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Information technology — Multimedia content description interface —

Part 10: Schema definition

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

Partie 10: Définition de schéma

Reference number
ISO/IEC 15938-10:2005(E)

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 15938-10 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 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*

— *Part 7: Conformance testing*

— *Part 8: Extraction and use of MPEG-7 descriptions*

— *Part 9: Profiles and levels*

— *Part 10: Schema definition*

— *Part 11: MPEG-7 profile schemas*

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Introduction

This International Standard, 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 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: specifies profiles of description tools.

Part 10 – Schema definition: specifies the schema using Description Definition Language.

This document specifies the schema of the ISO/IEC 15938 standard by collecting the description tools specified in the ISO/IEC 15938, assigning a namespace designator, and specifying the resulting syntax description in a single schema using description definition language.

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Information technology — Multimedia content description interface —

Part 10: Schema definition

1 Scope

1.1 Organization of the document

This International Standard specifies a metadata system for describing multimedia content. This part of ISO/IEC 15938 specifies the schema definition across all parts of ISO/IEC 15938. This part of ISO/IEC 15938 collects the description tools specified in ISO/IEC 15938, assigns a namespace designator, and specifies the resulting syntax description in a single schema using description definition language from ISO/IEC 15938-2.

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 (*Parts 1, 2, 3, 4, 5*), *Information technology — Multimedia content description interface*

XML, *Extensible Markup Language (XML) 1.0*, October 2000

XML *Schema, W3C Recommendation*, 2 May 2001

XML *Schema Part 0: Primer*, W3C Recommendation, 2 May 2001

XML *Schema Part 1: Structures*, W3C Recommendation, 2 May 2001

XML *Schema Part 2: Datatypes*, W3C Recommendation, 2 May 2001

xPath, *XML Path Language*, *W3C Recommendation*, 16 November 1999

NOTE These documents are maintained by the W3C (http://www.w3.org). The relevant documents can be obtained as follows:

Extensible Markup Language (XML) 1.0 (Second Edition), 6 October 2000, http://www.w3.org/TR/2000/REC-xml-20001006;

XML Schema: W3C Recommendation, 2 May 2001, http://www.w3.org/XML/Schema;

XML Schema Part 0: Primer, W3C Recommendation, 2 May 2001, http://www.w3.org/TR/xmlschema-0/ ;

XML Schema Part 1: Structures, W3C Recommendation, 2 May 2001, http://www.w3.org/TR/xmlschema-1/;

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XML Schema Part 2: Datatypes, W3C Recommendation, 2 May 2001, http://www.w3.org/TR/xmlschema-2/;

xPath, XML Path Language, W3C Recommendation, 16 November 1999, http://www.w3.org/TR/1999/REC-xpath-19991116; and

Canonical XML Version 1.0, W3C Recommendation, 15 March 2001, http://www.w3.org/TR/2001/REC-xml-c14n-20010315.

3 Terms and definitions

3.1 Conventions

3.1.1 Description tools

This part of ISO/IEC 15938 specifies conformance for descriptions and bitstreams complying with ISO/IEC 15938. Descriptions are instances of description tools defined in ISO/IEC 15938. The important concepts are defined as follows:

- **Description Tool (or tool)** – refers to a Description Scheme, Descriptor, or Datatype.
- **Description Scheme (DS)** – a description tool that describes entities or relationships pertaining to multimedia content. DSs specify the structure and semantics of their components, which may be Description Schemes, Descriptors, or datatypes.
- **Descriptor (D**) – a description tool that describes a feature, attribute, or group of attributes of multimedia content.
- **Datatype** – a basic reusable datatype employed by Description Schemes and Descriptors.

3.1.2 Naming convention

In order to specify the description tools, constructs provided by the Description Definition Language (DDL) specified in ISO/IEC 15938-2 are used, such as "element," "attribute," "simpleType" and "complexType." The names associated to these constructs are created on the basis of the following conventions:

- If the name is composed of multiple words, the first letter of each word is capitalized, with the exception that the capitalization of the first word depends on the type of construct as follows:
- Element naming: the first letter of the first word is capitalized (e.g. `TimePoint` element of `TimeType`).
- Attribute naming: the first letter of the first word is not capitalized (e.g. `timeUnit` attribute of `IncrDurationType`).
- complexType naming: the first letter of the first word is capitalized, and the suffix "Type" is used at the end of the name (e.g. `PersonType`).
- simpleType naming: the first letter of the first word is not capitalized, the suffix "Type" may be used at the end of the name (e.g. `timePointType`).

Note: when referencing a complexType or simpleType in the definition of a description tool, the "Type" suffix is not used. For instance, the text refers to the "`Time datatype`" (instead of "`TimeType` datatype"), to the "`MediaLocator D`" (instead of "`MediaLocatorType D`") and to the "`Person DS`" (instead of `PersonType DS`).

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3.1.3 Documentation convention

The syntax of each description tool is specified using the constructs provided by the DDL specified in ISO/IEC 15938-2, and is presented in this document using a specific font and background as shown in the following example:

```
<complexType name="ExampleType">
   <sequence>
      <element name="Element1" type="string"/>
   </sequence>
   <attribute name="attribute1" type="string" default="attrvalue1"/>
</complexType>
```

The semantics of each description tool is specified in text using a table format, where each row contains the name and a definition of a type, element or attribute as shown in the following example:

Name	*Definition*
`ExampleType`	Specifies an ...
`element1`	Describes the …
`attribute1`	Describes the …

Diagrammatic notation is sometimes used to depict overviews of the description tools. Such overview diagrams generally depict aggregation and generalization relationships between description tools or the entities being described. In these diagrams, rectangular shapes containing a name denote description tools (DSs or Ds) that are used to describe entities. In some diagrams, multiple description tools are listed in a single rectangle. Large diamond shapes containing a name denote description tools (DSs or Ds) that are used to describe relationships. Furthermore, paths between rectangles or diamonds denote association, generalization or aggregation relationships. Generalization relationships are indicated by a solid path with a filled triangle pointing at the more general entity. Aggregation (composition) relationships are indicated by a solid path with a (filled) diamond at the aggregating (composing) entity. Aggregation relationship paths may be accompanied by an indication of the multiplicity (minOccurs, maxOccurs) of the relation in text form.

The informative examples are included in separate subclauses, and are presented in this document using a separate font and background as shown in the following example:

```
<Example attribute1="example attribute value">
   <Element1>example element content</Element1>
</Example>
```

Moreover, the schema or set of description tools defined in this document follows a type-centric approach. The description tools are specified by defining the complexType or simpleType for each tool, but not declaring an element of this type at the global scope with the exception of the root element. However, in order to illustrate informative example descriptions in this document, the examples assume that an element of the example type (complexType or simpleType) has been declared, such as a member of another complexType or simpleType. For example, the description above assumes that the following declaration has been made:

```
<element name="Example" type="mpeg7ver1:ExampleType">
```

The term "reserved" is used in specifying the semantics of some description tools. The term "reserved" indicates that particular values are reserved for use in future extensions of ISO/IEC 15938.

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3.2 Terminology

For the purposes of this document, the following terms and definitions apply. Additional relevant definitions for all sections of this document can be in ISO/IEC 15938-1, ISO/IEC 15938-2, ISO/IEC 15938-3, 15938-4 and ISO/IEC 14496-5 for Systems, DDL, Visual, Audio and MDS definitions, respectively.

3.2.1 Schema-related terminology

3.2.2.1
Attribute
field of a **description tool** which is of simple type

3.2.2.2
Base type
type that serves as the root **type** of a derivation hierarchy for other **types**

3.2.2.3
Datatype
primitive reusable **type** employed by **Description Schemes** and **Descriptors**

3.2.2.4
Derived type
type that is defined in terms of extension or restriction of other **types**

3.2.2.5
Description
instantiation of one or more **description tools**

3.2.2.6
Description Scheme
description tool that describes entities or relationships pertaining to **multimedia content**

NOTE **Description Schemes** specify the structure and semantics of their components, which may be **Description Schemes**, **Descriptors**, or **datatypes**.

3.2.2.7
Description Tool
Description Scheme, **Descriptor**, or **datatype**

3.2.2.8
Descriptor
description tool that describes a feature, attribute, or group of attributes of multimedia content

3.2.2.9
Instantiation
assignment of values to the fields (elements, attributes) of one or more **description tools**

3.2.2.10
Element
field of a **description tool** which is of complex type

3.2.2.11
Schema
set of related **description tools**, for example, those specified in ISO/IEC 15938

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3.2.2.12
Type
format used for collection of letters, digits, and/or symbols, to depict values of an element or attribute of **description tool**

NOTE A **type** consists of a set of distinct values, a set of lexical representations, and a set of facets that characterize properties of the value space, individual values, or lexical items.

3.2.2.13
Canonical XML
canonical form of an XML document

NOTE If the canonical forms of two XML documents are strictly identical, the two XML documents are considered logically equivalent within the context of this specification. Canonicalization takes into account all syntactic changes physical permitted by XML 1.0 and Namespaces in XML.

3.2.2.14
XML canonicalization
method that generates the canonical form of an XML document

NOTE The term XML canonicalization refers to the process of applying the XML canonicalization method to an XML document.

3.2.2.15
Information set, or **infoset**
An XML document's information set consisting of a number of information items

NOTE An information item is an abstract description of some part of an XML document: each information item has a set of associated named properties.

3.2.2.16
Post schema validation infoset (PSVI)
infoset which supports information items and properties as defined in XML Schema - Part-1 - annex D

3.3 Symbols (and abbreviated terms)

For the purposes of this document, the symbols and abbreviated terms given in the following apply. Additional abbreviations are defined in ISO/IEC 15938 Parts 1-7.

AV	Audio-visual
BiM	Binary format for MPEG-7
CS	Classification Scheme
D	Descriptor
Ds	Descriptors
DCT	Discrete Cosine Transform
DDL	Description Definition Language
DS	Description Scheme
DSs	Description Schemes
IANA	Internet Assigned Numbers Authority

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IETF	Internet Engineering Task Force
IPMP	Intellectual Property Management and Protection
ISO	International Organization for Standardization
JPEG	Joint Photographic Experts Group
MDS	Multimedia Description Schemes
MPEG	Moving Picture Experts Group
MPEG-2	Generic coding of moving pictures and associated audio information (see ISO/IEC 13818)
MPEG-4	Coding of audio-visual objects (see ISO/IEC 14496)
MPEG-7	Multimedia Content Description Interface Standard (see ISO/IEC 15938)
MP3	MPEG-2 layer 3 audio coding
PSVI	Post schema validation infoset
QCIF	Quarter Common Intermediate Format
SMPTE	Society of Motion Picture and Television Engineers
TeM	Textual format for MPEG-7
TZ	Time Zone
TZD	Time Zone Difference
URI	Uniform Resource Identifier (see RFC 2396)
URL	Uniform Resource Locator (see RFC 2396)
W3C	World Wide Web Consortium
XML	Extensible Markup Language

4 Schema Definition

4.1 Introduction

This clause specifies the schema definition across the parts of ISO/IEC 15938. This part collects together the description tools specified in the ISO/IEC 15938, assigns a namespace designator, and specifies the resulting syntax description in a single schema using Description Definition Language [ISO/IEC 15938-2] to specify versions of the schema definition as illustrated in Figure 1. The frequency of creation of versions may depend on a number of factors, including the frequency of creation of amdendments to ISO/IEC 15938. Figure 1 is intended to provide an example of how versions are created from the schemas and amendments of the parts of ISO/IEC 15938 and does not determine the exact schedule for creating the versions.

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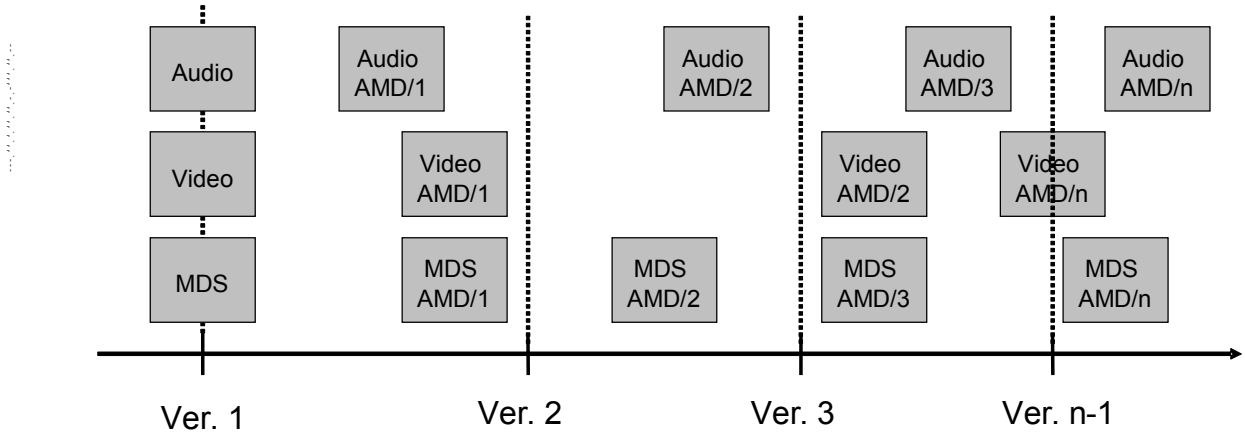

Figure 1 – Specification of versions of schema definition of ISO/IEC 15938.

4.2 Version 1 Schema Definition

The following schema definition, referred to as "Version 1" schema, specifies the namespace and syntax of the description tools of:

- ISO/IEC 15938-1 (Systems) + ISO/IEC 15938-1 Systems COR/1
- ISO/IEC 15938-2 (DDL)
- ISO/IEC 15938-3 (Visual) + ISO/IEC 15938-3 Visual COR/1
- SO/IEC 15938-4 (Audio)
- ISO/IEC 15938-5 (MDS) + ISO/IEC 15938-5 MDS COR/1

Note: the namespace designator "mpeg7" is used in the following schema definition for convenience. Other values may be used as long as the namespace designator value is fixed throughout the schema definition.

```
<!-- ################################################################################ -->
<!--                    ISO/IEC 15938 Information Technology                          -->
<!--                   Multimedia Content Description Interface                       -->
<!--                              MPEG-7 Version 1 Schema                             -->
<!-- ################################################################################ -->
<schema targetNamespace="urn:mpeg:mpeg7:schema:2001" elementFormDefault="qualified"
attributeFormDefault="unqualified" xmlns:mpeg7="urn:mpeg:mpeg7:schema:2001"
xmlns="http://www.w3.org/2001/XMLSchema">
  <annotation>
    <documentation>
      The following schema definition corresponds to the description tools of:
              ISO/IEC 15938-1 (Systems) + ISO/IEC 15938-1 Systems COR/1
              ISO/IEC 15938-2 (DDL)
              ISO/IEC 15938-3 (Visual) + ISO/IEC 15938-3 Visual COR/1
              ISO/IEC 15938-4 (Audio)
              ISO/IEC 15938-5 (MDS) + ISO/IEC 15938-5 MDS COR/1
     </documentation>
  </annotation>
  <!-- ########################################################## -->
  <!--  import xml components                                     -->
```

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```
  <!-- ########################################################## -->
  <import namespace="http://www.w3.org/XML/1998/namespace"
schemaLocation="http://www.w3.org/2001/03/xml.xsd" />
  <annotation>
    <documentation>
      This document contains tools defined as MPEG-7 specific extention of
      XML Schema in ISO/IEC 15938-2
    </documentation>
  </annotation>
  <!-- ################################################################################-->
  <!-- ********************** ISO/IEC 15938-1 SYSTEMS  ************************-->
  <!-- ################################################################################-->
  <annotation>
    <documentation>
      The following section contains tools defined in ISO/IEC 15938-1
    </documentation>
  </annotation>
  <!-- ################################################ -->
  <!-- Definition of DecoderInit        -->
  <!-- ################################################ -->
  <!-- DecoderInitType Systems -->
  <complexType name="DecoderInitType">
    <sequence>
      <element name="SchemaReference" type="mpeg7:SchemaReferenceType"
maxOccurs="unbounded"/>
      <element name="InitialDescription" type="mpeg7:AccessUnitType" minOccurs="0"/>
    </sequence>
    <attribute name="systemsProfileLevelIndication" type="decimal" use="required"/>
  </complexType>
  <complexType name="SchemaReferenceType">
    <attribute name="name" type="anyURI" use="required"/>
    <attribute name="locationHint" type="anyURI" use="optional"/>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of AccessUnitType         -->
  <!-- ################################################ -->
  <complexType name="AccessUnitType">
    <sequence>
      <element name="FragmentUpdateUnit" type="mpeg7:FragmentUpdateUnitType"
maxOccurs="unbounded"/>
    </sequence>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of FragmentUpdateUnitType     -->
  <!-- ################################################ -->
  <complexType name="FragmentUpdateUnitType">
    <sequence>
      <element name="FUCommand" type="mpeg7:FragmentUpdateCommandType"/>
      <element name="FUContext" type="mpeg7:FragmentUpdateContextType" minOccurs="0"/>
      <element name="FUPayload" type="mpeg7:FragmentUpdatePayloadType" minOccurs="0"/>
    </sequence>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of FragmentUpdateCommandType       -->
  <!-- ################################################ -->
  <simpleType name="FragmentUpdateCommandType">
    <union>
      <simpleType>
        <restriction base="string">
          <enumeration value="addNode"/>
```


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```
          <enumeration value="deleteNode"/>
          <enumeration value="replaceNode"/>
          <enumeration value="reset"/>
        </restriction>
      </simpleType>
      <simpleType>
        <restriction base="string"/>
      </simpleType>
    </union>
  </simpleType>
  <!-- ################################################   -->
  <!-- Definition of FragmentUpdateContextType           -->
  <!-- ################################################   -->
  <!-- FragmentUpdateContextType Systems COR/1 -->
  <simpleType name="FragmentUpdateContextType">
    <restriction base="string">
      <pattern
value="/?((\.|(\.\.)|(((\i\c*:)?\i\c*)(\[\d+\])?))(/((\.)|(\.\.)|(((\i\c*:)?\i\c*)(\[\d+\]
)?)))*(/@(\i\c*:)?\i\c*)?)|(@(\i\c*:)?\i\c*)"/>
    </restriction>
  </simpleType>
  <!-- ################################################ -->
  <!--  Definition of FragmentUpdatePayloadType       -->
  <!-- ################################################ -->
  <!-- FragmentUpdatePayloadType Systems COR/1 -->
  <complexType name="FragmentUpdatePayloadType">
    <sequence>
      <any processContents="skip" minOccurs="0"/>
    </sequence>
    <attribute name="hasDeferredNodes" type="boolean" use="optional" default="false"/>
    <anyAttribute namespace="##other" processContents="skip"/>
  </complexType>
  <!-- ********************************************************************--->
  <!-- *************************** ISO/IEC 15938-2 DDL  ***********************--->
  <!-- ********************************************************************--->
  <annotation>
    <documentation>
      The following section contains tools defined in ISO/IEC 15938-2
    </documentation>
  </annotation>
  <!-- ################################################ -->
  <!-- Definition of 'mpeg7:dim" for Matrix Datatype                  -->
  <!-- ################################################ -->
  <!-- definition of listOfPositiveIntegerForDim datatype -->
  <simpleType name="listOfPositiveIntegerForDim">
    <list itemType="positiveInteger"/>
  </simpleType>
  <!-- definition of mpeg7:dim attribute -->
  <attribute name="dim">
    <simpleType>
      <restriction base="mpeg7:listOfPositiveIntegerForDim">
        <minLength value="1"/>
      </restriction>
    </simpleType>
  </attribute>
  <!-- ################################################ -->
  <!-- Definition of MPEG-7 Datatype Extensions                    -->
  <!-- ################################################ -->
  <!-- definition of basicTimePoint dataype -->
  <simpleType name="basicTimePointType">
```

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```
    <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>
  <!-- ********************************************************************-->
  <!-- ******************* ISO/IEC 15938-3 Visual************************-->
  <!-- ********************************************************************-->
  <annotation>
    <documentation>
      The following section contains visual tools defined in ISO/IEC 15938-3
    </documentation>
  </annotation>
  <!-- ########################################################## -->
  <!-- Definition of GridLayout Datatype                                    -->
  <!-- ########################################################## -->
  <complexType name="GridLayoutType" final="#all">
    <sequence>
      <element name="Descriptor" type="mpeg7:VisualDType" maxOccurs="65025"/>
    </sequence>
    <attribute name="numOfPartX" type="mpeg7:unsigned8" use="required"/>
    <attribute name="numOfPartY" type="mpeg7:unsigned8" use="required"/>
    <attribute name="descriptorMask" use="optional">
      <simpleType>
        <restriction base="string">
          <pattern value="(0|1)*"/>
        </restriction>
      </simpleType>
    </attribute>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of VisualTimeSeries Datatypes                          -->
  <!-- ########################################################## -->
  <!-- Definition of VisualTimeSeries Datatype -->
  <complexType name="VisualTimeSeriesType" abstract="true">
    <sequence>
      <element name="TimeIncr" type="mpeg7:mediaDurationType"/>
    </sequence>
    <attribute name="offset" type="mpeg7:mediaDurationType" use="optional"
default="PT0S"/>
  </complexType>
  <!-- Definition of RegularVisualTimeSeries Datatype -->
  <complexType name="RegularVisualTimeSeriesType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualTimeSeriesType">
        <sequence>
          <element name="Descriptor" type="mpeg7:VisualDType" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of IrregularVisualTimeSeries Datatype -->
  <complexType name="IrregularVisualTimeSeriesType" final="#all">
```


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```
    <complexContent>
      <extension base="mpeg7:VisualTimeSeriesType">
        <sequence maxOccurs="unbounded">
          <element name="Descriptor" type="mpeg7:VisualDType"/>
          <element name="Interval" type="mpeg7:unsigned32"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of MultipleView Datatypes                                  -->
  <!-- ########################################################## -->
  <complexType name="MultipleViewType" final="#all">
    <sequence maxOccurs="16">
      <element name="IsVisible" type="boolean"/>
      <element name="Descriptor" type="mpeg7:VisualDType"/>
    </sequence>
    <attribute name="fixedViewsFlag" type="boolean" use="required"/>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of Spatial2DCoordinateSystem Header                        -->
  <!-- ########################################################## -->
  <complexType name="Spatial2DCoordinateSystemType" final="#all">
    <complexContent>
      <extension base="mpeg7:HeaderType">
        <sequence>
          <element name="Unit" minOccurs="0">
            <simpleType>
              <restriction base="string">
                <enumeration value="pixel"/>
                <enumeration value="meter"/>
                <enumeration value="pictureHeight"/>
                <enumeration value="pictureWidth"/>
                <enumeration value="pictureWidthAndHeight"/>
              </restriction>
            </simpleType>
          </element>
          <element name="LocalCoordinateSystem" minOccurs="0">
            <complexType>
              <sequence>
                <choice>
                  <sequence maxOccurs="3">
                    <element name="Pixel">
                      <simpleType>
                        <restriction base="mpeg7:integerVector">
                          <length value="2"/>
                        </restriction>
                      </simpleType>
                    </element>
                    <element name="CoordPoint">
                      <simpleType>
                        <restriction base="mpeg7:floatVector">
                          <length value="2"/>
                        </restriction>
                      </simpleType>
                    </element>
                  </sequence>
                  <sequence maxOccurs="3">
                    <element name="CurrPixel">
                      <simpleType>
```

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```
                    <restriction base="mpeg7:integerVector">
                      <length value="2"/>
                    </restriction>
                  </simpleType>
                </element>
                <element name="SrcPixel">
                  <simpleType>
                    <restriction base="mpeg7:integerVector">
                      <length value="2"/>
                    </restriction>
                  </simpleType>
                </element>
              </sequence>
            </choice>
            <element name="MappingFunct" type="string" minOccurs="0" maxOccurs="2"/>
          </sequence>
          <attribute name="name" type="string" use="required"/>
          <attribute name="dataSet" type="anyURI" use="optional"/>
        </complexType>
      </element>
      <element name="IntegratedCoordinateSystem" minOccurs="0">
        <complexType>
          <sequence minOccurs="0" maxOccurs="65535">
            <element name="TimeIncr" type="mpeg7:MediaIncrDurationType"/>
            <element name="MotionParams" type="float" minOccurs="2" maxOccurs="12"/>
          </sequence>
          <attribute name="modelType" use="required">
            <simpleType>
              <restriction base="string">
                <enumeration value="translational"/>
                <enumeration value="rotationAndScaling"/>
                <enumeration value="affine"/>
                <enumeration value="perspective"/>
                <enumeration value="quadratic"/>
              </restriction>
            </simpleType>
          </attribute>
          <attribute name="xOrigin" type="float" use="required"/>
          <attribute name="yOrigin" type="float" use="required"/>
        </complexType>
      </element>
    </sequence>
    <attribute name="xRepr" type="mpeg7:unsigned8" use="required"/>
    <attribute name="yRepr" type="mpeg7:unsigned8" use="required"/>
    <attribute name="xSrcSize" type="positiveInteger" use="optional"/>
    <attribute name="ySrcSize" type="positiveInteger" use="optional"/>
  </extension>
 </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of TemporalInterpolation Datatype                                  -->
<!-- ########################################################## -->
<complexType name="TemporalInterpolationType" final="#all">
 <sequence>
  <choice>
   <element name="WholeInterval">
    <complexType>
     <choice>
      <element name="MediaDuration" type="mpeg7:mediaDurationType"/>
      <element name="MediaIncrDuration" type="mpeg7:MediaIncrDurationType"/>
```


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```
            </choice>
          </complexType>
        </element>
        <element name="KeyTimePoint">
          <complexType>
            <choice>
              <element name="MediaTimePoint" type="mpeg7:mediaTimePointType" minOccurs="2"
maxOccurs="65535"/>
              <element name="MediaRelTimePoint" type="mpeg7:MediaRelTimePointType"
minOccurs="2" maxOccurs="65535"/>
              <element name="MediaRelIncrTimePoint" type="mpeg7:MediaRelIncrTimePointType"
minOccurs="2" maxOccurs="65535"/>
            </choice>
          </complexType>
        </element>
      </choice>
      <element name="InterpolationFunctions" maxOccurs="15">
        <complexType>
          <sequence>
            <element name="KeyValue" minOccurs="2" maxOccurs="65535">
              <complexType>
                <simpleContent>
                  <extension base="float">
                    <attribute name="type" use="optional" default="firstOrder">
                      <simpleType>
                        <restriction base="string">
                          <enumeration value="startPoint"/>
                          <enumeration value="firstOrder"/>
                          <enumeration value="secondOrder"/>
                          <enumeration value="notDetermined"/>
                        </restriction>
                      </simpleType>
                    </attribute>
                    <attribute name="param" type="float" use="optional" default="0.0"/>
                  </extension>
                </simpleContent>
              </complexType>
            </element>
          </sequence>
        </complexType>
      </element>
    </sequence>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of ColorSpace Datatype                                    -->
  <!-- ########################################################## -->
  <complexType name="ColorSpaceType" final="#all">
    <sequence>
      <element name="ColorTransMat" minOccurs="0">
        <simpleType>
          <restriction>
            <simpleType>
              <list itemType="mpeg7:unsigned16"/>
            </simpleType>
            <length value="9"/>
          </restriction>
        </simpleType>
      </element>
    </sequence>
    <attribute name="colorReferenceFlag" type="boolean" use="optional" default="false"/>
```

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```
    <attribute name="type" use="required">
      <simpleType>
        <restriction base="string">
          <enumeration value="RGB"/>
          <enumeration value="YCbCr"/>
          <enumeration value="HSV"/>
          <enumeration value="HMMD"/>
          <enumeration value="LinearMatrix"/>
          <enumeration value="Monochrome"/>
        </restriction>
      </simpleType>
    </attribute>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of ColorQuantization Datatype                   -->
  <!-- ########################################################## -->
  <complexType name="ColorQuantizationType" final="#all">
    <sequence maxOccurs="3">
      <element name="Component">
        <simpleType>
          <restriction base="string">
            <enumeration value="R"/>
            <enumeration value="G"/>
            <enumeration value="B"/>
            <enumeration value="Y"/>
            <enumeration value="Cb"/>
            <enumeration value="Cr"/>
            <enumeration value="H"/>
            <enumeration value="S"/>
            <enumeration value="V"/>
            <enumeration value="Max"/>
            <enumeration value="Min"/>
            <enumeration value="Diff"/>
            <enumeration value="Sum"/>
          </restriction>
        </simpleType>
      </element>
      <element name="NumOfBins" type="mpeg7:unsigned12"/>
    </sequence>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of DominantColor D                              -->
  <!-- ########################################################## -->
  <complexType name="DominantColorType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="ColorSpace" type="mpeg7:ColorSpaceType" minOccurs="0"/>
          <element name="ColorQuantization" type="mpeg7:ColorQuantizationType"
minOccurs="0"/>
          <element name="SpatialCoherency" type="mpeg7:unsigned5"/>
          <element name="Value" maxOccurs="8">
            <complexType>
              <sequence>
                <element name="Percentage" type="mpeg7:unsigned5"/>
                <element name="Index">
                  <simpleType>
                    <restriction>
                      <simpleType>
                        <list itemType="mpeg7:unsigned12"/>
```

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```
                    </simpleType>
                    <length value="3"/>
                  </restriction>
                </simpleType>
              </element>
              <element name="ColorVariance" minOccurs="0">
                <simpleType>
                  <restriction>
                    <simpleType>
                      <list itemType="mpeg7:unsigned1"/>
                    </simpleType>
                    <length value="3"/>
                  </restriction>
                </simpleType>
              </element>
            </sequence>
          </complexType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of ScalableColor D                                    --
>
<!-- ################################################################ -->
<complexType name="ScalableColorType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="Coeff" type="mpeg7:integerVector"/>
      </sequence>
      <attribute name="numOfCoeff" use="required">
        <simpleType>
          <restriction base="integer">
            <enumeration value="16"/>
            <enumeration value="32"/>
            <enumeration value="64"/>
            <enumeration value="128"/>
            <enumeration value="256"/>
          </restriction>
        </simpleType>
      </attribute>
      <attribute name="numOfBitplanesDiscarded" use="required">
        <simpleType>
          <restriction base="integer">
            <enumeration value="0"/>
            <enumeration value="1"/>
            <enumeration value="2"/>
            <enumeration value="3"/>
            <enumeration value="4"/>
            <enumeration value="6"/>
            <enumeration value="8"/>
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
```

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```
  <!-- Definition of ColorLayout D                                          --
>
  <!-- ########################################################## -->
  <complexType name="ColorLayoutType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="YDCCoeff" type="mpeg7:unsigned6"/>
          <element name="CbDCCoeff" type="mpeg7:unsigned6"/>
          <element name="CrDCCoeff" type="mpeg7:unsigned6"/>
          <choice>
            <element name="YACCoeff2">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="2"/>
                </restriction>
              </simpleType>
            </element>
            <element name="YACCoeff5">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="5"/>
                </restriction>
              </simpleType>
            </element>
            <element name="YACCoeff9">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="9"/>
                </restriction>
              </simpleType>
            </element>
            <element name="YACCoeff14">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="14"/>
                </restriction>
              </simpleType>
            </element>
            <element name="YACCoeff20">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="20"/>
                </restriction>
              </simpleType>
```


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```
            </element>
            <element name="YACCoeff27">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="27"/>
                </restriction>
              </simpleType>
            </element>
            <element name="YACCoeff63">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="63"/>
                </restriction>
              </simpleType>
            </element>
          </choice>
          <choice>
            <sequence>
              <element name="CbACCoeff2">
                <simpleType>
                  <restriction>
                    <simpleType>
                      <list itemType="mpeg7:unsigned5"/>
                    </simpleType>
                    <length value="2"/>
                  </restriction>
                </simpleType>
              </element>
              <element name="CrACCoeff2">
                <simpleType>
                  <restriction>
                    <simpleType>
                      <list itemType="mpeg7:unsigned5"/>
                    </simpleType>
                    <length value="2"/>
                  </restriction>
                </simpleType>
              </element>
            </sequence>
            <sequence>
              <element name="CbACCoeff5">
                <simpleType>
                  <restriction>
                    <simpleType>
                      <list itemType="mpeg7:unsigned5"/>
                    </simpleType>
                    <length value="5"/>
                  </restriction>
                </simpleType>
              </element>
              <element name="CrACCoeff5">
                <simpleType>
                  <restriction>
                    <simpleType>
```

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```
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="5"/>
                </restriction>
              </simpleType>
            </element>
          </sequence>
          <sequence>
            <element name="CbACCoeff9">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="9"/>
                </restriction>
              </simpleType>
            </element>
            <element name="CrACCoeff9">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="9"/>
                </restriction>
              </simpleType>
            </element>
          </sequence>
          <sequence>
            <element name="CbACCoeff14">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="14"/>
                </restriction>
              </simpleType>
            </element>
            <element name="CrACCoeff14">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="14"/>
                </restriction>
              </simpleType>
            </element>
          </sequence>
          <sequence>
            <element name="CbACCoeff20">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="20"/>
                </restriction>
```


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```
              </simpleType>
            </element>
            <element name="CrACCoeff20">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="20"/>
                </restriction>
              </simpleType>
            </element>
          </sequence>
          <sequence>
            <element name="CbACCoeff27">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="27"/>
                </restriction>
              </simpleType>
            </element>
            <element name="CrACCoeff27">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="27"/>
                </restriction>
              </simpleType>
            </element>
          </sequence>
          <sequence>
            <element name="CbACCoeff63">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="63"/>
                </restriction>
              </simpleType>
            </element>
            <element name="CrACCoeff63">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5"/>
                  </simpleType>
                  <length value="63"/>
                </restriction>
              </simpleType>
            </element>
          </sequence>
        </choice>
      </sequence>
    </extension>
```

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```
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of ColorStructure D                                                  --
>
  <!-- ########################################################## -->
  <complexType name="ColorStructureType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="Values">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned8"/>
                </simpleType>
                <minLength value="1"/>
                <maxLength value="256"/>
              </restriction>
            </simpleType>
          </element>
        </sequence>
        <attribute name="colorQuant" type="mpeg7:unsigned3" use="required"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of GoFGoPColor D                                                    -->
  <!-- ########################################################## -->
  <complexType name="GoFGoPColorType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="ScalableColor" type="mpeg7:ScalableColorType"/>
        </sequence>
        <attribute name="aggregation" use="required">
          <simpleType>
            <restriction base="string">
              <enumeration value="Average"/>
              <enumeration value="Median"/>
              <enumeration value="Intersection"/>
            </restriction>
          </simpleType>
        </attribute>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of HomogeneousTexture D                                          -->
  <!-- ########################################################## -->
  <!-- Definition of HomogeneousTexture D -->
  <complexType name="HomogeneousTextureType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="Average" type="mpeg7:unsigned8"/>
          <element name="StandardDeviation" type="mpeg7:unsigned8"/>
          <element name="Energy" type="mpeg7:textureListType"/>
          <element name="EnergyDeviation" type="mpeg7:textureListType" minOccurs="0"/>
        </sequence>
```


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```
    </extension>
  </complexContent>
</complexType>
<!-- Definition of textureList datatype -->
<simpleType name="textureListType">
  <restriction>
    <simpleType>
      <list itemType="mpeg7:unsigned8"/>
    </simpleType>
    <length value="30"/>
  </restriction>
</simpleType>
<!-- ########################################################## -->
<!-- Definition of TextureBrowsing D                                  -->
<!-- ########################################################## -->
<complexType name="TextureBrowsingType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="Regularity">
          <simpleType>
            <restriction base="string">
              <enumeration value="irregular"/>
              <enumeration value="slightlyRegular"/>
              <enumeration value="regular"/>
              <enumeration value="highlyRegular"/>
            </restriction>
          </simpleType>
        </element>
        <sequence maxOccurs="2">
          <element name="Direction">
            <simpleType>
              <restriction base="string">
                <enumeration value="noDirectionality"/>
                <enumeration value="0Degree"/>
                <enumeration value="30Degree"/>
                <enumeration value="60Degree"/>
                <enumeration value="90Degree"/>
                <enumeration value="120Degree"/>
                <enumeration value="150Degree"/>
              </restriction>
            </simpleType>
          </element>
          <element name="Scale">
            <simpleType>
              <restriction base="string">
                <enumeration value="fine"/>
                <enumeration value="medium"/>
                <enumeration value="coarse"/>
                <enumeration value="veryCoarse"/>
              </restriction>
            </simpleType>
          </element>
        </sequence>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of EdgeHistogram D                                    -->
```

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```
<!-- ########################################################## -->
<complexType name="EdgeHistogramType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="BinCounts">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned3"/>
              </simpleType>
              <length value="80"/>
            </restriction>
          </simpleType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of RegionShape D                                -->
<!-- ########################################################## -->
<complexType name="RegionShapeType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="MagnitudeOfART">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned4"/>
              </simpleType>
              <length value="35"/>
            </restriction>
          </simpleType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of ContourShape D                               -->
<!-- ########################################################## -->
<!-- Definition of ContourShape D -->
<complexType name="ContourShapeType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="GlobalCurvature" type="mpeg7:curvatureType"/>
        <element name="PrototypeCurvature" type="mpeg7:curvatureType" minOccurs="0"/>
        <element name="HighestPeakY" type="mpeg7:unsigned7"/>
        <!-- Peak Video COR/1 -->
        <element name="Peak" minOccurs="0" maxOccurs="62">
          <complexType>
            <attribute name="peakX" type="mpeg7:unsigned6" use="required"/>
            <attribute name="peakY" type="mpeg7:unsigned3" use="required"/>
          </complexType>
        </element>
      </sequence>
    </extension>
```


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```
    </complexContent>
  </complexType>
  <!-- Definition of curvature datatype -->
  <simpleType name="curvatureType">
    <restriction>
      <simpleType>
        <list itemType="mpeg7:unsigned6"/>
      </simpleType>
      <length value="2"/>
    </restriction>
  </simpleType>
  <!-- ########################################################## -->
  <!-- Definition of Shape3D D                                                  --
>
  <!-- ########################################################## -->
  <complexType name="Shape3DType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="Spectrum">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned12"/>
                </simpleType>
                <maxLength value="255"/>
              </restriction>
            </simpleType>
          </element>
          <element name="PlanarSurfaces" type="mpeg7:unsigned12"/>
          <element name="SingularSurfaces" type="mpeg7:unsigned12"/>
        </sequence>
        <attribute name="bitsPerBin" type="mpeg7:unsigned4" use="optional" default="12"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of CameraMotion D                                             -->
  <!-- ########################################################## -->
  <!-- Definition of CameraMotion D -->
  <complexType name="CameraMotionType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="Segment" type="mpeg7:CameraMotionSegmentType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of CameraMotionSegment Datatype -->
  <complexType name="CameraMotionSegmentType" abstract="true">
    <sequence>
      <element name="MediaTime" type="mpeg7:MediaTimeType"/>
      <element name="FocusOfExpansion" type="mpeg7:FocusOfExpansionType" minOccurs="0"/>
    </sequence>
  </complexType>
  <!-- Definition of MixtureCameraMotionSegment Datatype -->
  <complexType name="MixtureCameraMotionSegmentType" final="#all">
    <complexContent>
```

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```
    <extension base="mpeg7:CameraMotionSegmentType">
      <sequence>
        <element name="FractionalPresence" type="mpeg7:FractionalPresenceType"/>
        <element name="AmountOfMotion" type="mpeg7:MixtureAmountOfMotionType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of NonMixtureCameraMotionSegment Datatype -->
<complexType name="NonMixtureCameraMotionSegmentType">
  <complexContent>
    <extension base="mpeg7:CameraMotionSegmentType">
      <sequence>
        <element name="AmountOfMotion" type="mpeg7:NonMixtureAmountOfMotionType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of FocusOfExpansion Datatype -->
<complexType name="FocusOfExpansionType">
  <sequence>
    <element name="HorizontalPosition" type="float"/>
    <element name="VerticalPosition" type="float"/>
  </sequence>
</complexType>
<!-- Definition of FractionalPresence Datatype -->
<complexType name="FractionalPresenceType" final="#all">
  <sequence>
    <element name="TrackLeft" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="TrackRight" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="BoomDown" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="BoomUp" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="DollyForward" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="DollyBackward" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="PanLeft" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="PanRight" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="TiltDown" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="TiltUp" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="RollClockwise" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="RollAnticlockwise" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="ZoomIn" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="ZoomOut" type="mpeg7:unsigned7" minOccurs="0"/>
    <element name="Fixed" type="mpeg7:unsigned7" minOccurs="0"/>
  </sequence>
</complexType>
<!-- Definition of MixtureAmountOfMotion Datatype -->
<complexType name="MixtureAmountOfMotionType" final="#all">
  <sequence>
    <element name="TrackLeft" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="TrackRight" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="BoomDown" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="BoomUp" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="DollyForward" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="DollyBackward" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="PanLeft" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="PanRight" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="TiltDown" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="TiltUp" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="RollClockwise" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="RollAnticlockwise" type="mpeg7:unsigned11" minOccurs="0"/>
```

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```
    <element name="ZoomIn" type="mpeg7:unsigned11" minOccurs="0"/>
    <element name="ZoomOut" type="mpeg7:unsigned11" minOccurs="0"/>
  </sequence>
</complexType>
<!-- Definition of NonMixtureAmountOfMotion Datatype -->
<complexType name="NonMixtureAmountOfMotionType">
  <choice>
    <element name="TrackLeft" type="mpeg7:unsigned11"/>
    <element name="TrackRight" type="mpeg7:unsigned11"/>
    <element name="BoomDown" type="mpeg7:unsigned11"/>
    <element name="BoomUp" type="mpeg7:unsigned11"/>
    <element name="DollyForward" type="mpeg7:unsigned11"/>
    <element name="DollyBackward" type="mpeg7:unsigned11"/>
    <element name="PanLeft" type="mpeg7:unsigned11"/>
    <element name="PanRight" type="mpeg7:unsigned11"/>
    <element name="TiltDown" type="mpeg7:unsigned11"/>
    <element name="TiltUp" type="mpeg7:unsigned11"/>
    <element name="RollClockwise" type="mpeg7:unsigned11"/>
    <element name="RollAnticlockwise" type="mpeg7:unsigned11"/>
    <element name="ZoomIn" type="mpeg7:unsigned11"/>
    <element name="ZoomOut" type="mpeg7:unsigned11"/>
    <element name="Fixed">
      <complexType/>
    </element>
  </choice>
</complexType>
<!-- ########################################################## -->
<!-- Definition of MotionTrajectory D                                                  -->
<!-- ########################################################## -->
<complexType name="MotionTrajectoryType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <choice>
          <element name="CoordRef">
            <complexType>
              <attribute name="ref" type="IDREF" use="required"/>
              <attribute name="spatialRef" type="boolean" use="required"/>
            </complexType>
          </element>
          <element name="CoordDef">
            <complexType>
              <sequence>
                <element name="Repr" minOccurs="0">
                  <complexType>
                    <attribute name="x" type="mpeg7:unsigned8" use="required"/>
                    <attribute name="y" type="mpeg7:unsigned8" use="required"/>
                  </complexType>
                </element>
              </sequence>
              <attribute name="units" use="required">
                <simpleType>
                  <restriction base="string">
                    <enumeration value="pictureHeight"/>
                    <enumeration value="pictureWidth"/>
                    <enumeration value="pictureWidthAndHeight"/>
                    <enumeration value="meter"/>
                  </restriction>
                </simpleType>
              </attribute>
```

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```
            </complexType>
          </element>
        </choice>
        <element name="Params" type="mpeg7:TemporalInterpolationType"/>
      </sequence>
      <attribute name="cameraFollows" type="boolean" use="optional"/>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of ParametricMotion D                                 -->
<!-- ################################################################ -->
<complexType name="ParametricMotionType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <choice>
          <element name="CoordRef">
            <complexType>
              <attribute name="ref" type="IDREF" use="required"/>
              <attribute name="spatialRef" type="boolean" use="required"/>
            </complexType>
          </element>
          <element name="CoordDef">
            <complexType>
              <attribute name="originX" type="float" use="required"/>
              <attribute name="originY" type="float" use="required"/>
            </complexType>
          </element>
        </choice>
        <element name="MediaDuration" type="mpeg7:MediaIncrDurationType"/>
        <element name="Parameters">
          <simpleType>
            <restriction base="mpeg7:floatVector">
              <maxLength value="12"/>
            </restriction>
          </simpleType>
        </element>
      </sequence>
      <attribute name="motionModel" use="required">
        <simpleType>
          <restriction base="string">
            <enumeration value="translational"/>
            <enumeration value="rotationOrScaling"/>
            <enumeration value="affine"/>
            <enumeration value="perspective"/>
            <enumeration value="quadratic"/>
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of MotionActivity D                                   --
>
<!-- ################################################################ -->
<complexType name="MotionActivityType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
```


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```
        <sequence>
          <element name="Intensity">
            <simpleType>
              <restriction base="mpeg7:unsigned3">
                <minInclusive value="1"/>
                <maxInclusive value="5"/>
              </restriction>
            </simpleType>
          </element>
          <element name="DominantDirection" type="mpeg7:unsigned3" minOccurs="0"/>
          <element name="SpatialDistributionParams" minOccurs="0">
            <complexType>
              <attribute name="numOfShortRuns" type="mpeg7:unsigned6" use="required"/>
              <attribute name="numOfMediumRuns" type="mpeg7:unsigned5" use="required"/>
              <attribute name="numOfLongRuns" type="mpeg7:unsigned5" use="required"/>
            </complexType>
          </element>
          <element name="SpatialLocalizationParams" minOccurs="0">
            <complexType>
              <choice>
                <element name="Vector4">
                  <simpleType>
                    <restriction>
                      <simpleType>
                        <list itemType="mpeg7:unsigned3"/>
                      </simpleType>
                      <length value="4"/>
                    </restriction>
                  </simpleType>
                </element>
                <element name="Vector16">
                  <simpleType>
                    <restriction>
                      <simpleType>
                        <list itemType="mpeg7:unsigned3"/>
                      </simpleType>
                      <length value="16"/>
                    </restriction>
                  </simpleType>
                </element>
                <element name="Vector64">
                  <simpleType>
                    <restriction>
                      <simpleType>
                        <list itemType="mpeg7:unsigned3"/>
                      </simpleType>
                      <length value="64"/>
                    </restriction>
                  </simpleType>
                </element>
                <element name="Vector256">
                  <simpleType>
                    <restriction>
                      <simpleType>
                        <list itemType="mpeg7:unsigned3"/>
                      </simpleType>
                      <length value="256"/>
                    </restriction>
                  </simpleType>
                </element>
```

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```
            </choice>
          </complexType>
        </element>
        <element name="TemporalParams" minOccurs="0">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned6"/>
              </simpleType>
              <length value="5"/>
            </restriction>
          </simpleType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of RegionLocator Datatype                                    -->
<!-- ########################################################## -->
<!-- Definition of RegionLocator Datatype -->
<complexType name="RegionLocatorType" final="#all">
  <sequence>
    <element name="CoordRef" minOccurs="0">
      <complexType>
        <attribute name="ref" type="IDREF" use="required"/>
        <attribute name="spatialRef" type="boolean" use="optional" default="false"/>
      </complexType>
    </element>
    <element name="Box" minOccurs="0" maxOccurs="unbounded">
      <complexType>
        <simpleContent>
          <extension base="mpeg7:BoxListType">
            <attribute name="unlocatedRegion" type="boolean" use="optional"
default="false"/>
          </extension>
        </simpleContent>
      </complexType>
    </element>
    <element name="Polygon" minOccurs="0" maxOccurs="unbounded">
      <complexType>
        <sequence>
          <element name="Coords" type="mpeg7:IntegerMatrixType"/>
        </sequence>
        <attribute name="unlocatedRegion" type="boolean" use="optional"
default="false"/>
      </complexType>
    </element>
  </sequence>
</complexType>
<!-- Definition of BoxList Datatype -->
<complexType name="BoxListType">
  <simpleContent>
    <restriction base="mpeg7:IntegerMatrixType"/>
  </simpleContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of SpatioTemporalLocator Datatype                            -->
<!-- ########################################################## -->
<!-- Definition of SpatioTemporalLocator Datatype -->
```

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```
  <complexType name="SpatioTemporalLocatorType" final="#all">
    <sequence>
      <element name="CoordRef" minOccurs="0">
        <complexType>
          <attribute name="ref" type="IDREF" use="required"/>
          <attribute name="spatialRef" type="boolean" use="required"/>
        </complexType>
      </element>
      <choice maxOccurs="unbounded">
        <element name="FigureTrajectory" type="mpeg7:FigureTrajectoryType"/>
        <element name="ParameterTrajectory" type="mpeg7:ParameterTrajectoryType"/>
        <element name="MediaTime" type="mpeg7:MediaTimeType"/>
      </choice>
    </sequence>
  </complexType>
  <!-- Definition of FigureTrajectory Datatype -->
  <complexType name="FigureTrajectoryType" final="#all">
    <sequence>
      <element name="MediaTime" type="mpeg7:MediaTimeType"/>
      <element name="Vertex" type="mpeg7:TemporalInterpolationType" minOccurs="3"
maxOccurs="unbounded"/>
      <element name="Depth" type="mpeg7:TemporalInterpolationType" minOccurs="0"/>
    </sequence>
    <attribute name="type" use="required">
      <simpleType>
        <restriction base="string">
          <enumeration value="rectangle"/>
          <enumeration value="ellipse"/>
          <enumeration value="polygon"/>
        </restriction>
      </simpleType>
    </attribute>
  </complexType>
  <!-- Definition of ParameterTrajectory Datatype -->
  <complexType name="ParameterTrajectoryType" final="#all">
    <sequence>
      <element name="MediaTime" type="mpeg7:MediaTimeType"/>
      <element name="InitialRegion" type="mpeg7:RegionLocatorType"/>
      <element name="Params" type="mpeg7:TemporalInterpolationType" minOccurs="0"/>
      <element name="Depth" type="mpeg7:TemporalInterpolationType" minOccurs="0"/>
    </sequence>
    <attribute name="motionModel" use="required">
      <simpleType>
        <restriction base="string">
          <enumeration value="still"/>
          <enumeration value="translation"/>
          <enumeration value="rotationAndScaling"/>
          <enumeration value="affine"/>
          <enumeration value="perspective"/>
          <enumeration value="parabolic"/>
        </restriction>
      </simpleType>
    </attribute>
    <attribute name="ellipseFlag" type="boolean" use="optional" default="false"/>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of FaceRecognition D                                  -->
  <!-- ########################################################## -->
  <complexType name="FaceRecognitionType" final="#all">
    <complexContent>
```

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```
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="Feature">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5"/>
                </simpleType>
                <length value="48"/>
              </restriction>
            </simpleType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ********************************************************************--->
  <!-- ********************** ISO/IEC 15938-4 AUDIO ***************************--->
  <!-- ********************************************************************--->
  <annotation>
    <documentation>
      This section contains tools defined in ISO/IEC 15938-4
    </documentation>
  </annotation>
  <!-- ################################################################## -->
  <!-- Definition of AudioLLDScalar D                                     -->
  <!-- ################################################################## -->
  <complexType name="AudioLLDScalarType" abstract="true">
    <complexContent>
      <extension base="mpeg7:AudioDType">
        <choice>
          <element name="Scalar" type="float"/>
          <element name="SeriesOfScalar" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:SeriesOfScalarType">
                  <attribute name="hopSize" type="mpeg7:mediaDurationType"
default="PT10N1000F"/>
                </extension>
              </complexContent>
            </complexType>
          </element>
        </choice>
        <attribute name="confidence" type="mpeg7:zeroToOneType" use="optional"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################## -->
  <!-- Definition of AudioLLDVector D                                     -->
  <!-- ################################################################## -->
  <complexType name="AudioLLDVectorType" abstract="true">
    <complexContent>
      <extension base="mpeg7:AudioDType">
        <choice>
          <element name="Vector" type="mpeg7:floatVector"/>
          <element name="SeriesOfVector" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:SeriesOfVectorType">
```


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```
                  <attribute name="hopSize" type="mpeg7:mediaDurationType"
default="PT10N1000F"/>
                </extension>
              </complexContent>
            </complexType>
          </element>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioWaveform D                                    -->
  <!-- ################################################################ -->
  <complexType name="AudioWaveformType">
    <complexContent>
      <extension base="mpeg7:AudioLLDScalarType">
        <attribute name="minRange" type="float" use="optional"/>
        <attribute name="maxRange" type="float" use="optional"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of audioSpectrumAttributeGrp                          -->
  <!-- ################################################################ -->
  <attributeGroup name="audioSpectrumAttributeGrp">
    <attribute name="loEdge" type="float" default="62.5"/>
    <attribute name="hiEdge" type="float" default="16000"/>
    <attribute name="octaveResolution" use="optional">
      <simpleType>
        <restriction base="string">
          <enumeration value="1/16"/>
          <enumeration value="1/8"/>
          <enumeration value="1/4"/>
          <enumeration value="1/2"/>
          <enumeration value="1"/>
          <enumeration value="2"/>
          <enumeration value="4"/>
          <enumeration value="8"/>
        </restriction>
      </simpleType>
    </attribute>
    <!-- Edge values are in Hertz                                       -->
  </attributeGroup>
  <!-- ################################################################ -->
  <!-- Definition of AudioSpectrumEnvelope D                            -->
  <!-- ################################################################ -->
  <complexType name="AudioSpectrumEnvelopeType">
    <complexContent>
      <extension base="mpeg7:AudioLLDVectorType">
        <attributeGroup ref="mpeg7:audioSpectrumAttributeGrp"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioPower D                                       -->
  <!-- ################################################################ -->
  <complexType name="AudioPowerType">
    <complexContent>
      <extension base="mpeg7:AudioLLDScalarType"/>
    </complexContent>
```

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```
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioSpectrumCentroid D                            -->
  <!-- ################################################################ -->
  <complexType name="AudioSpectrumCentroidType">
    <complexContent>
      <extension base="mpeg7:AudioLLDScalarType"/>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioSpectrumSpread D                              -->
  <!-- ################################################################ -->
  <complexType name="AudioSpectrumSpreadType">
    <complexContent>
      <extension base="mpeg7:AudioLLDScalarType"/>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioFundamentalFrequency D                        -->
  <!-- ################################################################ -->
  <complexType name="AudioFundamentalFrequencyType">
    <complexContent>
      <extension base="mpeg7:AudioLLDScalarType">
        <attribute name="loLimit" type="float" default="25"/>
        <attribute name="hiLimit" type="float" use="optional"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioHarmonicity D                                 -->
  <!-- ################################################################ -->
  <complexType name="AudioHarmonicityType">
    <complexContent>
      <extension base="mpeg7:AudioDType">
        <sequence>
          <element name="HarmonicRatio" type="mpeg7:AudioLLDScalarType"/>
          <element name="UpperLimitOfHarmonicity" type="mpeg7:AudioLLDScalarType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioSpectrumFlatness D                            -->
  <!-- ################################################################ -->
  <complexType name="AudioSpectrumFlatnessType">
    <complexContent>
      <extension base="mpeg7:AudioLLDVectorType">
        <attribute name="loEdge" type="float" default="250"/>
        <attribute name="hiEdge" type="float" default="16000"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioSpectrumBasis D                               -->
  <!-- ################################################################ -->
  <complexType name="AudioSpectrumBasisType">
    <complexContent>
      <extension base="mpeg7:AudioLLDVectorType">
        <attributeGroup ref="mpeg7:audioSpectrumAttributeGrp"/>
      </extension>
```


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```
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of AudioSpectrumProjection D                          -->
<!-- ################################################################ -->
<complexType name="AudioSpectrumProjectionType">
  <complexContent>
    <extension base="mpeg7:AudioLLDVectorType"/>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of LogAttackTime D                                    -->
<!-- ################################################################ -->
<complexType name="LogAttackTimeType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType"/>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of HarmonicSpectralCentroid D                         -->
<!-- ################################################################ -->
<complexType name="HarmonicSpectralCentroidType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType"/>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of HarmonicSpectralDeviation D                        -->
<!-- ################################################################ -->
<complexType name="HarmonicSpectralDeviationType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType"/>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of HarmonicSpectralSpread D                           -->
<!-- ################################################################ -->
<complexType name="HarmonicSpectralSpreadType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType"/>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of HarmonicSpectralVariation D                        -->
<!-- ################################################################ -->
<complexType name="HarmonicSpectralVariationType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType"/>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SpectralCentroid D                                 -->
<!-- ################################################################ -->
<complexType name="SpectralCentroidType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType"/>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of TemporalCentroid D                                 -->
```

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```
<!-- ########################################################################## -->
<complexType name="TemporalCentroidType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType"/>
  </complexContent>
</complexType>
<!-- ########################################################################## -->
<!-- Definition of ScalableSeries datatype                                    -->
<!-- ########################################################################## -->
<complexType name="ScalableSeriesType" abstract="true">
  <sequence>
    <element name="Scaling" minOccurs="0" maxOccurs="unbounded">
      <complexType>
        <attribute name="ratio" type="positiveInteger" use="required"/>
        <attribute name="numOfElements" type="positiveInteger" use="required"/>
      </complexType>
    </element>
  </sequence>
  <attribute name="totalNumOfSamples" type="positiveInteger" use="required"/>
</complexType>
<!-- ########################################################################## -->
<!-- Definition of SeriesOfScalar datatype                                    -->
<!-- ########################################################################## -->
<complexType name="SeriesOfScalarType">
  <complexContent>
    <extension base="mpeg7:ScalableSeriesType">
      <sequence>
        <element name="Raw" type="mpeg7:floatVector" minOccurs="0"/>
        <element name="Min" type="mpeg7:floatVector" minOccurs="0"/>
        <element name="Max" type="mpeg7:floatVector" minOccurs="0"/>
        <element name="Mean" type="mpeg7:floatVector" minOccurs="0"/>
        <element name="Random" type="mpeg7:floatVector" minOccurs="0"/>
        <element name="First" type="mpeg7:floatVector" minOccurs="0"/>
        <element name="Last" type="mpeg7:floatVector" minOccurs="0"/>
        <element name="Variance" type="mpeg7:floatVector" minOccurs="0"/>
        <element name="Weight" type="mpeg7:floatVector" minOccurs="0"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################################## -->
<!-- Definition of SeriesOfScalarBinary datatype                              -->
<!-- ########################################################################## -->
<complexType name="SeriesOfScalarBinaryType">
  <complexContent>
    <extension base="mpeg7:SeriesOfScalarType">
      <sequence>
        <element name="VarianceScalewise" type="mpeg7:FloatMatrixType" minOccurs="0"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################################## -->
<!-- Definition of SeriesOfVector datatype                                    -->
<!-- ########################################################################## -->
<complexType name="SeriesOfVectorType">
  <complexContent>
    <extension base="mpeg7:ScalableSeriesType">
      <sequence>
        <element name="Raw" type="mpeg7:FloatMatrixType" minOccurs="0"/>
```


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```
        <element name="Min" type="mpeg7:FloatMatrixType" minOccurs="0"/>
        <element name="Max" type="mpeg7:FloatMatrixType" minOccurs="0"/>
        <element name="Mean" type="mpeg7:FloatMatrixType" minOccurs="0"/>
        <element name="Random" type="mpeg7:FloatMatrixType" minOccurs="0"/>
        <element name="First" type="mpeg7:FloatMatrixType" minOccurs="0"/>
        <element name="Last" type="mpeg7:FloatMatrixType" minOccurs="0"/>
        <element name="Variance" type="mpeg7:FloatMatrixType" minOccurs="0"/>
        <element name="Covariance" type="mpeg7:FloatMatrixType" minOccurs="0"/>
        <element name="VarianceSummed" type="mpeg7:floatVector" minOccurs="0"/>
        <element name="MaxSqDist" type="mpeg7:floatVector" minOccurs="0"/>
        <element name="Weight" type="mpeg7:floatVector" minOccurs="0"/>
      </sequence>
      <attribute name="vectorSize" type="positiveInteger" default="1"/>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SeriesOfVectorBinary datatype                      -->
<!-- ################################################################ -->
<complexType name="SeriesOfVectorBinaryType">
  <complexContent>
    <extension base="mpeg7:SeriesOfVectorType">
      <sequence>
        <element name="VarianceScalewise" type="mpeg7:FloatMatrixType" minOccurs="0"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SilenceHeader header                               -->
<!-- ################################################################ -->
<complexType name="SilenceHeaderType">
  <complexContent>
    <extension base="mpeg7:HeaderType">
      <attribute name="minDuration" type="mpeg7:mediaDurationType" use="required"/>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of Silence D                                          -->
<!-- ################################################################ -->
<complexType name="SilenceType">
  <complexContent>
    <extension base="mpeg7:AudioDType">
      <attribute name="confidence" type="mpeg7:zeroToOneType" default="1.0"/>
      <attribute name="minDurationRef" type="anyURI" use="optional"/>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of AudioSignature DS                                  -->
<!-- ################################################################ -->
<complexType name="AudioSignatureType">
  <complexContent>
    <extension base="mpeg7:AudioDSType">
      <sequence>
        <element name="Flatness" type="mpeg7:AudioSpectrumFlatnessType"/>
      </sequence>
    </extension>
  </complexContent>
```

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```
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of InstrumentTimbre DS                                -->
  <!-- ################################################################ -->
  <complexType name="InstrumentTimbreType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="LogAttackTime" type="mpeg7:LogAttackTimeType" minOccurs="0"/>
          <element name="HarmonicSpectralCentroid"
type="mpeg7:HarmonicSpectralCentroidType" minOccurs="0"/>
          <element name="HarmonicSpectralDeviation"
type="mpeg7:HarmonicSpectralDeviationType" minOccurs="0"/>
          <element name="HarmonicSpectralSpread" type="mpeg7:HarmonicSpectralSpreadType"
minOccurs="0"/>
          <element name="HarmonicSpectralVariation"
type="mpeg7:HarmonicSpectralVariationType" minOccurs="0"/>
          <element name="SpectralCentroid" type="mpeg7:SpectralCentroidType"
minOccurs="0"/>
          <element name="TemporalCentroid" type="mpeg7:TemporalCentroidType"
minOccurs="0"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of HarmonicInstrumentTimbre DS                        -->
  <!-- ################################################################ -->
  <complexType name="HarmonicInstrumentTimbreType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="LogAttackTime" type="mpeg7:LogAttackTimeType"/>
          <element name="HarmonicSpectralCentroid"
type="mpeg7:HarmonicSpectralCentroidType"/>
          <element name="HarmonicSpectralDeviation"
type="mpeg7:HarmonicSpectralDeviationType"/>
          <element name="HarmonicSpectralSpread" type="mpeg7:HarmonicSpectralSpreadType"/>
          <element name="HarmonicSpectralVariation"
type="mpeg7:HarmonicSpectralVariationType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of PercussiveInstrumentTimbre DS                      -->
  <!-- ################################################################ -->
  <complexType name="PercussiveInstrumentTimbreType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="LogAttackTime" type="mpeg7:LogAttackTimeType"/>
          <element name="SpectralCentroid" type="mpeg7:SpectralCentroidType"/>
          <element name="TemporalCentroid" type="mpeg7:TemporalCentroidType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of SpokenContentHeader header                         -->
```


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```
  <!-- ################################################################ -->
  <complexType name="SpokenContentHeaderType">
    <complexContent>
      <extension base="mpeg7:HeaderType">
        <sequence>
          <choice maxOccurs="unbounded">
            <element name="WordLexicon" type="mpeg7:WordLexiconType"/>
            <element name="PhoneLexicon" type="mpeg7:PhoneLexiconType"/>
            <!-- Information about the word and phone lexicons used to       -->
            <!-- represent the speech                                        -->
          </choice>
          <element name="ConfusionInfo" type="mpeg7:ConfusionCountType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="DescriptionMetadata" type="mpeg7:DescriptionMetadataType"
minOccurs="0"/>
          <element name="SpeakerInfo" type="mpeg7:SpeakerInfoType" maxOccurs="unbounded"/>
          <!-- Information about the speakers in the audio                 -->
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of SpeakerInfo header                                   -->
  <!-- ################################################################ -->
  <complexType name="SpeakerInfoType">
    <complexContent>
      <extension base="mpeg7:HeaderType">
        <sequence>
          <element name="SpokenLanguage" type="language"/>
          <element name="Person" type="mpeg7:PersonType" minOccurs="0"/>
          <element name="WordIndex" minOccurs="0">
            <complexType>
              <sequence>
                <element name="WordIndexEntry" maxOccurs="unbounded">
                  <complexType>
                    <sequence>
                      <element name="IndexEntry" type="mpeg7:SpokenContentIndexEntryType"
maxOccurs="unbounded"/>
                    </sequence>
                    <attribute name="key" use="required">
                      <simpleType>
                        <list itemType="mpeg7:WordLexiconIndexType"/>
                      </simpleType>
                    </attribute>
                  </complexType>
                </element>
              </sequence>
              <attribute name="defaultLattice" type="anyURI" use="required"/>
            </complexType>
          </element>
          <element name="PhoneIndex" minOccurs="0">
            <complexType>
              <sequence>
                <element name="PhoneIndexEntry" maxOccurs="unbounded">
                  <complexType>
                    <sequence>
                      <element name="IndexEntry" type="mpeg7:SpokenContentIndexEntryType"
maxOccurs="unbounded"/>
                    </sequence>
                    <attribute name="key" use="required">
```

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```
                    <simpleType>
                      <list itemType="mpeg7:PhoneLexiconIndexType"/>
                    </simpleType>
                  </attribute>
                </complexType>
              </element>
            </sequence>
            <attribute name="defaultLattice" type="anyURI" use="required"/>
          </complexType>
        </element>
      </sequence>
      <attribute name="phoneLexiconRef" type="anyURI" use="optional"/>
      <attribute name="wordLexiconRef" type="anyURI" use="optional"/>
      <attribute name="confusionInfoRef" type="anyURI" use="optional"/>
      <attribute name="descriptionMetadataRef" type="anyURI" use="optional"/>
      <attribute name="provenance" use="required">
        <simpleType>
          <restriction base="NMTOKEN">
            <enumeration value="unknown"/>
            <enumeration value="ASR"/>
            <enumeration value="manual"/>
            <enumeration value="keyword"/>
            <enumeration value="parsing"/>
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SpokenContentIndexEntry datatype                   -->
<!-- ################################################################ -->
<complexType name="SpokenContentIndexEntryType">
  <attribute name="node" type="mpeg7:unsigned16" use="required"/>
  <attribute name="block" type="mpeg7:unsigned16" use="required"/>
  <attribute name="lattice" type="anyURI" use="optional"/>
</complexType>
<!-- ################################################################ -->
<!-- Definitions of SpokenContent Word and Phone datatypes            -->
<!-- ################################################################ -->
<simpleType name="WordType">
  <restriction base="string"/>
</simpleType>
<simpleType name="PhoneType">
  <restriction base="string"/>
</simpleType>
<simpleType name="WordLexiconIndexType">
  <restriction base="mpeg7:unsigned32"/>
</simpleType>
<simpleType name="PhoneLexiconIndexType">
  <restriction base="mpeg7:unsigned16"/>
</simpleType>
<!-- ################################################################ -->
<!-- Definition of Lexicon header                                     -->
<!-- ################################################################ -->
<complexType name="LexiconType" abstract="true">
  <complexContent>
    <extension base="mpeg7:HeaderType">
      <attribute name="numOfOriginalEntries" type="positiveInteger" use="optional"/>
    </extension>
```


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```
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of WordLexicon header                                 -->
  <!-- ################################################################ -->
  <complexType name="WordLexiconType">
    <complexContent>
      <extension base="mpeg7:LexiconType">
        <sequence>
          <element name="Token" type="mpeg7:WordType"/>
          <!-- The maxOccurs is the upper limit of WordLexiconIndexType      -->
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of phoneticAlphabet datatype                          -->
  <!-- ################################################################ -->
  <simpleType name="phoneticAlphabetType">
    <restriction base="NMTOKEN">
      <enumeration value="sampa"/>
      <enumeration value="ipaSymbol"/>
      <enumeration value="ipaNumber"/>
      <enumeration value="other"/>
    </restriction>
    <!-- This defines an [enumerated] type covering the phone sets. It       -->
    <!-- essentially distinguishes between IPA based systems and everything  -->
    <!-- else.                                                               -->
  </simpleType>
  <!-- ################################################################ -->
  <!-- Definition of PhoneLexicon header                                -->
  <!-- ################################################################ -->
  <complexType name="PhoneLexiconType">
    <complexContent>
      <extension base="mpeg7:LexiconType">
        <sequence>
          <element name="Token" type="mpeg7:PhoneType" maxOccurs="65536"/>
          <!-- The maxOccurs is the upper limit of WordLexiconIndexType      -->
        </sequence>
        <attribute name="phoneticAlphabet" type="mpeg7:phoneticAlphabetType"
default="sampa"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of ConfusionCount header                              -->
  <!-- ################################################################ -->
  <complexType name="ConfusionCountType">
    <complexContent>
      <extension base="mpeg7:HeaderType">
        <sequence>
          <element name="Insertion" type="mpeg7:integerVector"/>
          <element name="Deletion" type="mpeg7:integerVector"/>
          <element name="Substitution" type="mpeg7:IntegerMatrixType"/>
        </sequence>
        <attribute name="numOfDimensions" type="positiveInteger" use="required"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
```

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```
  <!-- Definition of the SpokenContentLattice DS                              -->
  <!-- ########################################################################## -->
  <complexType name="SpokenContentLatticeType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="Block" maxOccurs="65536">
            <complexType>
              <sequence>
                <element name="MediaTime" type="mpeg7:MediaTimeType"/>
                <element name="Node" maxOccurs="65536">
                  <complexType>
                    <sequence>
                      <element name="WordLink" minOccurs="0" maxOccurs="127">
                        <complexType>
                          <complexContent>
                            <extension base="mpeg7:SpokenContentLinkType">
                              <attribute name="word" type="mpeg7:WordLexiconIndexType"
use="required"/>
                            </extension>
                          </complexContent>
                        </complexType>
                      </element>
                      <element name="PhoneLink" minOccurs="0" maxOccurs="127">
                        <complexType>
                          <complexContent>
                            <extension base="mpeg7:SpokenContentLinkType">
                              <attribute name="phone" type="mpeg7:PhoneLexiconIndexType"
use="required"/>
                            </extension>
                          </complexContent>
                        </complexType>
                      </element>
                    </sequence>
                    <attribute name="num" type="mpeg7:unsigned16" use="required"/>
                    <attribute name="timeOffset" type="mpeg7:unsigned16" use="required"/>
                    <attribute name="speakerInfoRef" type="anyURI" use="optional"/>
                  </complexType>
                </element>
              </sequence>
              <attribute name="defaultSpeakerInfoRef" type="anyURI" use="required"/>
              <attribute name="num" type="mpeg7:unsigned16" use="required"/>
              <attribute name="audio" default="speech">
                <simpleType>
                  <restriction base="NMTOKEN">
                    <enumeration value="unknown"/>
                    <enumeration value="speech"/>
                    <enumeration value="noise"/>
                    <enumeration value="noisySpeech"/>
                  </restriction>
                  <!-- This gives an approximate measure of how noisy the    -->
                  <!-- speech signal is with respect to the speech           -->
                </simpleType>
              </attribute>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
```


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```
<!-- ################################################################ -->
<!-- Definition of SpokenContentLink datatype                         -->
<!-- ################################################################ -->
<complexType name="SpokenContentLinkType">
  <attribute name="probability" type="mpeg7:zeroToOneType" default="1.0"/>
  <attribute name="nodeOffset" type="mpeg7:unsigned16" default="1"/>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SoundModel DS                                      -->
<!-- ################################################################ -->
<complexType name="SoundModelType">
  <complexContent>
    <extension base="mpeg7:ContinuousHiddenMarkovModelType">
      <sequence minOccurs="0">
        <element name="SoundClassLabel" type="mpeg7:TermUseType"/>
        <element name="SpectrumBasis" type="mpeg7:AudioSpectrumBasisType"/>
      </sequence>
      <attribute name="SoundModelRef" type="anyURI" use="optional"/>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SoundModelStatePath DS                             -->
<!-- ################################################################ -->
<complexType name="SoundModelStatePathType">
  <complexContent>
    <extension base="mpeg7:AudioDSType">
      <sequence>
        <element name="StatePath" type="mpeg7:AudioLLDScalarType"/>
        <element name="SoundModelRef" type="anyURI"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SoundModelStateHistogram D                         -->
<!-- ################################################################ -->
<complexType name="SoundModelStateHistogramType">
  <complexContent>
    <extension base="mpeg7:AudioDType">
      <sequence>
        <sequence maxOccurs="unbounded">
          <element name="StateRef" type="anyURI"/>
          <element name="RelativeFrequency" type="mpeg7:nonNegativeReal"/>
        </sequence>
        <element name="SoundModelRef" type="anyURI"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SoundClassificationModel DS                        -->
<!-- ################################################################ -->
<complexType name="SoundClassificationModelType">
  <complexContent>
    <extension base="mpeg7:ClassificationModelType">
      <sequence>
        <element name="SoundModel" type="mpeg7:SoundModelType" maxOccurs="unbounded"/>
      </sequence>
    </extension>
```

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```
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of Melody DS                                          -->
  <!-- ################################################################ -->
  <complexType name="MelodyType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="Meter" type="mpeg7:MeterType" minOccurs="0"/>
          <element name="Scale" type="mpeg7:scaleType" minOccurs="0"/>
          <element name="Key" type="mpeg7:KeyType" minOccurs="0"/>
          <choice>
            <element name="MelodyContour" type="mpeg7:MelodyContourType"/>
            <element name="MelodySequence" type="mpeg7:MelodySequenceType"
maxOccurs="unbounded"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of MelodyContour DS                                   -->
  <!-- ################################################################ -->
  <complexType name="MelodyContourType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="Contour" type="mpeg7:contourType"/>
          <element name="Beat" type="mpeg7:beatType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of Meter D                                            -->
  <!-- ################################################################ -->
  <complexType name="MeterType">
    <complexContent>
      <extension base="mpeg7:AudioDType">
        <sequence>
          <element name="Numerator">
            <simpleType>
              <restriction base="integer">
                <minInclusive value="1"/>
                <maxInclusive value="128"/>
              </restriction>
            </simpleType>
          </element>
          <element name="Denominator">
            <simpleType>
              <restriction base="integer">
                <enumeration value="1"/>
                <enumeration value="2"/>
                <enumeration value="4"/>
                <enumeration value="8"/>
                <enumeration value="16"/>
                <enumeration value="32"/>
                <enumeration value="64"/>
                <enumeration value="128"/>
```


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```
            </restriction>
          </simpleType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of contour datatype                                   -->
<!-- ################################################################ -->
<simpleType name="contourType">
  <list>
    <simpleType>
      <restriction base="integer">
        <minInclusive value="-2"/>
        <maxInclusive value="+2"/>
      </restriction>
    </simpleType>
  </list>
</simpleType>
<!-- ################################################################ -->
<!-- Definition of beat datatype                                      -->
<!-- ################################################################ -->
<simpleType name="beatType">
  <list itemType="integer"/>
</simpleType>
<!-- ################################################################ -->
<!-- Definition of Scale datatype                                     -->
<!-- ################################################################ -->
<!-- Information about a scale                                        -->
<!-- array of a repeatable span of notes, in semitones from base pitch     -->
<simpleType name="scaleType">
  <restriction base="mpeg7:floatVector"/>
</simpleType>
<!-- ################################################################ -->
<!-- Definition of MelodyKey DS                                       -->
<!-- ################################################################ -->
<!-- Information about the key                                        -->
<complexType name="KeyType">
  <complexContent>
    <extension base="mpeg7:AudioDSType">
      <sequence>
        <element name="KeyNote">
          <complexType>
            <simpleContent>
              <extension base="mpeg7:degreeNoteType">
                <attribute name="display" type="string" use="optional"/>
              </extension>
            </simpleContent>
          </complexType>
        </element>
      </sequence>
      <attribute name="accidental" type="mpeg7:degreeAccidentalType" default="natural"/>
      <attribute name="mode" type="mpeg7:termReferenceType" use="optional"/>
    </extension>
  </complexContent>
</complexType>
<simpleType name="degreeNoteType">
  <restriction base="string">
    <enumeration value="C"/>
```

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```
      <enumeration value="D"/>
      <enumeration value="E"/>
      <enumeration value="F"/>
      <enumeration value="G"/>
      <enumeration value="A"/>
      <enumeration value="B"/>
    </restriction>
  </simpleType>
  <simpleType name="degreeAccidentalType">
    <restriction base="string">
      <enumeration value="flat"/>
      <enumeration value="natural"/>
      <enumeration value="sharp"/>
      <enumeration value="doubleSharp"/>
      <enumeration value="doubleFlat"/>
    </restriction>
  </simpleType>
  <!-- ################################################################ -->
  <!-- Definition of MelodySequence DS                                  -->
  <!-- ################################################################ -->
  <complexType name="MelodySequenceType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="StartingNote" minOccurs="0">
            <complexType>
              <sequence>
                <element name="StartingFrequency" type="float" minOccurs="0"/>
                <element name="StartingPitch" minOccurs="0">
                  <complexType>
                    <sequence>
                      <element name="PitchNote">
                        <complexType>
                          <simpleContent>
                            <extension base="mpeg7:degreeNoteType">
                              <attribute name="display" type="string" use="optional"/>
                            </extension>
                          </simpleContent>
                        </complexType>
                      </element>
                    </sequence>
                    <attribute name="accidental" type="mpeg7:degreeAccidentalType"
default="natural"/>
                    <attribute name="height" type="integer" use="optional"/>
                  </complexType>
                </element>
              </sequence>
            </complexType>
          </element>
          <element name="NoteArray" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:AudioDSType">
                  <sequence>
                    <element name="Note" maxOccurs="unbounded">
                      <complexType>
                        <sequence>
                          <element name="Interval" type="float"/>
                          <element name="NoteRelDuration" type="float"/>
                          <element name="Lyric" type="mpeg7:TextualType" minOccurs="0"/>
```


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```
                    </sequence>
                  </complexType>
                </element>
              </sequence>
            </extension>
          </complexContent>
        </complexType>
      </element>
    </sequence>
  </extension>
 </complexContent>
</complexType>
<!-- ********************************************************************** -->
<!-- ************************ ISO/IEC 15938-5 MDS ************************* -->
<!-- ********************************************************************** -->
<annotation>
  <documentation>
    This section contains MDS tools defined in ISO/IEC 15938-5
   </documentation>
</annotation>
<!-- ######################################## -->
<!--  Definition of MPEG-7 Base types (4.2)  -->
<!-- ######################################## -->
<!-- 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 Visual D -->
<complexType name="VisualDType" abstract="true">
  <complexContent>
    <extension base="mpeg7:DType"/>
  </complexContent>
</complexType>
<!-- Definition of Audio D -->
<complexType name="AudioDType" abstract="true">
  <complexContent>
    <extension base="mpeg7:DType"/>
  </complexContent>
```

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```
  </complexType>
  <!-- Definition of Visual DS -->
  <complexType name="VisualDSType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType"/>
    </complexContent>
  </complexType>
  <!-- Definition of Audio DS -->
  <complexType name="AudioDSType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType"/>
    </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 MPEG-7 root element (4.3) MDS COR/1         -->
  <!-- ################################################ -->
  <!-- Definition of Mpeg7 Type MDS COR/1-->
  <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>
  <!-- Definition of DescriptionProfileType MDS COR/1-->
  <complexType name="DescriptionProfileType">
    <attribute name="profileAndLevelIndication" use="required">
      <simpleType>
        <list itemType="anyURI"/>
      </simpleType>
    </attribute>
  </complexType>
  <!-- Definition of Mpeg7 Element MDS COR/1-->
  <element name="Mpeg7">
    <complexType>
      <complexContent>
        <extension base="mpeg7:Mpeg7Type">
          <choice>
            <element name="DescriptionUnit" type="mpeg7:Mpeg7BaseType"/>
            <element name="Description" type="mpeg7:CompleteDescriptionType"
maxOccurs="unbounded"/>
          </choice>
        </extension>
      </complexContent>
    </complexType>
  </element>
  <!-- ########################################################## -->
  <!--  Definition of Complete description top-level types (4.4.2)  -->
```


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```
  <!-- ########################################################## -->
  <!-- Definition of CompleteDescription Top-level Type -->
  <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>
  <!-- ########################################################## -->
  <!--  Definition of Content description top-level types (4.4.3)  -->
  <!-- ########################################################## -->
  <!-- Definition of ContentDescription Top-level Type -->
  <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>
  <!-- Definition of ContentEntity Top-level Type -->
  <complexType name="ContentEntityType">
    <complexContent>
      <extension base="mpeg7:ContentDescriptionType">
        <sequence>
          <element name="MultimediaContent" type="mpeg7:MultimediaContentType"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ContentAbstraction Top-level Type -->
  <complexType name="ContentAbstractionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:ContentDescriptionType"/>
    </complexContent>
  </complexType>
  <!-- Definition of SemanticDescription Top-level Type -->
  <complexType name="SemanticDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentAbstractionType">
        <choice>
          <element name="Semantics" type="mpeg7:SemanticType" maxOccurs="unbounded"/>
          <element name="ConceptCollection" type="mpeg7:ConceptCollectionType"
maxOccurs="unbounded"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ModelDescription Top-level Type -->
  <complexType name="ModelDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentAbstractionType">
        <sequence>
```

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```
          <element name="Model" type="mpeg7:ModelType" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of SummaryDescription Top-level Type -->
  <complexType name="SummaryDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentAbstractionType">
        <sequence>
          <element name="Summarization" type="mpeg7:SummarizationType"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ViewDescription Top-level Type -->
  <complexType name="ViewDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentAbstractionType">
        <choice>
          <element name="View" type="mpeg7:ViewType" maxOccurs="unbounded"/>
          <element name="ViewSet" type="mpeg7:ViewSetType" maxOccurs="unbounded"/>
          <element name="ViewDecomposition" type="mpeg7:ViewDecompositionType"
maxOccurs="unbounded"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of VariationDescription Top-level Type -->
  <complexType name="VariationDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentAbstractionType">
        <choice>
          <element name="VariationSet" type="mpeg7:VariationSetType"
maxOccurs="unbounded"/>
          <element name="Variation" type="mpeg7:VariationType" maxOccurs="unbounded"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!--  Definition of Content management top-level types (4.4.4)  -->
  <!-- ################################################################ -->
  <!-- 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"/>
```

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```
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of MediaDescription Top-level Type -->
  <complexType name="MediaDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentManagementType">
        <sequence>
          <element name="MediaInformation" type="mpeg7:MediaInformationType"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of CreationDescription Top-level Type -->
  <complexType name="CreationDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentManagementType">
        <sequence>
          <element name="CreationInformation" type="mpeg7:CreationInformationType"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of UsageDescription Top-level Type -->
  <complexType name="UsageDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentManagementType">
        <sequence>
          <element name="UsageInformation" type="mpeg7:UsageInformationType"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ClassificationSchemeDescription Top-level Type -->
  <complexType name="ClassificationSchemeDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentManagementType">
        <choice>
          <element name="ClassificationScheme" type="mpeg7:ClassificationSchemeType"
maxOccurs="unbounded"/>
          <element name="ClassificationSchemeBase"
type="mpeg7:ClassificationSchemeBaseType" maxOccurs="unbounded"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################## -->
  <!--  Definition of Multimedia content entity tools (4.4.5)   -->
  <!-- ################################################## -->
  <!-- Definition of MultimediaContent Content Entity -->
  <complexType name="MultimediaContentType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType"/>
    </complexContent>
  </complexType>
  <!-- Definition of Image Content Entity -->
```

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```
  <complexType name="ImageType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="Image" type="mpeg7:StillRegionType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of Video Content Entity -->
  <complexType name="VideoType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="Video" type="mpeg7:VideoSegmentType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of Audio Content Entity -->
  <complexType name="AudioType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="Audio" type="mpeg7:AudioSegmentType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisual Content Entity -->
  <complexType name="AudioVisualType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="AudioVisual" type="mpeg7:AudioVisualSegmentType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of Multimedia Content Entity -->
  <complexType name="MultimediaType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="Multimedia" type="mpeg7:MultimediaSegmentType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of MultimediaCollection Content Entity -->
  <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>
```


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```
  </complexType>
  <!-- Definition of Signal Content Entity -->
  <complexType name="SignalType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <choice>
          <element name="ImageSignal" type="mpeg7:StillRegionType"/>
          <element name="VideoSignal" type="mpeg7:VideoSegmentType"/>
          <element name="AudioSignal" type="mpeg7:AudioSegmentType"/>
          <element name="SignalRef" type="mpeg7:ReferenceType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of InkContent Content Entity -->
  <complexType name="InkContentType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="InkContent" type="mpeg7:InkSegmentType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AnalyticEditedVideo Content Entity -->
  <complexType name="AnalyticEditedVideoType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="AnalyticEditedVideo"
type="mpeg7:AnalyticEditedVideoSegmentType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################### -->
  <!--  Definition of Package DS (4.5.2)   -->
  <!-- ################################### -->
  <!-- Definition of Package DS -->
  <complexType name="PackageType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="Scheme">
            <complexType>
              <attribute name="name" type="QName" use="required"/>
            </complexType>
          </element>
          <element name="Package" type="mpeg7:PackageType"/>
        </choice>
        <attribute name="name" type="string" use="required"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of DescriptionMetadata Header (4.5.3)  -->
  <!-- ################################################ -->
  <!-- Definition of DescriptionMetadata Header -->
  <complexType name="DescriptionMetadataType">
    <complexContent>
```

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```
      <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"/>
          <element name="Package" type="mpeg7:PackageType" minOccurs="0"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of Unsigned datatypes (5.2.2)  -->
  <!-- ######################################### -->
  <!-- Definition of unsigned1 datatype -->
  <simpleType name="unsigned1">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="1"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned2 datatype -->
  <simpleType name="unsigned2">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="3"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned3 datatype -->
  <simpleType name="unsigned3">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="7"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned4 datatype -->
  <simpleType name="unsigned4">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="15"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned5 datatype -->
  <simpleType name="unsigned5">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="31"/>
    </restriction>
  </simpleType>
```


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```
<!-- Definition of unsigned6 datatype -->
<simpleType name="unsigned6">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="63"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned7 datatype -->
<simpleType name="unsigned7">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="127"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned8 datatype -->
<simpleType name="unsigned8">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="255"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned9 datatype -->
<simpleType name="unsigned9">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="511"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned10 datatype -->
<simpleType name="unsigned10">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="1023"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned11 datatype -->
<simpleType name="unsigned11">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="2047"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned12 datatype -->
<simpleType name="unsigned12">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="4095"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned13 datatype -->
<simpleType name="unsigned13">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="8191"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned14 datatype -->
<simpleType name="unsigned14">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
```

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```
      <maxInclusive value="16383"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned15 datatype -->
  <simpleType name="unsigned15">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="32767"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned16 datatype -->
  <simpleType name="unsigned16">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="65535"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned17 datatype -->
  <simpleType name="unsigned17">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="131071"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned18 datatype -->
  <simpleType name="unsigned18">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="262143"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned19 datatype -->
  <simpleType name="unsigned19">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="524287"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned20 datatype -->
  <simpleType name="unsigned20">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="1048575"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned21 datatype -->
  <simpleType name="unsigned21">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="2097151"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned22 datatype -->
  <simpleType name="unsigned22">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="4194303"/>
    </restriction>
  </simpleType>
  <!-- Definition of unsigned23 datatype -->
```


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```
<simpleType name="unsigned23">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="8388607"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned24 datatype -->
<simpleType name="unsigned24">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="16777215"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned25 datatype -->
<simpleType name="unsigned25">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="33554431"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned26 datatype -->
<simpleType name="unsigned26">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="67108863"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned27 datatype -->
<simpleType name="unsigned27">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="134217727"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned28 datatype -->
<simpleType name="unsigned28">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="268435455"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned29 datatype -->
<simpleType name="unsigned29">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="536870911"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned30 datatype -->
<simpleType name="unsigned30">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="1073741823"/>
  </restriction>
</simpleType>
<!-- Definition of unsigned31 datatype -->
<simpleType name="unsigned31">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0"/>
    <maxInclusive value="2147483647"/>
```

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```
    </restriction>
  </simpleType>
  <!-- Definition of unsigned32 datatype -->
  <simpleType name="unsigned32">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0"/>
      <maxInclusive value="4294967295"/>
    </restriction>
  </simpleType>
  <!-- ######################################### -->
  <!--  Definition of zeroToOne datatype (5.3.2)  -->
  <!-- ######################################### -->
  <!-- Definition of zeroToOne datatype -->
  <simpleType name="zeroToOneType">
    <restriction base="float">
      <minInclusive value="0.0"/>
      <maxInclusive value="1.0"/>
    </restriction>
  </simpleType>
  <!-- ##############################################  -->
  <!--  Definition of minusOneToOne datatype (5.3.3)   -->
  <!-- ##############################################  -->
  <!-- Definition of minusOneToOne datatype -->
  <simpleType name="minusOneToOneType">
    <restriction base="float">
      <minInclusive value="-1.0"/>
      <maxInclusive value="+1.0"/>
    </restriction>
  </simpleType>
  <!-- ################################################  -->
  <!--  Definition of nonNegativeReal datatype (5.3.4)   -->
  <!-- ################################################  -->
  <!-- Definition of nonNegativeReal datatype -->
  <simpleType name="nonNegativeReal">
    <restriction base="double">
      <minInclusive value="0.0"/>
    </restriction>
  </simpleType>
  <!-- ######################################### -->
  <!--  Definition of vector datatypes  (5.4.2)  -->
  <!-- ######################################### -->
  <!-- Definition of integerVector datatype -->
  <simpleType name="integerVector">
    <list itemType="integer"/>
  </simpleType>
  <!-- Definition of floatVector datatype -->
  <simpleType name="floatVector">
    <list itemType="float"/>
  </simpleType>
  <!-- Definition of doubleVector datatype -->
  <simpleType name="doubleVector">
    <list itemType="double"/>
  </simpleType>
  <!-- ################################################## -->
  <!--  Definition of minusOneToOneVector datatype (5.4.3)  -->
  <!-- ################################################## -->
  <!-- Definition of minusOneToOneVector datatype -->
  <simpleType name="minusOneToOneVector">
    <list>
      <simpleType>
```


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```
      <restriction base="float">
        <minInclusive value="-1.0"/>
        <maxInclusive value="1.0"/>
      </restriction>
    </simpleType>
  </list>
</simpleType>
<!-- ########################################  -->
<!--  Definition of Matrix datatypes (5.4.4)   -->
<!-- ########################################  -->
<!-- Definition of IntegerMatrix datatype -->
<complexType name="IntegerMatrixType">
  <simpleContent>
    <extension base="mpeg7:integerVector">
      <attribute ref="mpeg7:dim" use="required"/>
    </extension>
  </simpleContent>
</complexType>
<!-- Definition of FloatMatrix datatype -->
<complexType name="FloatMatrixType">
  <simpleContent>
    <extension base="mpeg7:floatVector">
      <attribute ref="mpeg7:dim" use="required"/>
    </extension>
  </simpleContent>
</complexType>
<!-- Definition of DoubleMatrix datatype -->
<complexType name="DoubleMatrixType">
  <simpleContent>
    <extension base="mpeg7:doubleVector">
      <attribute ref="mpeg7:dim" use="required"/>
    </extension>
  </simpleContent>
</complexType>
<!-- ################################################  -->
<!--  Definition of DiagonalMatrix datatypes (5.4.5)   -->
<!-- ################################################  -->
<!-- Definition of IntegerDiagonalMatrix datatype -->
<complexType name="IntegerDiagonalMatrixType">
  <simpleContent>
    <extension base="mpeg7:integerVector">
      <attribute ref="mpeg7:dim" use="required"/>
    </extension>
  </simpleContent>
</complexType>
<!-- Definition of FloatDiagonalMatrix datatype -->
<complexType name="FloatDiagonalMatrixType">
  <simpleContent>
    <extension base="mpeg7:floatVector">
      <attribute ref="mpeg7:dim" use="required"/>
    </extension>
  </simpleContent>
</complexType>
<!-- Definition of DoubleDiagonalMatrix datatype -->
<complexType name="DoubleDiagonalMatrixType">
  <simpleContent>
    <extension base="mpeg7:doubleVector">
      <attribute ref="mpeg7:dim" use="required"/>
    </extension>
  </simpleContent>
```

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```
  </complexType>
  <!-- ################################################  -->
  <!--  Definition of MinusOneToOneMatrix datatype (5.4.6)   -->
  <!-- ################################################  -->
  <!-- Definition of MinusOneToOneMatrix datatype -->
  <complexType name="MinusOneToOneMatrixType">
    <simpleContent>
      <extension base="mpeg7:minusOneToOneVector">
        <attribute ref="mpeg7:dim" use="required"/>
      </extension>
    </simpleContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of probablityVector datatype (5.5.2)  -->
  <!-- ################################################ -->
  <!-- Definition of probabilityVector datatype -->
  <simpleType name="probabilityVector">
    <list>
      <simpleType>
        <restriction base="float">
          <minInclusive value="0.0"/>
          <maxInclusive value="1.0"/>
        </restriction>
      </simpleType>
    </list>
  </simpleType>
  <!-- ################################################ -->
  <!--  Definition of ProbabilityMatrix datatype (5.5.3)  -->
  <!-- ################################################ -->
  <!-- Definition of probabilityMatrix datatype -->
  <complexType name="ProbabilityMatrixType">
    <simpleContent>
      <extension base="mpeg7:probabilityVector">
        <attribute ref="mpeg7:dim" use="required"/>
      </extension>
    </simpleContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of mimeType datatype (5.6.2)  -->
  <!-- ################################################ -->
  <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 (5.6.3)  -->
  <!-- ############################################ -->
  <!-- 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 (5.6.4)  -->
  <!-- ########################################## -->
```


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```
  <!-- 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>
  <!-- ################################################ -->
  <!--  Definition of currencyCode datatype (5.6.5)  -->
  <!-- ################################################ -->
  <!-- Definition of currencyCode datatype -->
  <simpleType name="currencyCode">
    <restriction base="string">
      <whiteSpace value="collapse"/>
      <pattern value="[a-zA-Z]{3}"/>
    </restriction>
  </simpleType>
  <!-- ################################################ -->
  <!--  Definition of characterSetCode datatype (5.6.6)  -->
  <!-- ################################################ -->
  <!-- Definition of characterSetCode datatype -->
  <simpleType name="characterSetCode">
    <restriction base="string"/>
  </simpleType>
  <!-- ################################################ -->
  <!--   Definition of Reference datatypes (6.2.1)  -->
  <!-- ################################################ -->
  <!-- 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 datatypes (6.2.2)  -->
  <!-- ######################################## -->
  <!-- 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>
```

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```
  </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>
  <!-- Definition of xPathField datatype -->
  <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 UniqueID datatype (6.3.1)  -->
  <!-- ######################################## -->
  <!-- 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 (6.4.2)  -->
  <!-- ################################### -->
  <!-- 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 (6.4.3)  -->
```


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```
  <!-- ########################################### -->
  <!-- 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 (6.4.4)  -->
  <!-- ########################################### -->
  <!-- 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 (6.4.5)  -->
  <!-- ############################################### -->
  <!-- Definition of IncrDuration datatype -->
  <complexType name="IncrDurationType">
    <simpleContent>
      <extension base="integer">
        <attribute name="timeUnit" type="mpeg7:durationType" use="optional"/>
      </extension>
    </simpleContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of RelTimePoint datatypes (6.4.6)  -->
  <!-- ################################################ -->
  <!-- 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>
  <!-- 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 RelIncrTimePoint datatype (6.4.7)  -->
  <!-- ################################################## -->
  <!-- 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>
  <!-- ################################################## -->
```

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```
  <!--  Definition of timeProperty attribute group (6.4.8)  -->
  <!-- ################################################ -->
  <!-- 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 (6.4.10)  -->
  <!-- ######################################### -->
  <!-- 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 (6.4.11)  -->
  <!-- ############################################### -->
  <!-- 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 (6.4.12)  -->
  <!-- ############################################### -->
  <!-- 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>
  <!-- ################################################## -->
  <!--  Definition of MediaIncrDuration datatype (6.4.13)  -->
  <!-- ################################################## -->
  <!-- Definition of MediaIncrDuration datatype -->
  <complexType name="MediaIncrDurationType">
    <simpleContent>
      <extension base="integer">
        <attribute name="mediaTimeUnit" type="mpeg7:mediaDurationType" use="optional"/>
      </extension>
    </simpleContent>
  </complexType>
  <!-- ################################################## -->
  <!--  Definition of MediaRelTimePoint datatype (6.4.14)  -->
  <!-- ################################################## -->
  <!-- Definition of mediaTimeOffset datatype -->
  <simpleType name="mediaTimeOffsetType">
    <restriction base="mpeg7:basicDurationType">
```


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```
      <pattern value="\-?P(\d+D)?(T(\d+H)?(\d+M)?(\d+S)?(\d+N)?)?(\d+F)?"/>
    </restriction>
  </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 (6.4.15)  -->
  <!-- ######################################################## -->
  <!-- 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 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>
  <!-- ################################################ -->
  <!--  Definition of MediaLocator datatype (6.5.2)  -->
  <!-- ################################################ -->
  <!-- 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 (6.5.3)  -->
  <!-- ################################################ -->
  <!-- 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 (6.5.4)  -->
  <!-- ######################################################## -->
  <!-- Definition of TemporalSegmentLocator datatype -->
  <complexType name="TemporalSegmentLocatorType">
```

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```
    <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 (6.5.5)  -->
  <!-- ############################################ -->
  <!-- Definition of ImageLocator datatype -->
  <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>
  <!-- ######################################## -->
  <!--  Definition of Textual datatypes (7.3.2)  -->
  <!-- ######################################## -->
  <!-- Definition of TextualBase datatype -->
  <complexType name="TextualBaseType" abstract="true">
    <simpleContent>
      <extension base="string">
        <attribute ref="xml:lang" use="optional"/>
        <attribute name="phoneticTranscription" use="optional">
          <simpleType>
            <list itemType="mpeg7:PhoneType"/>
          </simpleType>
        </attribute>
        <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>
  <!-- ############################################  -->
```


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```
  <!--  Definition of TextAnnotation datatype (7.3.3)   -->
  <!-- ################################################  -->
  <!-- Definition of TextAnnotation datatype -->
  <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"/>
    </choice>
    <attribute name="relevance" type="mpeg7:zeroToOneType" use="optional"/>
    <attribute name="confidence" type="mpeg7:zeroToOneType" use="optional"/>
    <attribute ref="xml:lang"/>
  </complexType>
  <!-- ################################################### -->
  <!--  Definition of StructuredAnnotation datatype (7.3.4)  -->
  <!-- ################################################### -->
  <!-- Definition of StructuredAnnotation datatype -->
  <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>
  <!-- ################################################ -->
  <!--  Definition of KeywordAnnotation datatype (7.3.5)  -->
  <!-- ################################################ -->
  <!-- Definition of KeywordAnnotation datatype -->
  <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>
  <!-- ################################################### -->
  <!--  Definition of Dependency Structure datatypes (7.3.6)  -->
```

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```
  <!-- ################################################## -->
  <!-- Definition of DependencyStructure datatype -->
  <complexType name="DependencyStructureType">
    <sequence>
      <element name="Sentence" type="mpeg7:DependencyStructurePhraseType"
maxOccurs="unbounded"/>
    </sequence>
    <attribute ref="xml:lang" use="optional"/>
  </complexType>
  <!-- Definition of DependencyStructurePhrase datatype -->
  <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"/>
      </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:termAliasReferenceType
mpeg7:termURIReferenceType"/>
      </simpleType>
    </attribute>
    <attribute name="functionWord" type="string" use="optional"/>
    <attribute name="synthesis" type="NMTOKEN" use="optional" fixed="dependency"/>
  </complexType>
  <!-- Definition of WordForm datatype -->
  <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"/>
```


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```
                    <enumeration value="preposition"/>
                    <enumeration value="postposition"/>
                    <enumeration value="article"/>
                    <enumeration value="interjection"/>
                  </restriction>
                </simpleType>
                <simpleType>
                  <restriction base="mpeg7:termAliasReferenceType"/>
                </simpleType>
                <simpleType>
                  <restriction base="mpeg7:termURIReferenceType"/>
                </simpleType>
              </union>
            </simpleType>
          </list>
        </simpleType>
      </attribute>
      <attribute name="baseForm" type="string" use="optional"/>
    </extension>
  </simpleContent>
</complexType>
<!-- Definition of NonDependencyStructurePhrase datatype -->
<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"/>
      </restriction>
    </simpleType>
  </attribute>
</complexType>
<!-- Definition of dependencyOperator datatype -->
<simpleType name="dependencyOperatorType">
  <restriction base="NMTOKEN">
    <enumeration value="subject"/>
    <enumeration value="object"/>
    <enumeration value="indirectObject"/>
    <enumeration value="predicate"/>
    <enumeration value="expletive"/>
    <enumeration value="nonRestrictive"/>
  </restriction>
</simpleType>
<!-- ################################################ -->
<!--  Definition of ClassificationScheme DS (7.4.2)  -->
<!-- ################################################ -->
<!-- Definition of ClassificationSchemeBase DS  -->
<complexType name="ClassificationSchemeBaseType" abstract="true">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
```

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```
          <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>
  <!-- Definition of ClassificationScheme DS  -->
  <complexType name="ClassificationSchemeType">
    <complexContent>
      <extension base="mpeg7:ClassificationSchemeBaseType">
        <sequence>
          <element name="Term" type="mpeg7:TermDefinitionType" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of TermDefinition DS (7.4.3)  -->
  <!-- ######################################## -->
  <!-- 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>
```


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```
          </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:termAliasReferenceType"/>
      </simpleType>
      <simpleType>
        <restriction base="mpeg7:termURIReferenceType"/>
      </simpleType>
    </union>
  </simpleType>
  <!-- ######################################### -->
  <!--  Definition of TermUse datatype (7.4.4)  -->
  <!-- ######################################### -->
  <!-- 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"/>
      <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"/>
```

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```
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of ControlledTermUse datatype (7.4.5)  -->
  <!-- ################################################ -->
  <!-- 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 termReferenceType datatype (7.4.6)  MDS COR/1-->
  <!-- ################################################ -->
  <!-- Definition of termReference datatype  MDS COR/1-->
  <simpleType name="termReferenceType">
    <union memberTypes="mpeg7:termAliasReferenceType mpeg7:termURIReferenceType"/>
  </simpleType>
  <!-- Definition of termAliasReferenceType datatype  MDS COR/1-->
  <simpleType name="termAliasReferenceType">
    <restriction base="NMTOKEN">
      <whiteSpace value="collapse"/>
      <pattern value=":[^:]+:[^:]+"/>
    </restriction>
  </simpleType>
  <!-- Definition of termURIReferenceType datatype  MDS COR/1-->
  <simpleType name="termURIReferenceType">
    <restriction base="anyURI"/>
  </simpleType>
  <!-- ########################################################## -->
  <!--  Definition of ClassificationSchemeAlias datatype (7.4.7)  -->
  <!-- ########################################################## -->
  <!-- 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"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of GraphicalClassificationScheme DS (7.4.8)  -->
  <!-- ########################################################## -->
  <!-- Definition of GraphicalClassificationScheme DS  -->
  <complexType name="GraphicalClassificationSchemeType">
    <complexContent>
      <extension base="mpeg7:ClassificationSchemeBaseType">
        <sequence>
          <element name="GraphicalTerm" type="mpeg7:GraphicalTermDefinitionType"
maxOccurs="unbounded"/>
        </sequence>
        <attribute name="strict" type="boolean" use="optional" default="false"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
```


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```
  <!--  Definition of GraphicalTermDefinition DS (7.4.9)  -->
  <!-- ################################################ -->
  <!-- Definition of GraphicalTermDefinition DS  -->
  <complexType name="GraphicalTermDefinitionType">
    <complexContent>
      <extension base="mpeg7:TermDefinitionBaseType">
        <choice>
          <element name="TemplateGraph" type="mpeg7:GraphType"/>
          <element name="AlphabetGraph" type="mpeg7:GraphType"/>
          <element name="ProductionRule" type="mpeg7:GraphicalRuleDefinitionType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of GraphicalRuleDefinition DS (7.4.10)  -->
  <!-- ################################################ -->
  <!-- Definition of GraphicalRuleDefinition DS  -->
  <complexType name="GraphicalRuleDefinitionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="TemplateGraph" type="mpeg7:GraphType" minOccurs="0"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of PullbackDefinition DS (7.4.11)  -->
  <!-- ############################################ -->
  <!-- Definition of PullbackDefinition DS  -->
  <complexType name="PullbackDefinitionType">
    <complexContent>
      <extension base="mpeg7:GraphicalRuleDefinitionType">
        <sequence>
          <element name="RuleGraph" type="mpeg7:GraphType"/>
          <choice>
            <element name="AlphabetGraph" type="mpeg7:GraphType"/>
            <element name="AlphabetGraphRef" type="mpeg7:ControlledTermUseType"/>
          </choice>
          <element name="MorphismGraph" type="mpeg7:MorphismGraphType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of DoublePullbackDefinition DS (7.4.12)  -->
  <!-- ################################################ -->
  <!-- Definition of DoublePullbackDefinition DS  -->
  <complexType name="DoublePullbackDefinitionType">
    <complexContent>
      <extension base="mpeg7:GraphicalRuleDefinitionType">
        <sequence>
          <element name="RuleGraph" type="mpeg7:GraphType" minOccurs="2" maxOccurs="2"/>
          <choice>
            <element name="AlphabetGraph" type="mpeg7:GraphType"/>
            <element name="AlphabetGraphRef" type="mpeg7:ControlledTermUseType"/>
          </choice>
          <element name="MorphismGraph" type="mpeg7:MorphismGraphType" minOccurs="2"
maxOccurs="2"/>
```

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```
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of PushoutDefinition DS (7.4.13)  -->
  <!-- ############################################ -->
  <!-- Definition of PushoutDefinition DS  -->
  <complexType name="PushoutDefinitionType">
    <complexContent>
      <extension base="mpeg7:GraphicalRuleDefinitionType">
        <sequence>
          <element name="LHSGraph" type="mpeg7:GraphType"/>
          <element name="RHSGraph" type="mpeg7:GraphType"/>
          <element name="MorphismGraph" type="mpeg7:MorphismGraphType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of DoublePushoutDefinition DS (7.4.14)  -->
  <!-- ################################################ -->
  <!-- Definition of DoublePushoutDefinition DS  -->
  <complexType name="DoublePushoutDefinitionType">
    <complexContent>
      <extension base="mpeg7:GraphicalRuleDefinitionType">
        <sequence>
          <element name="LHSGraph" type="mpeg7:GraphType"/>
          <element name="ContextGraph" type="mpeg7:GraphType"/>
          <element name="RHSGraph" type="mpeg7:GraphType"/>
          <element name="MorphismGraph" type="mpeg7:MorphismGraphType" minOccurs="2"
maxOccurs="2"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################ -->
  <!--  Definition of Agent DS (7.5.2)  -->
  <!-- ################################ -->
  <!-- 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 (7.5.3)  -->
  <!-- ################################ -->
  <!-- Definition of Person DS  -->
  <complexType name="PersonType">
    <complexContent>
      <extension base="mpeg7:AgentType">
        <sequence>
          <choice maxOccurs="unbounded">
            <element name="Name" type="mpeg7:PersonNameType"/>
```


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```
            <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 (7.5.4)  -->
  <!-- ######################################## -->
  <!-- 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">
            <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>
```

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```
                  </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 (7.5.5)  -->
<!-- ######################################## -->
<!-- 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"/>
```


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```
                    </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>
 <!-- ########################################### -->
 <!--  Definition of PersonName datatype (7.5.6)  -->
 <!-- ########################################### -->
 <!-- Definition of PersonaName datatype  -->
 <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>
 <!-- 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>
```

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```
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of ElectronicAddress datatype (7.5.7)  -->
  <!-- ################################################ -->
  <!-- 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 (7.6.2)  -->
  <!-- ################################ -->
  <!-- Definition of Place DS -->
  <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"/>
```

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```
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of GeographicPoint datatype (7.6.3)  -->
<!-- ################################################ -->
<!-- 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 the Graph DS (7.7.2)  -->
<!-- ################################## -->
<!-- Definition of Graph DS -->
<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>
<!-- ################################## -->
<!--  Definition the Relation DS (7.7.3)  -->
<!-- ################################## -->
<!-- Definition of Relation DS -->
<complexType name="RelationType">
  <complexContent>
    <extension base="mpeg7:DSType">
      <attribute name="type" type="mpeg7:termReferenceType" use="optional"/>
      <attribute name="source" use="optional">
```

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```
          <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>
  <!-- ######################################### -->
  <!--  Definition the MorphismGraph DS (7.7.4)  -->
  <!-- ######################################### -->
  <!-- Definition of MorphismGraph DS -->
  <complexType name="MorphismGraphType">
    <complexContent>
      <extension base="mpeg7:GraphType">
        <sequence>
          <choice>
            <element name="SourceGraphRef" type="mpeg7:ReferenceType"/>
            <element name="SourceGraphTermRef" type="mpeg7:ControlledTermUseType"/>
          </choice>
          <choice>
            <element name="TargetGraphRef" type="mpeg7:ReferenceType"/>
            <element name="TargetGraphTermRef" type="mpeg7:ControlledTermUseType"/>
          </choice>
          <element name="RuleTermRef" type="mpeg7:ControlledTermUseType" minOccurs="0"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ##################################### -->
  <!--  Definition of OrderingKey DS (7.8.2)  -->
  <!-- ##################################### -->
  <!-- Definition of OrderingKey DS -->
  <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>
<!-- ################################### -->
<!--  Definition of Affective DS (7.9.2)  -->
<!-- ################################### -->
<!-- Definition of Affective DS -->
<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>
<!-- ########################################################## -->
<!--  Definition of PhoneticTranscriptionLexicon header (7.10.2)  -->
<!-- ########################################################## -->
<!-- Definition of PhoneticTranscriptionLexicon header -->
<complexType name="PhoneticTranscriptionLexiconType">
  <complexContent>
    <extension base="mpeg7:HeaderType">
      <sequence>
        <element name="Token" maxOccurs="unbounded">
          <complexType>
            <simpleContent>
              <extension base="mpeg7:WordType">
                <attribute name="phoneticTranscription" use="required">
                  <simpleType>
                    <list itemType="mpeg7:PhoneType"/>
                  </simpleType>
                </attribute>
                <attribute ref="xml:lang" use="optional"/>
              </extension>
            </simpleContent>
          </complexType>
        </element>
      </sequence>
      <attribute ref="xml:lang" use="optional"/>
      <attribute name="phoneticAlphabet" type="mpeg7:phoneticAlphabetType"
use="optional" default="sampa"/>
    </extension>
  </complexContent>
</complexType>
<!-- ######################################### -->
```

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```
  <!--  Definition of MediaInformation DS (8.2.1)  -->
  <!-- ######################################### -->
  <!-- Definition of MediaInformation DS -->
  <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>
  <!-- ########################################### -->
  <!--  Definition of MediaIdentification D (8.2.2)  -->
  <!-- ########################################### -->
  <!-- Definition of MediaIdentification D -->
  <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>
  <!-- ###################################### -->
  <!--  Definition of MediaProfile DS (8.2.3)  -->
  <!-- ###################################### -->
  <!-- Definition of MediaProfile DS -->
  <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"/>
        </sequence>
        <attribute name="master" type="boolean" use="optional" default="false"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################### -->
  <!--  Definition of MediaFormat D (8.2.4)  -->
  <!-- ################################### -->
  <!-- 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"/>
          <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:termAliasReferenceType"/>
                </simpleType>
                <simpleType>
                  <restriction base="mpeg7:termURIReferenceType"/>
                </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"/>
                                  <enumeration value="graylevel"/>
                                  <enumeration value="colorized"/>
                                </restriction>
```

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```
                            </simpleType>
                            <simpleType>
                              <restriction base="mpeg7:termAliasReferenceType"/>
                            </simpleType>
                            <simpleType>
                              <restriction base="mpeg7:termURIReferenceType"/>
                            </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"/>
                    </extension>
                  </simpleContent>
```


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```
                </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:termAliasReferenceType"/>
                    </simpleType>
                    <simpleType>
                      <restriction base="mpeg7:termURIReferenceType"/>
                    </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>
<!-- Definition of ColorSampling D -->
<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">
```

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```
                        <sequence>
                          <element name="Offset" minOccurs="0">
                            <complexType>
                              <attribute name="horizontal" type="mpeg7:nonNegativeReal"
use="required"/>
                              <attribute name="vertical" type="mpeg7:nonNegativeReal"
use="required"/>
                            </complexType>
                          </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>
  <!-- ################################################ -->
  <!--  Definition of Media TranscodingHints D (8.2.5)  -->
  <!-- ################################################ -->
  <!-- Definition of MediaTranscodingHints D -->
  <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"/>
```


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```
              <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"/>
        <attribute name="importance" type="mpeg7:zeroToOneType" use="optional"/>
        <attribute name="spatialResolutionHint" type="mpeg7:zeroToOneType"
use="optional"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of MediaQuality D (8.2.6)  -->
  <!-- ######################################## -->
  <!-- Definition of MediaQuality D -->
  <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>
```

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```
      </extension>
    </complexContent>
  </complexType>
  <!-- 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>
        </complexType>
      </element>
    </sequence>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of MediaInstance DS (8.2.7)  -->
  <!-- ######################################## -->
  <!-- Definition of MediaInstance DS -->
  <complexType name="MediaInstanceType">
    <complexContent>
      <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>
  <!-- ############################################## -->
  <!--  Definition of CreationInformation DS (9.2.1)  -->
  <!-- ############################################## -->
  <!-- Definition of CreationInformation DS  -->
  <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>
```


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```
  <!-- ################################### -->
  <!--  Definition of Creation DS (9.2.2)  -->
  <!-- ################################### -->
  <!-- Definition of Creation DS  -->
  <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>
  <!-- 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:termAliasReferenceType"/>
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termURIReferenceType"/>
              </simpleType>
            </union>
          </simpleType>
        </attribute>
```

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```
      </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"/>
          <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"/>
      <choice>
        <element name="Agent" type="mpeg7:AgentType"/>
        <element name="AgentRef" type="mpeg7:ReferenceType"/>
      </choice>
    </sequence>
  </complexType>
  <!-- Definition of CreationTool datatype -->
  <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>
  <!-- ######################################## -->
  <!--  Definition of Classification DS (9.2.3)  -->
  <!-- ######################################## -->
  <!-- Definition of Classification DS  -->
  <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">
```


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```
                    <simpleType>
                      <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>
```

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```
            </complexType>
          </element>
          <element name="ParentalGuidance" type="mpeg7:ParentalGuidanceType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="MediaReview" type="mpeg7:MediaReviewType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </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>
  <!-- Definition of MediaReview datatype -->
  <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>
  <!-- ######################################### -->
  <!--  Definition of RelatedMaterial DS (9.2.4)  -->
  <!-- ######################################### -->
  <!-- Definition of RelatedMaterial DS -->
  <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"/>
```


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```
            <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>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of UsageInformation DS (10.2.1)  -->
  <!-- ############################################ -->
  <!-- Definition of UsageInformation DS -->
  <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>
  <!-- ######################################### -->
  <!--  Definition of Rights datatype (10.2.2)  -->
  <!-- ######################################### -->
  <!-- Definition of Rights datatype -->
  <complexType name="RightsType">
    <sequence>
      <element name="RightsID" type="mpeg7:UniqueIDType" maxOccurs="unbounded"/>
    </sequence>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of Financial datatype (10.2.3)  -->
  <!-- ############################################ -->
  <!-- Definition of Financial datatype -->
  <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>
```

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```
    </element>
  </sequence>
</complexType>
<!-- ######################################## -->
<!--  Definition of Availability DS (10.2.4)  -->
<!-- ######################################## -->
<!-- Definition of Availability DS -->
<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"/>
                              <enumeration value="conditionalAccess"/>
                              <enumeration value="encrypted"/>
                              <enumeration value="payPerUse"/>
                            </restriction>
                          </simpleType>
                          <simpleType>
                            <restriction base="mpeg7:termAliasReferenceType"/>
                          </simpleType>
                          <simpleType>
                            <restriction base="mpeg7:termURIReferenceType"/>
                          </simpleType>
                        </union>
                      </simpleType>
                    </list>
                  </simpleType>
                </attribute>
              </extension>
            </complexContent>
          </complexType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of Dissemination DS -->
<complexType name="DisseminationType">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
        <element name="Source" type="mpeg7:TextualType" minOccurs="0"/>
```


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```
          <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>
  <!-- ################################################ -->
  <!--  Definition of UsageRecord DS (10.2.5)  -->
  <!-- ################################################ -->
  <!-- Definition of UsageRecord DS -->
  <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>
  <!-- ################################## -->
  <!--  Definition of Segment DS (11.2.2)  MDS COR/1-->
  <!-- ################################## -->
  <!-- Definition of Segment DS  MDS COR/1-->
  <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>
          <element name="TextAnnotation" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:TextAnnotationType">
                  <attribute name="type" use="optional">
                    <simpleType>
                      <union memberTypes="mpeg7:termAliasReferenceType
mpeg7:termURIReferenceType string"/>
                    </simpleType>
                  </attribute>
                </extension>
              </complexContent>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
```

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```
            <element name="Semantic" type="mpeg7:SemanticType"/>
            <element name="SemanticRef" type="mpeg7:ReferenceType"/>
          </choice>
          <element name="MatchingHint" type="mpeg7:MatchingHintType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="PointOfView" type="mpeg7:PointOfViewType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="Relation" type="mpeg7:RelationType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of SegmentDecomposition DS (11.2.3)  -->
  <!-- ################################################ -->
  <!-- Definition of SegmentDecomposition DS -->
  <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>
  <!-- Definition of SpatialSegmentDecomposition DS -->
  <complexType name="SpatialSegmentDecompositionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:SegmentDecompositionType"/>
    </complexContent>
  </complexType>
  <!-- Definition of TemporalSegmentDecomposition DS -->
  <complexType name="TemporalSegmentDecompositionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:SegmentDecompositionType"/>
    </complexContent>
  </complexType>
  <!-- Definition of SpatioTemporalSegmentDecomposition DS -->
  <complexType name="SpatioTemporalSegmentDecompositionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:SegmentDecompositionType"/>
    </complexContent>
  </complexType>
  <!-- Definition of MediaSourceSegmentDecomposition DS -->
  <complexType name="MediaSourceSegmentDecompositionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:SegmentDecompositionType"/>
    </complexContent>
  </complexType>
  <!-- ################################ -->
  <!--  Definition of Mask D (11.3.2.2)  -->
  <!-- ################################ -->
  <!-- Definition of Mask D -->
  <complexType name="MaskType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DType"/>
    </complexContent>
  </complexType>
  <!-- ###################################### -->
```


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```
  <!--  Definition of SpatialMask D (11.3.2.3)  -->
  <!-- ######################################## -->
  <!-- Definition of SpatialMask D -->
  <complexType name="SpatialMaskType">
    <complexContent>
      <extension base="mpeg7:MaskType">
        <sequence>
          <element name="SubRegion" type="mpeg7:RegionLocatorType" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of TemporalMask D (11.3.2.4)  -->
  <!-- ######################################### -->
  <!-- Definition of TemporalMask D -->
  <complexType name="TemporalMaskType">
    <complexContent>
      <extension base="mpeg7:MaskType">
        <sequence>
          <element name="SubInterval" type="mpeg7:MediaTimeType" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of SpatioTemporalMask D (11.3.2.5)   -->
  <!-- ################################################ -->
  <!-- Definition of SpatioTemporalMask D -->
  <complexType name="SpatioTemporalMaskType">
    <complexContent>
      <extension base="mpeg7:MaskType">
        <sequence>
          <element name="SubRegion" type="mpeg7:SpatioTemporalLocatorType"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################### -->
  <!--  Definition of MediaSpaceMask D (11.3.2.6)  -->
  <!-- ########################################### -->
  <!-- Definition of MediaSpaceMask D -->
  <complexType name="MediaSpaceMaskType">
    <complexContent>
      <extension base="mpeg7:MaskType">
        <sequence>
          <element name="SubInterval" maxOccurs="unbounded">
            <complexType>
              <attribute name="offset" type="nonNegativeInteger" use="required"/>
              <attribute name="length" type="positiveInteger" use="optional"/>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################### -->
  <!--  Definition of SceneGraphMask D (11.3.2.7)  -->
  <!-- ########################################### -->
```

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```
  <!-- Definition of SceneGraphMask D -->
  <complexType name="SceneGraphMaskType">
    <complexContent>
      <extension base="mpeg7:MaskType">
        <choice maxOccurs="unbounded">
          <element name="SubGraph" type="anyURI"/>
          <element name="SubGraphNum" type="nonNegativeInteger"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################## -->
  <!--  Definition of OrderedGroupDataSetMask D (11.3.2.8)  -->
  <!-- ################################################## -->
  <!-- Definition of OrderedGroupDataSetMask D -->
  <complexType name="OrderedGroupDataSetMaskType">
    <complexContent>
      <extension base="mpeg7:MaskType">
        <sequence>
          <element name="SubInterval" maxOccurs="unbounded">
            <complexType>
              <attribute name="setRef" type="anyURI" use="optional"/>
              <attribute name="startComponent" type="nonNegativeInteger" use="optional"/>
              <attribute name="startUnit" type="nonNegativeInteger" use="optional"/>
              <attribute name="endComponent" type="nonNegativeInteger" use="optional"/>
              <attribute name="endUnit" type="nonNegativeInteger" use="optional"/>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of MatchingHint D (11.3.3)  -->
  <!-- ######################################## -->
  <!-- Definition of MatchingHint D -->
  <complexType name="MatchingHintType">
    <complexContent>
      <extension base="mpeg7:DType">
        <sequence>
          <element name="Hint" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:ReferenceType">
                  <attribute name="value" type="mpeg7:zeroToOneType" use="required"/>
                </extension>
              </complexContent>
            </complexType>
          </element>
        </sequence>
        <attribute name="reliability" type="mpeg7:zeroToOneType" use="optional"
default="1.0"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of PointOfView D (11.3.4)  -->
  <!-- ######################################## -->
  <!-- Definition of PointOfView D -->
  <complexType name="PointOfViewType">
```


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```
    <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>
  <!-- ######################################## -->
  <!--  Definition of StillRegion DS (11.4.2)  -->
  <!-- ######################################## -->
  <!-- Definition of StillRegion DS -->
  <complexType name="StillRegionType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <choice minOccurs="0">
            <element name="SpatialLocator" type="mpeg7:RegionLocatorType"/>
            <element name="SpatialMask" type="mpeg7:SpatialMaskType"/>
          </choice>
          <choice minOccurs="0">
            <element name="MediaTimePoint" type="mpeg7:mediaTimePointType"/>
            <element name="MediaRelTimePoint" type="mpeg7:MediaRelTimePointType"/>
            <element name="MediaRelIncrTimePoint" type="mpeg7:MediaRelIncrTimePointType"/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="VisualDescriptor" type="mpeg7:VisualDType"/>
            <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType"/>
            <element name="GridLayoutDescriptors" type="mpeg7:GridLayoutType"/>
          </choice>
          <element name="MultipleView" type="mpeg7:MultipleViewType" minOccurs="0"/>
          <element name="SpatialDecomposition"
type="mpeg7:StillRegionSpatialDecompositionType" minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of StillRegionSpatialDecomposition DS  (11.4.3)  -->
  <!-- ########################################################## -->
  <!-- Definition of StillRegionSpatialDecomposition DS -->
  <complexType name="StillRegionSpatialDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatialSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="StillRegion" type="mpeg7:StillRegionType"/>
          <element name="StillRegionRef" type="mpeg7:ReferenceType"/>
        </choice>
      </extension>
    </complexContent>
```

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```
  </complexType>
  <!-- ################################### -->
  <!--  Definition of ImageText DS (11.4.4)  -->
  <!-- ################################### -->
  <!-- Definition of ImageText DS -->
  <complexType name="ImageTextType">
    <complexContent>
      <extension base="mpeg7:StillRegionType">
        <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:termAliasReferenceType"/>
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termURIReferenceType"/>
              </simpleType>
            </union>
          </simpleType>
        </attribute>
        <attribute name="fontSize" type="positiveInteger" use="optional"/>
        <attribute name="fontType" type="string" use="optional"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################## -->
  <!--  Definition of Mosaic DS (11.4.5)  -->
  <!-- ################################## -->
  <!-- Definition of Mosaic DS -->
  <complexType name="MosaicType">
    <complexContent>
      <extension base="mpeg7:StillRegionType">
        <sequence>
          <element name="WarpingParam" minOccurs="0">
            <complexType>
              <sequence maxOccurs="unbounded">
                <choice>
                  <element name="MediaTimePoint" type="mpeg7:mediaTimePointType"/>
                  <element name="MediaRelTimePoint" type="mpeg7:MediaRelTimePointType"/>
                  <element name="MediaRelIncrTimePoint"
type="mpeg7:MediaRelIncrTimePointType"/>
                </choice>
                <element name="MotionParam" type="mpeg7:floatVector"/>
              </sequence>
              <attribute name="modelType" use="required">
                <simpleType>
                  <union>
                    <simpleType>
                      <restriction base="NMTOKEN">
                        <enumeration value="translational"/>
                        <enumeration value="rotationAndScaling"/>
```

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```
                        <enumeration value="affine"/>
                        <enumeration value="perspective"/>
                        <enumeration value="quadratic"/>
                      </restriction>
                    </simpleType>
                    <simpleType>
                      <restriction base="mpeg7:termAliasReferenceType"/>
                    </simpleType>
                    <simpleType>
                      <restriction base="mpeg7:termURIReferenceType"/>
                    </simpleType>
                  </union>
                </simpleType>
              </attribute>
              <attribute name="sourceSequenceWidth" type="positiveInteger"
use="required"/>
              <attribute name="sourceSequenceHeight" type="positiveInteger"
use="required"/>
              <attribute name="xOffset" type="float" use="required"/>
              <attribute name="yOffset" type="float" use="required"/>
              <attribute name="xOrigin" type="float" use="required"/>
              <attribute name="yOrigin" type="float" use="required"/>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################### -->
  <!--  Definition of StillRegion3D DS (11.4.6)   -->
  <!-- ########################################### -->
  <!-- Definition of StilLRegion3D DS -->
  <complexType name="StillRegion3DType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="VisualDescriptor" type="mpeg7:VisualDType"/>
            <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType"/>
          </choice>
          <element name="MultipleView" type="mpeg7:MultipleViewType" minOccurs="0"/>
          <element name="SpatialDecomposition"
type="mpeg7:StillRegion3DSpatialDecompositionType" minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of StillRegion3DSpatialDecomposition DS (11.4.7)  -->
  <!-- ########################################################## -->
  <!-- Definition of StillRegion3DSpatialDecomposition DS -->
  <complexType name="StillRegion3DSpatialDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatialSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="StillRegion" type="mpeg7:StillRegionType"/>
          <element name="StillRegionRef" type="mpeg7:ReferenceType"/>
          <element name="StillRegion3D" type="mpeg7:StillRegion3DType"/>
          <element name="StillRegion3DRef" type="mpeg7:ReferenceType"/>
        </choice>
```

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```
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of VideoSegment DS (11.4.8)  -->
  <!-- ######################################## -->
  <!-- Definition of VideoSegment DS -->
  <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="VisualDescriptor" type="mpeg7:VisualDType"/>
            <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType"/>
            <element name="VisualTimeSeriesDescriptor" type="mpeg7:VisualTimeSeriesType"/>
          </choice>
          <element name="MultipleView" type="mpeg7:MultipleViewType" minOccurs="0"/>
          <element name="Mosaic" type="mpeg7:MosaicType" minOccurs="0"
maxOccurs="unbounded"/>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="SpatialDecomposition"
type="mpeg7:VideoSegmentSpatialDecompositionType"/>
            <element name="TemporalDecomposition"
type="mpeg7:VideoSegmentTemporalDecompositionType"/>
            <element name="SpatioTemporalDecomposition"
type="mpeg7:VideoSegmentSpatioTemporalDecompositionType"/>
            <element name="MediaSourceDecomposition"
type="mpeg7:VideoSegmentMediaSourceDecompositionType"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################################## -->
  <!--  Definition of VideoSegment decomposition DSs (11.4.9)  -->
  <!-- ######################################################## -->
  <!-- Definition of VideoSegmentSpatialDecomposition DS -->
  <complexType name="VideoSegmentSpatialDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatialSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="MovingRegion" type="mpeg7:MovingRegionType"/>
          <element name="MovingRegionRef" type="mpeg7:ReferenceType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of VideoSegmentTemporalDecomposition DS -->
  <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"/>
```


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```
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of VideoSegmentSpatioTemporalDecomposition DS -->
  <complexType name="VideoSegmentSpatioTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatioTemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="MovingRegion" type="mpeg7:MovingRegionType"/>
          <element name="MovingRegionRef" type="mpeg7:ReferenceType"/>
          <element name="StillRegion" type="mpeg7:StillRegionType"/>
          <element name="StillRegionRef" type="mpeg7:ReferenceType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of VideoSegmentMediaSourceDecomposition DS -->
  <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>
  <!-- ######################################### -->
  <!--  Definition of MovingRegion DS (11.4.10)  -->
  <!-- ######################################### -->
  <!-- Definition of MovingRegion DS -->
  <complexType name="MovingRegionType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <choice minOccurs="0">
            <element name="SpatioTemporalLocator" type="mpeg7:SpatioTemporalLocatorType"/>
            <element name="SpatioTemporalMask" type="mpeg7:SpatioTemporalMaskType"/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="VisualDescriptor" type="mpeg7:VisualDType"/>
            <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType"/>
            <element name="VisualTimeSeriesDescriptor" type="mpeg7:VisualTimeSeriesType"/>
          </choice>
          <element name="MultipleView" type="mpeg7:MultipleViewType" minOccurs="0"/>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="SpatialDecomposition"
type="mpeg7:MovingRegionSpatialDecompositionType"/>
            <element name="TemporalDecomposition"
type="mpeg7:MovingRegionTemporalDecompositionType"/>
            <element name="SpatioTemporalDecomposition"
type="mpeg7:MovingRegionSpatioTemporalDecompositionType"/>
            <element name="MediaSourceDecomposition"
type="mpeg7:MovingRegionMediaSourceDecompositionType"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
```

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```
<!-- ########################################################## -->
<!--  Definition of MovingRegion decomposition DSs (11.4.11)  -->
<!-- ########################################################## -->
<!-- Definition of MovingRegionSpatialDecomposition DS -->
<complexType name="MovingRegionSpatialDecompositionType">
  <complexContent>
    <extension base="mpeg7:SpatialSegmentDecompositionType">
      <choice maxOccurs="unbounded">
        <element name="MovingRegion" type="mpeg7:MovingRegionType"/>
        <element name="MovingRegionRef" type="mpeg7:ReferenceType"/>
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of MovingRegionTemporalDecomposition DS -->
<complexType name="MovingRegionTemporalDecompositionType">
  <complexContent>
    <extension base="mpeg7:TemporalSegmentDecompositionType">
      <choice maxOccurs="unbounded">
        <element name="MovingRegion" type="mpeg7:MovingRegionType"/>
        <element name="MovingRegionRef" type="mpeg7:ReferenceType"/>
        <element name="StillRegion" type="mpeg7:StillRegionType"/>
        <element name="StillRegionRef" type="mpeg7:ReferenceType"/>
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of MovingRegionSpatioTemporalDecomposition DS -->
<complexType name="MovingRegionSpatioTemporalDecompositionType">
  <complexContent>
    <extension base="mpeg7:SpatioTemporalSegmentDecompositionType">
      <choice maxOccurs="unbounded">
        <element name="MovingRegion" type="mpeg7:MovingRegionType"/>
        <element name="MovingRegionRef" type="mpeg7:ReferenceType"/>
        <element name="StillRegion" type="mpeg7:StillRegionType"/>
        <element name="StillRegionRef" type="mpeg7:ReferenceType"/>
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of MovingRegionMediaSourceDecomposition DS -->
<complexType name="MovingRegionMediaSourceDecompositionType">
  <complexContent>
    <extension base="mpeg7:MediaSourceSegmentDecompositionType">
      <choice maxOccurs="unbounded">
        <element name="MovingRegion" type="mpeg7:MovingRegionType"/>
        <element name="MovingRegionRef" type="mpeg7:ReferenceType"/>
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- ################################### -->
<!--  Definition of VideoText DS (11.4.12)  -->
<!-- ################################### -->
<!-- Definition of VideoText DS -->
<complexType name="VideoTextType">
  <complexContent>
    <extension base="mpeg7:MovingRegionType">
      <sequence>
        <element name="Text" type="mpeg7:TextualType" minOccurs="0"/>
```


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```
        </sequence>
        <attribute name="textType" use="optional">
          <simpleType>
            <union>
              <simpleType>
                <restriction base="NMTOKEN">
                  <enumeration value="superimposed"/>
                  <enumeration value="scene"/>
                </restriction>
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termAliasReferenceType"/>
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termURIReferenceType"/>
              </simpleType>
            </union>
          </simpleType>
        </attribute>
        <attribute name="fontSize" type="positiveInteger" use="optional"/>
        <attribute name="fontType" type="string" use="optional"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of AudioSegment DS (11.5.2)  -->
  <!-- ######################################### -->
  <!-- Definition of AudioSegment DS -->
  <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="AudioDescriptor" type="mpeg7:AudioDType"/>
            <element name="AudioDescriptionScheme" type="mpeg7:AudioDSType"/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="TemporalDecomposition"
type="mpeg7:AudioSegmentTemporalDecompositionType"/>
            <element name="MediaSourceDecomposition"
type="mpeg7:AudioSegmentMediaSourceDecompositionType"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################################## -->
  <!-- Definition of AudioSegment decomposition DSs (11.5.3)  -->
  <!-- ######################################################## -->
  <!-- Definition of AudioSegmentTemporalDecomposition DS -->
  <complexType name="AudioSegmentTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioSegment" type="mpeg7:AudioSegmentType"/>
          <element name="AudioSegmentRef" type="mpeg7:ReferenceType"/>
```

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```
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioSegmentMediaSourceDecomposition DS -->
  <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>
  <!-- ################################################ -->
  <!--  Definition of AudioVisualSegment DS (11.6.2)   -->
  <!-- ################################################ -->
  <!-- Definition of AudioVisualSegment DS -->
  <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="SpatialDecomposition"
type="mpeg7:AudioVisualSegmentSpatialDecompositionType"/>
            <element name="TemporalDecomposition"
type="mpeg7:AudioVisualSegmentTemporalDecompositionType"/>
            <element name="SpatioTemporalDecomposition"
type="mpeg7:AudioVisualSegmentSpatioTemporalDecompositionType"/>
            <element name="MediaSourceDecomposition"
type="mpeg7:AudioVisualSegmentMediaSourceDecompositionType"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################################ -->
  <!--  Definition of AudioVisualSegment decomposition DSs (11.6.3)  -->
  <!-- ############################################################ -->
  <!-- Definition of AudioVisualSegmentSpatialDecomposition DS -->
  <complexType name="AudioVisualSegmentSpatialDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatialSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType"/>
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisualSegmentTemporalDecomposition DS -->
  <complexType name="AudioVisualSegmentTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
```

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```
        <element name="AudioVisualSegment" type="mpeg7:AudioVisualSegmentType"/>
        <element name="AudioVisualSegmentRef" type="mpeg7:ReferenceType"/>
        <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType"/>
        <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType"/>
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of AudioVisualSegmentSpatioTemporalDecomposition DS -->
<complexType name="AudioVisualSegmentSpatioTemporalDecompositionType">
  <complexContent>
    <extension base="mpeg7:SpatioTemporalSegmentDecompositionType">
      <choice maxOccurs="unbounded">
        <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType"/>
        <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType"/>
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of AudioVisualSegmentMediaSourceDecomposition DS -->
<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>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of AudioVisualRegion DS (11.6.4)  -->
<!-- ################################################ -->
<!-- Definition of AudioVisualRegion DS -->
<complexType name="AudioVisualRegionType">
  <complexContent>
    <extension base="mpeg7:SegmentType">
      <sequence>
        <choice minOccurs="0">
          <element name="VisualSpatioTemporalLocator"
type="mpeg7:SpatioTemporalLocatorType"/>
          <element name="VisualSpatioTemporalMask" type="mpeg7:SpatioTemporalMaskType"/>
        </choice>
        <choice minOccurs="0">
          <element name="AudioMediaTime" type="mpeg7:MediaTimeType"/>
          <element name="AudioTemporalMask" type="mpeg7:TemporalMaskType"/>
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="SpatialDecomposition"
type="mpeg7:AudioVisualRegionSpatialDecompositionType"/>
          <element name="TemporalDecomposition"
type="mpeg7:AudioVisualRegionTemporalDecompositionType"/>
          <element name="SpatioTemporalDecomposition"
type="mpeg7:AudioVisualRegionSpatioTemporalDecompositionType"/>
```

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```
            <element name="MediaSourceDecomposition"
type="mpeg7:AudioVisualRegionMediaSourceDecompositionType"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of AudioVisualRegion decomposition DSs (11.6.5)  -->
  <!-- ########################################################## -->
  <!-- Definition of AudioVisualRegionSpatialDecomposition DS -->
  <complexType name="AudioVisualRegionSpatialDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatialSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType"/>
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisualSegmentTemporalDecomposition DS -->
  <complexType name="AudioVisualRegionTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType"/>
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisualSegmentSpatioTemporalDecomposition DS -->
  <complexType name="AudioVisualRegionSpatioTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatioTemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType"/>
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisualSegmentMediaSourceDecomposition DS -->
  <complexType name="AudioVisualRegionMediaSourceDecompositionType">
    <complexContent>
      <extension base="mpeg7:MediaSourceSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType"/>
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType"/>
          <element name="VideoSegment" type="mpeg7:VideoSegmentType"/>
          <element name="VideoSegmentRef" type="mpeg7:ReferenceType"/>
          <element name="MovingRegion" type="mpeg7:MovingRegionType"/>
          <element name="MovingRegionRef" 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>
      </extension>
```

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```
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of MultimediaSegment DS (11.7.2)   -->
  <!-- ################################################ -->
  <!-- Definition of MultimediaSegment DS -->
  <complexType name="MultimediaSegmentType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <element name="MediaSourceDecomposition"
type="mpeg7:MultimediaSegmentMediaSourceDecompositionType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!--  Definition of MultimediaSegmentMediaSourceDecomposition DS (11.7.3)  -->
  <!-- ################################################################ -->
  <!-- Definition of MultimediaSegmentMediaSourceDecomposition DS -->
  <complexType name="MultimediaSegmentMediaSourceDecompositionType">
    <complexContent>
      <extension base="mpeg7:MediaSourceSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="Segment" type="mpeg7:SegmentType"/>
          <element name="SegmentRef" type="mpeg7:ReferenceType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ###################################### -->
  <!--  Definition of InkSegment DS (11.8.2)  -->
  <!-- ###################################### -->
  <!-- Definition of InkSegment DS -->
  <complexType name="InkSegmentType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <element name="InkMediaInformation" type="mpeg7:InkMediaInformationType"
minOccurs="0"/>
          <element name="MediaTime" type="mpeg7:MediaTimeType" minOccurs="0"/>
          <element name="TemporalMask" type="mpeg7:TemporalMaskType" minOccurs="0"/>
          <element name="SceneGraphMask" type="mpeg7:SceneGraphMaskType" minOccurs="0"/>
          <element name="MediaSpaceMask" type="mpeg7:MediaSpaceMaskType" minOccurs="0"/>
          <element name="OrderedGroupDataSetMask" type="mpeg7:OrderedGroupDataSetMaskType"
minOccurs="0"/>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="HandWritingRecogInformation"
type="mpeg7:HandWritingRecogInformationType"/>
            <element name="HandWritingRecogResult"
type="mpeg7:HandWritingRecogResultType"/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="VisualDescriptor" type="mpeg7:VisualDType"/>
            <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType"/>
            <element name="VisualTimeSeriesDescriptor" type="mpeg7:VisualTimeSeriesType"/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
```

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```
            <element name="SpatialDecomposition"
type="mpeg7:InkSegmentSpatialDecompositionType"/>
            <element name="TemporalDecomposition"
type="mpeg7:InkSegmentTemporalDecompositionType"/>
          </choice>
        </sequence>
        <attribute name="type" use="optional" default="content">
          <simpleType>
            <restriction base="NMTOKEN">
              <enumeration value="content"/>
              <enumeration value="meta"/>
              <enumeration value="mixed"/>
            </restriction>
          </simpleType>
        </attribute>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of InkMediaInformation DS (11.8.3)  -->
  <!-- ################################################ -->
  <!-- Definition of InkMediaInformation DS -->
  <complexType name="InkMediaInformationType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="InputDevice" minOccurs="0">
            <complexType>
              <sequence>
                <element name="Device" type="mpeg7:TermUseType"/>
              </sequence>
              <attribute name="xWidth" type="nonNegativeInteger" use="optional"/>
              <attribute name="yWidth" type="nonNegativeInteger" use="optional"/>
              <attribute name="resolutionX" type="nonNegativeInteger" use="optional"/>
              <attribute name="resolutionY" type="nonNegativeInteger" use="optional"/>
              <attribute name="resolutionZ" type="nonNegativeInteger" use="optional"/>
              <attribute name="resolutionP" type="integer" use="optional"/>
              <attribute name="resolutionS" type="integer" use="optional"/>
            </complexType>
          </element>
          <element name="WritingFieldLayout" minOccurs="0">
            <complexType>
              <sequence>
                <element name="RegionLocator" type="mpeg7:RegionLocatorType"/>
              </sequence>
              <attribute name="fieldIDList" use="optional">
                <simpleType>
                  <list itemType="ID"/>
                </simpleType>
              </attribute>
            </complexType>
          </element>
          <element name="OverlaidMedia" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <sequence>
                <choice>
                  <element name="OverlaidMediaLocator" type="mpeg7:MediaLocatorType"/>
                  <element name="OverlaidMediaRef" type="mpeg7:ReferenceType"/>
                </choice>
```


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```
                <element name="MediaRegionLocator" type="mpeg7:RegionLocatorType"
minOccurs="0"/>
              </sequence>
              <attribute name="fieldIDRef" type="IDREF" use="optional"/>
              <attribute name="translationX" type="integer" use="optional" default="0"/>
              <attribute name="translationY" type="integer" use="optional" default="0"/>
              <attribute name="rotation" type="float" use="optional" default="0.0"/>
              <attribute name="scaleX" type="float" use="optional" default="1.0"/>
              <attribute name="scaleY" type="float" use="optional" default="1.0"/>
            </complexType>
          </element>
          <element name="Brush" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <sequence>
                <element name="Name" type="mpeg7:TermUseType" minOccurs="0"/>
                <element name="Color" type="mpeg7:TermUseType" minOccurs="0"/>
                <element name="Shape" type="mpeg7:TermUseType" minOccurs="0"/>
                <element name="Size" type="nonNegativeInteger" minOccurs="0"/>
              </sequence>
            </complexType>
          </element>
          <element name="Param" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <attribute name="name" type="string" use="optional"/>
              <attribute name="value" type="string" use="optional"/>
            </complexType>
          </element>
          <element name="Handedness" minOccurs="0">
            <simpleType>
              <restriction base="NMTOKEN">
                <enumeration value="left"/>
                <enumeration value="right"/>
                <enumeration value="others"/>
              </restriction>
            </simpleType>
          </element>
          <element name="Style" minOccurs="0">
            <simpleType>
              <union>
                <simpleType>
                  <restriction base="NMTOKEN">
                    <enumeration value="printed"/>
                    <enumeration value="cursive"/>
                    <enumeration value="drawing"/>
                    <enumeration value="mixed"/>
                  </restriction>
                </simpleType>
                <simpleType>
                  <restriction base="mpeg7:termAliasReferenceType"/>
                </simpleType>
                <simpleType>
                  <restriction base="mpeg7:termURIReferenceType"/>
                </simpleType>
              </union>
            </simpleType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
```

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```
  <!-- ########################################################## -->
  <!--  Definition of HandWritingRecogInformation DS (11.8.4)  -->
  <!-- ########################################################## -->
  <!-- Definition of HandWritingRecogInformation DS -->
  <complexType name="HandWritingRecogInformationType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Recognizer" minOccurs="0">
            <complexType>
              <sequence>
                <element name="Name" type="mpeg7:TermUseType" minOccurs="0"/>
                <element name="Owner" type="mpeg7:AgentType" minOccurs="0"/>
                <element name="Information" type="mpeg7:TextAnnotationType"
minOccurs="0"/>
              </sequence>
            </complexType>
          </element>
          <element name="InkLexicon" minOccurs="0">
            <complexType>
              <sequence>
                <element name="Name" type="mpeg7:TermUseType" minOccurs="0"/>
                <element name="Owner" type="mpeg7:AgentType" minOccurs="0"/>
                <choice>
                  <element name="Resource" type="mpeg7:MediaLocatorType"/>
                  <element name="Entry" maxOccurs="unbounded">
                    <complexType>
                      <sequence>
                        <element name="Text" type="mpeg7:TermUseType" minOccurs="0"/>
                        <element name="InkSegmentRef" type="mpeg7:ReferenceType"
minOccurs="0"/>
                      </sequence>
                      <attribute name="index" type="ID" use="optional"/>
                      <attribute name="frequency" type="mpeg7:zeroToOneType"
use="optional"/>
                    </complexType>
                  </element>
                </choice>
              </sequence>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################## -->
  <!--  Definition of HandWritingRecogResult DS (11.8.5)  -->
  <!-- ################################################## -->
  <!-- Definition of HandWritingRecogResult DS -->
  <complexType name="HandWritingRecogResultType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="HandWritingRecogInformationRef" type="mpeg7:ReferenceType"
minOccurs="0"/>
          <element name="Quality" type="mpeg7:zeroToOneType" minOccurs="0"/>
          <element name="Result" maxOccurs="unbounded">
            <complexType>
              <sequence>
                <choice>
```


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```
                <element name="Text" type="string"/>
                <element name="LexiconIndexRef" type="mpeg7:ReferenceType"/>
              </choice>
            </sequence>
            <attribute name="score" type="mpeg7:zeroToOneType" use="optional"/>
          </complexType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################## -->
<!--  Definition of InkSegment decomposition DSs (11.8.6)  -->
<!-- ################################################## -->
<!-- Definition of InkSegmentSpatialDecomposition DS -->
<complexType name="InkSegmentSpatialDecompositionType">
  <complexContent>
    <extension base="mpeg7:SpatialSegmentDecompositionType">
      <choice maxOccurs="unbounded">
        <element name="InkSegment" type="mpeg7:InkSegmentType"/>
        <element name="InkSegmentRef" type="mpeg7:ReferenceType"/>
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of InkSegmentTemporalDecomposition DS -->
<complexType name="InkSegmentTemporalDecompositionType">
  <complexContent>
    <extension base="mpeg7:TemporalSegmentDecompositionType">
      <choice maxOccurs="unbounded">
        <element name="InkSegment" type="mpeg7:InkSegmentType"/>
        <element name="InkSegmentRef" type="mpeg7:ReferenceType"/>
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!--  Definition of the AnalyticEditedVideoSegment DS (11.9.2)  -->
<!-- ########################################################## -->
<!-- Definition of AnalyticEditedVideoSegment DS -->
<complexType name="AnalyticEditedVideoSegmentType" abstract="true">
  <complexContent>
    <extension base="mpeg7:VideoSegmentType">
      <sequence>
        <element name="AnalyticEditionAreaDecomposition"
type="mpeg7:AnalyticEditedVideoSegmentSpatioTemporalDecompositionType" minOccurs="0"
maxOccurs="unbounded"/>
      </sequence>
      <attribute name="locationReliability" type="mpeg7:zeroToOneType" use="optional"/>
      <attribute name="editingLevelReliability" type="mpeg7:zeroToOneType"
use="optional"/>
      <attribute name="type" use="optional">
        <simpleType>
          <restriction base="NMTOKEN">
            <enumeration value="simple"/>
            <enumeration value="composite"/>
          </restriction>
        </simpleType>
      </attribute>
    </extension>
```

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```
    </complexContent>
  </complexType>
  <!-- ################################################################################ -->
  <!--  Definition of the AnalyticEditedVideoSegment Decompostion DSs (11.9.3)  -->
  <!-- ################################################################################ -->
  <!-- Definition of AnalyticEditedVideoSegmentSpatioTemporalDecomposition DS -->
  <complexType name="AnalyticEditedVideoSegmentSpatioTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatioTemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="EditedMovingRegion" type="mpeg7:EditedMovingRegionType"/>
          <element name="EditedMovingRegionRef" type="mpeg7:ReferenceType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of EditedVideo DS (11.9.4)  -->
  <!-- ######################################## -->
  <!-- Definition of EditedVideo DS -->
  <complexType name="EditedVideoType">
    <complexContent>
      <extension base="mpeg7:AnalyticEditedVideoSegmentType">
        <sequence>
          <element name="AnalyticEditingTemporalDecomposition"
type="mpeg7:EditedVideoEditingTemporalDecompositionType" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################# -->
  <!--  Definition of the EditedVideoEditing decomposition DSs (11.9.5)  -->
  <!-- ################################################################# -->
  <!-- Definition of EditedVideoEditingTemporalDecomposition DS -->
  <complexType name="EditedVideoEditingTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <sequence maxOccurs="unbounded">
          <choice>
            <choice>
              <element name="Shot" type="mpeg7:ShotType"/>
              <element name="ShotRef" type="mpeg7:ReferenceType"/>
            </choice>
            <choice>
              <element name="GlobalTransition" type="mpeg7:GlobalTransitionType"/>
              <element name="GlobalTransitionRef" type="mpeg7:ReferenceType"/>
            </choice>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of AnalyticClip DS (11.9.6)  -->
  <!-- ######################################## -->
  <!-- Definition of AnalyticClip DS -->
  <complexType name="AnalyticClipType" abstract="true">
    <complexContent>
      <extension base="mpeg7:AnalyticEditedVideoSegmentType"/>
    </complexContent>
```


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```
  </complexType>
  <!-- ################################ -->
  <!--  Definition of Shot DS (11.9.7)  -->
  <!-- ################################ -->
  <!-- Definition of Shot DS -->
  <complexType name="ShotType">
    <complexContent>
      <extension base="mpeg7:AnalyticClipType">
        <sequence>
          <element name="AnalyticEditingTemporalDecomposition"
type="mpeg7:ShotEditingTemporalDecompositionType" minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of the ShotEditing Decomposition DSs (11.9.8)  -->
  <!-- ########################################################## -->
  <!--  Definition of the ShotEditingTemporalDecomposition DS  -->
  <complexType name="ShotEditingTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <sequence maxOccurs="unbounded">
          <choice>
            <choice>
              <element name="CompositionShot" type="mpeg7:CompositionShotType"/>
              <element name="CompositionShotRef" type="mpeg7:ReferenceType"/>
            </choice>
            <choice>
              <element name="CompositionTransition"
type="mpeg7:CompositionTransitionType"/>
              <element name="CompositionTransitionRef" type="mpeg7:ReferenceType"/>
            </choice>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of CompositionShot DS (11.9.9)  -->
  <!-- ######################################### -->
  <!-- Definition of CompositionShot DS -->
  <complexType name="CompositionShotType">
    <complexContent>
      <extension base="mpeg7:AnalyticClipType">
        <sequence>
          <element name="AnalyticEditingTemporalDecomposition"
type="mpeg7:CompositionShotEditingTemporalDecompositionType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################## -->
  <!--  Definition of the CompositionShotEditing decomposition DSs (11.9.10)  -->
  <!-- ################################################################## -->
  <complexType name="CompositionShotEditingTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <sequence maxOccurs="unbounded">
```

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```
          <choice>
            <choice>
              <element name="IntraCompositionShot" type="mpeg7:IntraCompositionShotType"/>
              <element name="IntraCompositionShotRef" type="mpeg7:ReferenceType"/>
            </choice>
            <choice>
              <element name="InternalTransition" type="mpeg7:InternalTransitionType"/>
              <element name="InternalTransitionRef" type="mpeg7:ReferenceType"/>
            </choice>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of IntraCompositionShot DS (11.9.11)  -->
  <!-- ################################################ -->
  <!-- Definition of IntraCompositionShot DS -->
  <complexType name="IntraCompositionShotType">
    <complexContent>
      <extension base="mpeg7:AnalyticClipType">
        <sequence>
          <element name="AnalyticEditingTemporalDecomposition"
type="mpeg7:IntraCompositionShotEditingTemporalDecompositionType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################################## -->
  <!--  Definition of the IntraCompositionShotEditing decomposition DSs (11.9.12)  -->
  <!-- ########################################################################## -->
  <!-- Definition of IntraCompositionShotEditingTemporalDecomposition DS -->
  <complexType name="IntraCompositionShotEditingTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <sequence maxOccurs="unbounded">
          <choice>
            <choice>
              <element name="IntraCompositionShot" type="mpeg7:IntraCompositionShotType"/>
              <element name="IntraCompositionShotRef" type="mpeg7:ReferenceType"/>
            </choice>
            <choice>
              <element name="InternalTransition" type="mpeg7:InternalTransitionType"/>
              <element name="InternalTransitionRef" type="mpeg7:ReferenceType"/>
            </choice>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of AnalyticTransition DS (11.9.13)  -->
  <!-- ############################################ -->
  <!-- Definition of AnalyticTransition DS -->
  <complexType name="AnalyticTransitionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:AnalyticEditedVideoSegmentType">
        <sequence>
          <element name="EvolutionType" type="mpeg7:TermUseType" minOccurs="0"/>
```


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```
        <element name="EditedMovingRegionRef" type="mpeg7:ReferenceType" minOccurs="0"/>
      </sequence>
      <attribute name="evolutionReliability" type="mpeg7:zeroToOneType" use="optional"/>
    </extension>
  </complexContent>
</complexType>
<!-- ############################################ -->
<!--  Definition of GlobalTransition DS (11.9.14)  -->
<!-- ############################################ -->
<!-- Definition of GlobalTransition DS -->
<complexType name="GlobalTransitionType">
  <complexContent>
    <extension base="mpeg7:AnalyticTransitionType"/>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of CompositionTransition DS (11.9.15)  -->
<!-- ################################################ -->
<!-- Definition of CompositionTransition DS -->
<complexType name="CompositionTransitionType">
  <complexContent>
    <extension base="mpeg7:AnalyticTransitionType">
      <attribute name="compositionType" use="optional">
        <simpleType>
          <union>
            <simpleType>
              <restriction base="NMTOKEN">
                <enumeration value="create"/>
                <enumeration value="delete"/>
                <enumeration value="change"/>
              </restriction>
            </simpleType>
            <simpleType>
              <restriction base="mpeg7:termAliasReferenceType"/>
            </simpleType>
            <simpleType>
              <restriction base="mpeg7:termURIReferenceType"/>
            </simpleType>
          </union>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of InternalTransition DS (11.9.16)  -->
<!-- ################################################ -->
<!-- Definition of InternalTransition DS -->
<complexType name="InternalTransitionType">
  <complexContent>
    <extension base="mpeg7:AnalyticTransitionType"/>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition the EditedMovingRegion DS (11.9.17)  -->
<!-- ################################################ -->
<!-- Definition of EditedMovingRegion DS -->
<complexType name="EditedMovingRegionType">
  <complexContent>
    <extension base="mpeg7:MovingRegionType">
```

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```
        <sequence>
          <element name="RegionDepthType" type="mpeg7:TermUseType" minOccurs="0"/>
          <element name="BoundaryType" type="mpeg7:TermUseType" minOccurs="0"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of SemanticBase DS (12.3.2)  -->
  <!-- ######################################## -->
  <!-- Definition of SemanticBase DS -->
  <complexType name="SemanticBaseType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="AbstractionLevel" type="mpeg7:AbstractionLevelType"
minOccurs="0"/>
          <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"/>
                <element name="AudioDescriptor" type="mpeg7:AudioDType" minOccurs="0"
maxOccurs="unbounded"/>
                <element name="AudioDescriptionScheme" type="mpeg7:AudioDSType"
minOccurs="0" maxOccurs="unbounded"/>
                <element name="VisualDescriptor" type="mpeg7:VisualDType" minOccurs="0"
maxOccurs="unbounded"/>
                <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType"
minOccurs="0" maxOccurs="unbounded"/>
              </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:termAliasReferenceType"/>
                    </simpleType>
                    <simpleType>
                      <restriction base="mpeg7:termURIReferenceType"/>
                    </simpleType>
                  </union>
                </simpleType>
              </attribute>
            </complexType>
          </element>
```


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```
          <element name="Relation" type="mpeg7:RelationType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of SemanticBag DS (12.3.3)  -->
  <!-- ######################################## -->
  <!-- Definition of SemanticBag DS -->
  <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>
  <!-- ################################### -->
  <!--  Definition of Semantic DS (12.3.4)  -->
  <!-- ################################### -->
  <!-- Definition of Semantic DS -->
  <complexType name="SemanticType">
    <complexContent>
      <extension base="mpeg7:SemanticBagType"/>
    </complexContent>
  </complexType>
  <!-- ################################### -->
  <!--  Definition of Object DS (12.3.5)  -->
  <!-- ################################### -->
  <!-- Definition of Object DS -->
  <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>
  <!-- ######################################## -->
  <!--  Definition of AgentObject DS (12.3.6)  -->
  <!-- ######################################## -->
  <!-- Definition of AgentObject DS -->
  <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>
```

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```
  </complexType>
  <!-- ################################## -->
  <!--  Definition of Event DS (12.3.7)  -->
  <!-- ################################## -->
  <!-- Definition of Event DS -->
  <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>
  <!-- ################################## -->
  <!--  Definition of Concept DS (11.3.8)  -->
  <!-- ################################## -->
  <!-- Definition of Concept DS -->
  <complexType name="ConceptType">
    <complexContent>
      <extension base="mpeg7:SemanticBaseType"/>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of SemanticState DS (12.3.9)  -->
  <!-- ######################################## -->
  <!-- Definition of SemanticState DS -->
  <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>
              </sequence>
            </complexType>
          </element>
          <element name="SemanticTime" type="mpeg7:SemanticTimeType" minOccurs="0"/>
          <element name="SemanticPlace" type="mpeg7:SemanticPlaceType" minOccurs="0"/>
```


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```
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################### -->
<!--  Definition of SemanticPlace DS (12.3.10)  -->
<!-- ########################################### -->
<!-- Definition of SemanticPlace DS -->
<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>
<!-- ########################################### -->
<!--  Definition of SemanticTime DS (12.3.11)  -->
<!-- ########################################### -->
<!-- Definition of SemanticTime DS -->
<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>
<!-- ################################################ -->
<!--  Definition of AbstractionLevel datatype (12.4.2)  -->
<!-- ################################################ -->
<!-- Definition of AbstractionLevel DS -->
<complexType name="AbstractionLevelType">
  <attribute name="dimension" type="nonNegativeInteger" use="required"/>
</complexType>
<!-- ######################################## -->
<!--  Definition of Extent datatype (12.4.3)  -->
<!-- ######################################## -->
<!-- Definition of Extent datatype -->
<complexType name="ExtentType">
  <attribute name="measurementType" type="string" use="required"/>
  <attribute name="unit" type="string" use="required"/>
```

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```
    <attribute name="value" type="string" use="required"/>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of Position datatype (12.4.4)  -->
  <!-- ######################################### -->
  <!-- Definition of Position datatype -->
  <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>
  <!-- ######################################### -->
  <!--  Definition of Summarization DS (13.2.2)  -->
  <!-- ######################################### -->
  <!-- Definition of Summarization DS -->
  <complexType name="SummarizationType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Summary" type="mpeg7:SummaryType" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################### -->
  <!--  Definition of Summary DS (13.2.3)  -->
  <!-- ################################### -->
  <!-- Definition of Summary DS -->
  <complexType name="SummaryType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Name" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="SourceID" type="mpeg7:UniqueIDType" minOccurs="0"/>
          <element name="SourceLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
          <element name="SourceInformation" type="mpeg7:ReferenceType" minOccurs="0"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################### -->
  <!--  Definition of HierarchicalSummary DS (13.2.4)  -->
  <!-- ############################################### -->
  <!-- Definition of HierarchicalSummary DS -->
  <complexType name="HierarchicalSummaryType">
    <complexContent>
      <extension base="mpeg7:SummaryType">
        <sequence>
          <element name="SummaryThemeList" type="mpeg7:SummaryThemeListType"
minOccurs="0"/>
          <choice maxOccurs="unbounded">
            <element name="SummarySegmentGroup" type="mpeg7:SummarySegmentGroupType"/>
            <element name="SummarySegmentGroupRef" type="mpeg7:ReferenceType"/>
          </choice>
        </sequence>
        <attribute name="components" use="optional">
```


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```
        <simpleType>
          <list>
            <simpleType>
              <restriction base="NMTOKEN">
                <enumeration value="keyAudioVisualClips"/>
                <enumeration value="keyVideoClips"/>
                <enumeration value="keyAudioClips"/>
                <enumeration value="keyFrames"/>
                <enumeration value="keySounds"/>
                <enumeration value="keyThemes"/>
              </restriction>
            </simpleType>
          </list>
        </simpleType>
      </attribute>
      <attribute name="hierarchy" use="required">
        <simpleType>
          <restriction base="NMTOKEN">
            <enumeration value="independent"/>
            <enumeration value="dependent"/>
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ############################################ -->
<!--  Definition of SummaryThemeList DS (13.2.5)  -->
<!-- ############################################ -->
<!-- Definition of SummaryThemeList DS -->
<complexType name="SummaryThemeListType">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
        <element name="SummaryTheme" maxOccurs="unbounded">
          <complexType>
            <simpleContent>
              <extension base="mpeg7:TextualType">
                <attribute name="id" type="ID" use="required"/>
                <attribute name="parentID" type="IDREF" use="optional"/>
              </extension>
            </simpleContent>
          </complexType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of SummarySegmentGroup DS (13.2.6)   -->
<!-- ################################################ -->
<!-- Definition of SummarySegmentGroup DS -->
<complexType name="SummarySegmentGroupType">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
        <element name="Name" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
        <element name="Caption" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
```

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```
          <choice maxOccurs="unbounded">
            <element name="SummarySegment" type="mpeg7:SummarySegmentType"/>
            <element name="SummarySegmentRef" type="mpeg7:ReferenceType"/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="SummarySegmentGroup" type="mpeg7:SummarySegmentGroupType"/>
            <element name="SummarySegmentGroupRef" type="mpeg7:ReferenceType"/>
          </choice>
        </sequence>
        <attribute name="level" type="integer" use="optional"/>
        <attribute name="duration" type="mpeg7:mediaDurationType" use="optional"/>
        <attribute name="numOfKeyFrames" type="nonNegativeInteger" use="optional"/>
        <attribute name="fidelity" type="mpeg7:zeroToOneType" use="optional"/>
        <attribute name="themeIDs" type="IDREFS" use="optional"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of SummarySegment DS (13.2.7)  -->
  <!-- ######################################### -->
  <!-- Definition of SummarySegment DS -->
  <complexType name="SummarySegmentType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Name" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="SourceID" type="mpeg7:UniqueIDType" minOccurs="0"/>
          <choice minOccurs="0">
            <element name="KeyAudioVisualClip" type="mpeg7:TemporalSegmentLocatorType"/>
            <sequence>
              <element name="KeyVideoClip" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
              <element name="KeyAudioClip" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
            </sequence>
          </choice>
          <element name="KeyFrame" type="mpeg7:ImageLocatorType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="KeySound" type="mpeg7:TemporalSegmentLocatorType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
        <attribute name="themeIDs" type="IDREFS" use="optional"/>
        <attribute name="order" type="positiveInteger" use="optional"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of SequentialSummary DS (13.2.8)  -->
  <!-- ############################################ -->
  <!-- Definition of SequentialSummary DS -->
  <complexType name="SequentialSummaryType">
    <complexContent>
      <extension base="mpeg7:SummaryType">
        <sequence>
          <choice>
            <element name="AudioVisualSummaryLocator"
type="mpeg7:TemporalSegmentLocatorType" minOccurs="0"/>
            <sequence>
```


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```
              <element name="VideoSummaryLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
              <element name="AudioSummaryLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
            </sequence>
          </choice>
          <element name="VisualSummaryComponent" type="mpeg7:VisualSummaryComponentType"
minOccurs="0" maxOccurs="unbounded"/>
          <element name="AudioSummaryComponent" type="mpeg7:AudioSummaryComponentType"
minOccurs="0" maxOccurs="unbounded"/>
          <element name="TextualSummaryComponent" type="mpeg7:TextualSummaryComponentType"
minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
        <attribute name="components" use="optional">
          <simpleType>
            <list>
              <simpleType>
                <restriction base="NMTOKEN">
                  <enumeration value="visual"/>
                  <enumeration value="audio"/>
                  <enumeration value="textual"/>
                </restriction>
              </simpleType>
            </list>
          </simpleType>
        </attribute>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of VisualSummaryComponent D (13.2.9)  -->
  <!-- ################################################ -->
  <!-- Definition of VisualSummaryComponent D -->
  <complexType name="VisualSummaryComponentType">
    <complexContent>
      <extension base="mpeg7:DType">
        <sequence>
          <element name="VideoSourceID" type="mpeg7:UniqueIDType" minOccurs="0"/>
          <element name="VideoSourceLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
          <element name="ComponentSourceTime" type="mpeg7:MediaTimeType" minOccurs="0"/>
          <element name="ImageLocator" type="mpeg7:ImageLocatorType" minOccurs="0"/>
          <element name="SyncTime" type="mpeg7:MediaTimeType" minOccurs="0"/>
          <element name="FrameActivity" type="mpeg7:zeroToOneType" minOccurs="0"/>
          <element name="Region" type="mpeg7:RegionLocatorType" minOccurs="0"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of AudioSummaryComponent D (13.2.10)  -->
  <!-- ################################################ -->
  <!-- Definition of AudioSummaryComponent D -->
  <complexType name="AudioSummaryComponentType">
    <complexContent>
      <extension base="mpeg7:DType">
        <sequence>
          <element name="Title" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="AudioSourceID" type="mpeg7:UniqueIDType" minOccurs="0"/>
```

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```
          <element name="AudioSourceLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
          <element name="ComponentSourceTime" type="mpeg7:MediaTimeType" minOccurs="0"/>
          <element name="SoundLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
          <element name="SyncTime" type="mpeg7:MediaTimeType" minOccurs="0"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################## -->
  <!--  Definition of TextualSummaryComponent D (13.2.11)  -->
  <!-- ################################################## -->
  <!-- Definition of TextualSummaryComponent D -->
  <complexType name="TextualSummaryComponentType">
    <complexContent>
      <extension base="mpeg7:DType">
        <sequence>
          <element name="AudioVisualSourceID" type="mpeg7:UniqueIDType" minOccurs="0"/>
          <element name="AudioVisualSourceLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
          <element name="ComponentSourceTime" type="mpeg7:MediaTimeType" minOccurs="0"/>
          <element name="FreeText" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="SyncTime" type="mpeg7:MediaTimeType" minOccurs="0"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of Partition Datatype (13.3.2)  -->
  <!-- ######################################### -->
  <!-- Definition of Partition datatype -->
  <complexType name="PartitionType">
    <sequence>
      <element name="Origin" type="mpeg7:SignalPlaneOriginType" minOccurs="0"/>
      <element name="Start" type="mpeg7:SignalPlaneType"/>
      <choice>
        <element name="End" type="mpeg7:SignalPlaneType"/>
        <element name="Extent" type="mpeg7:SignalPlaneType"/>
      </choice>
    </sequence>
    <attribute name="dim" use="optional">
      <simpleType>
        <restriction base="positiveInteger">
          <maxInclusive value="4"/>
        </restriction>
      </simpleType>
    </attribute>
  </complexType>
  <!-- Definition of SignalPlane datatype -->
  <complexType name="SignalPlaneType" abstract="true">
    <sequence>
      <element name="Origin" type="mpeg7:SignalPlaneOriginType" minOccurs="0"/>
    </sequence>
    <attribute name="dim" use="optional">
      <simpleType>
        <restriction base="positiveInteger">
          <maxInclusive value="4"/>
        </restriction>
```


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```
    </simpleType>
  </attribute>
</complexType>
<!-- Definition of SignalPlaneFraction datatype -->
<complexType name="SignalPlaneFractionType">
  <complexContent>
    <extension base="mpeg7:SignalPlaneType">
      <attribute name="x" type="double" use="optional"/>
      <attribute name="y" type="double" use="optional"/>
      <attribute name="z" type="double" use="optional"/>
      <attribute name="t" type="double" use="optional"/>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of SignalPlaneSample datatype -->
<complexType name="SignalPlaneSampleType">
  <complexContent>
    <extension base="mpeg7:SignalPlaneType">
      <attribute name="x" type="integer" use="optional"/>
      <attribute name="y" type="integer" use="optional"/>
      <attribute name="z" type="integer" use="optional"/>
      <attribute name="t" type="integer" use="optional"/>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of SignalPlaneOrigin datatype -->
<complexType name="SignalPlaneOriginType">
  <attribute name="xOrigin" use="optional" default="left">
    <simpleType>
      <restriction base="NMTOKEN">
        <enumeration value="left"/>
        <enumeration value="right"/>
      </restriction>
    </simpleType>
  </attribute>
  <attribute name="yOrigin" use="optional" default="bottom">
    <simpleType>
      <restriction base="NMTOKEN">
        <enumeration value="top"/>
        <enumeration value="bottom"/>
      </restriction>
    </simpleType>
  </attribute>
  <attribute name="zOrigin" use="optional" default="back">
    <simpleType>
      <restriction base="NMTOKEN">
        <enumeration value="back"/>
        <enumeration value="front"/>
      </restriction>
    </simpleType>
  </attribute>
  <attribute name="timeOrigin" use="optional" default="past">
    <simpleType>
      <restriction base="NMTOKEN">
        <enumeration value="past"/>
        <enumeration value="future"/>
      </restriction>
    </simpleType>
  </attribute>
</complexType>
```

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```
<!-- ######################################### -->
<!--  Definition of Filter datatypes (13.3.3)  -->
<!-- ######################################### -->
<!-- Definition of Filter datatype -->
<complexType name="FilterType" abstract="true">
  <attribute name="dim" type="positiveInteger" use="optional"/>
</complexType>
<!-- Definition of Filter1D datatype -->
<complexType name="Filter1DType">
  <complexContent>
    <extension base="mpeg7:FilterType">
      <sequence>
        <element name="Terms" type="mpeg7:DoubleMatrixType"/>
      </sequence>
      <attribute name="phase" type="integer" use="optional" default="0"/>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of Filter2D datatype -->
<complexType name="Filter2DType">
  <complexContent>
    <extension base="mpeg7:FilterType">
      <sequence>
        <element name="Terms" type="mpeg7:DoubleMatrixType"/>
      </sequence>
      <attribute name="xPhase" type="integer" use="optional" default="0"/>
      <attribute name="yPhase" type="integer" use="optional" default="0"/>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of FilterSeparable datatype -->
<complexType name="FilterSeparableType">
  <complexContent>
    <extension base="mpeg7:FilterType">
      <sequence>
        <element name="Filter1D" type="mpeg7:Filter1DType" maxOccurs="unbounded"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ######################################### -->
<!--  Definition of Filtering datatype (13.3.4)  -->
<!-- ######################################### -->
<!-- Definition of Filtering datatype -->
<complexType name="FilteringType">
  <sequence>
    <element name="Filter" type="mpeg7:FilterType"/>
    <element name="PadSize" type="mpeg7:SignalPlaneSampleType" minOccurs="0"/>
    <element name="Shift" type="mpeg7:SignalPlaneSampleType" minOccurs="0"/>
    <element name="CropStart" type="mpeg7:SignalPlaneSampleType" minOccurs="0"/>
    <element name="CropEnd" type="mpeg7:SignalPlaneSampleType" minOccurs="0"/>
  </sequence>
  <attribute name="xPad" type="mpeg7:paddingType" use="optional" default="periodic"/>
  <attribute name="yPad" type="mpeg7:paddingType" use="optional" default="periodic"/>
  <attribute name="zPad" type="mpeg7:paddingType" use="optional" default="periodic"/>
  <attribute name="tPad" type="mpeg7:paddingType" use="optional" default="periodic"/>
</complexType>
<!-- Definition of padding datatype -->
<simpleType name="paddingType">
  <union>
```


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```
      <simpleType>
        <restriction base="NMTOKEN">
          <enumeration value="zero"/>
          <enumeration value="replication"/>
          <enumeration value="periodic"/>
          <enumeration value="symmetric"/>
          <enumeration value="antiSymmetric"/>
        </restriction>
      </simpleType>
      <simpleType>
        <restriction base="mpeg7:termAliasReferenceType"/>
      </simpleType>
      <simpleType>
        <restriction base="mpeg7:termURIReferenceType"/>
      </simpleType>
    </union>
  </simpleType>
  <!-- ################################## -->
  <!--  Definition of View DS (13.3.5)  -->
  <!-- ################################## -->
  <!-- Definition of View DS -->
  <complexType name="ViewType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Target" type="mpeg7:SignalType"/>
          <element name="Source" type="mpeg7:SignalType" minOccurs="0"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ###################################### -->
  <!--  Definition of SpaceView DS (13.3.6)  -->
  <!-- ###################################### -->
  <!-- Definition of SpaceView DS -->
  <complexType name="SpaceViewType">
    <complexContent>
      <extension base="mpeg7:ViewType">
        <choice>
          <element name="SpacePartition" type="mpeg7:PartitionType"/>
          <element name="SpaceRegion" type="mpeg7:RegionLocatorType"/>
          <element name="SpatioTemporalRegion" type="mpeg7:SpatioTemporalLocatorType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of FrequencyView DS (13.3.7)  -->
  <!-- ######################################### -->
  <!-- Definition of FrequencyView DS -->
  <complexType name="FrequencyViewType">
    <complexContent>
      <extension base="mpeg7:ViewType">
        <sequence>
          <element name="FrequencyPartition" type="mpeg7:PartitionType"/>
          <element name="Filtering" type="mpeg7:FilteringType" minOccurs="0"/>
          <element name="DownSamplingFactor" type="mpeg7:SignalPlaneSampleType"
minOccurs="0"/>
        </sequence>
      </extension>
```

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```
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of SpaceFrequencyView DS (13.3.8)  -->
  <!-- ################################################ -->
  <!-- Definition of SpaceFrequencyView DS -->
  <complexType name="SpaceFrequencyViewType">
    <complexContent>
      <extension base="mpeg7:ViewType">
        <sequence>
          <choice>
            <element name="SpacePartition" type="mpeg7:PartitionType"/>
            <element name="SpaceRegion" type="mpeg7:RegionLocatorType"/>
          </choice>
          <element name="FrequencyPartition" type="mpeg7:PartitionType"/>
          <element name="Filtering" type="mpeg7:FilteringType" minOccurs="0"/>
          <element name="DownSamplingFactor" type="mpeg7:SignalPlaneSampleType"
minOccurs="0"/>
        </sequence>
        <attribute name="order" use="optional" default="spaceFrequency">
          <simpleType>
            <restriction base="NMTOKEN">
              <enumeration value="spaceFrequency"/>
              <enumeration value="frequencySpace"/>
              <enumeration value="commutative"/>
              <enumeration value="partitionable"/>
              <enumeration value="mixed"/>
            </restriction>
          </simpleType>
        </attribute>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!-- Definition of ResolutionView DS (13.3.9)         -->
  <!-- ################################################ -->
  <!-- Definition of ResolutionView DS -->
  <complexType name="ResolutionViewType">
    <complexContent>
      <extension base="mpeg7:ViewType">
        <sequence>
          <element name="FrequencyPartition" type="mpeg7:PartitionType" minOccurs="0"/>
          <element name="Filtering" type="mpeg7:FilteringType" minOccurs="0"/>
          <element name="DownSamplingFactor" type="mpeg7:SignalPlaneSampleType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of SpaceResolutionView DS (13.3.10)  -->
  <!-- ################################################ -->
  <!-- Definition of SpaceResolutionView DS -->
  <complexType name="SpaceResolutionViewType">
    <complexContent>
      <extension base="mpeg7:ViewType">
        <sequence>
          <choice>
            <element name="SpacePartition" type="mpeg7:PartitionType"/>
            <element name="SpaceRegion" type="mpeg7:RegionLocatorType"/>
          </choice>
```


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```
        <element name="FrequencyPartition" type="mpeg7:PartitionType" minOccurs="0"/>
        <element name="Filtering" type="mpeg7:FilteringType" minOccurs="0"/>
        <element name="DownSamplingFactor" type="mpeg7:SignalPlaneSampleType"/>
      </sequence>
      <attribute name="order" use="optional" default="spaceFrequency">
        <simpleType>
          <restriction base="NMTOKEN">
            <enumeration value="spaceFrequency"/>
            <enumeration value="frequencySpace"/>
            <enumeration value="commutative"/>
            <enumeration value="partitionable"/>
            <enumeration value="mixed"/>
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of ViewDecomposition DS (13.3.11)  -->
<!-- ################################################ -->
<!-- Definition of ViewDecomposition DS -->
<complexType name="ViewDecompositionType" abstract="true">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
        <element name="Source" type="mpeg7:SignalType" minOccurs="0"/>
      </sequence>
      <attribute name="complete" type="boolean" use="optional"/>
      <attribute name="nonRedundant" type="boolean" use="optional"/>
    </extension>
  </complexContent>
</complexType>
<!-- ################################### -->
<!--  Definition of ViewSet DS (13.3.12)  -->
<!-- ################################### -->
<!-- Definition of ViewSet DS -->
<complexType name="ViewSetType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <choice maxOccurs="unbounded">
        <element name="View" type="mpeg7:ViewType"/>
        <element name="ViewRef" type="mpeg7:ReferenceType"/>
      </choice>
      <attribute name="setProperty" use="optional">
        <simpleType>
          <union>
            <simpleType>
              <restriction base="NMTOKEN">
                <enumeration value="space"/>
                <enumeration value="frequency"/>
                <enumeration value="subband"/>
                <enumeration value="uniformSubband"/>
                <enumeration value="wavelet"/>
              </restriction>
            </simpleType>
            <simpleType>
              <restriction base="mpeg7:termAliasReferenceType"/>
            </simpleType>
            <simpleType>
```

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```
              <restriction base="mpeg7:termURIReferenceType"/>
            </simpleType>
          </union>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ##################################### -->
<!--  Definition of SpaceTree DS (13.3.13)  -->
<!-- ##################################### -->
<!-- Definition of SpaceTree DS -->
<complexType name="SpaceTreeType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <sequence>
        <choice minOccurs="0">
          <element name="View" type="mpeg7:SpaceViewType"/>
          <element name="ViewRef" type="mpeg7:ReferenceType"/>
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="Child" type="mpeg7:SpaceTreeType"/>
          <element name="ChildRef" type="mpeg7:ReferenceType"/>
        </choice>
      </sequence>
      <attribute name="branching" type="nonNegativeInteger" use="required"/>
    </extension>
  </complexContent>
</complexType>
<!-- ######################################### -->
<!--  Definition of FrequencyTree DS (13.3.14)  -->
<!-- ######################################### -->
<!-- Definition of FrequencyTree DS -->
<complexType name="FrequencyTreeType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <sequence>
        <choice minOccurs="0">
          <element name="View" type="mpeg7:FrequencyViewType"/>
          <element name="ViewRef" type="mpeg7:ReferenceType"/>
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="Child" type="mpeg7:FrequencyTreeType"/>
          <element name="ChildRef" type="mpeg7:ReferenceType"/>
        </choice>
      </sequence>
      <attribute name="branching" type="nonNegativeInteger" use="required"/>
    </extension>
  </complexContent>
</complexType>
<!-- ############################################### -->
<!--  Definition of SpaceFrequencyGraph DS (13.3.15)  -->
<!-- ############################################### -->
<!-- Definition of SpaceFrequencyGraph DS -->
<complexType name="SpaceFrequencyGraphType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <sequence>
        <choice minOccurs="0">
          <element name="View" type="mpeg7:SpaceFrequencyViewType"/>
```

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```
          <element name="ViewRef" type="mpeg7:ReferenceType"/>
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="SpaceChild" type="mpeg7:SpaceFrequencyGraphType"/>
          <element name="SpaceChildRef" type="mpeg7:ReferenceType"/>
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="FrequencyChild" type="mpeg7:SpaceFrequencyGraphType"/>
          <element name="FrequencyChildRef" type="mpeg7:ReferenceType"/>
        </choice>
      </sequence>
      <attribute name="branching" type="nonNegativeInteger" use="required"/>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################### -->
<!--  Definition of VideoViewGraph DS (13.3.16)  -->
<!-- ########################################### -->
<!-- Definition of VideoViewGraph DS -->
<complexType name="VideoViewGraphType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <sequence>
        <choice minOccurs="0">
          <element name="View" type="mpeg7:FrequencyViewType"/>
          <element name="ViewRef" type="mpeg7:ReferenceType"/>
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="SpaceFrequencyChild" type="mpeg7:VideoViewGraphType"/>
          <element name="SpaceFrequencyChildRef" type="mpeg7:ReferenceType"/>
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="TimeFrequencyChild" type="mpeg7:VideoViewGraphType"/>
          <element name="TimeFrequencyChildRef" type="mpeg7:ReferenceType"/>
        </choice>
      </sequence>
      <attribute name="branching" type="nonNegativeInteger" use="required"/>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################## -->
<!--  Definition of MultiResolutionPyramid DS (13.3.17)  -->
<!-- ################################################## -->
<!-- Definition of MultiResolutionPyramid DS -->
<complexType name="MultiResolutionPyramidType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <sequence>
        <choice minOccurs="0">
          <element name="View" type="mpeg7:ResolutionViewType"/>
          <element name="ViewRef" type="mpeg7:ReferenceType"/>
        </choice>
        <choice minOccurs="0">
          <element name="Child" type="mpeg7:MultiResolutionPyramidType"/>
          <element name="ChildRef" type="mpeg7:ReferenceType"/>
        </choice>
      </sequence>
      <attribute name="level" type="nonNegativeInteger" use="optional"/>
    </extension>
  </complexContent>
```

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```
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of VariationSet DS (13.4.2)  -->
  <!-- ######################################## -->
  <!-- Definition of VariationSet DS -->
  <complexType name="VariationSetType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Source" type="mpeg7:MultimediaContentType"/>
          <element name="Variation" type="mpeg7:VariationType" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of Variation content entity -->
  <complexType name="VariationType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Source" type="mpeg7:MultimediaContentType" minOccurs="0"/>
          <element name="Content" type="mpeg7:MultimediaContentType"/>
          <element name="VariationRelationship" minOccurs="0" maxOccurs="unbounded">
            <simpleType>
              <union>
                <simpleType>
                  <restriction base="NMTOKEN">
                    <enumeration value="summarization"/>
                    <enumeration value="abstraction"/>
                    <enumeration value="extraction"/>
                    <enumeration value="modalityTranslation"/>
                    <enumeration value="languageTranslation"/>
                    <enumeration value="colorReduction"/>
                    <enumeration value="spatialReduction"/>
                    <enumeration value="temporalReduction"/>
                    <enumeration value="samplingReduction"/>
                    <enumeration value="rateReduction"/>
                    <enumeration value="qualityReduction"/>
                    <enumeration value="compression"/>
                    <enumeration value="scaling"/>
                    <enumeration value="revision"/>
                    <enumeration value="substitution"/>
                    <enumeration value="replay"/>
                    <enumeration value="alternativeView"/>
                    <enumeration value="alternativeMediaProfile"/>
                  </restriction>
                </simpleType>
                <simpleType>
                  <restriction base="mpeg7:termAliasReferenceType"/>
                </simpleType>
                <simpleType>
                  <restriction base="mpeg7:termURIReferenceType"/>
                </simpleType>
              </union>
            </simpleType>
          </element>
        </sequence>
        <attribute name="fidelity" type="mpeg7:zeroToOneType" use="optional"/>
        <attribute name="priority" type="nonNegativeInteger" use="optional"/>
        <attribute name="timeOffset" type="mpeg7:mediaDurationType" use="optional"/>
```

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```
        <attribute name="timeScale" type="mpeg7:zeroToOneType" use="optional"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of Collection DS (14.2.1)  -->
  <!-- ######################################## -->
  <!-- Definition of Collection DS -->
  <complexType name="CollectionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <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>
  <!-- ############################################ -->
  <!--  Definition of ContentCollection DS (14.2.2)  -->
  <!-- ############################################ -->
  <!-- Definition of ContentCollection DS -->
  <complexType name="ContentCollectionType">
    <complexContent>
      <extension base="mpeg7:CollectionType">
        <sequence>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="VisualFeature" type="mpeg7:VisualDType"/>
            <element name="AudioFeature" type="mpeg7:AudioDType"/>
          </choice>
          <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>
  <!-- ############################################ -->
  <!--  Definition of SegmentCollection DS (14.2.3)  -->
  <!-- ############################################ -->
  <!-- Definition of SegmentCollection DS -->
  <complexType name="SegmentCollectionType">
    <complexContent>
      <extension base="mpeg7:CollectionType">
        <sequence>
          <choice minOccurs="0" maxOccurs="unbounded">
```

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```
            <element name="Segment" type="mpeg7:SegmentType"/>
            <element name="SegmentRef" type="mpeg7:ReferenceType"/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="SegmentCollection" type="mpeg7:SegmentCollectionType"/>
            <element name="SegmentCollectionRef" type="mpeg7:ReferenceType"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of DescriptorCollection DS (14.2.4)  -->
  <!-- ################################################ -->
  <!-- Definition of DescriptorCollection DS -->
  <complexType name="DescriptorCollectionType">
    <complexContent>
      <extension base="mpeg7:CollectionType">
        <sequence>
          <element name="Descriptor" type="mpeg7:DType" minOccurs="0"
maxOccurs="unbounded"/>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="DescriptorCollection" type="mpeg7:DescriptorCollectionType"/>
            <element name="DescriptorCollectionRef" type="mpeg7:ReferenceType"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of ConceptCollection DS (14.2.5)  -->
  <!-- ############################################ -->
  <!-- Definition of ConceptCollection DS -->
  <complexType name="ConceptCollectionType">
    <complexContent>
      <extension base="mpeg7:CollectionType">
        <sequence>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="Concept" type="mpeg7:SemanticBaseType"/>
            <element name="ConceptRef" type="mpeg7:ReferenceType"/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="ConceptCollection" type="mpeg7:ConceptCollectionType"/>
            <element name="ConceptCollectionRef" type="mpeg7:ReferenceType"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################### -->
  <!--  Definition of MixedCollection DS (14.2.6)  -->
  <!-- ########################################### -->
  <!-- Definition of MixedCollection DS -->
  <complexType name="MixedCollectionType">
    <complexContent>
      <extension base="mpeg7:CollectionType">
        <sequence>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="Content" type="mpeg7:MultimediaContentType"/>
            <element name="ContentRef" type="mpeg7:ReferenceType"/>
```


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```
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="Segment" type="mpeg7:SegmentType"/>
            <element name="SegmentRef" type="mpeg7:ReferenceType"/>
          </choice>
          <element name="Descriptor" type="mpeg7:DType" minOccurs="0"
maxOccurs="unbounded"/>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="Concept" type="mpeg7:SemanticBaseType"/>
            <element name="ConceptRef" type="mpeg7:ReferenceType"/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="MixedCollection" type="mpeg7:MixedCollectionType"/>
            <element name="MixedCollectionRef" type="mpeg7:ReferenceType"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of StructuredCollection DS (14.2.7)  -->
  <!-- ################################################ -->
  <!-- Definition of StructuredCollection DS -->
  <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="CollectionModel" type="mpeg7:CollectionModelType"/>
            <element name="CollectionModelRef" type="mpeg7:ReferenceType"/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="ClusterModel" type="mpeg7:ClusterModelType"/>
            <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>
  <!-- ################################## -->
  <!--  Definition of Model DS (14.3.2)  -->
  <!-- ################################## -->
  <!-- Definition of Model DS -->
  <complexType name="ModelType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <attribute name="confidence" type="mpeg7:zeroToOneType" use="optional"/>
        <attribute name="reliability" type="mpeg7:zeroToOneType" use="optional"/>
      </extension>
    </complexContent>
  </complexType>
```

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```
<!-- ########################################### -->
<!--  Definition of ProbabilityModel DS (14.4.2) -->
<!-- ########################################### -->
<!-- Definition of ProbabilityModel DS -->
<complexType name="ProbabilityModelType" abstract="true">
  <complexContent>
    <extension base="mpeg7:ModelType"/>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of ProbabilityDistribution DS (14.4.3)  -->
<!-- ################################################ -->
<!-- Definition of ProbabilityDistribution DS -->
<complexType name="ProbabilityDistributionType">
  <complexContent>
    <extension base="mpeg7:ProbabilityModelType">
      <sequence>
        <element name="Mean" type="mpeg7:DoubleMatrixType" minOccurs="0"/>
        <element name="Variance" type="mpeg7:DoubleMatrixType" minOccurs="0"/>
        <element name="Min" type="mpeg7:DoubleMatrixType" minOccurs="0"/>
        <element name="Max" type="mpeg7:DoubleMatrixType" minOccurs="0"/>
        <element name="Mode" type="mpeg7:DoubleMatrixType" minOccurs="0"/>
        <element name="Median" type="mpeg7:DoubleMatrixType" minOccurs="0"/>
        <element name="Moment" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <sequence>
              <element name="Value">
                <complexType>
                  <simpleContent>
                    <extension base="mpeg7:DoubleMatrixType">
                      <attribute name="order" type="nonNegativeInteger" use="required"/>
                    </extension>
                  </simpleContent>
                </complexType>
              </element>
              <element name="Center" type="mpeg7:DoubleMatrixType" minOccurs="0"/>
            </sequence>
          </complexType>
        </element>
        <element name="Cumulant" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <sequence>
              <element name="Value">
                <complexType>
                  <simpleContent>
                    <extension base="mpeg7:DoubleMatrixType">
                      <attribute name="order" type="nonNegativeInteger" use="required"/>
                    </extension>
                  </simpleContent>
                </complexType>
              </element>
              <element name="Center" type="mpeg7:DoubleMatrixType" minOccurs="0"/>
            </sequence>
          </complexType>
        </element>
      </sequence>
      <attribute name="dim" type="nonNegativeInteger" default="1"/>
    </extension>
  </complexContent>
</complexType>
```


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```
<!-- ################################################ -->
<!--  Definition of Discrete distribution DSs (14.4.4)  -->
<!-- ################################################ -->
<!-- Definition of DiscreteDistribution DS -->
<complexType name="DiscreteDistributionType" abstract="true">
  <complexContent>
    <extension base="mpeg7:ProbabilityDistributionType"/>
  </complexContent>
</complexType>
<!-- Definition of HistogramProbability DS -->
<complexType name="HistogramProbabilityType">
  <complexContent>
    <extension base="mpeg7:DiscreteDistributionType">
      <sequence>
        <element name="Distribution" type="mpeg7:ProbabilityMatrixType" minOccurs="0"/>
      </sequence>
      <attribute name="momentNormalized" type="mpeg7:nonNegativeReal" use="optional"/>
      <attribute name="count" type="nonNegativeInteger" use="optional"/>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of BinomialDistribution DS -->
<complexType name="BinomialDistributionType">
  <complexContent>
    <extension base="mpeg7:DiscreteDistributionType">
      <sequence>
        <element name="SuccessProbability" type="mpeg7:ProbabilityMatrixType"/>
        <element name="NumOfTrials" type="mpeg7:IntegerMatrixType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of HyperGeometricDistribution DS -->
<complexType name="HyperGeometricDistributionType">
  <complexContent>
    <extension base="mpeg7:DiscreteDistributionType">
      <sequence>
        <element name="NumOfSuccesses" type="mpeg7:IntegerMatrixType"/>
        <element name="NumOfTrials" type="mpeg7:IntegerMatrixType"/>
        <element name="PopulationSize" type="mpeg7:IntegerMatrixType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of PoissonDistribution DS -->
<complexType name="PoissonDistributionType">
  <complexContent>
    <extension base="mpeg7:DiscreteDistributionType">
      <sequence>
        <element name="Lambda" type="mpeg7:DoubleMatrixType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of GeometricDistribution DS -->
<complexType name="GeometricDistributionType">
  <complexContent>
    <extension base="mpeg7:DiscreteDistributionType">
      <sequence>
        <element name="SuccessProbability" type="mpeg7:DoubleMatrixType"/>
```

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```
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of DiscreteUniformDistribution DS -->
<complexType name="DiscreteUniformDistributionType">
  <complexContent>
    <extension base="mpeg7:DiscreteDistributionType">
      <sequence>
        <element name="Range" type="mpeg7:DoubleMatrixType"/>
        <element name="Scale" type="mpeg7:DoubleMatrixType" minOccurs="0"/>
        <element name="Shift" type="mpeg7:DoubleMatrixType" minOccurs="0"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################## -->
<!--  Definition of Continuous distribution DSs (14.4.5)  -->
<!-- ################################################## -->
<!-- Definition of ContinuousDistribution DS -->
<complexType name="ContinuousDistributionType" abstract="true">
  <complexContent>
    <extension base="mpeg7:ProbabilityDistributionType"/>
  </complexContent>
</complexType>
<!-- Definition of GaussianDistribution DS -->
<complexType name="GaussianDistributionType">
  <complexContent>
    <extension base="mpeg7:ContinuousDistributionType">
      <sequence>
        <element name="Determinant" type="double" minOccurs="0"/>
        <element name="CovarianceInverse" type="mpeg7:DoubleMatrixType" minOccurs="0"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of GeneralizedGaussianDistribution DS -->
<complexType name="GeneralizedGaussianDistributionType">
  <complexContent>
    <extension base="mpeg7:GaussianDistributionType">
      <sequence>
        <element name="Shape" type="mpeg7:DoubleMatrixType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of ExponentialDistribution DS -->
<complexType name="ExponentialDistributionType">
  <complexContent>
    <extension base="mpeg7:ContinuousDistributionType">
      <sequence>
        <element name="Theta" type="mpeg7:DoubleMatrixType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of GammaDistribution DS -->
<complexType name="GammaDistributionType">
  <complexContent>
    <extension base="mpeg7:ContinuousDistributionType">
```


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```
      <sequence>
        <element name="Theta" type="mpeg7:DoubleMatrixType"/>
        <element name="Shape" type="mpeg7:DoubleMatrixType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of ContinuousUniformDistribution DS -->
<complexType name="ContinuousUniformDistributionType">
  <complexContent>
    <extension base="mpeg7:ContinuousDistributionType">
      <sequence>
        <element name="MaxRange" type="mpeg7:DoubleMatrixType"/>
        <element name="MinRange" type="mpeg7:DoubleMatrixType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of LognormalDistribution DS -->
<complexType name="LognormalDistributionType">
  <complexContent>
    <extension base="mpeg7:ContinuousDistributionType">
      <sequence>
        <element name="NormalMean" type="mpeg7:DoubleMatrixType"/>
        <element name="NormalVariance" type="mpeg7:DoubleMatrixType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of GaussianMixtureModel DS -->
<complexType name="GaussianMixtureModelType">
  <complexContent>
    <extension base="mpeg7:ContinuousDistributionType">
      <sequence maxOccurs="unbounded">
        <element name="Weight" type="mpeg7:nonNegativeReal"/>
        <element name="GaussianDistribution" type="mpeg7:GaussianDistributionType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of FiniteStateModel DS (14.4.6)  -->
<!-- ################################################ -->
<!-- Definition of FiniteStateModel DS -->
<complexType name="FiniteStateModelType" abstract="true">
  <complexContent>
    <extension base="mpeg7:ProbabilityModelType">
      <attribute name="numOfStates" type="nonNegativeInteger" use="required"/>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of StateTransitionModel DS -->
<complexType name="StateTransitionModelType">
  <complexContent>
    <extension base="mpeg7:FiniteStateModelType">
      <sequence>
        <element name="Initial" type="mpeg7:ProbabilityMatrixType" minOccurs="0"/>
        <element name="Transitions" type="mpeg7:ProbabilityMatrixType"/>
        <element name="State" type="mpeg7:ModelStateType" maxOccurs="unbounded"/>
      </sequence>
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```
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of DiscreteHiddenMarkovModel DS -->
  <complexType name="DiscreteHiddenMarkovModelType">
    <complexContent>
      <extension base="mpeg7:StateTransitionModelType">
        <sequence maxOccurs="unbounded">
          <element name="NumOfObservationsPerState" type="nonNegativeInteger"/>
          <element name="Observation" type="mpeg7:TextualType" maxOccurs="unbounded"/>
          <element name="ObservationDistribution" type="mpeg7:DiscreteDistributionType"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ContinuousHiddenMarkovModel DS -->
  <complexType name="ContinuousHiddenMarkovModelType">
    <complexContent>
      <extension base="mpeg7:StateTransitionModelType">
        <sequence>
          <element name="DescriptorModel" type="mpeg7:DescriptorModelType"
maxOccurs="unbounded"/>
          <element name="ObservationDistribution" type="mpeg7:ContinuousDistributionType"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of AnalyticModel DS  (14.5.2)  -->
  <!-- ######################################## -->
  <!-- Definition of AnalyticModel DS -->
  <complexType name="AnalyticModelType" abstract="true">
    <complexContent>
      <extension base="mpeg7:ModelType">
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="Label">
            <complexType>
              <complexContent>
                <extension base="mpeg7:TermUseType">
                  <attribute name="relevance" type="mpeg7:zeroToOneType" use="optional"/>
                  <attribute name="confidence" type="mpeg7:zeroToOneType" use="optional"/>
                  <attribute name="reliability" type="mpeg7:zeroToOneType"
use="optional"/>
                </extension>
              </complexContent>
            </complexType>
          </element>
          <element name="Semantics">
            <complexType>
              <complexContent>
                <extension base="mpeg7:SemanticBaseType">
                  <attribute name="relevance" type="mpeg7:zeroToOneType" use="optional"/>
                  <attribute name="confidence" type="mpeg7:zeroToOneType" use="optional"/>
                  <attribute name="reliability" type="mpeg7:zeroToOneType"
use="optional"/>
                </extension>
              </complexContent>
            </complexType>
          </element>
```


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```
      </choice>
      <attribute name="function" use="optional">
        <simpleType>
          <restriction base="string">
            <enumeration value="described"/>
            <enumeration value="describing"/>
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of ModelState DS -->
<complexType name="ModelStateType">
  <complexContent>
    <extension base="mpeg7:AnalyticModelType"/>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of CollectionModel DS (14.5.3)  -->
<!-- ################################################ -->
<!-- Definition of CollectionModel DS -->
<complexType name="CollectionModelType">
  <complexContent>
    <extension base="mpeg7:AnalyticModelType">
      <choice minOccurs="0" maxOccurs="unbounded">
        <element name="Collection" type="mpeg7:CollectionType"/>
        <element name="CollectionRef" type="mpeg7:ReferenceType"/>
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- ############################################## -->
<!--  Definition of DescriptorModel DS (14.5.4)  -->
<!-- ############################################## -->
<!-- Definition of DescriptorModel DS -->
<complexType name="DescriptorModelType">
  <complexContent>
    <extension base="mpeg7:ModelType">
      <sequence>
        <element name="Descriptor" type="mpeg7:DType"/>
        <element name="Field" type="mpeg7:xPathFieldType" maxOccurs="unbounded"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################## -->
<!--  Definition of ProbabilityModelClass DS (14.5.5)  -->
<!-- ################################################## -->
<!-- Definition of ProbabilityModelClass DS -->
<complexType name="ProbabilityModelClassType">
  <complexContent>
    <extension base="mpeg7:AnalyticModelType">
      <sequence maxOccurs="unbounded">
        <element name="DescriptorModel" type="mpeg7:DescriptorModelType"/>
        <element name="ProbabilityModel" type="mpeg7:ProbabilityModelType"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
```

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```
  <!-- ######################################## -->
  <!--  Definition of ClusterModel DS (14.6.2)  -->
  <!-- ######################################## -->
  <!-- Definition of ClusterModel DS -->
  <complexType name="ClusterModelType">
    <complexContent>
      <extension base="mpeg7:AnalyticModelType">
        <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="ClusterModel" type="mpeg7:ClusterModelType"/>
            <element name="ClusterModelRef" type="mpeg7:ReferenceType"/>
          </choice>
          <sequence minOccurs="0">
            <element name="DescriptorModel" type="mpeg7:DescriptorModelType"/>
            <element name="ProbabilityModel" type="mpeg7:ProbabilityModelType"/>
          </sequence>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of ClassificationModel DS (14.7.2)  -->
  <!-- ############################################ -->
  <!-- Definition of ClassificationModel DS -->
  <complexType name="ClassificationModelType" abstract="true">
    <complexContent>
      <extension base="mpeg7:ModelType">
        <attribute name="complete" type="boolean" use="optional" default="true"/>
        <attribute name="redundant" type="boolean" use="optional" default="false"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################################## -->
  <!--  Definition of ClusterClassificationModel DS (14.7.3)  -->
  <!-- ######################################################## -->
  <!-- Definition of ClusterClassificationModel DS -->
  <complexType name="ClusterClassificationModelType">
    <complexContent>
      <extension base="mpeg7:ClassificationModelType">
        <choice maxOccurs="unbounded">
          <element name="ClusterModel" type="mpeg7:ClusterModelType"/>
          <element name="ClusterModelRef" type="mpeg7:ReferenceType"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################################ -->
  <!--  Definition of ProbabilityClassificationModel DS (14.7.4)  -->
  <!-- ############################################################ -->
  <!-- Definition of ProbabilityClassificationModel DS -->
  <complexType name="ProbabilityClassificationModelType">
    <complexContent>
      <extension base="mpeg7:ClassificationModelType">
        <sequence>
          <element name="ProbabilityModelClass" type="mpeg7:ProbabilityModelClassType"
maxOccurs="unbounded"/>
```


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```
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ##################################### -->
  <!--  Basic User Preference tools (15.2.2)  -->
  <!-- ##################################### -->
  <!-- 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:termAliasReferenceType"/>
                        </simpleType>
                        <simpleType>
                          <restriction base="mpeg7:termURIReferenceType"/>
                        </simpleType>
                      </union>
                    </simpleType>
                  </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"/>
```

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```
      <maxInclusive value="100"/>
    </restriction>
  </simpleType>
  <!-- ########################################### -->
  <!--  Definition of UserPreferences DS (15.2.3)  -->
  <!-- ########################################### -->
  <!-- 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 (15.2.4)  -->
  <!-- ################################################ -->
  <!-- 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 (15.2.5)  -->
  <!-- ########################################################## -->
  <!-- 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>
        <attribute name="protected" type="mpeg7:userChoiceType" use="optional"
default="true"/>
        <attribute name="preferenceValue" type="mpeg7:preferenceValueType" use="optional"
default="10"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
```


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```
  <!--  Definition of CreationPreferences DS (15.2.6)  -->
  <!-- ################################################ -->
  <!-- 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>
```

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```
              <extension base="mpeg7:TermUseType">
                <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 ClassificationPreferences DS (15.2.7)  -->
 <!-- ################################################### -->
 <!-- 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>
```


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```
          </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>
              </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>
```

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```
          </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:termAliasReferenceType"/>
      </simpleType>
      <simpleType>
        <restriction base="mpeg7:termURIReferenceType"/>
      </simpleType>
    </union>
  </simpleType>
  <!-- ################################################ -->
  <!--  Definition of SourcePreferences DS (15.2.8)  -->
  <!-- ################################################ -->
  <!-- Definition of SourcePreferences DS -->
  <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">
```


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```
                  <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"/>
        <attribute name="preferenceValue" type="mpeg7:preferenceValueType" use="optional"
default="10"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of BrowsingPreferences DS (15.2.9)  -->
  <!-- ################################################ -->
  <!-- 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>
```

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```
                    <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 (15.2.10)  -->
  <!-- ################################################ -->
  <!-- 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"/>
          <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 -->
```


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```
  <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:termAliasReferenceType"/>
      </simpleType>
      <simpleType>
        <restriction base="mpeg7:termURIReferenceType"/>
      </simpleType>
    </union>
  </simpleType>
  <!-- ######################################### -->
  <!--  Definition of UsageHistory DS (15.3.2)  -->
  <!-- ######################################### -->
  <!-- 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"
maxOccurs="unbounded"/>
        </sequence>
        <attribute name="allowCollection" type="mpeg7:userChoiceType" use="optional"
default="false"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################### -->
  <!--  Definition of UserActionHistory DS (15.3.3)  -->
  <!-- ############################################### -->
  <!-- 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"
maxOccurs="unbounded"/>
        </sequence>
        <attribute name="protected" type="mpeg7:userChoiceType" use="optional"
default="true"/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
```

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```
  <!--  Definition of UserActionList DS (15.3.4) -->
  <!-- ######################################## -->
  <!-- Definition of UserActionList DS -->
  <complexType name="UserActionListType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence minOccurs="0">
          <element name="ActionType" type="mpeg7:TermUseType"/>
          <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 (15.3.5)  -->
  <!-- ################################### -->
  <!-- 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>
```


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4.3 Version 2 Schema Definition

The following schema definition, referred to as “Version 2” schema, specifies the namespace and syntax of the description tools of:

- ISO/IEC 15938-1 + ISO/IEC 15938-1 COR/1 /1 + ISO/IEC 15938-1 AMD/1 (Systems)
- ISO/IEC 15938-2 (DDL)
- ISO/IEC 15938-3 + ISO/IEC 15938-3 COR/1 + ISO/IEC 15938-3 AMD/1 (Visual)
- ISO/IEC 15938-4:2002 + ISO/IEC 15938-4 AMD/1 (Audio)
- ISO/IEC 15938-5 + ISO/IEC 15938-5 COR/1 + ISO/IEC 15938-5 AMD/1 + ISO/IEC 15938-5 AMD/2 (MDS)

Note: the namespace designator “mpeg7” is used in the following schema definition for convenience. Other values may be used as long as the namespace designator value is fixed throughout the schema definition.

```
<!-- ################################################################################ -->
<!--                    ISO/IEC 15938 Information Technology                          -->
<!--                   Multimedia Content Description Interface                       -->
<!--                              MPEG-7 Version 2 Schema                             -->
<!-- ################################################################################ -->
<schema targetNamespace="urn:mpeg:mpeg7:schema:2004" elementFormDefault="qualified"
attributeFormDefault="unqualified" xmlns="http://www.w3.org/2001/XMLSchema"
xmlns:mpeg7="urn:mpeg:mpeg7:schema:2004">
  <annotation>
    <documentation>
      The following schema definition corresponds to the description tools of:
              ISO/IEC 15938-1 + ISO/IEC 15938-1 COR/1 /1 + ISO/IEC 15938-1 AMD/1 (Systems)
              ISO/IEC 15938-2 (DDL)
              ISO/IEC 15938-3 + ISO/IEC 15938-3 COR/1 + ISO/IEC 15938-3 AMD/1 (Visual)
              ISO/IEC 15938-4 + ISO/IEC 15938-4 AMD/1 (Audio)
              ISO/IEC 15938-5 + ISO/IEC 15938-5 COR/1 + ISO/IEC 15938-5 AMD/1 + ISO/IEC
15938-5 AMD/2 (MDS)
     </documentation>
  </annotation>
  <!-- ########################################################## -->
  <!--  import xml components                                     -->
  <!-- ########################################################## -->
  <import namespace="http://www.w3.org/XML/1998/namespace"
schemaLocation="http://www.w3.org/2001/03/xml.xsd" />
  <annotation>
    <documentation>
      This document contains tools defined as MPEG-7 specific extention of
      XML Schema in ISO/IEC 15938-2
    </documentation>
  </annotation>
  <!-- ********************************************************************************--->
  <!-- ********************** ISO/IEC 15938-1 SYSTEMS  ************************--->
  <!-- ********************************************************************************--->
  <annotation>
    <documentation>
      The following section contains tools defined in:
           ISO/IEC 15938-1 + ISO/IEC 15938-1 AMD/1 (Systems)
    </documentation>
  </annotation>
  <!-- ############################################## -->
```

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```
  <!-- Definition of DecoderInit (Systems COR/1)      -->
  <!-- ################################################ -->
  <complexType name="DecoderInitType">
    <sequence>
      <element name="SchemaReference" type="mpeg7:SchemaReferenceType"
maxOccurs="unbounded" />
      <element name="InitialDescription" type="mpeg7:AccessUnitType" minOccurs="0" />
    </sequence>
    <attribute name="systemsProfileLevelIndication" type="decimal" use="required" />
  </complexType>
  <complexType name="SchemaReferenceType">
    <attribute name="name" type="anyURI" use="required" />
    <attribute name="locationHint" type="anyURI" use="optional" />
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of AccessUnitType         -->
  <!-- ################################################ -->
  <complexType name="AccessUnitType">
    <sequence>
      <element name="FragmentUpdateUnit" type="mpeg7:FragmentUpdateUnitType"
maxOccurs="unbounded" />
    </sequence>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of FragmentUpdateUnitType     -->
  <!-- ################################################ -->
  <complexType name="FragmentUpdateUnitType">
    <sequence>
      <element name="FUCommand" type="mpeg7:FragmentUpdateCommandType" />
      <element name="FUContext" type="mpeg7:FragmentUpdateContextType" minOccurs="0" />
      <element name="FUPayload" type="mpeg7:FragmentUpdatePayloadType" minOccurs="0" />
    </sequence>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of FragmentUpdateCommandType       -->
  <!-- ################################################ -->
  <simpleType name="FragmentUpdateCommandType">
    <union>
      <simpleType>
        <restriction base="string">
          <enumeration value="addNode" />
          <enumeration value="deleteNode" />
          <enumeration value="replaceNode" />
          <enumeration value="reset" />
        </restriction>
      </simpleType>
      <simpleType>
        <restriction base="string" />
      </simpleType>
    </union>
  </simpleType>
  <!-- ################################################   -->
  <!-- Definition of FragmentUpdateContextType           -->
  <!-- ################################################   -->
  <simpleType name="FragmentUpdateContextTypeBase">
    <restriction base="string">
      <pattern
value="/?((\.|(\.\.)|(((\i\c*:)?\i\c*)(\[\d+\])?))(/((\.)|(\.\.)|(((\i\c*:)?\i\c*)(\[\d+\]
)?)))*(/@(\i\c*:)?\i\c*)?)|(@(\i\c*:)?\i\c*)" />
    </restriction>
```


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```
  </simpleType>
  <!-- FragmentUpdateContextType Systems AMD/1 -->
  <complexType name="FragmentUpdateContextType">
    <simpleContent>
      <extension base="mpeg7:FragmentUpdateContextTypeBase">
        <attribute name="position" default="lastChild">
          <simpleType>
            <restriction base="string">
              <enumeration value="lastChild" />
              <enumeration value="prevSibling" />
            </restriction>
          </simpleType>
        </attribute>
      </extension>
    </simpleContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of FragmentUpdatePayloadType       -->
  <!-- ################################################ -->
  <!-- FragmentUpdatePayloadType Systems AMD/1 -->
  <complexType name="FragmentUpdatePayloadType">
    <sequence>
      <any namespace="##other" processContents="skip" minOccurs="0" />
      <element name="FragmentReference" type="mpeg7:FragmentReferenceType" minOccurs="0"
/>
    </sequence>
    <attribute name="hasDeferredNodes" type="boolean" default="false" />
    <anyAttribute namespace="##other" processContents="skip" />
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of FragmentReferenceType  Systems AMD/1     -->
  <!-- ################################################ -->
  <!-- FragmentReferenceType Systems AMD/1 -->
  <complexType name="FragmentReferenceType" abstract="true">
    <attribute name="isDeferred" type="boolean" use="optional" default="false" />
  </complexType>
  <!-- URIFragmentReferenceType Systems AMD/1 -->
  <complexType name="URIFragmentReferenceType">
    <complexContent>
      <extension base="mpeg7:FragmentReferenceType">
        <attribute name="href" type="anyURI" use="required" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ********************************************************************************-->
  <!-- ***************************** ISO/IEC 15938-2 DDL  ***************************-->
  <!-- ********************************************************************************-->
  <annotation>
    <documentation>
      The following section contains tools defined in ISO/IEC 15938-2
    </documentation>
  </annotation>
  <!-- ################################################ -->
  <!-- Definition of 'mpeg7:dim" for Matrix Datatype                  -->
  <!-- ################################################ -->
  <!-- definition of listOfPositiveIntegerForDim datatype -->
  <simpleType name="listOfPositiveIntegerForDim">
    <list itemType="positiveInteger" />
  </simpleType>
  <!-- definition of mpeg7:dim attribute -->
```

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```
  <attribute name="dim">
    <simpleType>
      <restriction base="mpeg7:listOfPositiveIntegerForDim">
        <minLength value="1" />
      </restriction>
    </simpleType>
  </attribute>
  <!-- ################################################ -->
  <!-- Definition of MPEG-7 Datatype Extensions                    -->
  <!-- ################################################ -->
  <!-- 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>
  <!-- ********************************************************************--->
  <!-- ******************* ISO/IEC 15938-3 Visual*************************--->
  <!-- ********************************************************************--->
  <annotation>
    <documentation>
      The following section contains visual tools defined in:
           ISO/IEC 15938-3 + ISO/IEC 15938-3 AMD/1 (Visual)
    </documentation>
  </annotation>
  <!-- ############################################################ -->
  <!-- Definition of GridLayout Datatype                                    -->
  <!-- ############################################################ -->
  <complexType name="GridLayoutType" final="#all">
    <sequence>
      <element name="Descriptor" type="mpeg7:VisualDType" maxOccurs="65025" />
    </sequence>
    <attribute name="numOfPartX" type="mpeg7:unsigned8" use="required" />
    <attribute name="numOfPartY" type="mpeg7:unsigned8" use="required" />
    <attribute name="descriptorMask" use="optional">
      <simpleType>
        <restriction base="string">
          <pattern value="(0|1)*" />
        </restriction>
      </simpleType>
    </attribute>
  </complexType>
  <!-- ############################################################ -->
  <!-- Definition of VisualTimeSeries Datatypes                             -->
  <!-- ############################################################ -->
  <!-- Definition of VisualTimeSeries Datatype -->
  <complexType name="VisualTimeSeriesType" abstract="true">
    <sequence>
      <element name="TimeIncr" type="mpeg7:mediaDurationType" />
    </sequence>
    <attribute name="offset" type="mpeg7:mediaDurationType" use="optional" default="PT0S"
/>
```


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```
  </complexType>
  <!-- Definition of RegularVisualTimeSeries Datatype -->
  <complexType name="RegularVisualTimeSeriesType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualTimeSeriesType">
        <sequence>
          <element name="Descriptor" type="mpeg7:VisualDType" maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of IrregularVisualTimeSeries Datatype -->
  <complexType name="IrregularVisualTimeSeriesType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualTimeSeriesType">
        <sequence maxOccurs="unbounded">
          <element name="Descriptor" type="mpeg7:VisualDType" />
          <element name="Interval" type="mpeg7:unsigned32" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of MultipleView Datatypes                                  -->
  <!-- ########################################################## -->
  <complexType name="MultipleViewType" final="#all">
    <sequence maxOccurs="16">
      <element name="IsVisible" type="boolean" />
      <element name="Descriptor" type="mpeg7:VisualDType" />
    </sequence>
    <attribute name="fixedViewsFlag" type="boolean" use="required" />
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of Spatial2DCoordinateSystem Header                        -->
  <!-- ########################################################## -->
  <complexType name="Spatial2DCoordinateSystemType" final="#all">
    <complexContent>
      <extension base="mpeg7:HeaderType">
        <sequence>
          <element name="Unit" minOccurs="0">
            <simpleType>
              <restriction base="string">
                <enumeration value="pixel" />
                <enumeration value="meter" />
                <enumeration value="pictureHeight" />
                <enumeration value="pictureWidth" />
                <enumeration value="pictureWidthAndHeight" />
              </restriction>
            </simpleType>
          </element>
          <element name="LocalCoordinateSystem" minOccurs="0">
            <complexType>
              <sequence>
                <choice>
                  <sequence maxOccurs="3">
                    <element name="Pixel">
                      <simpleType>
                        <restriction base="mpeg7:integerVector">
                          <length value="2" />
                        </restriction>
```

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```
                  </simpleType>
                </element>
                <element name="CoordPoint">
                  <simpleType>
                    <restriction base="mpeg7:floatVector">
                      <length value="2" />
                    </restriction>
                  </simpleType>
                </element>
              </sequence>
              <sequence maxOccurs="3">
                <element name="CurrPixel">
                  <simpleType>
                    <restriction base="mpeg7:integerVector">
                      <length value="2" />
                    </restriction>
                  </simpleType>
                </element>
                <element name="SrcPixel">
                  <simpleType>
                    <restriction base="mpeg7:integerVector">
                      <length value="2" />
                    </restriction>
                  </simpleType>
                </element>
              </sequence>
            </choice>
            <element name="MappingFunct" type="string" minOccurs="0" maxOccurs="2" />
          </sequence>
          <attribute name="name" type="string" use="required" />
          <attribute name="dataSet" type="anyURI" use="optional" />
        </complexType>
      </element>
      <element name="IntegratedCoordinateSystem" minOccurs="0">
        <complexType>
          <sequence minOccurs="0" maxOccurs="65535">
            <element name="TimeIncr" type="mpeg7:MediaIncrDurationType" />
            <element name="MotionParams" type="float" minOccurs="2" maxOccurs="12" />
          </sequence>
          <attribute name="modelType" use="required">
            <simpleType>
              <restriction base="string">
                <enumeration value="translational" />
                <enumeration value="rotationAndScaling" />
                <enumeration value="affine" />
                <enumeration value="perspective" />
                <enumeration value="quadratic" />
              </restriction>
            </simpleType>
          </attribute>
          <attribute name="xOrigin" type="float" use="required" />
          <attribute name="yOrigin" type="float" use="required" />
        </complexType>
      </element>
    </sequence>
    <attribute name="xRepr" type="mpeg7:unsigned8" use="required" />
    <attribute name="yRepr" type="mpeg7:unsigned8" use="required" />
    <attribute name="xSrcSize" type="positiveInteger" use="optional" />
    <attribute name="ySrcSize" type="positiveInteger" use="optional" />
  </extension>
```


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```
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of TemporalInterpolation Datatype                                  -->
  <!-- ########################################################## -->
  <complexType name="TemporalInterpolationType" final="#all">
    <sequence>
      <choice>
        <element name="WholeInterval">
          <complexType>
            <choice>
              <element name="MediaDuration" type="mpeg7:mediaDurationType" />
              <element name="MediaIncrDuration" type="mpeg7:MediaIncrDurationType" />
            </choice>
          </complexType>
        </element>
        <element name="KeyTimePoint">
          <complexType>
            <choice>
              <element name="MediaTimePoint" type="mpeg7:mediaTimePointType" minOccurs="2"
maxOccurs="65535" />
              <element name="MediaRelTimePoint" type="mpeg7:MediaRelTimePointType"
minOccurs="2" maxOccurs="65535" />
              <element name="MediaRelIncrTimePoint" type="mpeg7:MediaRelIncrTimePointType"
minOccurs="2" maxOccurs="65535" />
            </choice>
          </complexType>
        </element>
      </choice>
      <element name="InterpolationFunctions" maxOccurs="15">
        <complexType>
          <sequence>
            <element name="KeyValue" minOccurs="2" maxOccurs="65535">
              <complexType>
                <simpleContent>
                  <extension base="float">
                    <attribute name="type" use="optional" default="firstOrder">
                      <simpleType>
                        <restriction base="string">
                          <enumeration value="startPoint" />
                          <enumeration value="firstOrder" />
                          <enumeration value="secondOrder" />
                          <enumeration value="notDetermined" />
                        </restriction>
                      </simpleType>
                    </attribute>
                    <attribute name="param" type="float" use="optional" default="0.0" />
                  </extension>
                </simpleContent>
              </complexType>
            </element>
          </sequence>
        </complexType>
      </element>
    </sequence>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of ColorSpace Datatype                                            -->
  <!-- ########################################################## -->
  <complexType name="ColorSpaceType" final="#all">
```

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```
    <sequence>
      <element name="ColorTransMat" minOccurs="0">
        <simpleType>
          <restriction>
            <simpleType>
              <list itemType="mpeg7:unsigned16" />
            </simpleType>
            <length value="9" />
          </restriction>
        </simpleType>
      </element>
    </sequence>
    <attribute name="colorReferenceFlag" type="boolean" use="optional" default="false" />
    <attribute name="type" use="required">
      <simpleType>
        <restriction base="string">
          <enumeration value="RGB" />
          <enumeration value="YCbCr" />
          <enumeration value="HSV" />
          <enumeration value="HMMD" />
          <enumeration value="LinearMatrix" />
          <enumeration value="Monochrome" />
        </restriction>
      </simpleType>
    </attribute>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of ColorQuantization Datatype                                  -->
  <!-- ########################################################## -->
  <complexType name="ColorQuantizationType" final="#all">
    <sequence maxOccurs="3">
      <element name="Component">
        <simpleType>
          <restriction base="string">
            <enumeration value="R" />
            <enumeration value="G" />
            <enumeration value="B" />
            <enumeration value="Y" />
            <enumeration value="Cb" />
            <enumeration value="Cr" />
            <enumeration value="H" />
            <enumeration value="S" />
            <enumeration value="V" />
            <enumeration value="Max" />
            <enumeration value="Min" />
            <enumeration value="Diff" />
            <enumeration value="Sum" />
          </restriction>
        </simpleType>
      </element>
      <element name="NumOfBins" type="mpeg7:unsigned12" />
    </sequence>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of DominantColor D                                          -->
  <!-- ########################################################## -->
  <complexType name="DominantColorType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
```


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```
          <element name="ColorSpace" type="mpeg7:ColorSpaceType" minOccurs="0" />
          <element name="ColorQuantization" type="mpeg7:ColorQuantizationType"
minOccurs="0" />
          <element name="SpatialCoherency" type="mpeg7:unsigned5" />
          <element name="Value" maxOccurs="8">
            <complexType>
              <sequence>
                <element name="Percentage" type="mpeg7:unsigned5" />
                <element name="Index">
                  <simpleType>
                    <restriction>
                      <simpleType>
                        <list itemType="mpeg7:unsigned12" />
                      </simpleType>
                      <length value="3" />
                    </restriction>
                  </simpleType>
                </element>
                <element name="ColorVariance" minOccurs="0">
                  <simpleType>
                    <restriction>
                      <simpleType>
                        <list itemType="mpeg7:unsigned1" />
                      </simpleType>
                      <length value="3" />
                    </restriction>
                  </simpleType>
                </element>
              </sequence>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################################ -->
  <!-- Definition of ScalableColor D                                                  --
>
  <!-- ############################################################ -->
  <complexType name="ScalableColorType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="Coeff" type="mpeg7:integerVector" />
        </sequence>
        <attribute name="numOfCoeff" use="required">
          <simpleType>
            <restriction base="integer">
              <enumeration value="16" />
              <enumeration value="32" />
              <enumeration value="64" />
              <enumeration value="128" />
              <enumeration value="256" />
            </restriction>
          </simpleType>
        </attribute>
        <attribute name="numOfBitplanesDiscarded" use="required">
          <simpleType>
            <restriction base="integer">
              <enumeration value="0" />
```

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```
            <enumeration value="1" />
            <enumeration value="2" />
            <enumeration value="3" />
            <enumeration value="4" />
            <enumeration value="6" />
            <enumeration value="8" />
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of ColorLayout D                                                    --
>
<!-- ########################################################## -->
<complexType name="ColorLayoutType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="YDCCoeff" type="mpeg7:unsigned6" />
        <element name="CbDCCoeff" type="mpeg7:unsigned6" />
        <element name="CrDCCoeff" type="mpeg7:unsigned6" />
        <choice>
          <element name="YACCoeff2">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="2" />
              </restriction>
            </simpleType>
          </element>
          <element name="YACCoeff5">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="5" />
              </restriction>
            </simpleType>
          </element>
          <element name="YACCoeff9">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="9" />
              </restriction>
            </simpleType>
          </element>
          <element name="YACCoeff14">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
```


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```
                <length value="14" />
              </restriction>
            </simpleType>
          </element>
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            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="20" />
              </restriction>
            </simpleType>
          </element>
          <element name="YACCoeff27">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="27" />
              </restriction>
            </simpleType>
          </element>
          <element name="YACCoeff63">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="63" />
              </restriction>
            </simpleType>
          </element>
        </choice>
        <choice>
          <sequence>
            <element name="CbACCoeff2">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5" />
                  </simpleType>
                  <length value="2" />
                </restriction>
              </simpleType>
            </element>
            <element name="CrACCoeff2">
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5" />
                  </simpleType>
                  <length value="2" />
                </restriction>
              </simpleType>
            </element>
          </sequence>
          <sequence>
            <element name="CbACCoeff5">
```

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```
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="5" />
              </restriction>
            </simpleType>
          </element>
          <element name="CrACCoeff5">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="5" />
              </restriction>
            </simpleType>
          </element>
        </sequence>
        <sequence>
          <element name="CbACCoeff9">
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              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="9" />
              </restriction>
            </simpleType>
          </element>
          <element name="CrACCoeff9">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="9" />
              </restriction>
            </simpleType>
          </element>
        </sequence>
        <sequence>
          <element name="CbACCoeff14">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="14" />
              </restriction>
            </simpleType>
          </element>
          <element name="CrACCoeff14">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="14" />
```

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```
            </restriction>
          </simpleType>
        </element>
      </sequence>
      <sequence>
        <element name="CbACCoeff20">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned5" />
              </simpleType>
              <length value="20" />
            </restriction>
          </simpleType>
        </element>
        <element name="CrACCoeff20">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned5" />
              </simpleType>
              <length value="20" />
            </restriction>
          </simpleType>
        </element>
      </sequence>
      <sequence>
        <element name="CbACCoeff27">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned5" />
              </simpleType>
              <length value="27" />
            </restriction>
          </simpleType>
        </element>
        <element name="CrACCoeff27">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned5" />
              </simpleType>
              <length value="27" />
            </restriction>
          </simpleType>
        </element>
      </sequence>
      <sequence>
        <element name="CbACCoeff63">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned5" />
              </simpleType>
              <length value="63" />
            </restriction>
          </simpleType>
        </element>
        <element name="CrACCoeff63">
```

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```
              <simpleType>
                <restriction>
                  <simpleType>
                    <list itemType="mpeg7:unsigned5" />
                  </simpleType>
                  <length value="63" />
                </restriction>
              </simpleType>
            </element>
          </sequence>
        </choice>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of ColorStructure D                                                  --
>
<!-- ########################################################## -->
<complexType name="ColorStructureType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="Values">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned8" />
              </simpleType>
              <minLength value="1" />
              <maxLength value="256" />
            </restriction>
          </simpleType>
        </element>
      </sequence>
      <attribute name="colorQuant" type="mpeg7:unsigned3" use="required" />
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of GoFGoPColor D                                                   -->
<!-- ########################################################## -->
<complexType name="GoFGoPColorType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="ScalableColor" type="mpeg7:ScalableColorType" />
      </sequence>
      <attribute name="aggregation" use="required">
        <simpleType>
          <restriction base="string">
            <enumeration value="Average" />
            <enumeration value="Median" />
            <enumeration value="Intersection" />
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
```


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```
<!-- ########################################################## -->
<!-- Definition of HomogeneousTexture D                                  -->
<!-- ########################################################## -->
<!-- Definition of HomogeneousTexture D -->
<complexType name="HomogeneousTextureType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="Average" type="mpeg7:unsigned8" />
        <element name="StandardDeviation" type="mpeg7:unsigned8" />
        <element name="Energy" type="mpeg7:textureListType" />
        <element name="EnergyDeviation" type="mpeg7:textureListType" minOccurs="0" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of textureList datatype -->
<simpleType name="textureListType">
  <restriction>
    <simpleType>
      <list itemType="mpeg7:unsigned8" />
    </simpleType>
    <length value="30" />
  </restriction>
</simpleType>
<!-- ########################################################## -->
<!-- Definition of TextureBrowsing D                                     -->
<!-- ########################################################## -->
<complexType name="TextureBrowsingType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="Regularity">
          <simpleType>
            <restriction base="string">
              <enumeration value="irregular" />
              <enumeration value="slightlyRegular" />
              <enumeration value="regular" />
              <enumeration value="highlyRegular" />
            </restriction>
          </simpleType>
        </element>
        <sequence maxOccurs="2">
          <element name="Direction">
            <simpleType>
              <restriction base="string">
                <enumeration value="noDirectionality" />
                <enumeration value="0Degree" />
                <enumeration value="30Degree" />
                <enumeration value="60Degree" />
                <enumeration value="90Degree" />
                <enumeration value="120Degree" />
                <enumeration value="150Degree" />
              </restriction>
            </simpleType>
          </element>
          <element name="Scale">
            <simpleType>
              <restriction base="string">
                <enumeration value="fine" />
```

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```
                <enumeration value="medium" />
                <enumeration value="coarse" />
                <enumeration value="veryCoarse" />
              </restriction>
            </simpleType>
          </element>
        </sequence>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of EdgeHistogram D                                -->
<!-- ########################################################## -->
<complexType name="EdgeHistogramType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="BinCounts">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned3" />
              </simpleType>
              <length value="80" />
            </restriction>
          </simpleType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of RegionShape D                                  -->
<!-- ########################################################## -->
<complexType name="RegionShapeType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="MagnitudeOfART">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned4" />
              </simpleType>
              <length value="35" />
            </restriction>
          </simpleType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of ContourShape D                                 -->
<!-- ########################################################## -->
<!-- Definition of ContourShape D -->
<complexType name="ContourShapeType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
```


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```
        <sequence>
          <element name="GlobalCurvature" type="mpeg7:curvatureType" />
          <element name="PrototypeCurvature" type="mpeg7:curvatureType" minOccurs="0" />
          <element name="HighestPeakY" type="mpeg7:unsigned7" />
          <!-- VIDEO COR/1 -->
          <element name="Peak" minOccurs="0" maxOccurs="62">
            <complexType>
              <attribute name="peakX" type="mpeg7:unsigned6" use="required" />
              <attribute name="peakY" type="mpeg7:unsigned3" use="required" />
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of curvature datatype -->
  <simpleType name="curvatureType">
    <restriction>
      <simpleType>
        <list itemType="mpeg7:unsigned6" />
      </simpleType>
      <length value="2" />
    </restriction>
  </simpleType>
  <!-- ############################################################ -->
  <!-- Definition of Shape3D D                                                  --
>
  <!-- ############################################################ -->
  <complexType name="Shape3DType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="Spectrum">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned12" />
                </simpleType>
                <maxLength value="255" />
              </restriction>
            </simpleType>
          </element>
          <element name="PlanarSurfaces" type="mpeg7:unsigned12" />
          <element name="SingularSurfaces" type="mpeg7:unsigned12" />
        </sequence>
        <attribute name="bitsPerBin" type="mpeg7:unsigned4" use="optional" default="12" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################################ -->
  <!-- Definition of CameraMotion D                                             -->
  <!-- ############################################################ -->
  <!-- Definition of CameraMotion D -->
  <complexType name="CameraMotionType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="Segment" type="mpeg7:CameraMotionSegmentType" minOccurs="0"
maxOccurs="unbounded" />
        </sequence>
```

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```
    </extension>
  </complexContent>
</complexType>
<!-- Definition of CameraMotionSegment Datatype -->
<complexType name="CameraMotionSegmentType" abstract="true">
  <sequence>
    <element name="MediaTime" type="mpeg7:MediaTimeType" />
    <element name="FocusOfExpansion" type="mpeg7:FocusOfExpansionType" minOccurs="0" />
  </sequence>
</complexType>
<!-- Definition of MixtureCameraMotionSegment Datatype -->
<complexType name="MixtureCameraMotionSegmentType" final="#all">
  <complexContent>
    <extension base="mpeg7:CameraMotionSegmentType">
      <sequence>
        <element name="FractionalPresence" type="mpeg7:FractionalPresenceType" />
        <element name="AmountOfMotion" type="mpeg7:MixtureAmountOfMotionType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of NonMixtureCameraMotionSegment Datatype -->
<complexType name="NonMixtureCameraMotionSegmentType">
  <complexContent>
    <extension base="mpeg7:CameraMotionSegmentType">
      <sequence>
        <element name="AmountOfMotion" type="mpeg7:NonMixtureAmountOfMotionType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of FocusOfExpansion Datatype -->
<complexType name="FocusOfExpansionType">
  <sequence>
    <element name="HorizontalPosition" type="float" />
    <element name="VerticalPosition" type="float" />
  </sequence>
</complexType>
<!-- Definition of FractionalPresence Datatype -->
<complexType name="FractionalPresenceType" final="#all">
  <sequence>
    <element name="TrackLeft" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="TrackRight" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="BoomDown" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="BoomUp" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="DollyForward" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="DollyBackward" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="PanLeft" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="PanRight" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="TiltDown" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="TiltUp" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="RollClockwise" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="RollAnticlockwise" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="ZoomIn" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="ZoomOut" type="mpeg7:unsigned7" minOccurs="0" />
    <element name="Fixed" type="mpeg7:unsigned7" minOccurs="0" />
  </sequence>
</complexType>
<!-- Definition of MixtureAmountOfMotion Datatype -->
<complexType name="MixtureAmountOfMotionType" final="#all">
```


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```
    <sequence>
      <element name="TrackLeft" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="TrackRight" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="BoomDown" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="BoomUp" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="DollyForward" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="DollyBackward" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="PanLeft" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="PanRight" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="TiltDown" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="TiltUp" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="RollClockwise" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="RollAnticlockwise" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="ZoomIn" type="mpeg7:unsigned11" minOccurs="0" />
      <element name="ZoomOut" type="mpeg7:unsigned11" minOccurs="0" />
    </sequence>
  </complexType>
  <!-- Definition of NonMixtureAmountOfMotion Datatype -->
  <complexType name="NonMixtureAmountOfMotionType">
    <choice>
      <element name="TrackLeft" type="mpeg7:unsigned11" />
      <element name="TrackRight" type="mpeg7:unsigned11" />
      <element name="BoomDown" type="mpeg7:unsigned11" />
      <element name="BoomUp" type="mpeg7:unsigned11" />
      <element name="DollyForward" type="mpeg7:unsigned11" />
      <element name="DollyBackward" type="mpeg7:unsigned11" />
      <element name="PanLeft" type="mpeg7:unsigned11" />
      <element name="PanRight" type="mpeg7:unsigned11" />
      <element name="TiltDown" type="mpeg7:unsigned11" />
      <element name="TiltUp" type="mpeg7:unsigned11" />
      <element name="RollClockwise" type="mpeg7:unsigned11" />
      <element name="RollAnticlockwise" type="mpeg7:unsigned11" />
      <element name="ZoomIn" type="mpeg7:unsigned11" />
      <element name="ZoomOut" type="mpeg7:unsigned11" />
      <element name="Fixed">
        <complexType />
      </element>
    </choice>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of MotionTrajectory D                                                  -->
  <!-- ########################################################## -->
  <complexType name="MotionTrajectoryType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <choice>
            <element name="CoordRef">
              <complexType>
                <attribute name="ref" type="IDREF" use="required" />
                <attribute name="spatialRef" type="boolean" use="required" />
              </complexType>
            </element>
            <element name="CoordDef">
              <complexType>
                <sequence>
                  <element name="Repr" minOccurs="0">
                    <complexType>
                      <attribute name="x" type="mpeg7:unsigned8" use="required" />
                      <attribute name="y" type="mpeg7:unsigned8" use="required" />
```

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```
                </complexType>
              </element>
            </sequence>
            <attribute name="units" use="required">
              <simpleType>
                <restriction base="string">
                  <enumeration value="pictureHeight" />
                  <enumeration value="pictureWidth" />
                  <enumeration value="pictureWidthAndHeight" />
                  <enumeration value="meter" />
                </restriction>
              </simpleType>
            </attribute>
          </complexType>
        </element>
      </choice>
      <element name="Params" type="mpeg7:TemporalInterpolationType" />
    </sequence>
    <attribute name="cameraFollows" type="boolean" use="optional" />
  </extension>
 </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of ParametricMotion D                                    -->
<!-- ########################################################## -->
<complexType name="ParametricMotionType" final="#all">
 <complexContent>
  <extension base="mpeg7:VisualDType">
   <sequence>
    <choice>
     <element name="CoordRef">
      <complexType>
       <attribute name="ref" type="IDREF" use="required" />
       <attribute name="spatialRef" type="boolean" use="required" />
      </complexType>
     </element>
     <element name="CoordDef">
      <complexType>
       <attribute name="originX" type="float" use="required" />
       <attribute name="originY" type="float" use="required" />
      </complexType>
     </element>
    </choice>
    <element name="MediaDuration" type="mpeg7:MediaIncrDurationType" />
    <element name="Parameters">
     <simpleType>
      <restriction base="mpeg7:floatVector">
       <maxLength value="12" />
      </restriction>
     </simpleType>
    </element>
   </sequence>
   <attribute name="motionModel" use="required">
    <simpleType>
     <restriction base="string">
      <enumeration value="translational" />
      <enumeration value="rotationOrScaling" />
      <enumeration value="affine" />
      <enumeration value="perspective" />
      <enumeration value="quadratic" />
```

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```
            </restriction>
          </simpleType>
        </attribute>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of MotionActivity D                                                  --
>
  <!-- ########################################################## -->
  <complexType name="MotionActivityType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="Intensity">
            <simpleType>
              <restriction base="mpeg7:unsigned3">
                <minInclusive value="1" />
                <maxInclusive value="5" />
              </restriction>
            </simpleType>
          </element>
          <element name="DominantDirection" type="mpeg7:unsigned3" minOccurs="0" />
          <element name="SpatialDistributionParams" minOccurs="0">
            <complexType>
              <attribute name="numOfShortRuns" type="mpeg7:unsigned6" use="required" />
              <attribute name="numOfMediumRuns" type="mpeg7:unsigned5" use="required" />
              <attribute name="numOfLongRuns" type="mpeg7:unsigned5" use="required" />
            </complexType>
          </element>
          <element name="SpatialLocalizationParams" minOccurs="0">
            <complexType>
              <choice>
                <element name="Vector4">
                  <simpleType>
                    <restriction>
                      <simpleType>
                        <list itemType="mpeg7:unsigned3" />
                      </simpleType>
                      <length value="4" />
                    </restriction>
                  </simpleType>
                </element>
                <element name="Vector16">
                  <simpleType>
                    <restriction>
                      <simpleType>
                        <list itemType="mpeg7:unsigned3" />
                      </simpleType>
                      <length value="16" />
                    </restriction>
                  </simpleType>
                </element>
                <element name="Vector64">
                  <simpleType>
                    <restriction>
                      <simpleType>
                        <list itemType="mpeg7:unsigned3" />
                      </simpleType>
                      <length value="64" />
```

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```
                  </restriction>
                </simpleType>
              </element>
              <element name="Vector256">
                <simpleType>
                  <restriction>
                    <simpleType>
                      <list itemType="mpeg7:unsigned3" />
                    </simpleType>
                    <length value="256" />
                  </restriction>
                </simpleType>
              </element>
            </choice>
          </complexType>
        </element>
        <element name="TemporalParams" minOccurs="0">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned6" />
              </simpleType>
              <length value="5" />
            </restriction>
          </simpleType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!-- Definition of RegionLocator Datatype                       -->
<!-- ########################################################## -->
<!-- Definition of RegionLocator Datatype -->
<complexType name="RegionLocatorType" final="#all">
  <sequence>
    <element name="CoordRef" minOccurs="0">
      <complexType>
        <attribute name="ref" type="IDREF" use="required" />
        <attribute name="spatialRef" type="boolean" use="optional" default="false" />
      </complexType>
    </element>
    <element name="Box" minOccurs="0" maxOccurs="unbounded">
      <complexType>
        <simpleContent>
          <extension base="mpeg7:BoxListType">
            <attribute name="unlocatedRegion" type="boolean" use="optional"
default="false" />
          </extension>
        </simpleContent>
      </complexType>
    </element>
    <element name="Polygon" minOccurs="0" maxOccurs="unbounded">
      <complexType>
        <sequence>
          <element name="Coords" type="mpeg7:IntegerMatrixType" />
        </sequence>
        <attribute name="unlocatedRegion" type="boolean" use="optional" default="false"
/>
      </complexType>
```


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```
      </element>
    </sequence>
  </complexType>
  <!-- Definition of BoxList Datatype -->
  <complexType name="BoxListType">
    <simpleContent>
      <restriction base="mpeg7:IntegerMatrixType" />
    </simpleContent>
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of SpatioTemporalLocator Datatype                -->
  <!-- ########################################################## -->
  <!-- Definition of SpatioTemporalLocator Datatype -->
  <complexType name="SpatioTemporalLocatorType" final="#all">
    <sequence>
      <element name="CoordRef" minOccurs="0">
        <complexType>
          <attribute name="ref" type="IDREF" use="required" />
          <attribute name="spatialRef" type="boolean" use="required" />
        </complexType>
      </element>
      <choice maxOccurs="unbounded">
        <element name="FigureTrajectory" type="mpeg7:FigureTrajectoryType" />
        <element name="ParameterTrajectory" type="mpeg7:ParameterTrajectoryType" />
        <element name="MediaTime" type="mpeg7:MediaTimeType" />
      </choice>
    </sequence>
  </complexType>
  <!-- Definition of FigureTrajectory Datatype -->
  <complexType name="FigureTrajectoryType" final="#all">
    <sequence>
      <element name="MediaTime" type="mpeg7:MediaTimeType" />
      <element name="Vertex" type="mpeg7:TemporalInterpolationType" minOccurs="3"
maxOccurs="unbounded" />
      <element name="Depth" type="mpeg7:TemporalInterpolationType" minOccurs="0" />
    </sequence>
    <attribute name="type" use="required">
      <simpleType>
        <restriction base="string">
          <enumeration value="rectangle" />
          <enumeration value="ellipse" />
          <enumeration value="polygon" />
        </restriction>
      </simpleType>
    </attribute>
  </complexType>
  <!-- Definition of ParameterTrajectory Datatype -->
  <complexType name="ParameterTrajectoryType" final="#all">
    <sequence>
      <element name="MediaTime" type="mpeg7:MediaTimeType" />
      <element name="InitialRegion" type="mpeg7:RegionLocatorType" />
      <element name="Params" type="mpeg7:TemporalInterpolationType" minOccurs="0" />
      <element name="Depth" type="mpeg7:TemporalInterpolationType" minOccurs="0" />
    </sequence>
    <attribute name="motionModel" use="required">
      <simpleType>
        <restriction base="string">
          <enumeration value="still" />
          <enumeration value="translation" />
          <enumeration value="rotationAndScaling" />
```

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```
          <enumeration value="affine" />
          <enumeration value="perspective" />
          <enumeration value="parabolic" />
        </restriction>
      </simpleType>
    </attribute>
    <attribute name="ellipseFlag" type="boolean" use="optional" default="false" />
  </complexType>
  <!-- ########################################################## -->
  <!-- Definition of FaceRecognition D                                    -->
  <!-- ########################################################## -->
  <complexType name="FaceRecognitionType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="Feature">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <length value="48" />
              </restriction>
            </simpleType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################################-->
  <!-- ************************ ISO/IEC 15938-4 Visual AMD/1
****************************-->
  <!-- ################################################################################-->
  <!-- ################################################## -->
  <!--  Definition of MPEG-7 GofGopFeatureType                  -->
  <!-- ################################################## -->
  <complexType name="GofGopFeatureType">
    <sequence>
      <element name="Descriptor" type="mpeg7:VisualDType" />
    </sequence>
    <attribute name="aggregation" use="optional">
      <simpleType>
        <restriction base="string">
          <enumeration value="Average" />
          <enumeration value="Median" />
          <enumeration value="SplitMerge" />
        </restriction>
      </simpleType>
    </attribute>
  </complexType>
  <!-- ##########################################################-->
  <!--  Definition of MPEG-7 ColorTemperatureType          -->
  <!-- ##########################################################-->
  <complexType name="ColorTemperatureType" final="#all">
    <complexContent>
      <extension base="mpeg7:VisualDType">
        <sequence>
          <element name="BrowsingCategory">
            <simpleType>
              <restriction base="string">
```


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```
              <enumeration value="hot" />
              <enumeration value="warm" />
              <enumeration value="moderate" />
              <enumeration value="cool" />
            </restriction>
          </simpleType>
        </element>
        <element name="SubRangeIndex" type="mpeg7:unsigned6" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################## -->
<!-- Definition of MPEG-7 IlluminationInvariantColorType -->
<!-- ################################################## -->
<complexType name="IlluminationInvariantColorType">
  <choice>
    <element name="DominantColor" type="mpeg7:DominantColorType" />
    <element name="ScalableColor" type="mpeg7:ScalableColorType" />
    <element name="ColorLayout" type="mpeg7:ColorLayoutType" />
    <element name="ColorStructure" type="mpeg7:ColorStructureType" />
  </choice>
</complexType>
<!-- ################################################## -->
<!--  Definition of MPEG-7 ShapeVariationType   -->
<!-- ################################################## -->
<complexType name="ShapeVariationType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="StaticShapeVariation">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned4" />
              </simpleType>
              <length value="35" />
            </restriction>
          </simpleType>
        </element>
        <element name="DynamicShapeVariation">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned4" />
              </simpleType>
              <length value="35" />
            </restriction>
          </simpleType>
        </element>
        <element name="StatisticalVariation">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned4" />
              </simpleType>
              <length value="35" />
            </restriction>
          </simpleType>
        </element>
```

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```
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of MPEG-7 "AdvancedFaceRecognitionType"   -->
<!-- ################################################ -->
<complexType name="AdvancedFaceRecognitionType" final="#all">
  <complexContent>
    <extension base="mpeg7:VisualDType">
      <sequence>
        <element name="FourierFeature">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned5" />
              </simpleType>
              <minLength value="24" />
              <maxLength value="63" />
            </restriction>
          </simpleType>
        </element>
        <element name="CentralFourierFeature">
          <simpleType>
            <restriction>
              <simpleType>
                <list itemType="mpeg7:unsigned5" />
              </simpleType>
              <minLength value="24" />
              <maxLength value="63" />
            </restriction>
          </simpleType>
        </element>
        <sequence minOccurs="0">
          <element name="CompositeFeature">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <minLength value="0" />
                <maxLength value="63" />
              </restriction>
            </simpleType>
          </element>
          <element name="SubregionCompositeFeature">
            <simpleType>
              <restriction>
                <simpleType>
                  <list itemType="mpeg7:unsigned5" />
                </simpleType>
                <minLength value="0" />
                <maxLength value="63" />
              </restriction>
            </simpleType>
          </element>
        </sequence>
      </sequence>
    </extension>
  </complexContent>
```


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```
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of media-centric visual DSs  -->
  <!-- ######################################################## -->
  <!--  Definition of MPEG-7 Still Region Feature Type   -->
  <!-- ######################################################## -->
  <complexType name="StillRegionFeatureType">
    <complexContent>
      <extension base="mpeg7:VisualDSType">
        <sequence>
          <choice minOccurs="0">
            <element name="DominantColor" type="mpeg7:DominantColorType" />
            <element name="ScalableColor" type="mpeg7:ScalableColorType" />
            <element name="ColorStructure" type="mpeg7:ColorStructureType" />
          </choice>
          <element name="ColorLayout" type="mpeg7:ColorLayoutType" minOccurs="0" />
          <element name="ColorTemperature" type="mpeg7:ColorTemperatureType" minOccurs="0"
/>
          <element name="IlluminationCompensatedColor"
type="mpeg7:IlluminationInvariantColorType" minOccurs="0" />
          <element name="Edge" type="mpeg7:EdgeHistogramType" minOccurs="0" />
          <choice minOccurs="0">
            <element name="HomogeneousPattern" type="mpeg7:HomogeneousTextureType" />
            <element name="TextureBrowsing" type="mpeg7:TextureBrowsingType" />
          </choice>
          <choice minOccurs="0">
            <element name="ShapeMask" type="mpeg7:RegionShapeType" />
            <element name="Contour" type="mpeg7:ContourShapeType" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################################## -->
  <!--  Definition of MPEG-7 VideoSegmentFeatureType   -->
  <!-- ######################################################## -->
  <complexType name="VideoSegmentFeatureType">
    <complexContent>
      <extension base="mpeg7:VisualDSType">
        <sequence>
          <!-- List of features available -->
          <!-- Temporal transition of frame feature -->
          <element name="TemporalTransition" type="mpeg7:VisualTimeSeriesType"
minOccurs="0" maxOccurs="unbounded" />
          <!-- Representative feature over all frame in the sequence -->
          <element name="RepresentativeFeature" type="mpeg7:GofGopFeatureType"
minOccurs="0" maxOccurs="unbounded" />
          <!-- motion activity -->
          <element name="MotionActivity" type="mpeg7:MotionActivityType" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################################## -->
  <!--  Definition of MPEG-7 MovingRegionFeatureType   -->
  <!-- ######################################################## -->
  <complexType name="MovingRegionFeatureType">
    <complexContent>
      <extension base="mpeg7:VideoSegmentFeatureType">
        <sequence>
```

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```
          <!-- List of features available -->
          <!-- description of statistical characteristics of shape changes -->
          <element name="ShapeVariation" type="mpeg7:ShapeVariationType" minOccurs="0" />
          <!-- description of motion characteristics -->
          <choice minOccurs="0">
            <element name="ParametricMotion" type="mpeg7:ParametricMotionType" />
            <element name="MotionTrajectory" type="mpeg7:MotionTrajectoryType" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ********************************************************************--->
  <!-- ********************** ISO/IEC 15938-4 AUDIO ***************************--->
  <!-- ********************************************************************--->
  <annotation>
    <documentation>
      This section contains tools defined in:
           ISO/IEC 15938-4 + ISO/IEC 15938-4 AMD/1 (Audio)
    </documentation>
  </annotation>
  <!-- ################################################################## -->
  <!-- Definition of AudioLLDScalar D                                     -->
  <!-- ################################################################## -->
  <complexType name="AudioLLDScalarType" abstract="true">
    <complexContent>
      <extension base="mpeg7:AudioDType">
        <choice>
          <element name="Scalar" type="float" />
          <element name="SeriesOfScalar" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:SeriesOfScalarType">
                  <attribute name="hopSize" type="mpeg7:mediaDurationType"
default="PT10N1000F" />
                </extension>
              </complexContent>
            </complexType>
          </element>
        </choice>
        <attribute name="confidence" type="mpeg7:zeroToOneType" use="optional" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################## -->
  <!-- Definition of AudioLLDVector D                                     -->
  <!-- ################################################################## -->
  <complexType name="AudioLLDVectorType" abstract="true">
    <complexContent>
      <extension base="mpeg7:AudioDType">
        <choice>
          <element name="Vector" type="mpeg7:floatVector" />
          <element name="SeriesOfVector" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:SeriesOfVectorType">
                  <attribute name="hopSize" type="mpeg7:mediaDurationType"
default="PT10N1000F" />
                </extension>
              </complexContent>
```

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```
          </complexType>
        </element>
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of AudioWaveform D                                    -->
<!-- ################################################################ -->
<complexType name="AudioWaveformType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType">
      <attribute name="minRange" type="float" use="optional" />
      <attribute name="maxRange" type="float" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of audioSpectrumAttributeGrp                          -->
<!-- ################################################################ -->
<attributeGroup name="audioSpectrumAttributeGrp">
  <attribute name="loEdge" type="float" default="62.5" />
  <attribute name="hiEdge" type="float" default="16000" />
  <attribute name="octaveResolution" use="optional">
    <simpleType>
      <restriction base="string">
        <enumeration value="1/16" />
        <enumeration value="1/8" />
        <enumeration value="1/4" />
        <enumeration value="1/2" />
        <enumeration value="1" />
        <enumeration value="2" />
        <enumeration value="4" />
        <enumeration value="8" />
      </restriction>
    </simpleType>
  </attribute>
  <!-- Edge values are in Hertz                                       -->
</attributeGroup>
<!-- ################################################################ -->
<!-- Definition of AudioSpectrumEnvelope D                            -->
<!-- ################################################################ -->
<complexType name="AudioSpectrumEnvelopeType">
  <complexContent>
    <extension base="mpeg7:AudioLLDVectorType">
      <attributeGroup ref="mpeg7:audioSpectrumAttributeGrp" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of AudioPower D                                       -->
<!-- ################################################################ -->
<complexType name="AudioPowerType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType" />
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of AudioSpectrumCentroid D                            -->
<!-- ################################################################ -->
```

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```
  <complexType name="AudioSpectrumCentroidType">
    <complexContent>
      <extension base="mpeg7:AudioLLDScalarType" />
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioSpectrumSpread D                              -->
  <!-- ################################################################ -->
  <complexType name="AudioSpectrumSpreadType">
    <complexContent>
      <extension base="mpeg7:AudioLLDScalarType" />
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioFundamentalFrequency D                        -->
  <!-- ################################################################ -->
  <complexType name="AudioFundamentalFrequencyType">
    <complexContent>
      <extension base="mpeg7:AudioLLDScalarType">
        <attribute name="loLimit" type="float" default="25" />
        <attribute name="hiLimit" type="float" use="optional" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioHarmonicity D                                 -->
  <!-- ################################################################ -->
  <complexType name="AudioHarmonicityType">
    <complexContent>
      <extension base="mpeg7:AudioDType">
        <sequence>
          <element name="HarmonicRatio" type="mpeg7:AudioLLDScalarType" />
          <element name="UpperLimitOfHarmonicity" type="mpeg7:AudioLLDScalarType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioSpectrumFlatness D                            -->
  <!-- ################################################################ -->
  <complexType name="AudioSpectrumFlatnessType">
    <complexContent>
      <extension base="mpeg7:AudioLLDVectorType">
        <attribute name="loEdge" type="float" default="250" />
        <attribute name="hiEdge" type="float" default="16000" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioSpectrumBasis D                               -->
  <!-- ################################################################ -->
  <complexType name="AudioSpectrumBasisType">
    <complexContent>
      <extension base="mpeg7:AudioLLDVectorType">
        <attributeGroup ref="mpeg7:audioSpectrumAttributeGrp" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of AudioSpectrumProjection D                          -->
```


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```
<!-- ################################################################## -->
<complexType name="AudioSpectrumProjectionType">
  <complexContent>
    <extension base="mpeg7:AudioLLDVectorType" />
  </complexContent>
</complexType>
<!-- ################################################################## -->
<!-- Definition of LogAttackTime D                                      -->
<!-- ################################################################## -->
<complexType name="LogAttackTimeType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType" />
  </complexContent>
</complexType>
<!-- ################################################################## -->
<!-- Definition of HarmonicSpectralCentroid D                           -->
<!-- ################################################################## -->
<complexType name="HarmonicSpectralCentroidType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType" />
  </complexContent>
</complexType>
<!-- ################################################################## -->
<!-- Definition of HarmonicSpectralDeviation D                          -->
<!-- ################################################################## -->
<complexType name="HarmonicSpectralDeviationType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType" />
  </complexContent>
</complexType>
<!-- ################################################################## -->
<!-- Definition of HarmonicSpectralSpread D                             -->
<!-- ################################################################## -->
<complexType name="HarmonicSpectralSpreadType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType" />
  </complexContent>
</complexType>
<!-- ################################################################## -->
<!-- Definition of HarmonicSpectralVariation D                          -->
<!-- ################################################################## -->
<complexType name="HarmonicSpectralVariationType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType" />
  </complexContent>
</complexType>
<!-- ################################################################## -->
<!-- Definition of SpectralCentroid D                                   -->
<!-- ################################################################## -->
<complexType name="SpectralCentroidType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType" />
  </complexContent>
</complexType>
<!-- ################################################################## -->
<!-- Definition of TemporalCentroid D                                   -->
<!-- ################################################################## -->
<complexType name="TemporalCentroidType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType" />
```

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```
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of ScalableSeries datatype                            -->
<!-- ################################################################ -->
<complexType name="ScalableSeriesType" abstract="true">
  <sequence>
    <element name="Scaling" minOccurs="0" maxOccurs="unbounded">
      <complexType>
        <attribute name="ratio" type="positiveInteger" use="required" />
        <attribute name="numOfElements" type="positiveInteger" use="required" />
      </complexType>
    </element>
  </sequence>
  <attribute name="totalNumOfSamples" type="positiveInteger" use="required" />
</complexType>
<!-- ################################################################ -->
<!-- Definition of SeriesOfScalar datatype                            -->
<!-- ################################################################ -->
<complexType name="SeriesOfScalarType">
  <complexContent>
    <extension base="mpeg7:ScalableSeriesType">
      <sequence>
        <element name="Raw" type="mpeg7:floatVector" minOccurs="0" />
        <element name="Min" type="mpeg7:floatVector" minOccurs="0" />
        <element name="Max" type="mpeg7:floatVector" minOccurs="0" />
        <element name="Mean" type="mpeg7:floatVector" minOccurs="0" />
        <element name="Random" type="mpeg7:floatVector" minOccurs="0" />
        <element name="First" type="mpeg7:floatVector" minOccurs="0" />
        <element name="Last" type="mpeg7:floatVector" minOccurs="0" />
        <element name="Variance" type="mpeg7:floatVector" minOccurs="0" />
        <element name="Weight" type="mpeg7:floatVector" minOccurs="0" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SeriesOfScalarBinary datatype                      -->
<!-- ################################################################ -->
<complexType name="SeriesOfScalarBinaryType">
  <complexContent>
    <extension base="mpeg7:SeriesOfScalarType">
      <sequence>
        <element name="VarianceScalewise" type="mpeg7:FloatMatrixType" minOccurs="0" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SeriesOfVector datatype                            -->
<!-- ################################################################ -->
<complexType name="SeriesOfVectorType">
  <complexContent>
    <extension base="mpeg7:ScalableSeriesType">
      <sequence>
        <element name="Raw" type="mpeg7:FloatMatrixType" minOccurs="0" />
        <element name="Min" type="mpeg7:FloatMatrixType" minOccurs="0" />
        <element name="Max" type="mpeg7:FloatMatrixType" minOccurs="0" />
        <element name="Mean" type="mpeg7:FloatMatrixType" minOccurs="0" />
        <element name="Random" type="mpeg7:FloatMatrixType" minOccurs="0" />
```


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```
        <element name="First" type="mpeg7:FloatMatrixType" minOccurs="0" />
        <element name="Last" type="mpeg7:FloatMatrixType" minOccurs="0" />
        <element name="Variance" type="mpeg7:FloatMatrixType" minOccurs="0" />
        <element name="Covariance" type="mpeg7:FloatMatrixType" minOccurs="0" />
        <element name="VarianceSummed" type="mpeg7:floatVector" minOccurs="0" />
        <element name="MaxSqDist" type="mpeg7:floatVector" minOccurs="0" />
        <element name="Weight" type="mpeg7:floatVector" minOccurs="0" />
      </sequence>
      <attribute name="vectorSize" type="positiveInteger" default="1" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SeriesOfVectorBinary datatype                      -->
<!-- ################################################################ -->
<complexType name="SeriesOfVectorBinaryType">
  <complexContent>
    <extension base="mpeg7:SeriesOfVectorType">
      <sequence>
        <element name="VarianceScalewise" type="mpeg7:FloatMatrixType" minOccurs="0" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SilenceHeader header                               -->
<!-- ################################################################ -->
<complexType name="SilenceHeaderType">
  <complexContent>
    <extension base="mpeg7:HeaderType">
      <attribute name="minDuration" type="mpeg7:mediaDurationType" use="required" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of Silence D                                          -->
<!-- ################################################################ -->
<complexType name="SilenceType">
  <complexContent>
    <extension base="mpeg7:AudioDType">
      <attribute name="confidence" type="mpeg7:zeroToOneType" default="1.0" />
      <attribute name="minDurationRef" type="anyURI" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of AudioSignature DS                                  -->
<!-- ################################################################ -->
<complexType name="AudioSignatureType">
  <complexContent>
    <extension base="mpeg7:AudioDSType">
      <sequence>
        <element name="Flatness" type="mpeg7:AudioSpectrumFlatnessType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of InstrumentTimbre DS                                -->
<!-- ################################################################ -->
```

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```
  <complexType name="InstrumentTimbreType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="LogAttackTime" type="mpeg7:LogAttackTimeType" minOccurs="0" />
          <element name="HarmonicSpectralCentroid"
type="mpeg7:HarmonicSpectralCentroidType" minOccurs="0" />
          <element name="HarmonicSpectralDeviation"
type="mpeg7:HarmonicSpectralDeviationType" minOccurs="0" />
          <element name="HarmonicSpectralSpread" type="mpeg7:HarmonicSpectralSpreadType"
minOccurs="0" />
          <element name="HarmonicSpectralVariation"
type="mpeg7:HarmonicSpectralVariationType" minOccurs="0" />
          <element name="SpectralCentroid" type="mpeg7:SpectralCentroidType" minOccurs="0"
/>
          <element name="TemporalCentroid" type="mpeg7:TemporalCentroidType" minOccurs="0"
/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of HarmonicInstrumentTimbre DS                        -->
  <!-- ################################################################ -->
  <complexType name="HarmonicInstrumentTimbreType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="LogAttackTime" type="mpeg7:LogAttackTimeType" />
          <element name="HarmonicSpectralCentroid"
type="mpeg7:HarmonicSpectralCentroidType" />
          <element name="HarmonicSpectralDeviation"
type="mpeg7:HarmonicSpectralDeviationType" />
          <element name="HarmonicSpectralSpread" type="mpeg7:HarmonicSpectralSpreadType"
/>
          <element name="HarmonicSpectralVariation"
type="mpeg7:HarmonicSpectralVariationType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of PercussiveInstrumentTimbre DS                      -->
  <!-- ################################################################ -->
  <complexType name="PercussiveInstrumentTimbreType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="LogAttackTime" type="mpeg7:LogAttackTimeType" />
          <element name="SpectralCentroid" type="mpeg7:SpectralCentroidType" />
          <element name="TemporalCentroid" type="mpeg7:TemporalCentroidType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of SpokenContentHeader header                         -->
  <!-- ################################################################ -->
  <complexType name="SpokenContentHeaderType">
    <complexContent>
```


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```
      <extension base="mpeg7:HeaderType">
        <sequence>
          <choice maxOccurs="unbounded">
            <element name="WordLexicon" type="mpeg7:WordLexiconType" />
            <element name="PhoneLexicon" type="mpeg7:PhoneLexiconType" />
            <!-- Information about the word and phone lexicons used to       -->
            <!-- represent the speech                                         -->
          </choice>
          <element name="ConfusionInfo" type="mpeg7:ConfusionCountType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="DescriptionMetadata" type="mpeg7:DescriptionMetadataType"
minOccurs="0" />
          <element name="SpeakerInfo" type="mpeg7:SpeakerInfoType" maxOccurs="unbounded"
/>
          <!-- Information about the speakers in the audio                  -->
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################# -->
  <!-- Definition of SpeakerInfo header                                   -->
  <!-- ################################################################# -->
  <complexType name="SpeakerInfoType">
    <complexContent>
      <extension base="mpeg7:HeaderType">
        <sequence>
          <element name="SpokenLanguage" type="language" />
          <element name="Person" type="mpeg7:PersonType" minOccurs="0" />
          <element name="WordIndex" minOccurs="0">
            <complexType>
              <sequence>
                <element name="WordIndexEntry" maxOccurs="unbounded">
                  <complexType>
                    <sequence>
                      <element name="IndexEntry" type="mpeg7:SpokenContentIndexEntryType"
maxOccurs="unbounded" />
                    </sequence>
                    <attribute name="key" use="required">
                      <simpleType>
                        <list itemType="mpeg7:WordLexiconIndexType" />
                      </simpleType>
                    </attribute>
                  </complexType>
                </element>
              </sequence>
              <attribute name="defaultLattice" type="anyURI" use="required" />
            </complexType>
          </element>
          <element name="PhoneIndex" minOccurs="0">
            <complexType>
              <sequence>
                <element name="PhoneIndexEntry" maxOccurs="unbounded">
                  <complexType>
                    <sequence>
                      <element name="IndexEntry" type="mpeg7:SpokenContentIndexEntryType"
maxOccurs="unbounded" />
                    </sequence>
                    <attribute name="key" use="required">
                      <simpleType>
                        <list itemType="mpeg7:PhoneLexiconIndexType" />
```

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```
                    </simpleType>
                  </attribute>
                </complexType>
              </element>
            </sequence>
            <attribute name="defaultLattice" type="anyURI" use="required" />
          </complexType>
        </element>
      </sequence>
      <attribute name="phoneLexiconRef" type="anyURI" use="optional" />
      <attribute name="wordLexiconRef" type="anyURI" use="optional" />
      <attribute name="confusionInfoRef" type="anyURI" use="optional" />
      <attribute name="descriptionMetadataRef" type="anyURI" use="optional" />
      <attribute name="provenance" use="required">
        <simpleType>
          <restriction base="NMTOKEN">
            <enumeration value="unknown" />
            <enumeration value="ASR" />
            <enumeration value="manual" />
            <enumeration value="keyword" />
            <enumeration value="parsing" />
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SpokenContentIndexEntry datatype                   -->
<!-- ################################################################ -->
<complexType name="SpokenContentIndexEntryType">
  <attribute name="node" type="mpeg7:unsigned16" use="required" />
  <attribute name="block" type="mpeg7:unsigned16" use="required" />
  <attribute name="lattice" type="anyURI" use="optional" />
</complexType>
<!-- ################################################################ -->
<!-- Definitions of SpokenContent Word and Phone datatypes            -->
<!-- ################################################################ -->
<simpleType name="WordType">
  <restriction base="string" />
</simpleType>
<simpleType name="PhoneType">
  <restriction base="string" />
</simpleType>
<simpleType name="WordLexiconIndexType">
  <restriction base="mpeg7:unsigned32" />
</simpleType>
<simpleType name="PhoneLexiconIndexType">
  <restriction base="mpeg7:unsigned16" />
</simpleType>
<!-- ################################################################ -->
<!-- Definition of Lexicon header                                     -->
<!-- ################################################################ -->
<complexType name="LexiconType" abstract="true">
  <complexContent>
    <extension base="mpeg7:HeaderType">
      <attribute name="numOfOriginalEntries" type="positiveInteger" use="optional" />
    </extension>
  </complexContent>
</complexType>
```


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```
  <!-- ################################################################ -->
  <!-- Definition of WordLexiconType  (Audio AMD/1)                     -
->
  <!-- ################################################################ -->
  <!-- ################################################################ -->
  <!-- Definition of WordLexiconType                                    -->
  <!-- ################################################################ -->
  <complexType name="WordLexiconType">
    <complexContent>
      <extension base="mpeg7:LexiconType">
        <sequence>
          <element name="Token" minOccurs="1" maxOccurs="4294967296">
            <complexType> <!-- New attribute V2 -->
              <simpleContent>
                <extension base="mpeg7:WordType">
                  <attribute name="linguisticUnit" use="optional" default="word">
                    <simpleType>
                      <union>
                        <simpleType>
                          <restriction base="NMTOKEN">
                            <enumeration value="word" />
                            <enumeration value="syllable" />
                            <enumeration value="morpheme" />
                            <enumeration value="phrase" />
                            <enumeration value="component" />
                            <enumeration value="stem" />
                            <enumeration value="affix" />
                            <enumeration value="nonspeech" />
                            <enumeration value="other" />
                          </restriction>
                        </simpleType>
                        <simpleType>
                          <restriction base="mpeg7:termAliasReferenceType" />
                        </simpleType>
                        <simpleType>
                          <restriction base="mpeg7:termURIReferenceType" />
                        </simpleType>
                      </union>
                    </simpleType>
                  </attribute>
                  <attribute name="representation" use="optional" default="orthographic">
                    <simpleType>
                      <restriction base="NMTOKEN">
                        <enumeration value="orthographic" />
                        <enumeration value="nonorthographic" />
                      </restriction>
                    </simpleType>
                  </attribute>
                </extension>
              </simpleContent>
            </complexType>
          </element>
        </sequence>
        <attribute name="phoneticAlphabet" type="mpeg7:phoneticAlphabetType"
use="optional" /> <!-- New attribute V2 -->
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of phoneticAlphabet datatype                          -->
```

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```
  <!-- ################################################################ -->
  <simpleType name="phoneticAlphabetType">
    <restriction base="NMTOKEN">
      <enumeration value="sampa" />
      <enumeration value="ipaSymbol" />
      <enumeration value="ipaNumber" />
      <enumeration value="other" />
    </restriction>
    <!-- This defines an [enumerated] type covering the phone sets. It       -->
    <!-- essentially distinguishes between IPA based systems and everything  -->
    <!-- else.                                                               -->
  </simpleType>
  <!-- ################################################################ -->
  <!-- Definition of PhoneLexicon header                                  -->
  <!-- ################################################################ -->
  <complexType name="PhoneLexiconType">
    <complexContent>
      <extension base="mpeg7:LexiconType">
        <sequence>
          <element name="Token" type="mpeg7:PhoneType" maxOccurs="65536" />
          <!-- The maxOccurs is the upper limit of WordLexiconIndexType      -->
        </sequence>
        <attribute name="phoneticAlphabet" type="mpeg7:phoneticAlphabetType"
default="sampa" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of ConfusionCount header                                -->
  <!-- ################################################################ -->
  <complexType name="ConfusionCountType">
    <complexContent>
      <extension base="mpeg7:HeaderType">
        <sequence>
          <element name="Insertion" type="mpeg7:integerVector" />
          <element name="Deletion" type="mpeg7:integerVector" />
          <element name="Substitution" type="mpeg7:IntegerMatrixType" />
        </sequence>
        <attribute name="numOfDimensions" type="positiveInteger" use="required" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of the SpokenContentLattice DS                          -->
  <!-- ################################################################ -->
  <complexType name="SpokenContentLatticeType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="Block" maxOccurs="65536">
            <complexType>
              <sequence>
                <element name="MediaTime" type="mpeg7:MediaTimeType" />
                <element name="Node" maxOccurs="65536">
                  <complexType>
                    <sequence>
                      <element name="WordLink" minOccurs="0" maxOccurs="127">
                        <complexType>
                          <complexContent>
                            <extension base="mpeg7:SpokenContentLinkType">
```


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```
                              <attribute name="word" type="mpeg7:WordLexiconIndexType"
use="required" />
                            </extension>
                          </complexContent>
                        </complexType>
                      </element>
                      <element name="PhoneLink" minOccurs="0" maxOccurs="127">
                        <complexType>
                          <complexContent>
                            <extension base="mpeg7:SpokenContentLinkType">
                              <attribute name="phone" type="mpeg7:PhoneLexiconIndexType"
use="required" />
                            </extension>
                          </complexContent>
                        </complexType>
                      </element>
                    </sequence>
                    <attribute name="num" type="mpeg7:unsigned16" use="required" />
                    <attribute name="timeOffset" type="mpeg7:unsigned16" use="required" />
                    <attribute name="speakerInfoRef" type="anyURI" use="optional" />
                  </complexType>
                </element>
              </sequence>
              <attribute name="defaultSpeakerInfoRef" type="anyURI" use="required" />
              <attribute name="num" type="mpeg7:unsigned16" use="required" />
              <attribute name="audio" default="speech">
                <simpleType>
                  <restriction base="NMTOKEN">
                    <enumeration value="unknown" />
                    <enumeration value="speech" />
                    <enumeration value="noise" />
                    <enumeration value="noisySpeech" />
                  </restriction>
                  <!-- This gives an approximate measure of how noisy the    -->
                  <!-- speech signal is with respect to the speech           -->
                </simpleType>
              </attribute>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of SpokenContentLink datatype   (Audio AMD/1)
-->
  <!-- ################################################################ -->
  <complexType name="SpokenContentLinkType">
    <attribute name="probability" type="mpeg7:zeroToOneType" default="1.0" />
    <attribute name="acousticScore" type="mpeg7:nonNegativeReal" use="optional" /> <!--
New attribute V2 -->
    <attribute name="nodeOffset" type="mpeg7:unsigned16" default="1" />
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of SoundModel DS                                      -->
  <!-- ################################################################ -->
  <complexType name="SoundModelType">
    <complexContent>
      <extension base="mpeg7:ContinuousHiddenMarkovModelType">
        <sequence minOccurs="0">
```

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```
        <element name="SoundClassLabel" type="mpeg7:TermUseType" />
        <element name="SpectrumBasis" type="mpeg7:AudioSpectrumBasisType" />
      </sequence>
      <attribute name="SoundModelRef" type="anyURI" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SoundModelStatePath DS                             -->
<!-- ################################################################ -->
<complexType name="SoundModelStatePathType">
  <complexContent>
    <extension base="mpeg7:AudioDSType">
      <sequence>
        <element name="StatePath" type="mpeg7:AudioLLDScalarType" />
        <element name="SoundModelRef" type="anyURI" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SoundModelStateHistogram D                         -->
<!-- ################################################################ -->
<complexType name="SoundModelStateHistogramType">
  <complexContent>
    <extension base="mpeg7:AudioDType">
      <sequence>
        <sequence maxOccurs="unbounded">
          <element name="StateRef" type="anyURI" />
          <element name="RelativeFrequency" type="mpeg7:nonNegativeReal" />
        </sequence>
        <element name="SoundModelRef" type="anyURI" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of SoundClassificationModel DS                        -->
<!-- ################################################################ -->
<complexType name="SoundClassificationModelType">
  <complexContent>
    <extension base="mpeg7:ClassificationModelType">
      <sequence>
        <element name="SoundModel" type="mpeg7:SoundModelType" maxOccurs="unbounded" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of Melody DS                                          -->
<!-- ################################################################ -->
<complexType name="MelodyType">
  <complexContent>
    <extension base="mpeg7:AudioDSType">
      <sequence>
        <element name="Meter" type="mpeg7:MeterType" minOccurs="0" />
        <element name="Scale" type="mpeg7:scaleType" minOccurs="0" />
        <element name="Key" type="mpeg7:KeyType" minOccurs="0" />
        <choice>
          <element name="MelodyContour" type="mpeg7:MelodyContourType" />
```


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```
            <element name="MelodySequence" type="mpeg7:MelodySequenceType"
maxOccurs="unbounded" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of MelodyContour DS                                   -->
  <!-- ################################################################ -->
  <complexType name="MelodyContourType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="Contour" type="mpeg7:contourType" />
          <element name="Beat" type="mpeg7:beatType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of Meter D                                            -->
  <!-- ################################################################ -->
  <complexType name="MeterType">
    <complexContent>
      <extension base="mpeg7:AudioDType">
        <sequence>
          <element name="Numerator">
            <simpleType>
              <restriction base="integer">
                <minInclusive value="1" />
                <maxInclusive value="128" />
              </restriction>
            </simpleType>
          </element>
          <element name="Denominator">
            <simpleType>
              <restriction base="integer">
                <enumeration value="1" />
                <enumeration value="2" />
                <enumeration value="4" />
                <enumeration value="8" />
                <enumeration value="16" />
                <enumeration value="32" />
                <enumeration value="64" />
                <enumeration value="128" />
              </restriction>
            </simpleType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!-- Definition of contour datatype                                   -->
  <!-- ################################################################ -->
  <simpleType name="contourType">
    <list>
      <simpleType>
        <restriction base="integer">
```

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```
          <minInclusive value="-2" />
          <maxInclusive value="+2" />
        </restriction>
      </simpleType>
    </list>
  </simpleType>
  <!-- ################################################################ -->
  <!-- Definition of beat datatype                                      -->
  <!-- ################################################################ -->
  <simpleType name="beatType">
    <list itemType="integer" />
  </simpleType>
  <!-- ################################################################ -->
  <!-- Definition of Scale datatype                                     -->
  <!-- ################################################################ -->
  <!-- Information about a scale                                        -->
  <!-- array of a repeatable span of notes, in semitones from base pitch     -->
  <simpleType name="scaleType">
    <restriction base="mpeg7:floatVector" />
  </simpleType>
  <!-- ################################################################ -->
  <!-- Definition of MelodyKey DS                                       -->
  <!-- ################################################################ -->
  <!-- Information about the key                                        -->
  <complexType name="KeyType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="KeyNote">
            <complexType>
              <simpleContent>
                <extension base="mpeg7:degreeNoteType">
                  <attribute name="display" type="string" use="optional" />
                </extension>
              </simpleContent>
            </complexType>
          </element>
        </sequence>
        <attribute name="accidental" type="mpeg7:degreeAccidentalType" default="natural"
/>
        <attribute name="mode" type="mpeg7:termReferenceType" use="optional" />
      </extension>
    </complexContent>
  </complexType>
  <simpleType name="degreeNoteType">
    <restriction base="string">
      <enumeration value="C" />
      <enumeration value="D" />
      <enumeration value="E" />
      <enumeration value="F" />
      <enumeration value="G" />
      <enumeration value="A" />
      <enumeration value="B" />
    </restriction>
  </simpleType>
  <simpleType name="degreeAccidentalType">
    <restriction base="string">
      <enumeration value="flat" />
      <enumeration value="natural" />
      <enumeration value="sharp" />
```


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```
      <enumeration value="doubleSharp" />
      <enumeration value="doubleFlat" />
    </restriction>
  </simpleType>
  <!-- ################################################################ -->
  <!-- Definition of MelodySequence DS                                  -->
  <!-- ################################################################ -->
  <complexType name="MelodySequenceType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <element name="StartingNote" minOccurs="0">
            <complexType>
              <sequence>
                <element name="StartingFrequency" type="float" minOccurs="0" />
                <element name="StartingPitch" minOccurs="0">
                  <complexType>
                    <sequence>
                      <element name="PitchNote">
                        <complexType>
                          <simpleContent>
                            <extension base="mpeg7:degreeNoteType">
                              <attribute name="display" type="string" use="optional" />
                            </extension>
                          </simpleContent>
                        </complexType>
                      </element>
                    </sequence>
                    <attribute name="accidental" type="mpeg7:degreeAccidentalType"
default="natural" />
                    <attribute name="height" type="integer" use="optional" />
                  </complexType>
                </element>
              </sequence>
            </complexType>
          </element>
          <element name="NoteArray" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:AudioDSType">
                  <sequence>
                    <element name="Note" maxOccurs="unbounded">
                      <complexType>
                        <sequence>
                          <element name="Interval" type="float" />
                          <element name="NoteRelDuration" type="float" />
                          <element name="Lyric" type="mpeg7:TextualType" minOccurs="0" />
                        </sequence>
                      </complexType>
                    </element>
                  </sequence>
                </extension>
              </complexContent>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################-->
```

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```
  <!-- ************************ ISO/IEC 15938-3 Audio AMD/1 ***************************-
->
  <!-- ********************************************************************************-->
  <!-- ################################################ -->
  <!--   Definition of AudioSignalQuality DS AMD/1      -->
  <!-- ################################################ -->
  <complexType name="AudioSignalQualityType">
    <complexContent>
      <extension base="mpeg7:AudioDSType">
        <sequence>
          <!--  Summaries-->
          <element name="Operator" type="mpeg7:PersonType" minOccurs="0" />
          <element name="UsedTool" type="mpeg7:CreationToolType" minOccurs="0" />
          <element name="BackgroundNoiseLevel" type="mpeg7:BackgroundNoiseLevelType" />
          <element name="RelativeDelay" type="mpeg7:RelativeDelayType" />
          <element name="Balance" type="mpeg7:BalanceType" />
          <element name="DcOffset" type="mpeg7:DcOffsetType" />
          <element name="CrossChannelCorrelation" type="mpeg7:CrossChannelCorrelationType"
/>
          <element name="Bandwidth" type="mpeg7:BandwidthType" />
          <!--  High Level Feature-->
          <element name="TransmissionTechnology" type="mpeg7:TransmissionTechnologyType"
minOccurs="0" />
          <!--  Events-->
          <element name="ErrorEventList" minOccurs="0">
            <complexType>
              <sequence>
                <element name="ErrorEvent" type="mpeg7:ErrorEventType" minOccurs="0"
maxOccurs="unbounded" />
              </sequence>
            </complexType>
          </element>
        </sequence>
        <!--  Attributes-->
        <attribute name="IsOriginalMono" type="boolean" />
        <attribute name="BroadcastReady" type="boolean" use="optional" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--   Definition of BackgroundNoiseLevel D           -->
  <!-- ################################################ -->
  <complexType name="BackgroundNoiseLevelType">
    <complexContent>
      <extension base="mpeg7:AudioLLDVectorType" />
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--   Definition of CrossChannelCorrelation D        -->
  <!-- ################################################ -->
  <complexType name="CrossChannelCorrelationType">
    <complexContent>
      <extension base="mpeg7:AudioLLDVectorType" />
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--   Definition of RelativeDelay D                  -->
  <!-- ################################################ -->
  <complexType name="RelativeDelayType">
    <complexContent>
```


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```
    <extension base="mpeg7:AudioLLDVectorType">
      <attribute name="Reliability" type="mpeg7:zeroToOneType" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--   Definition of Balance D                        -->
<!-- ################################################ -->
<complexType name="BalanceType">
  <complexContent>
    <extension base="mpeg7:AudioLLDVectorType" />
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--   Definition of DcOffset D                       -->
<!-- ################################################ -->
<complexType name="DcOffsetType">
  <complexContent>
    <extension base="mpeg7:AudioLLDVectorType" />
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--   Definition of Bandwidth D                      -->
<!-- ################################################ -->
<complexType name="BandwidthType">
  <complexContent>
    <extension base="mpeg7:AudioLLDVectorType" />
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--   Definition of Transmission Technology Type     -->
<!-- ################################################ -->
<complexType name="TransmissionTechnologyType">
  <complexContent>
    <extension base="mpeg7:ControlledTermUseType" />
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--   Definition of ErrorEvent DS                    -->
<!-- ################################################ -->
<complexType name="ErrorEventType">
  <complexContent>
    <extension base="mpeg7:AudioDSType">
      <sequence>
        <element name="ErrorClass" type="mpeg7:ControlledTermUseType" />
        <element name="ChannelNo" type="positiveInteger" />
        <element name="TimeStamp" type="mpeg7:MediaTimeType" />
        <element name="Relevance" type="mpeg7:unsigned4" />
        <element name="DetectionProcess">
          <simpleType>
            <restriction base="string">
              <enumeration value="manual" />
              <enumeration value="automatic" />
            </restriction>
          </simpleType>
        </element>
        <element name="Status">
          <simpleType>
            <restriction base="string">
              <enumeration value="undefined" />
```

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```
              <enumeration value="checked" />
              <enumeration value="needs restoration" />
              <enumeration value="restored" />
              <enumeration value="deleted" />
            </restriction>
          </simpleType>
        </element>
        <element name="Comment" type="mpeg7:TextAnnotationType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--   Definition of Audio Tempo DS                   -->
<!-- ################################################ -->
<complexType name="AudioTempoType">
  <complexContent>
    <extension base="mpeg7:AudioDSType">
      <sequence>
        <element name="BPM" type="mpeg7:AudioBPMType" />
        <element name="Meter" type="mpeg7:MeterType" minOccurs="0" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################################ -->
<!-- Definition of AudioBPMType                                       -->
<!-- ################################################################ -->
<complexType name="AudioBPMType">
  <complexContent>
    <extension base="mpeg7:AudioLLDScalarType">
      <attribute name="loLimit" type="float" use="optional" />
      <attribute name="hiLimit" type="float" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- ********************************************************************--->
<!-- ********************** ISO/IEC 15938-5 MDS ***************************--->
<!-- ********************************************************************--->
<annotation>
  <documentation>
    This section contains MDS tools defined in ISO/IEC 15938-5
   </documentation>
</annotation>
<!-- ###################################### -->
<!--  Definition of MPEG-7 Base types (4.2)  -->
<!-- ###################################### -->
<!-- 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 -->
```


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```
  <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 Visual D -->
  <complexType name="VisualDType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DType" />
    </complexContent>
  </complexType>
  <!-- Definition of Audio D (MDS AMD/1) -->
  <complexType name="AudioDType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DType">
        <attribute name="channels" type="mpeg7:integerVector" use="optional" />
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of Visual DS -->
  <complexType name="VisualDSType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType" />
    </complexContent>
  </complexType>
  <!-- Definition of Audio DS (MDS AMD/1) -->
  <complexType name="AudioDSType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <attribute name="channels" type="mpeg7:integerVector" use="optional" />
      </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 MPEG-7 root element (4.3) (COR/1) -->
  <!-- ################################################ -->
  <!-- Definition of Mpeg7 Type (COR/1)-->
  <complexType name="Mpeg7Type" abstract="true">
    <sequence>
      <element name="DescriptionProfile" type="mpeg7:DescriptionProfileType" minOccurs="0"
/>
      <element name="DescriptionMetadata" type="mpeg7:DescriptionMetadataType"
minOccurs="0" />
    </sequence>
```

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```
    <attribute ref="xml:lang" use="optional" />
    <attributeGroup ref="mpeg7:timePropertyGrp" />
    <attributeGroup ref="mpeg7:mediaTimePropertyGrp" />
  </complexType>
  <!-- Definition of DescriptionProfileType (COR/1) -->
  <complexType name="DescriptionProfileType">
    <attribute name="profileAndLevelIndication" use="required">
      <simpleType>
        <list itemType="anyURI" />
      </simpleType>
    </attribute>
  </complexType>
  <!-- Definition of Mpeg7 Element (COR/1) -->
  <element name="Mpeg7">
    <complexType>
      <complexContent>
        <extension base="mpeg7:Mpeg7Type">
          <choice>
            <element name="DescriptionUnit" type="mpeg7:Mpeg7BaseType" />
            <element name="Description" type="mpeg7:CompleteDescriptionType"
maxOccurs="unbounded" />
          </choice>
        </extension>
      </complexContent>
    </complexType>
  </element>
  <!-- ############################################################ -->
  <!--  Definition of Complete description top-level types (4.4.2)  -->
  <!-- ############################################################ -->
  <!-- Definition of CompleteDescription Top-level Type -->
  <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>
  <!-- ############################################################ -->
  <!--  Definition of Content description top-level types (4.4.3)  -->
  <!-- ############################################################ -->
  <!-- Definition of ContentDescription Top-level Type -->
  <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>
  <!-- Definition of ContentEntity Top-level Type -->
  <complexType name="ContentEntityType">
    <complexContent>
      <extension base="mpeg7:ContentDescriptionType">
        <sequence>
```


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```
          <element name="MultimediaContent" type="mpeg7:MultimediaContentType"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ContentAbstraction Top-level Type -->
  <complexType name="ContentAbstractionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:ContentDescriptionType" />
    </complexContent>
  </complexType>
  <!-- Definition of SemanticDescription Top-level Type -->
  <complexType name="SemanticDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentAbstractionType">
        <choice>
          <element name="Semantics" type="mpeg7:SemanticType" maxOccurs="unbounded" />
          <element name="ConceptCollection" type="mpeg7:ConceptCollectionType"
maxOccurs="unbounded" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ModelDescription Top-level Type -->
  <complexType name="ModelDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentAbstractionType">
        <sequence>
          <element name="Model" type="mpeg7:ModelType" maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of SummaryDescription Top-level Type -->
  <complexType name="SummaryDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentAbstractionType">
        <sequence>
          <element name="Summarization" type="mpeg7:SummarizationType"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ViewDescription Top-level Type -->
  <complexType name="ViewDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentAbstractionType">
        <choice>
          <element name="View" type="mpeg7:ViewType" maxOccurs="unbounded" />
          <element name="ViewSet" type="mpeg7:ViewSetType" maxOccurs="unbounded" />
          <element name="ViewDecomposition" type="mpeg7:ViewDecompositionType"
maxOccurs="unbounded" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of VariationDescription Top-level Type -->
  <complexType name="VariationDescriptionType">
```

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```
    <complexContent>
      <extension base="mpeg7:ContentAbstractionType">
        <choice>
          <element name="VariationSet" type="mpeg7:VariationSetType" maxOccurs="unbounded"
/>
          <element name="Variation" type="mpeg7:VariationType" maxOccurs="unbounded" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of Content management top-level types (4.4.4)  -->
  <!-- ########################################################## -->
  <!-- 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 MediaDescription Top-level Type -->
  <complexType name="MediaDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentManagementType">
        <sequence>
          <element name="MediaInformation" type="mpeg7:MediaInformationType"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of CreationDescription Top-level Type -->
  <complexType name="CreationDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentManagementType">
        <sequence>
          <element name="CreationInformation" type="mpeg7:CreationInformationType"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of UsageDescription Top-level Type -->
  <complexType name="UsageDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentManagementType">
        <sequence>
```


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```
          <element name="UsageInformation" type="mpeg7:UsageInformationType"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ClassificationSchemeDescription Top-level Type -->
  <complexType name="ClassificationSchemeDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentManagementType">
        <choice>
          <element name="ClassificationScheme" type="mpeg7:ClassificationSchemeType"
maxOccurs="unbounded" />
          <element name="ClassificationSchemeBase"
type="mpeg7:ClassificationSchemeBaseType" maxOccurs="unbounded" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################################## -->
  <!--  Definition of Multimedia content entity tools (4.4.5)   -->
  <!-- ######################################################## -->
  <!-- Definition of MultimediaContent Content Entity -->
  <complexType name="MultimediaContentType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType" />
    </complexContent>
  </complexType>
  <!-- Definition of Image Content Entity -->
  <complexType name="ImageType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="Image" type="mpeg7:StillRegionType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of Video Content Entity -->
  <complexType name="VideoType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="Video" type="mpeg7:VideoSegmentType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of Audio Content Entity -->
  <complexType name="AudioType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="Audio" type="mpeg7:AudioSegmentType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisual Content Entity -->
  <complexType name="AudioVisualType">
```

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```
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="AudioVisual" type="mpeg7:AudioVisualSegmentType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of Multimedia Content Entity -->
  <complexType name="MultimediaType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="Multimedia" type="mpeg7:MultimediaSegmentType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of MultimediaCollection Content Entity -->
  <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>
  <!-- Definition of Signal Content Entity -->
  <complexType name="SignalType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <choice>
          <element name="ImageSignal" type="mpeg7:StillRegionType" />
          <element name="VideoSignal" type="mpeg7:VideoSegmentType" />
          <element name="AudioSignal" type="mpeg7:AudioSegmentType" />
          <element name="SignalRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of InkContent Content Entity -->
  <complexType name="InkContentType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="InkContent" type="mpeg7:InkSegmentType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AnalyticEditedVideo Content Entity -->
  <complexType name="AnalyticEditedVideoType">
    <complexContent>
      <extension base="mpeg7:MultimediaContentType">
        <sequence>
          <element name="AnalyticEditedVideo" type="mpeg7:AnalyticEditedVideoSegmentType"
/>
```


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```
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of Linguistic Content Entity (AMD/1) -->
<complexType name="LinguisticType">
  <complexContent>
    <extension base="mpeg7:MultimediaContentType">
      <sequence>
        <element name="Linguistic" type="mpeg7:LinguisticDocumentType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of Text Content Entity (AMD/1) -->
<complexType name="TextType">
  <complexContent>
    <extension base="mpeg7:MultimediaContentType">
      <sequence>
        <element name="Text" type="mpeg7:TextSegmentType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################### -->
<!--  Definition of Package DS (4.5.2)   -->
<!-- ################################### -->
<!-- Definition of Package DS -->
<complexType name="PackageType">
  <complexContent>
    <extension base="mpeg7:DSType">
      <choice minOccurs="0" maxOccurs="unbounded">
        <element name="Scheme">
          <complexType>
            <attribute name="name" type="QName" use="required" />
          </complexType>
        </element>
        <element name="Package" type="mpeg7:PackageType" />
      </choice>
      <attribute name="name" type="string" use="required" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of DescriptionMetadata Header (4.5.3)  -->
<!-- ################################################ -->
<!-- Definition of DescriptionMetadata Header -->
<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" />
```

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```
          <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" />
          <element name="Package" type="mpeg7:PackageType" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of Unsigned datatypes (5.2.2)  -->
  <!-- ######################################### -->
  <!-- Definition of unsigned1 datatype -->
  <simpleType name="unsigned1">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="1" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned2 datatype -->
  <simpleType name="unsigned2">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="3" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned3 datatype -->
  <simpleType name="unsigned3">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="7" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned4 datatype -->
  <simpleType name="unsigned4">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="15" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned5 datatype -->
  <simpleType name="unsigned5">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="31" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned6 datatype -->
  <simpleType name="unsigned6">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="63" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned7 datatype -->
  <simpleType name="unsigned7">
    <restriction base="nonNegativeInteger">
```


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```
    <minInclusive value="0" />
    <maxInclusive value="127" />
  </restriction>
</simpleType>
<!-- Definition of unsigned8 datatype -->
<simpleType name="unsigned8">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="255" />
  </restriction>
</simpleType>
<!-- Definition of unsigned9 datatype -->
<simpleType name="unsigned9">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="511" />
  </restriction>
</simpleType>
<!-- Definition of unsigned10 datatype -->
<simpleType name="unsigned10">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="1023" />
  </restriction>
</simpleType>
<!-- Definition of unsigned11 datatype -->
<simpleType name="unsigned11">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="2047" />
  </restriction>
</simpleType>
<!-- Definition of unsigned12 datatype -->
<simpleType name="unsigned12">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="4095" />
  </restriction>
</simpleType>
<!-- Definition of unsigned13 datatype -->
<simpleType name="unsigned13">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="8191" />
  </restriction>
</simpleType>
<!-- Definition of unsigned14 datatype -->
<simpleType name="unsigned14">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="16383" />
  </restriction>
</simpleType>
<!-- Definition of unsigned15 datatype -->
<simpleType name="unsigned15">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="32767" />
  </restriction>
</simpleType>
```

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```
  <!-- Definition of unsigned16 datatype -->
  <simpleType name="unsigned16">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="65535" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned17 datatype -->
  <simpleType name="unsigned17">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="131071" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned18 datatype -->
  <simpleType name="unsigned18">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="262143" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned19 datatype -->
  <simpleType name="unsigned19">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="524287" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned20 datatype -->
  <simpleType name="unsigned20">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="1048575" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned21 datatype -->
  <simpleType name="unsigned21">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="2097151" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned22 datatype -->
  <simpleType name="unsigned22">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="4194303" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned23 datatype -->
  <simpleType name="unsigned23">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
      <maxInclusive value="8388607" />
    </restriction>
  </simpleType>
  <!-- Definition of unsigned24 datatype -->
  <simpleType name="unsigned24">
    <restriction base="nonNegativeInteger">
      <minInclusive value="0" />
```


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```
    <maxInclusive value="16777215" />
  </restriction>
</simpleType>
<!-- Definition of unsigned25 datatype -->
<simpleType name="unsigned25">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="33554431" />
  </restriction>
</simpleType>
<!-- Definition of unsigned26 datatype -->
<simpleType name="unsigned26">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="67108863" />
  </restriction>
</simpleType>
<!-- Definition of unsigned27 datatype -->
<simpleType name="unsigned27">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="134217727" />
  </restriction>
</simpleType>
<!-- Definition of unsigned28 datatype -->
<simpleType name="unsigned28">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="268435455" />
  </restriction>
</simpleType>
<!-- Definition of unsigned29 datatype -->
<simpleType name="unsigned29">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="536870911" />
  </restriction>
</simpleType>
<!-- Definition of unsigned30 datatype -->
<simpleType name="unsigned30">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="1073741823" />
  </restriction>
</simpleType>
<!-- Definition of unsigned31 datatype -->
<simpleType name="unsigned31">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="2147483647" />
  </restriction>
</simpleType>
<!-- Definition of unsigned32 datatype -->
<simpleType name="unsigned32">
  <restriction base="nonNegativeInteger">
    <minInclusive value="0" />
    <maxInclusive value="4294967295" />
  </restriction>
</simpleType>
<!-- ########################################## -->
```

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```
<!--  Definition of zeroToOne datatype (5.3.2)  -->
<!-- ######################################## -->
<!-- Definition of zeroToOne datatype -->
<simpleType name="zeroToOneType">
  <restriction base="float">
    <minInclusive value="0.0" />
    <maxInclusive value="1.0" />
  </restriction>
</simpleType>
<!-- ##############################################  -->
<!--  Definition of minusOneToOne datatype (5.3.3)   -->
<!-- ##############################################  -->
<!-- Definition of minusOneToOne datatype -->
<simpleType name="minusOneToOneType">
  <restriction base="float">
    <minInclusive value="-1.0" />
    <maxInclusive value="+1.0" />
  </restriction>
</simpleType>
<!-- ################################################  -->
<!--  Definition of nonNegativeReal datatype (5.3.4)   -->
<!-- ################################################  -->
<!-- Definition of nonNegativeReal datatype -->
<simpleType name="nonNegativeReal">
  <restriction base="double">
    <minInclusive value="0.0" />
  </restriction>
</simpleType>
<!-- ######################################## -->
<!--  Definition of vector datatypes  (5.4.2)  -->
<!-- ######################################## -->
<!-- Definition of integerVector datatype -->
<simpleType name="integerVector">
  <list itemType="integer" />
</simpleType>
<!-- Definition of floatVector datatype -->
<simpleType name="floatVector">
  <list itemType="float" />
</simpleType>
<!-- Definition of doubleVector datatype -->
<simpleType name="doubleVector">
  <list itemType="double" />
</simpleType>
<!-- ################################################## -->
<!--  Definition of minusOneToOneVector datatype (5.4.3)  -->
<!-- ################################################## -->
<!-- Definition of minusOneToOneVector datatype -->
<simpleType name="minusOneToOneVector">
  <list>
    <simpleType>
      <restriction base="float">
        <minInclusive value="-1.0" />
        <maxInclusive value="1.0" />
      </restriction>
    </simpleType>
  </list>
</simpleType>
<!-- ######################################  -->
<!--  Definition of Matrix datatypes (5.4.4)   -->
<!-- ######################################  -->
```


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```
<!-- Definition of IntegerMatrix datatype -->
<complexType name="IntegerMatrixType">
  <simpleContent>
    <extension base="mpeg7:integerVector">
      <attribute ref="mpeg7:dim" use="required" />
    </extension>
  </simpleContent>
</complexType>
<!-- Definition of FloatMatrix datatype -->
<complexType name="FloatMatrixType">
  <simpleContent>
    <extension base="mpeg7:floatVector">
      <attribute ref="mpeg7:dim" use="required" />
    </extension>
  </simpleContent>
</complexType>
<!-- Definition of DoubleMatrix datatype -->
<complexType name="DoubleMatrixType">
  <simpleContent>
    <extension base="mpeg7:doubleVector">
      <attribute ref="mpeg7:dim" use="required" />
    </extension>
  </simpleContent>
</complexType>
<!-- ################################################  -->
<!--  Definition of DiagonalMatrix datatypes (5.4.5)   -->
<!-- ################################################  -->
<!-- Definition of IntegerDiagonalMatrix datatype -->
<complexType name="IntegerDiagonalMatrixType">
  <simpleContent>
    <extension base="mpeg7:integerVector">
      <attribute ref="mpeg7:dim" use="required" />
    </extension>
  </simpleContent>
</complexType>
<!-- Definition of FloatDiagonalMatrix datatype -->
<complexType name="FloatDiagonalMatrixType">
  <simpleContent>
    <extension base="mpeg7:floatVector">
      <attribute ref="mpeg7:dim" use="required" />
    </extension>
  </simpleContent>
</complexType>
<!-- Definition of DoubleDiagonalMatrix datatype -->
<complexType name="DoubleDiagonalMatrixType">
  <simpleContent>
    <extension base="mpeg7:doubleVector">
      <attribute ref="mpeg7:dim" use="required" />
    </extension>
  </simpleContent>
</complexType>
<!-- ####################################################  -->
<!--  Definition of MinusOneToOneMatrix datatype (5.4.6)   -->
<!-- ####################################################  -->
<!-- Definition of MinusOneToOneMatrix datatype -->
<complexType name="MinusOneToOneMatrixType">
  <simpleContent>
    <extension base="mpeg7:minusOneToOneVector">
      <attribute ref="mpeg7:dim" use="required" />
    </extension>
```

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```
    </simpleContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of probablityVector datatype (5.5.2)  -->
  <!-- ################################################ -->
  <!-- Definition of probabilityVector datatype -->
  <simpleType name="probabilityVector">
    <list>
      <simpleType>
        <restriction base="float">
          <minInclusive value="0.0" />
          <maxInclusive value="1.0" />
        </restriction>
      </simpleType>
    </list>
  </simpleType>
  <!-- ################################################ -->
  <!--  Definition of ProbabilityMatrix datatype (5.5.3)  -->
  <!-- ################################################ -->
  <!-- Definition of probabilityMatrix datatype -->
  <complexType name="ProbabilityMatrixType">
    <simpleContent>
      <extension base="mpeg7:probabilityVector">
        <attribute ref="mpeg7:dim" use="required" />
      </extension>
    </simpleContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of mimeType datatype (5.6.2)  -->
  <!-- ################################################ -->
  <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 (5.6.3)  -->
  <!-- ########################################### -->
  <!-- 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 (5.6.4)  -->
  <!-- ########################################### -->
  <!-- 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>
  <!-- ########################################### -->
  <!--  Definition of currencyCode datatype (5.6.5)  -->
  <!-- ########################################### -->
```


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```
  <!-- Definition of currencyCode datatype -->
  <simpleType name="currencyCode">
    <restriction base="string">
      <whiteSpace value="collapse" />
      <pattern value="[a-zA-Z]{3}" />
    </restriction>
  </simpleType>
  <!-- ################################################ -->
  <!--  Definition of characterSetCode datatype (5.6.6)  -->
  <!-- ################################################ -->
  <!-- Definition of characterSetCode datatype -->
  <simpleType name="characterSetCode">
    <restriction base="string" />
  </simpleType>
  <!-- ########################################### -->
  <!--   Definition of Reference datatypes (6.2.1)  -->
  <!-- ########################################### -->
  <!-- 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 datatypes (6.2.2)  -->
  <!-- ###################################### -->
  <!-- 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*|\*)))|\.))*))*" />
    </restriction>
  </simpleType>
  <!-- Definition of xPathField datatype -->
```

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```
  <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 UniqueID datatype (6.3.1)  -->
  <!-- ######################################### -->
  <!-- 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 (6.4.2)  -->
  <!-- ################################### -->
  <!-- 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 (6.4.3)  -->
  <!-- ######################################### -->
  <!-- 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 (6.4.4)  -->
```


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```
  <!-- ########################################## -->
  <!-- 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 (6.4.5)  -->
  <!-- ############################################### -->
  <!-- Definition of IncrDuration datatype -->
  <complexType name="IncrDurationType">
    <simpleContent>
      <extension base="integer">
        <attribute name="timeUnit" type="mpeg7:durationType" use="optional" />
      </extension>
    </simpleContent>
  </complexType>
  <!-- ############################################### -->
  <!--  Definition of RelTimePoint datatypes (6.4.6)  -->
  <!-- ############################################### -->
  <!-- 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>
  <!-- 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 RelIncrTimePoint datatype (6.4.7)  -->
  <!-- ################################################ -->
  <!-- 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 timeProperty attribute group (6.4.8)  -->
  <!-- ################################################### -->
  <!-- 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 (6.4.10)  -->
  <!-- ########################################## -->
```

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```
  <!-- 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 (6.4.11)  -->
  <!-- ################################################ -->
  <!-- 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 (6.4.12)  -->
  <!-- ################################################ -->
  <!-- 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>
  <!-- ################################################ -->
  <!--  Definition of MediaIncrDuration datatype (6.4.13)  -->
  <!-- ################################################ -->
  <!-- Definition of MediaIncrDuration datatype -->
  <complexType name="MediaIncrDurationType">
    <simpleContent>
      <extension base="integer">
        <attribute name="mediaTimeUnit" type="mpeg7:mediaDurationType" use="optional" />
      </extension>
    </simpleContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of MediaRelTimePoint datatype (6.4.14)  -->
  <!-- ################################################ -->
  <!-- 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>
  </simpleType>
  <!-- Definition of MediaRelTimePoint datatype -->
  <complexType name="MediaRelTimePointType">
    <simpleContent>
      <extension base="mpeg7:mediaTimeOffsetType">
        <attribute name="mediaTimeBase" type="mpeg7:xPathRefType" use="optional" />
      </extension>
    </simpleContent>
```


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```
</complexType>
<!-- ########################################################## -->
<!--  Definition of MediaRelIncrTimePoint datatype (6.4.15)  -->
<!-- ########################################################## -->
<!-- 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 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>
<!-- ############################################ -->
<!--  Definition of MediaLocator datatype (6.5.2)  -->
<!-- ############################################ -->
<!-- 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 (6.5.3)  -->
<!-- ############################################ -->
<!-- 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 (6.5.4)  -->
<!-- ########################################################## -->
<!-- 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>
```

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```
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of ImageLocator datatype (6.5.5)  -->
<!-- ################################################ -->
<!-- Definition of ImageLocator datatype -->
<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>
<!-- ######################################################## -->
<!--  Definition of StreamLocator datatype (6.5.7) (AMD/1)  -->
<!-- ######################################################## -->
<!-- Definition of StreamLocator datatype (AMD/1) -->
<complexType name="StreamLocatorType">
  <complexContent>
    <extension base="mpeg7:MediaLocatorType">
      <sequence>
        <element name="StreamSection" type="mpeg7:StreamSectionType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################################## -->
<!--  Definition of LogicalUnitLocator datatype (6.5.7)(AMD/2)  -->
<!-- ########################################################## -->
<!-- Definition of LogicalUnitLocator datatype (AMD/2)  -->
<complexType name="LogicalUnitLocatorType">
  <complexContent>
    <extension base="mpeg7:MediaLocatorType">
      <choice maxOccurs="unbounded">
        <element name="LogicalUnit">
          <complexType>
            <sequence minOccurs="0" maxOccurs="unbounded">
              <element name="SubUnit" type="mpeg7:MediaLocatorType" />
            </sequence>
            <attribute name="unit" type="mpeg7:termReferenceType" use="required" />
            <attribute name="value" type="string" use="required" />
          </complexType>
        </element>
        <element name="ReferenceUnit">
          <complexType>
            <sequence minOccurs="0" maxOccurs="unbounded">
              <element name="SubUnit" type="mpeg7:MediaLocatorType" />
            </sequence>
```


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```
            <attributeGroup ref="mpeg7:referenceGrp" />
          </complexType>
        </element>
      </choice>
    </extension>
  </complexContent>
 </complexType>
 <!-- ######################################### -->
 <!--  Definition of Textual datatypes (7.3.2)  -->
 <!-- ######################################### -->
 <!-- Definition of TextualBase datatype -->
 <complexType name="TextualBaseType" abstract="true">
  <simpleContent>
   <extension base="string">
    <attribute ref="xml:lang" use="optional" />
    <attribute name="phoneticTranscription" use="optional">
     <simpleType>
      <list itemType="mpeg7:PhoneType" />
     </simpleType>
    </attribute>
    <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 TextAnnotation datatype (7.3.3)   -->
 <!-- ################################################  -->
 <!-- Definition of TextAnnotation datatype -->
 <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" />
  </choice>
  <attribute name="relevance" type="mpeg7:zeroToOneType" use="optional" />
  <attribute name="confidence" type="mpeg7:zeroToOneType" use="optional" />
  <attribute ref="xml:lang" />
 </complexType>
 <!-- ################################################## -->
 <!--  Definition of StructuredAnnotation datatype (7.3.4)  -->
 <!-- ################################################## -->
 <!-- Definition of StructuredAnnotation datatype -->
 <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" />
```

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```
      <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>
  <!-- ################################################ -->
  <!--  Definition of KeywordAnnotation datatype (7.3.5)  -->
  <!-- ################################################ -->
  <!-- Definition of KeywordAnnotation datatype -->
  <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>
  <!-- ################################################### -->
  <!--  Definition of Dependency Structure datatypes (7.3.6)  -->
  <!-- ################################################### -->
  <!-- Definition of DependencyStructure datatype -->
  <complexType name="DependencyStructureType">
    <sequence>
      <element name="Sentence" type="mpeg7:DependencyStructurePhraseType"
maxOccurs="unbounded" />
    </sequence>
    <attribute ref="xml:lang" use="optional" />
  </complexType>
  <!-- Definition of DependencyStructurePhrase datatype -->
  <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" />
      </choice>
    </sequence>
    <attribute name="id" type="ID" use="optional" />
    <attribute name="equal" type="IDREF" use="optional" />
```


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```
    <attribute name="operator" use="optional">
      <simpleType>
        <union memberTypes="mpeg7:dependencyOperatorType mpeg7:termAliasReferenceType
mpeg7:termURIReferenceType" />
      </simpleType>
    </attribute>
    <attribute name="functionWord" type="string" use="optional" />
    <attribute name="synthesis" type="NMTOKEN" use="optional" fixed="dependency" />
  </complexType>
  <!-- Definition of WordForm datatype -->
  <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:termAliasReferenceType" />
                  </simpleType>
                  <simpleType>
                    <restriction base="mpeg7:termURIReferenceType" />
                  </simpleType>
                </union>
              </simpleType>
            </list>
          </simpleType>
        </attribute>
        <attribute name="baseForm" type="string" use="optional" />
      </extension>
    </simpleContent>
  </complexType>
  <!-- Definition of NonDependencyStructurePhrase datatype -->
  <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" />
```

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```
      <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" />
        </restriction>
      </simpleType>
    </attribute>
  </complexType>
  <!-- Definition of dependencyOperator datatype -->
  <simpleType name="dependencyOperatorType">
    <restriction base="NMTOKEN">
      <enumeration value="subject" />
      <enumeration value="object" />
      <enumeration value="indirectObject" />
      <enumeration value="predicate" />
      <enumeration value="expletive" />
      <enumeration value="nonRestrictive" />
    </restriction>
  </simpleType>
  <!-- ################################################ -->
  <!--  Definition of ClassificationScheme DS (7.4.2)  -->
  <!-- ################################################ -->
  <!-- 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>
  <!-- Definition of ClassificationScheme DS  -->
  <complexType name="ClassificationSchemeType">
    <complexContent>
      <extension base="mpeg7:ClassificationSchemeBaseType">
        <sequence>
          <element name="Term" type="mpeg7:TermDefinitionType" maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!--  Definition of SubjectClassificationScheme DS (7.4.2) (AMD/1)   -->
  <!-- ################################################################ -->
  <!-- Definition of SubjectClassificationScheme DS    -->
  <complexType name="SubjectClassificationSchemeType">
    <complexContent>
```


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```
      <extension base="mpeg7:ClassificationSchemeBaseType">
        <sequence>
          <element name="Term" type="mpeg7:SubjectTermDefinitionType"
maxOccurs="unbounded" />
        </sequence>
        <attribute name="subdelim" type="NMTOKEN" use="optional" default="--" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################################## -->
  <!--  Definition of SubjectTermDefinition DS (7.4.3)(AMD/1)  -->
  <!-- ######################################################## -->
  <!-- Definition of SubjectTermDefinition DS  -->
  <complexType name="SubjectTermDefinitionType">
    <complexContent>
      <extension base="mpeg7:TermDefinitionBaseType">
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="Classification" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="Subdivision" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="Note" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <simpleContent>
                <extension base="mpeg7:TextualType">
                  <attribute name="type" type="mpeg7:termNoteQualifierType" use="optional"
default="PN" />
                </extension>
              </simpleContent>
            </complexType>
          </element>
          <element name="Term" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:SubjectTermDefinitionType">
                  <attribute name="relation" type="mpeg7:termRelationQualifierType"
use="optional" default="NT" />
                </extension>
              </complexContent>
            </complexType>
          </element>
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of termNoteQualifier datatype  -->
  <simpleType name="termNoteQualifierType">
    <union>
      <simpleType>
        <restriction base="NMTOKEN">
          <enumeration value="PN" />
          <enumeration value="CN" />
          <enumeration value="HN" />
          <enumeration value="scope" />
          <enumeration value="code" />
        </restriction>
      </simpleType>
      <simpleType>
        <restriction base="mpeg7:termAliasReferenceType" />
      </simpleType>
```

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```
      <simpleType>
        <restriction base="mpeg7:termURIReferenceType" />
      </simpleType>
    </union>
  </simpleType>
  <!-- ######################################## -->
  <!--  Definition of TermDefinition DS (7.4.3)  -->
  <!-- ######################################## -->
  <!-- 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>
```


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```
      <simpleType>
        <restriction base="mpeg7:termAliasReferenceType" />
      </simpleType>
      <simpleType>
        <restriction base="mpeg7:termURIReferenceType" />
      </simpleType>
    </union>
  </simpleType>
  <!-- ######################################### -->
  <!--  Definition of TermUse datatype (7.4.4)  -->
  <!-- ######################################### -->
  <!-- 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" />
      <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 (7.4.5)  -->
  <!-- ################################################ -->
  <!-- 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 termReferenceType datatype (7.4.6)  -->
  <!-- ################################################ -->
```

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```
  <!-- Definition of termReference datatype  -->
  <simpleType name="termReferenceType">
    <union memberTypes="mpeg7:termAliasReferenceType mpeg7:termURIReferenceType" />
  </simpleType>
  <simpleType name="termAliasReferenceType">
    <restriction base="NMTOKEN">
      <whiteSpace value="collapse" />
      <pattern value=":[^:]+:[^:]+" />
    </restriction>
  </simpleType>
  <simpleType name="termURIReferenceType">
    <restriction base="anyURI" />
  </simpleType>
  <!-- ########################################################## -->
  <!--  Definition of ClassificationSchemeAlias datatype (7.4.7)  -->
  <!-- ########################################################## -->
  <!-- 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" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of GraphicalClassificationScheme DS (7.4.8)  -->
  <!-- ########################################################## -->
  <!-- Definition of GraphicalClassificationScheme DS  -->
  <complexType name="GraphicalClassificationSchemeType">
    <complexContent>
      <extension base="mpeg7:ClassificationSchemeBaseType">
        <sequence>
          <element name="GraphicalTerm" type="mpeg7:GraphicalTermDefinitionType"
maxOccurs="unbounded" />
        </sequence>
        <attribute name="strict" type="boolean" use="optional" default="false" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################## -->
  <!--  Definition of GraphicalTermDefinition DS (7.4.9)  -->
  <!-- ################################################## -->
  <!-- Definition of GraphicalTermDefinition DS  -->
  <complexType name="GraphicalTermDefinitionType">
    <complexContent>
      <extension base="mpeg7:TermDefinitionBaseType">
        <choice>
          <element name="TemplateGraph" type="mpeg7:GraphType" />
          <element name="AlphabetGraph" type="mpeg7:GraphType" />
          <element name="ProductionRule" type="mpeg7:GraphicalRuleDefinitionType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################## -->
  <!--  Definition of GraphicalRuleDefinition DS (7.4.10)  -->
  <!-- ################################################## -->
  <!-- Definition of GraphicalRuleDefinition DS  -->
  <complexType name="GraphicalRuleDefinitionType" abstract="true">
```


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```
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="TemplateGraph" type="mpeg7:GraphType" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of PullbackDefinition DS (7.4.11)  -->
  <!-- ################################################ -->
  <!-- Definition of PullbackDefinition DS  -->
  <complexType name="PullbackDefinitionType">
    <complexContent>
      <extension base="mpeg7:GraphicalRuleDefinitionType">
        <sequence>
          <element name="RuleGraph" type="mpeg7:GraphType" />
          <choice>
            <element name="AlphabetGraph" type="mpeg7:GraphType" />
            <element name="AlphabetGraphRef" type="mpeg7:ControlledTermUseType" />
          </choice>
          <element name="MorphismGraph" type="mpeg7:MorphismGraphType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of DoublePullbackDefinition DS (7.4.12)  -->
  <!-- ################################################ -->
  <!-- Definition of DoublePullbackDefinition DS  -->
  <complexType name="DoublePullbackDefinitionType">
    <complexContent>
      <extension base="mpeg7:GraphicalRuleDefinitionType">
        <sequence>
          <element name="RuleGraph" type="mpeg7:GraphType" minOccurs="2" maxOccurs="2" />
          <choice>
            <element name="AlphabetGraph" type="mpeg7:GraphType" />
            <element name="AlphabetGraphRef" type="mpeg7:ControlledTermUseType" />
          </choice>
          <element name="MorphismGraph" type="mpeg7:MorphismGraphType" minOccurs="2"
maxOccurs="2" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of PushoutDefinition DS (7.4.13)  -->
  <!-- ################################################ -->
  <!-- Definition of PushoutDefinition DS  -->
  <complexType name="PushoutDefinitionType">
    <complexContent>
      <extension base="mpeg7:GraphicalRuleDefinitionType">
        <sequence>
          <element name="LHSGraph" type="mpeg7:GraphType" />
          <element name="RHSGraph" type="mpeg7:GraphType" />
          <element name="MorphismGraph" type="mpeg7:MorphismGraphType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
```

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```
  <!-- ################################################ -->
  <!--  Definition of DoublePushoutDefinition DS (7.4.14)  -->
  <!-- ################################################ -->
  <!-- Definition of DoublePushoutDefinition DS  -->
  <complexType name="DoublePushoutDefinitionType">
    <complexContent>
      <extension base="mpeg7:GraphicalRuleDefinitionType">
        <sequence>
          <element name="LHSGraph" type="mpeg7:GraphType" />
          <element name="ContextGraph" type="mpeg7:GraphType" />
          <element name="RHSGraph" type="mpeg7:GraphType" />
          <element name="MorphismGraph" type="mpeg7:MorphismGraphType" minOccurs="2"
maxOccurs="2" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################ -->
  <!--  Definition of Agent DS (7.5.2)  -->
  <!-- ################################ -->
  <!-- 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 (7.5.3) (AMD/2)  -->
  <!-- ######################################### -->
  <!-- Definition of Person DS  (AMD/2) -->
  <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>
```


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```
          <element name="ElectronicAddress" type="mpeg7:ElectronicAddressType"
minOccurs="0" maxOccurs="unbounded" />
          <element name="PersonDescription" type="mpeg7:TextualType" minOccurs="0" />
          <element name="Nationality" type="mpeg7:countryCode" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of PersonGroup DS (7.5.4)  -->
  <!-- ######################################## -->
  <!-- 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">
            <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">
```

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```
            <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 (7.5.5)  -->
  <!-- ######################################## -->
  <!-- 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>
                </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>
```


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```
          <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 PersonName datatype (7.5.6) (AMD/2)  -->
  <!-- ################################################## -->
  <!-- Definition of PersonName datatype (AMD/2)-->
  <complexType name="PersonNameType">
    <sequence>
      <choice maxOccurs="unbounded">
        <element name="GivenName" type="mpeg7:NameComponentType" />
        <element name="LinkingName" type="mpeg7:NameComponentType" minOccurs="0" />
        <element name="FamilyName" type="mpeg7:NameComponentType" minOccurs="0" />
        <element name="Title" type="mpeg7:NameComponentType" minOccurs="0" />
        <element name="Salutation" 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 (7.5.7)(AMD/2)  -->
  <!-- ########################################################## -->
  <!-- Definition of ElectronicAddress datatype (AMD/2) -->
  <complexType name="ElectronicAddressType">
    <sequence>
      <element name="Telephone" minOccurs="0" maxOccurs="unbounded">
        <complexType>
          <simpleContent>
            <extension base="string">
              <attribute name="type" use="optional">
                <simpleType>
                  <restriction base="string">
```

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```
                    <enumeration value="central" />
                    <enumeration value="secondary" />
                  </restriction>
                </simpleType>
              </attribute>
            </extension>
          </simpleContent>
        </complexType>
      </element>
      <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 (7.6.2) (AMD/2)  -->
  <!-- ######################################## -->
  <!-- Definition of Place DS (AMD/2)  -->
  <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="PlaceDescription" type="mpeg7:TextualType" 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>
          <choice>
            <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" />
```


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```
            </complexType>
          </element>
          <element name="StructuredPostalAddress" minOccurs="0">
            <complexType>
              <sequence>
                <element name="StreetNumber" type="string" minOccurs="0" />
                <element name="StreetName" type="string" minOccurs="0" />
                <element name="PostalTown" type="string" minOccurs="0" />
                <element name="City" type="string" minOccurs="0" />
                <element name="StateProvinceCounty" type="string" minOccurs="0" />
                <element name="Country" type="mpeg7:countryCode" minOccurs="0" />
                <element name="PostingIdentifier" type="mpeg7:TextualType" minOccurs="0"
/>
              </sequence>
            </complexType>
          </element>
        </choice>
        <choice>
          <element name="InternalCoordinates" type="string" minOccurs="0" />
          <element name="StructuredInternalCoordinates" minOccurs="0">
            <complexType>
              <sequence>
                <element name="RoomNumber" type="string" minOccurs="0" />
                <element name="RoomName" type="string" minOccurs="0" />
                <element name="BuildingName" type="string" minOccurs="0" />
              </sequence>
            </complexType>
          </element>
        </choice>
        <element name="ElectronicAddress" type="mpeg7:ElectronicAddressType"
minOccurs="0" maxOccurs="unbounded" />
      </sequence>
      <attribute ref="xml:lang" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of GeographicPoint datatype (7.6.3)  -->
<!-- ################################################ -->
<!-- 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>
<!-- ################################ -->
```

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```
  <!--  Definition the Graph DS (7.7.2)  -->
  <!-- ################################ -->
  <!-- Definition of Graph DS -->
  <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>
  <!-- ################################################  -->
  <!-- Definition of Relation DS (7.7.3) (AMD/1)        -->
  <!-- ################################################  -->
  <complexType name="RelationType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <attribute name="type" type="mpeg7:termReferenceListType" use="optional" />
        <attribute name="source" type="mpeg7:termReferenceListType" use="optional" />
        <attribute name="target" type="mpeg7:termReferenceListType" use="optional" />
        <attribute name="directed" type="boolean" use="optional" default="true" />
        <attribute name="strength" type="mpeg7:zeroToOneType" use="optional" default="1.0"
/>
      </extension>
    </complexContent>
  </complexType>
  <simpleType name="termReferenceListType">
    <list itemType="mpeg7:termReferenceType" />
  </simpleType>
  <!-- ######################################## -->
  <!--  Definition the MorphismGraph DS (7.7.4)  -->
  <!-- ######################################## -->
  <!-- Definition of MorphismGraph DS -->
  <complexType name="MorphismGraphType">
    <complexContent>
      <extension base="mpeg7:GraphType">
        <sequence>
          <choice>
            <element name="SourceGraphRef" type="mpeg7:ReferenceType" />
            <element name="SourceGraphTermRef" type="mpeg7:ControlledTermUseType" />
          </choice>
          <choice>
            <element name="TargetGraphRef" type="mpeg7:ReferenceType" />
            <element name="TargetGraphTermRef" type="mpeg7:ControlledTermUseType" />
          </choice>
          <element name="RuleTermRef" type="mpeg7:ControlledTermUseType" minOccurs="0" />
        </sequence>
```


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```
    </extension>
  </complexContent>
</complexType>
<!-- ##################################### -->
<!--  Definition of OrderingKey DS (7.8.2)  -->
<!-- ##################################### -->
<!-- Definition of OrderingKey DS -->
<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">
            <enumeration value="descending" />
            <enumeration value="ascending" />
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ################################### -->
<!--  Definition of Affective DS (7.9.2)  -->
<!-- ################################### -->
<!-- Definition of Affective DS -->
<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>
<!-- ########################################################## -->
<!--  Definition of PhoneticTranscriptionLexicon header (7.10.2)  -->
<!-- ########################################################## -->
```

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```
  <!-- Definition of PhoneticTranscriptionLexicon header -->
  <complexType name="PhoneticTranscriptionLexiconType">
    <complexContent>
      <extension base="mpeg7:HeaderType">
        <sequence>
          <element name="Token" maxOccurs="unbounded">
            <complexType>
              <simpleContent>
                <extension base="mpeg7:WordType">
                  <attribute name="phoneticTranscription" use="required">
                    <simpleType>
                      <list itemType="mpeg7:PhoneType" />
                    </simpleType>
                  </attribute>
                  <attribute ref="xml:lang" use="optional" />
                </extension>
              </simpleContent>
            </complexType>
          </element>
        </sequence>
        <attribute ref="xml:lang" use="optional" />
        <attribute name="phoneticAlphabet" type="mpeg7:phoneticAlphabetType"
use="optional" default="sampa" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################## -->
  <!-- Definition of Linguistic DS (7.11) (AMD/1)         -->
  <!-- ################################################## -->
  <complexType name="LinguisticEntityType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="MediaLocator" type="mpeg7:MediaLocatorType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="Relation" type="mpeg7:RelationType" minOccurs="0"
maxOccurs="unbounded" />
        </sequence>
        <attribute ref="xml:lang" />
        <attribute name="start" use="optional">
          <simpleType>
            <union memberTypes="nonNegativeInteger mpeg7:mediaTimePointType" />
          </simpleType>
        </attribute>
        <attribute name="length" use="optional">
          <simpleType>
            <union memberTypes="nonNegativeInteger mpeg7:mediaDurationType" />
          </simpleType>
        </attribute>
        <attribute name="type" type="mpeg7:termReferenceType" use="optional" />
        <attribute name="depend" type="mpeg7:termReferenceType" use="optional" />
        <attribute name="equal" type="mpeg7:termReferenceListType" use="optional" />
        <attribute name="semantics" type="mpeg7:termReferenceListType" use="optional" />
        <attribute name="compoundSemantics" type="mpeg7:termReferenceListType"
use="optional" />
        <attribute name="operator" type="mpeg7:termReferenceListType" use="optional" />
        <attribute name="copy" type="mpeg7:termReferenceListType" use="optional" />
        <attribute name="noCopy" type="mpeg7:termReferenceListType" use="optional" />
        <attribute name="substitute" type="mpeg7:termReferenceType" use="optional" />
        <attribute name="inScope" type="mpeg7:termReferenceType" use="optional" />
```


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```
        <attribute name="edit" use="optional">
          <simpleType>
            <restriction base="string">
              <whiteSpace value="preserve" />
              <pattern value=":.*" />
            </restriction>
          </simpleType>
        </attribute>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################-->
  <!-- Definition of LinguisticDocument DS  (7.11) (AMD/1)  -->
  <!-- ########################################################-->
  <complexType name="LinguisticDocumentType">
    <complexContent>
      <extension base="mpeg7:LinguisticEntityType">
        <choice maxOccurs="unbounded">
          <element name="Heading" type="mpeg7:SentencesType" />
          <element name="Division" type="mpeg7:LinguisticDocumentType" />
          <element name="Paragraph" type="mpeg7:SentencesType" />
          <element name="Sentences" type="mpeg7:SentencesType" />
          <element name="Sentence" type="mpeg7:SyntacticConstituentType" />
          <element name="Quotation" type="mpeg7:LinguisticDocumentType" />
        </choice>
        <attribute name="synthesis" type="mpeg7:synthesisType" use="optional"
default="coordination" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################-->
  <!-- Definition of Sentences DS (7.11) (AMD/1)            -->
  <!-- ########################################################-->
  <complexType name="SentencesType">
    <complexContent>
      <extension base="mpeg7:LinguisticEntityType">
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="Sentences" type="mpeg7:SentencesType" />
          <element name="Sentence" type="mpeg7:SyntacticConstituentType" />
          <element name="Quotation" type="mpeg7:LinguisticDocumentType" />
        </choice>
        <attribute name="synthesis" type="mpeg7:synthesisType" use="optional"
default="coordination" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################-->
  <!-- Definition of SyntacticConsituent DS (7.11) (AMD/1)  -->
  <!-- ########################################################-->
  <complexType name="SyntacticConstituentType">
    <complexContent>
      <extension base="mpeg7:LinguisticEntityType">
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="Head" type="mpeg7:SyntacticConstituentType" />
          <element name="Phrase" type="mpeg7:SyntacticConstituentType" />
          <element name="Quotation" type="mpeg7:LinguisticDocumentType" />
        </choice>
        <attribute name="baseForm" type="string" use="optional" />
        <attribute name="synthesis" type="mpeg7:synthesisType" use="optional"
default="dependency" />
```

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```
        <attribute name="functionWord" type="string" use="optional" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################-->
  <!-- Definition of Synthesis DataType (7.11) (AMD/1)      -->
  <!-- ########################################################-->
  <simpleType name="synthesisType">
    <restriction base="string">
      <enumeration value="none" />
      <enumeration value="dependency" />
      <enumeration value="forward" />
      <enumeration value="backward" />
      <enumeration value="coordination" />
      <enumeration value="apposition" />
      <enumeration value="repair" />
      <enumeration value="error" />
    </restriction>
  </simpleType>
  <!-- ########################################### -->
  <!--  Definition of MediaInformation DS (8.2.1)  -->
  <!-- ########################################### -->
  <!-- Definition of MediaInformation DS -->
  <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>
  <!-- ############################################ -->
  <!--  Definition of MediaIdentification D (8.2.2)  -->
  <!-- ############################################ -->
  <!-- Definition of MediaIdentification D -->
  <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>
  <!-- ###################################### -->
  <!--  Definition of MediaProfile DS (8.2.3)  -->
  <!-- ###################################### -->
  <!-- Definition of MediaProfile DS -->
  <complexType name="MediaProfileType">
    <complexContent>
```


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```
      <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" />
        </sequence>
        <attribute name="master" type="boolean" use="optional" default="false" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ##################################### -->
  <!--  Definition of MediaFormat D (8.2.4)  -->
  <!-- ##################################### -->
  <!-- Definition of MediaFormat D -->
  <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:termAliasReferenceType" />
                </simpleType>
                <simpleType>
                  <restriction base="mpeg7:termURIReferenceType" />
                </simpleType>
```

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```
            </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" />
                                <enumeration value="graylevel" />
                                <enumeration value="colorized" />
                              </restriction>
                            </simpleType>
                            <simpleType>
                              <restriction base="mpeg7:termAliasReferenceType" />
                            </simpleType>
                            <simpleType>
                              <restriction base="mpeg7:termURIReferenceType" />
                            </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>
```


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```
                <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"
/>
                      </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:termAliasReferenceType" />
                      </simpleType>
                      <simpleType>
                        <restriction base="mpeg7:termURIReferenceType" />
                      </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" />
```

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```
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ColorSampling D -->
  <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>
                          </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>
  <!-- ################################################ -->
  <!--  Definition of Media TranscodingHints D (8.2.5)  -->
  <!-- ################################################ -->
  <!-- Definition of MediaTranscodingHints D -->
  <complexType name="MediaTranscodingHintsType">
    <complexContent>
```


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```
      <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" />
        <attribute name="importance" type="mpeg7:zeroToOneType" use="optional" />
        <attribute name="spatialResolutionHint" type="mpeg7:zeroToOneType" use="optional"
/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of MediaQuality D (8.2.6)  -->
  <!-- ######################################## -->
  <!-- Definition of MediaQuality D -->
  <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" />
```

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```
                      <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>
<!-- 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>
      </complexType>
    </element>
  </sequence>
</complexType>
<!-- ######################################## -->
<!--  Definition of MediaInstance DS (8.2.7)  -->
<!-- ######################################## -->
<!-- Definition of MediaInstance DS -->
<complexType name="MediaInstanceType">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
        <element name="InstanceIdentifier" type="mpeg7:UniqueIDType" />
        <choice>
          <element name="MediaLocator" type="mpeg7:MediaLocatorType" />
```


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```
            <element name="LocationDescription" type="mpeg7:TextualType" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of CreationInformation DS (9.2.1)  -->
  <!-- ################################################ -->
  <!-- Definition of CreationInformation DS  -->
  <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>
  <!-- ################################### -->
  <!--  Definition of Creation DS (9.2.2)  -->
  <!-- ################################### -->
  <!-- Definition of Creation DS  -->
  <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>
  <!-- Definition of Title datatype  -->
  <complexType name="TitleType">
    <simpleContent>
      <extension base="mpeg7:TextualBaseType">
        <attribute name="type" use="optional" default="main">
          <simpleType>
            <union>
              <simpleType>
```

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```
                <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:termAliasReferenceType" />
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termURIReferenceType" />
              </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" />
          <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" />
      <choice>
        <element name="Agent" type="mpeg7:AgentType" />
        <element name="AgentRef" type="mpeg7:ReferenceType" />
      </choice>
    </sequence>
  </complexType>
  <!-- Definition of CreationTool datatype -->
  <complexType name="CreationToolType">
    <sequence>
      <element name="Tool" type="mpeg7:TermUseType" />
```


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```
      <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>
  <!-- ######################################### -->
  <!--  Definition of Classification DS (9.2.3)  -->
  <!-- ######################################### -->
  <!-- Definition of Classification DS  -->
  <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>
                      <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">
```

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```
            <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" />
          <element name="MediaReview" type="mpeg7:MediaReviewType" minOccurs="0"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </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>
```


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```
  <!-- Definition of MediaReview datatype -->
  <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>
  <!-- ######################################### -->
  <!--  Definition of RelatedMaterial DS (9.2.4)  -->
  <!-- ######################################### -->
  <!-- Definition of RelatedMaterial DS -->
  <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>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of UsageInformation DS (10.2.1)  -->
  <!-- ######################################### -->
  <!-- Definition of UsageInformation DS -->
  <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>
  <!-- ######################################### -->
  <!--  Definition of Rights datatype (10.2.2)  -->
  <!-- ######################################### -->
  <!-- Definition of Rights datatype -->
```

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```
<complexType name="RightsType">
  <sequence>
    <element name="RightsID" type="mpeg7:UniqueIDType" maxOccurs="unbounded" />
  </sequence>
</complexType>
<!-- ######################################### -->
<!--  Definition of Financial datatype (10.2.3)  -->
<!-- ######################################### -->
<!-- Definition of Financial datatype -->
<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>
<!-- ###################################### -->
<!--  Definition of Availability DS (10.2.4)  -->
<!-- ###################################### -->
<!-- Definition of Availability DS -->
<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" />
                              <enumeration value="conditionalAccess" />
                              <enumeration value="encrypted" />
                              <enumeration value="payPerUse" />
                            </restriction>
                          </simpleType>
                          <simpleType>
                            <restriction base="mpeg7:termAliasReferenceType" />
```

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```
                          </simpleType>
                          <simpleType>
                            <restriction base="mpeg7:termURIReferenceType" />
                          </simpleType>
                        </union>
                      </simpleType>
                    </list>
                  </simpleType>
                </attribute>
              </extension>
            </complexContent>
          </complexType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of Dissemination DS -->
<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>
<!-- ################################################ -->
<!--  Definition of UsageRecord DS (10.2.5)  -->
<!-- ################################################ -->
<!-- Definition of UsageRecord DS -->
<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>
<!-- ################################### -->
<!--  Definition of Segment DS (11.2.2)  -->
<!-- ################################### -->
<!-- Definition of Segment DS -->
<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"
/>
```

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```
          <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" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:TextAnnotationType">
                  <attribute name="type" use="optional">
                    <simpleType>
                      <union memberTypes="mpeg7:termAliasReferenceType
mpeg7:termURIReferenceType 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="MatchingHint" type="mpeg7:MatchingHintType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="PointOfView" type="mpeg7:PointOfViewType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="Relation" type="mpeg7:RelationType" minOccurs="0"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of SegmentDecomposition DS (11.2.3)  -->
  <!-- ################################################ -->
  <!-- Definition of SegmentDecomposition DS -->
  <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>
  <!-- Definition of SpatialSegmentDecomposition DS -->
  <complexType name="SpatialSegmentDecompositionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:SegmentDecompositionType" />
    </complexContent>
  </complexType>
  <!-- Definition of TemporalSegmentDecomposition DS -->
  <complexType name="TemporalSegmentDecompositionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:SegmentDecompositionType" />
    </complexContent>
```


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```
  </complexType>
  <!-- Definition of SpatioTemporalSegmentDecomposition DS -->
  <complexType name="SpatioTemporalSegmentDecompositionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:SegmentDecompositionType" />
    </complexContent>
  </complexType>
  <!-- Definition of MediaSourceSegmentDecomposition DS -->
  <complexType name="MediaSourceSegmentDecompositionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:SegmentDecompositionType" />
    </complexContent>
  </complexType>
  <!-- ################################## -->
  <!--  Definition of Mask D (11.3.2.2)  -->
  <!-- ################################## -->
  <!-- Definition of Mask D -->
  <complexType name="MaskType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DType" />
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of SpatialMask D (11.3.2.3)  -->
  <!-- ######################################## -->
  <!-- Definition of SpatialMask D -->
  <complexType name="SpatialMaskType">
    <complexContent>
      <extension base="mpeg7:MaskType">
        <sequence>
          <element name="SubRegion" type="mpeg7:RegionLocatorType" maxOccurs="unbounded"
/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of TemporalMask D (11.3.2.4)  -->
  <!-- ######################################### -->
  <!-- Definition of TemporalMask D -->
  <complexType name="TemporalMaskType">
    <complexContent>
      <extension base="mpeg7:MaskType">
        <sequence>
          <element name="SubInterval" type="mpeg7:MediaTimeType" maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of SpatioTemporalMask D (11.3.2.5)   -->
  <!-- ################################################ -->
  <!-- Definition of SpatioTemporalMask D -->
  <complexType name="SpatioTemporalMaskType">
    <complexContent>
      <extension base="mpeg7:MaskType">
        <sequence>
          <element name="SubRegion" type="mpeg7:SpatioTemporalLocatorType"
maxOccurs="unbounded" />
        </sequence>
```

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```
    </extension>
  </complexContent>
</complexType>
<!-- ########################################### -->
<!--  Definition of MediaSpaceMask D (11.3.2.6)  -->
<!-- ########################################### -->
<!-- Definition of MediaSpaceMask D -->
<complexType name="MediaSpaceMaskType">
  <complexContent>
    <extension base="mpeg7:MaskType">
      <sequence>
        <element name="SubInterval" maxOccurs="unbounded">
          <complexType>
            <attribute name="offset" type="nonNegativeInteger" use="required" />
            <attribute name="length" type="positiveInteger" use="optional" />
          </complexType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################### -->
<!--  Definition of SceneGraphMask D (11.3.2.7)  -->
<!-- ########################################### -->
<!-- Definition of SceneGraphMask D -->
<complexType name="SceneGraphMaskType">
  <complexContent>
    <extension base="mpeg7:MaskType">
      <choice maxOccurs="unbounded">
        <element name="SubGraph" type="anyURI" />
        <element name="SubGraphNum" type="nonNegativeInteger" />
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################## -->
<!--  Definition of OrderedGroupDataSetMask D (11.3.2.8)  -->
<!-- ################################################## -->
<!-- Definition of OrderedGroupDataSetMask D -->
<complexType name="OrderedGroupDataSetMaskType">
  <complexContent>
    <extension base="mpeg7:MaskType">
      <sequence>
        <element name="SubInterval" maxOccurs="unbounded">
          <complexType>
            <attribute name="setRef" type="anyURI" use="optional" />
            <attribute name="startComponent" type="nonNegativeInteger" use="optional" />
            <attribute name="startUnit" type="nonNegativeInteger" use="optional" />
            <attribute name="endComponent" type="nonNegativeInteger" use="optional" />
            <attribute name="endUnit" type="nonNegativeInteger" use="optional" />
          </complexType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ###################################### -->
<!--  Definition of MatchingHint D (11.3.3)  -->
<!-- ###################################### -->
<!-- Definition of MatchingHint D -->
```

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```
  <complexType name="MatchingHintType">
    <complexContent>
      <extension base="mpeg7:DType">
        <sequence>
          <element name="Hint" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:ReferenceType">
                  <attribute name="value" type="mpeg7:zeroToOneType" use="required" />
                </extension>
              </complexContent>
            </complexType>
          </element>
        </sequence>
        <attribute name="reliability" type="mpeg7:zeroToOneType" use="optional"
default="1.0" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of PointOfView D (11.3.4)  -->
  <!-- ######################################## -->
  <!-- Definition of PointOfView D -->
  <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>
  <!-- ######################################### -->
  <!--  Definition of StreamMask D (11.3.9) (AMD/1)-->
  <!-- ######################################### -->
  <!-- Definition of StreamMask D (AMD/1) -->
  <complexType name="StreamMaskType">
    <complexContent>
      <extension base="mpeg7:MaskType">
        <sequence>
          <element name="StreamSection" type="mpeg7:StreamSectionType"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <complexType name="StreamSectionType">
    <attribute name="unit" type="mpeg7:unitType" />
    <attribute name="start" type="nonNegativeInteger" />
    <attribute name="length" type="nonNegativeInteger" />
```

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```
  </complexType>
  <simpleType name="unitType">
    <restriction base="string">
      <enumeration value="char" />
      <enumeration value="byte" />
      <enumeration value="integer" />
      <enumeration value="long" />
      <enumeration value="float" />
      <enumeration value="double" />
    </restriction>
  </simpleType>
  <!-- ################################################ -->
  <!--  Definition of StillRegion DS (11.4.2)(AMD/2)  -->
  <!-- ################################################ -->
  <!-- Definition of StillRegion DS (AMD/2) -->
  <complexType name="StillRegionType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <choice minOccurs="0">
            <element name="SpatialLocator" type="mpeg7:RegionLocatorType" />
            <element name="SpatialMask" type="mpeg7:SpatialMaskType" />
          </choice>
          <choice minOccurs="0">
            <element name="MediaTimePoint" type="mpeg7:mediaTimePointType" />
            <element name="MediaRelTimePoint" type="mpeg7:MediaRelTimePointType" />
            <element name="MediaRelIncrTimePoint" type="mpeg7:MediaRelIncrTimePointType"
/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="VisualDescriptor" type="mpeg7:VisualDType" />
            <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType" />
            <element name="GridLayoutDescriptors" type="mpeg7:GridLayoutType" />
            <element name="IlluminationInvariantColor"
type="mpeg7:IlluminationInvariantColorType" />
          </choice>
          <element name="MultipleView" type="mpeg7:MultipleViewType" minOccurs="0" />
          <element name="SpatialDecomposition"
type="mpeg7:StillRegionSpatialDecompositionType" minOccurs="0" maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################################ -->
  <!--  Definition of StillRegionSpatialDecomposition DS  (11.4.3)  -->
  <!-- ############################################################ -->
  <!-- Definition of StillRegionSpatialDecomposition DS -->
  <complexType name="StillRegionSpatialDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatialSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="StillRegion" type="mpeg7:StillRegionType" />
          <element name="StillRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################### -->
  <!--  Definition of ImageText DS (11.4.4)  -->
  <!-- ################################### -->
```


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```
  <!-- Definition of ImageText DS -->
  <complexType name="ImageTextType">
    <complexContent>
      <extension base="mpeg7:StillRegionType">
        <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:termAliasReferenceType" />
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termURIReferenceType" />
              </simpleType>
            </union>
          </simpleType>
        </attribute>
        <attribute name="fontSize" type="positiveInteger" use="optional" />
        <attribute name="fontType" type="string" use="optional" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################### -->
  <!--  Definition of Mosaic DS (11.4.5)  -->
  <!-- ################################### -->
  <!-- Definition of Mosaic DS -->
  <complexType name="MosaicType">
    <complexContent>
      <extension base="mpeg7:StillRegionType">
        <sequence>
          <element name="WarpingParam" minOccurs="0">
            <complexType>
              <sequence maxOccurs="unbounded">
                <choice>
                  <element name="MediaTimePoint" type="mpeg7:mediaTimePointType" />
                  <element name="MediaRelTimePoint" type="mpeg7:MediaRelTimePointType" />
                  <element name="MediaRelIncrTimePoint"
type="mpeg7:MediaRelIncrTimePointType" />
                </choice>
                <element name="MotionParam" type="mpeg7:floatVector" />
              </sequence>
              <attribute name="modelType" use="required">
                <simpleType>
                  <union>
                    <simpleType>
                      <restriction base="NMTOKEN">
                        <enumeration value="translational" />
                        <enumeration value="rotationAndScaling" />
                        <enumeration value="affine" />
                        <enumeration value="perspective" />
                        <enumeration value="quadratic" />
                      </restriction>
```

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```
                    </simpleType>
                    <simpleType>
                      <restriction base="mpeg7:termAliasReferenceType" />
                    </simpleType>
                    <simpleType>
                      <restriction base="mpeg7:termURIReferenceType" />
                    </simpleType>
                  </union>
                </simpleType>
              </attribute>
              <attribute name="sourceSequenceWidth" type="positiveInteger" use="required"
/>
              <attribute name="sourceSequenceHeight" type="positiveInteger" use="required"
/>
              <attribute name="xOffset" type="float" use="required" />
              <attribute name="yOffset" type="float" use="required" />
              <attribute name="xOrigin" type="float" use="required" />
              <attribute name="yOrigin" type="float" use="required" />
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of StillRegion3D DS (11.4.6)   -->
  <!-- ######################################### -->
  <!-- Definition of StilLRegion3D DS -->
  <complexType name="StillRegion3DType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="VisualDescriptor" type="mpeg7:VisualDType" />
            <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType" />
          </choice>
          <element name="MultipleView" type="mpeg7:MultipleViewType" minOccurs="0" />
          <element name="SpatialDecomposition"
type="mpeg7:StillRegion3DSpatialDecompositionType" minOccurs="0" maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################################ -->
  <!--  Definition of StillRegion3DSpatialDecomposition DS (11.4.7)  -->
  <!-- ############################################################ -->
  <!-- Definition of StillRegion3DSpatialDecomposition DS -->
  <complexType name="StillRegion3DSpatialDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatialSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="StillRegion" type="mpeg7:StillRegionType" />
          <element name="StillRegionRef" type="mpeg7:ReferenceType" />
          <element name="StillRegion3D" type="mpeg7:StillRegion3DType" />
          <element name="StillRegion3DRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
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```
  <!--  Definition of VideoSegment DS (11.4.8) (AMD/2)  -->
  <!-- ################################################ -->
  <!-- Definition of VideoSegment DS (AMD/2)-->
  <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="VisualDescriptor" type="mpeg7:VisualDType" />
            <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType" />
            <element name="VisualTimeSeriesDescriptor" type="mpeg7:VisualTimeSeriesType"
/>
            <element name="GofGopFeature" type="mpeg7:GofGopFeatureType" />
          </choice>
          <element name="MultipleView" type="mpeg7:MultipleViewType" minOccurs="0" />
          <element name="Mosaic" type="mpeg7:MosaicType" minOccurs="0"
maxOccurs="unbounded" />
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="SpatialDecomposition"
type="mpeg7:VideoSegmentSpatialDecompositionType" />
            <element name="TemporalDecomposition"
type="mpeg7:VideoSegmentTemporalDecompositionType" />
            <element name="SpatioTemporalDecomposition"
type="mpeg7:VideoSegmentSpatioTemporalDecompositionType" />
            <element name="MediaSourceDecomposition"
type="mpeg7:VideoSegmentMediaSourceDecompositionType" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################################## -->
  <!--  Definition of VideoSegment decomposition DSs (11.4.9)  -->
  <!-- ######################################################## -->
  <!-- Definition of VideoSegmentSpatialDecomposition DS -->
  <complexType name="VideoSegmentSpatialDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatialSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="MovingRegion" type="mpeg7:MovingRegionType" />
          <element name="MovingRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of VideoSegmentTemporalDecomposition DS -->
  <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>
```

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```
    </complexContent>
  </complexType>
  <!-- Definition of VideoSegmentSpatioTemporalDecomposition DS -->
  <complexType name="VideoSegmentSpatioTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatioTemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="MovingRegion" type="mpeg7:MovingRegionType" />
          <element name="MovingRegionRef" type="mpeg7:ReferenceType" />
          <element name="StillRegion" type="mpeg7:StillRegionType" />
          <element name="StillRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of VideoSegmentMediaSourceDecomposition DS -->
  <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>
  <!-- ################################################ -->
  <!--  Definition of MovingRegion DS (11.4.10)(AMD/2)  -->
  <!-- ################################################ -->
  <!-- Definition of MovingRegion DS (AMD/2) -->
  <complexType name="MovingRegionType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <choice minOccurs="0">
            <element name="SpatioTemporalLocator" type="mpeg7:SpatioTemporalLocatorType"
/>
            <element name="SpatioTemporalMask" type="mpeg7:SpatioTemporalMaskType" />
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="VisualDescriptor" type="mpeg7:VisualDType" />
            <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType" />
            <element name="VisualTimeSeriesDescriptor" type="mpeg7:VisualTimeSeriesType"
/>
            <element name="GofGopFeature" type="mpeg7:GofGopFeatureType" />
          </choice>
          <element name="MultipleView" type="mpeg7:MultipleViewType" minOccurs="0" />
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="SpatialDecomposition"
type="mpeg7:MovingRegionSpatialDecompositionType" />
            <element name="TemporalDecomposition"
type="mpeg7:MovingRegionTemporalDecompositionType" />
            <element name="SpatioTemporalDecomposition"
type="mpeg7:MovingRegionSpatioTemporalDecompositionType" />
            <element name="MediaSourceDecomposition"
type="mpeg7:MovingRegionMediaSourceDecompositionType" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
```


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```
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of MovingRegion decomposition DSs (11.4.11)  -->
  <!-- ########################################################## -->
  <!-- Definition of MovingRegionSpatialDecomposition DS -->
  <complexType name="MovingRegionSpatialDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatialSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="MovingRegion" type="mpeg7:MovingRegionType" />
          <element name="MovingRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of MovingRegionTemporalDecomposition DS -->
  <complexType name="MovingRegionTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="MovingRegion" type="mpeg7:MovingRegionType" />
          <element name="MovingRegionRef" type="mpeg7:ReferenceType" />
          <element name="StillRegion" type="mpeg7:StillRegionType" />
          <element name="StillRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of MovingRegionSpatioTemporalDecomposition DS -->
  <complexType name="MovingRegionSpatioTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatioTemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="MovingRegion" type="mpeg7:MovingRegionType" />
          <element name="MovingRegionRef" type="mpeg7:ReferenceType" />
          <element name="StillRegion" type="mpeg7:StillRegionType" />
          <element name="StillRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of MovingRegionMediaSourceDecomposition DS -->
  <complexType name="MovingRegionMediaSourceDecompositionType">
    <complexContent>
      <extension base="mpeg7:MediaSourceSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="MovingRegion" type="mpeg7:MovingRegionType" />
          <element name="MovingRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ###################################### -->
  <!--  Definition of VideoText DS (11.4.12)  -->
  <!-- ###################################### -->
  <!-- Definition of VideoText DS -->
  <complexType name="VideoTextType">
    <complexContent>
      <extension base="mpeg7:MovingRegionType">
        <sequence>
```

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```
          <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:termAliasReferenceType" />
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termURIReferenceType" />
              </simpleType>
            </union>
          </simpleType>
        </attribute>
        <attribute name="fontSize" type="positiveInteger" use="optional" />
        <attribute name="fontType" type="string" use="optional" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of AudioSegment DS (11.5.2)  -->
  <!-- ######################################## -->
  <!-- Definition of AudioSegment DS -->
  <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="AudioDescriptor" type="mpeg7:AudioDType" />
            <element name="AudioDescriptionScheme" type="mpeg7:AudioDSType" />
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="TemporalDecomposition"
type="mpeg7:AudioSegmentTemporalDecompositionType" />
            <element name="MediaSourceDecomposition"
type="mpeg7:AudioSegmentMediaSourceDecompositionType" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ##################################################### -->
  <!-- Definition of AudioSegment decomposition DSs (11.5.3)  -->
  <!-- ##################################################### -->
  <!-- Definition of AudioSegmentTemporalDecomposition DS -->
  <complexType name="AudioSegmentTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioSegment" type="mpeg7:AudioSegmentType" />
```


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```
          <element name="AudioSegmentRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioSegmentMediaSourceDecomposition DS -->
  <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>
  <!-- ################################################ -->
  <!--  Definition of AudioVisualSegment DS (11.6.2)   -->
  <!-- ################################################ -->
  <!-- Definition of AudioVisualSegment DS -->
  <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="SpatialDecomposition"
type="mpeg7:AudioVisualSegmentSpatialDecompositionType" />
            <element name="TemporalDecomposition"
type="mpeg7:AudioVisualSegmentTemporalDecompositionType" />
            <element name="SpatioTemporalDecomposition"
type="mpeg7:AudioVisualSegmentSpatioTemporalDecompositionType" />
            <element name="MediaSourceDecomposition"
type="mpeg7:AudioVisualSegmentMediaSourceDecompositionType" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of AudioVisualSegment decomposition DSs (11.6.3)  -->
  <!-- ########################################################## -->
  <!-- Definition of AudioVisualSegmentSpatialDecomposition DS -->
  <complexType name="AudioVisualSegmentSpatialDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatialSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType" />
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisualSegmentTemporalDecomposition DS -->
  <complexType name="AudioVisualSegmentTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
```

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```
        <choice maxOccurs="unbounded">
          <element name="AudioVisualSegment" type="mpeg7:AudioVisualSegmentType" />
          <element name="AudioVisualSegmentRef" type="mpeg7:ReferenceType" />
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType" />
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisualSegmentSpatioTemporalDecomposition DS -->
  <complexType name="AudioVisualSegmentSpatioTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatioTemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType" />
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisualSegmentMediaSourceDecomposition DS -->
  <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>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of AudioVisualRegion DS (11.6.4)  -->
  <!-- ################################################ -->
  <!-- Definition of AudioVisualRegion DS -->
  <complexType name="AudioVisualRegionType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <choice minOccurs="0">
            <element name="VisualSpatioTemporalLocator"
type="mpeg7:SpatioTemporalLocatorType" />
            <element name="VisualSpatioTemporalMask" type="mpeg7:SpatioTemporalMaskType"
/>
          </choice>
          <choice minOccurs="0">
            <element name="AudioMediaTime" type="mpeg7:MediaTimeType" />
            <element name="AudioTemporalMask" type="mpeg7:TemporalMaskType" />
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="SpatialDecomposition"
type="mpeg7:AudioVisualRegionSpatialDecompositionType" />
            <element name="TemporalDecomposition"
type="mpeg7:AudioVisualRegionTemporalDecompositionType" />
```


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```
            <element name="SpatioTemporalDecomposition"
type="mpeg7:AudioVisualRegionSpatioTemporalDecompositionType" />
            <element name="MediaSourceDecomposition"
type="mpeg7:AudioVisualRegionMediaSourceDecompositionType" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of AudioVisualRegion decomposition DSs (11.6.5)  -->
  <!-- ########################################################## -->
  <!-- Definition of AudioVisualRegionSpatialDecomposition DS -->
  <complexType name="AudioVisualRegionSpatialDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatialSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType" />
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisualSegmentTemporalDecomposition DS -->
  <complexType name="AudioVisualRegionTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType" />
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisualSegmentSpatioTemporalDecomposition DS -->
  <complexType name="AudioVisualRegionSpatioTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatioTemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType" />
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of AudioVisualSegmentMediaSourceDecomposition DS -->
  <complexType name="AudioVisualRegionMediaSourceDecompositionType">
    <complexContent>
      <extension base="mpeg7:MediaSourceSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="AudioVisualRegion" type="mpeg7:AudioVisualRegionType" />
          <element name="AudioVisualRegionRef" type="mpeg7:ReferenceType" />
          <element name="VideoSegment" type="mpeg7:VideoSegmentType" />
          <element name="VideoSegmentRef" type="mpeg7:ReferenceType" />
          <element name="MovingRegion" type="mpeg7:MovingRegionType" />
          <element name="MovingRegionRef" 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" />
```

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```
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of MultimediaSegment DS (11.7.2)   -->
  <!-- ############################################ -->
  <!-- Definition of MultimediaSegment DS -->
  <complexType name="MultimediaSegmentType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <element name="MediaSourceDecomposition"
type="mpeg7:MultimediaSegmentMediaSourceDecompositionType" minOccurs="0"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!--  Definition of MultimediaSegmentMediaSourceDecomposition DS (11.7.3)  -->
  <!-- ################################################################ -->
  <!-- Definition of MultimediaSegmentMediaSourceDecomposition DS -->
  <complexType name="MultimediaSegmentMediaSourceDecompositionType">
    <complexContent>
      <extension base="mpeg7:MediaSourceSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="Segment" type="mpeg7:SegmentType" />
          <element name="SegmentRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################### -->
  <!--  Definition of InkSegment DS (11.8.2)  -->
  <!-- ################################### -->
  <!-- Definition of InkSegment DS -->
  <complexType name="InkSegmentType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <element name="InkMediaInformation" type="mpeg7:InkMediaInformationType"
minOccurs="0" />
          <element name="MediaTime" type="mpeg7:MediaTimeType" minOccurs="0" />
          <element name="TemporalMask" type="mpeg7:TemporalMaskType" minOccurs="0" />
          <element name="SceneGraphMask" type="mpeg7:SceneGraphMaskType" minOccurs="0" />
          <element name="MediaSpaceMask" type="mpeg7:MediaSpaceMaskType" minOccurs="0" />
          <element name="OrderedGroupDataSetMask" type="mpeg7:OrderedGroupDataSetMaskType"
minOccurs="0" />
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="HandWritingRecogInformation"
type="mpeg7:HandWritingRecogInformationType" />
            <element name="HandWritingRecogResult" type="mpeg7:HandWritingRecogResultType"
/>
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="VisualDescriptor" type="mpeg7:VisualDType" />
            <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType" />
            <element name="VisualTimeSeriesDescriptor" type="mpeg7:VisualTimeSeriesType"
/>
```


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```
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="SpatialDecomposition"
type="mpeg7:InkSegmentSpatialDecompositionType" />
            <element name="TemporalDecomposition"
type="mpeg7:InkSegmentTemporalDecompositionType" />
          </choice>
        </sequence>
        <attribute name="type" use="optional" default="content">
          <simpleType>
            <restriction base="NMTOKEN">
              <enumeration value="content" />
              <enumeration value="meta" />
              <enumeration value="mixed" />
            </restriction>
          </simpleType>
        </attribute>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of InkMediaInformation DS (11.8.3)  -->
  <!-- ################################################ -->
  <!-- Definition of InkMediaInformation DS -->
  <complexType name="InkMediaInformationType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="InputDevice" minOccurs="0">
            <complexType>
              <sequence>
                <element name="Device" type="mpeg7:TermUseType" />
              </sequence>
              <attribute name="xWidth" type="nonNegativeInteger" use="optional" />
              <attribute name="yWidth" type="nonNegativeInteger" use="optional" />
              <attribute name="resolutionX" type="nonNegativeInteger" use="optional" />
              <attribute name="resolutionY" type="nonNegativeInteger" use="optional" />
              <attribute name="resolutionZ" type="nonNegativeInteger" use="optional" />
              <attribute name="resolutionP" type="integer" use="optional" />
              <attribute name="resolutionS" type="integer" use="optional" />
            </complexType>
          </element>
          <element name="WritingFieldLayout" minOccurs="0">
            <complexType>
              <sequence>
                <element name="RegionLocator" type="mpeg7:RegionLocatorType" />
              </sequence>
              <attribute name="fieldIDList" use="optional">
                <simpleType>
                  <list itemType="ID" />
                </simpleType>
              </attribute>
            </complexType>
          </element>
          <element name="OverlaidMedia" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <sequence>
                <choice>
                  <element name="OverlaidMediaLocator" type="mpeg7:MediaLocatorType" />
                  <element name="OverlaidMediaRef" type="mpeg7:ReferenceType" />
```

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```
              </choice>
              <element name="MediaRegionLocator" type="mpeg7:RegionLocatorType"
minOccurs="0" />
            </sequence>
            <attribute name="fieldIDRef" type="IDREF" use="optional" />
            <attribute name="translationX" type="integer" use="optional" default="0" />
            <attribute name="translationY" type="integer" use="optional" default="0" />
            <attribute name="rotation" type="float" use="optional" default="0.0" />
            <attribute name="scaleX" type="float" use="optional" default="1.0" />
            <attribute name="scaleY" type="float" use="optional" default="1.0" />
          </complexType>
        </element>
        <element name="Brush" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <sequence>
              <element name="Name" type="mpeg7:TermUseType" minOccurs="0" />
              <element name="Color" type="mpeg7:TermUseType" minOccurs="0" />
              <element name="Shape" type="mpeg7:TermUseType" minOccurs="0" />
              <element name="Size" type="nonNegativeInteger" minOccurs="0" />
            </sequence>
          </complexType>
        </element>
        <element name="Param" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <attribute name="name" type="string" use="optional" />
            <attribute name="value" type="string" use="optional" />
          </complexType>
        </element>
        <element name="Handedness" minOccurs="0">
          <simpleType>
            <restriction base="NMTOKEN">
              <enumeration value="left" />
              <enumeration value="right" />
              <enumeration value="others" />
            </restriction>
          </simpleType>
        </element>
        <element name="Style" minOccurs="0">
          <simpleType>
            <union>
              <simpleType>
                <restriction base="NMTOKEN">
                  <enumeration value="printed" />
                  <enumeration value="cursive" />
                  <enumeration value="drawing" />
                  <enumeration value="mixed" />
                </restriction>
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termAliasReferenceType" />
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termURIReferenceType" />
              </simpleType>
            </union>
          </simpleType>
        </element>
      </sequence>
    </extension>
  </complexContent>
```

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```
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of HandWritingRecogInformation DS (11.8.4)  -->
  <!-- ########################################################## -->
  <!-- Definition of HandWritingRecogInformation DS -->
  <complexType name="HandWritingRecogInformationType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Recognizer" minOccurs="0">
            <complexType>
              <sequence>
                <element name="Name" type="mpeg7:TermUseType" minOccurs="0" />
                <element name="Owner" type="mpeg7:AgentType" minOccurs="0" />
                <element name="Information" type="mpeg7:TextAnnotationType" minOccurs="0"
/>
              </sequence>
            </complexType>
          </element>
          <element name="InkLexicon" minOccurs="0">
            <complexType>
              <sequence>
                <element name="Name" type="mpeg7:TermUseType" minOccurs="0" />
                <element name="Owner" type="mpeg7:AgentType" minOccurs="0" />
                <choice>
                  <element name="Resource" type="mpeg7:MediaLocatorType" />
                  <element name="Entry" maxOccurs="unbounded">
                    <complexType>
                      <sequence>
                        <element name="Text" type="mpeg7:TermUseType" minOccurs="0" />
                        <element name="InkSegmentRef" type="mpeg7:ReferenceType"
minOccurs="0" />
                      </sequence>
                      <attribute name="index" type="ID" use="optional" />
                      <attribute name="frequency" type="mpeg7:zeroToOneType"
use="optional" />
                    </complexType>
                  </element>
                </choice>
              </sequence>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################## -->
  <!--  Definition of HandWritingRecogResult DS (11.8.5)  -->
  <!-- ################################################## -->
  <!-- Definition of HandWritingRecogResult DS -->
  <complexType name="HandWritingRecogResultType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="HandWritingRecogInformationRef" type="mpeg7:ReferenceType"
minOccurs="0" />
          <element name="Quality" type="mpeg7:zeroToOneType" minOccurs="0" />
          <element name="Result" maxOccurs="unbounded">
            <complexType>
              <sequence>
```

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```
              <choice>
                <element name="Text" type="string" />
                <element name="LexiconIndexRef" type="mpeg7:ReferenceType" />
              </choice>
            </sequence>
            <attribute name="score" type="mpeg7:zeroToOneType" use="optional" />
          </complexType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ######################################################## -->
<!--  Definition of InkSegment decomposition DSs (11.8.6)  -->
<!-- ######################################################## -->
<!-- Definition of InkSegmentSpatialDecomposition DS -->
<complexType name="InkSegmentSpatialDecompositionType">
  <complexContent>
    <extension base="mpeg7:SpatialSegmentDecompositionType">
      <choice maxOccurs="unbounded">
        <element name="InkSegment" type="mpeg7:InkSegmentType" />
        <element name="InkSegmentRef" type="mpeg7:ReferenceType" />
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of InkSegmentTemporalDecomposition DS -->
<complexType name="InkSegmentTemporalDecompositionType">
  <complexContent>
    <extension base="mpeg7:TemporalSegmentDecompositionType">
      <choice maxOccurs="unbounded">
        <element name="InkSegment" type="mpeg7:InkSegmentType" />
        <element name="InkSegmentRef" type="mpeg7:ReferenceType" />
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- ######################################################### -->
<!--  Definition of the AnalyticEditedVideoSegment DS (11.9.2)  -->
<!-- ######################################################### -->
<!-- Definition of AnalyticEditedVideoSegment DS -->
<complexType name="AnalyticEditedVideoSegmentType" abstract="true">
  <complexContent>
    <extension base="mpeg7:VideoSegmentType">
      <sequence>
        <element name="AnalyticEditionAreaDecomposition"
type="mpeg7:AnalyticEditedVideoSegmentSpatioTemporalDecompositionType" minOccurs="0"
maxOccurs="unbounded" />
      </sequence>
      <attribute name="locationReliability" type="mpeg7:zeroToOneType" use="optional" />
      <attribute name="editingLevelReliability" type="mpeg7:zeroToOneType"
use="optional" />
      <attribute name="type" use="optional">
        <simpleType>
          <restriction base="NMTOKEN">
            <enumeration value="simple" />
            <enumeration value="composite" />
          </restriction>
        </simpleType>
      </attribute>
```


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```
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################################ -->
  <!--  Definition of the AnalyticEditedVideoSegment Decompostion DSs (11.9.3)  -->
  <!-- ################################################################################ -->
  <!-- Definition of AnalyticEditedVideoSegmentSpatioTemporalDecomposition DS -->
  <complexType name="AnalyticEditedVideoSegmentSpatioTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:SpatioTemporalSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="EditedMovingRegion" type="mpeg7:EditedMovingRegionType" />
          <element name="EditedMovingRegionRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of EditedVideo DS (11.9.4)  -->
  <!-- ######################################## -->
  <!-- Definition of EditedVideo DS -->
  <complexType name="EditedVideoType">
    <complexContent>
      <extension base="mpeg7:AnalyticEditedVideoSegmentType">
        <sequence>
          <element name="AnalyticEditingTemporalDecomposition"
type="mpeg7:EditedVideoEditingTemporalDecompositionType" maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################# -->
  <!--  Definition of the EditedVideoEditing decomposition DSs (11.9.5)  -->
  <!-- ################################################################# -->
  <!-- Definition of EditedVideoEditingTemporalDecomposition DS -->
  <complexType name="EditedVideoEditingTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <sequence maxOccurs="unbounded">
          <choice>
            <choice>
              <element name="Shot" type="mpeg7:ShotType" />
              <element name="ShotRef" type="mpeg7:ReferenceType" />
            </choice>
            <choice>
              <element name="GlobalTransition" type="mpeg7:GlobalTransitionType" />
              <element name="GlobalTransitionRef" type="mpeg7:ReferenceType" />
            </choice>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of AnalyticClip DS (11.9.6)  -->
  <!-- ######################################## -->
  <!-- Definition of AnalyticClip DS -->
  <complexType name="AnalyticClipType" abstract="true">
    <complexContent>
      <extension base="mpeg7:AnalyticEditedVideoSegmentType" />
```

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```
    </complexContent>
  </complexType>
  <!-- ################################ -->
  <!--  Definition of Shot DS (11.9.7)  -->
  <!-- ################################ -->
  <!-- Definition of Shot DS -->
  <complexType name="ShotType">
    <complexContent>
      <extension base="mpeg7:AnalyticClipType">
        <sequence>
          <element name="AnalyticEditingTemporalDecomposition"
type="mpeg7:ShotEditingTemporalDecompositionType" minOccurs="0" maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of the ShotEditing Decomposition DSs (11.9.8)  -->
  <!-- ########################################################## -->
  <!--  Definition of the ShotEditingTemporalDecomposition DS  -->
  <complexType name="ShotEditingTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <sequence maxOccurs="unbounded">
          <choice>
            <choice>
              <element name="CompositionShot" type="mpeg7:CompositionShotType" />
              <element name="CompositionShotRef" type="mpeg7:ReferenceType" />
            </choice>
            <choice>
              <element name="CompositionTransition" type="mpeg7:CompositionTransitionType"
/>
              <element name="CompositionTransitionRef" type="mpeg7:ReferenceType" />
            </choice>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of CompositionShot DS (11.9.9)  -->
  <!-- ######################################### -->
  <!-- Definition of CompositionShot DS -->
  <complexType name="CompositionShotType">
    <complexContent>
      <extension base="mpeg7:AnalyticClipType">
        <sequence>
          <element name="AnalyticEditingTemporalDecomposition"
type="mpeg7:CompositionShotEditingTemporalDecompositionType" minOccurs="0"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ##################################################################### -->
  <!--  Definition of the CompositionShotEditing decomposition DSs (11.9.10)  -->
  <!-- ##################################################################### -->
  <complexType name="CompositionShotEditingTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
```


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```
        <sequence maxOccurs="unbounded">
          <choice>
            <choice>
              <element name="IntraCompositionShot" type="mpeg7:IntraCompositionShotType"
/>
              <element name="IntraCompositionShotRef" type="mpeg7:ReferenceType" />
            </choice>
            <choice>
              <element name="InternalTransition" type="mpeg7:InternalTransitionType" />
              <element name="InternalTransitionRef" type="mpeg7:ReferenceType" />
            </choice>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of IntraCompositionShot DS (11.9.11)  -->
  <!-- ################################################ -->
  <!-- Definition of IntraCompositionShot DS -->
  <complexType name="IntraCompositionShotType">
    <complexContent>
      <extension base="mpeg7:AnalyticClipType">
        <sequence>
          <element name="AnalyticEditingTemporalDecomposition"
type="mpeg7:IntraCompositionShotEditingTemporalDecompositionType" minOccurs="0"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################################## -->
  <!--  Definition of the IntraCompositionShotEditing decomposition DSs (11.9.12)  -->
  <!-- ########################################################################## -->
  <!-- Definition of IntraCompositionShotEditingTemporalDecomposition DS -->
  <complexType name="IntraCompositionShotEditingTemporalDecompositionType">
    <complexContent>
      <extension base="mpeg7:TemporalSegmentDecompositionType">
        <sequence maxOccurs="unbounded">
          <choice>
            <choice>
              <element name="IntraCompositionShot" type="mpeg7:IntraCompositionShotType"
/>
              <element name="IntraCompositionShotRef" type="mpeg7:ReferenceType" />
            </choice>
            <choice>
              <element name="InternalTransition" type="mpeg7:InternalTransitionType" />
              <element name="InternalTransitionRef" type="mpeg7:ReferenceType" />
            </choice>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of AnalyticTransition DS (11.9.13)  -->
  <!-- ################################################ -->
  <!-- Definition of AnalyticTransition DS -->
  <complexType name="AnalyticTransitionType" abstract="true">
    <complexContent>
```

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```
      <extension base="mpeg7:AnalyticEditedVideoSegmentType">
        <sequence>
          <element name="EvolutionType" type="mpeg7:TermUseType" minOccurs="0" />
          <element name="EditedMovingRegionRef" type="mpeg7:ReferenceType" minOccurs="0"
/>
        </sequence>
        <attribute name="evolutionReliability" type="mpeg7:zeroToOneType" use="optional"
/>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of GlobalTransition DS (11.9.14)  -->
  <!-- ################################################ -->
  <!-- Definition of GlobalTransition DS -->
  <complexType name="GlobalTransitionType">
    <complexContent>
      <extension base="mpeg7:AnalyticTransitionType" />
    </complexContent>
  </complexType>
  <!-- ################################################## -->
  <!--  Definition of CompositionTransition DS (11.9.15)  -->
  <!-- ################################################## -->
  <!-- Definition of CompositionTransition DS -->
  <complexType name="CompositionTransitionType">
    <complexContent>
      <extension base="mpeg7:AnalyticTransitionType">
        <attribute name="compositionType" use="optional">
          <simpleType>
            <union>
              <simpleType>
                <restriction base="NMTOKEN">
                  <enumeration value="create" />
                  <enumeration value="delete" />
                  <enumeration value="change" />
                </restriction>
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termAliasReferenceType" />
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termURIReferenceType" />
              </simpleType>
            </union>
          </simpleType>
        </attribute>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of InternalTransition DS (11.9.16)  -->
  <!-- ################################################ -->
  <!-- Definition of InternalTransition DS -->
  <complexType name="InternalTransitionType">
    <complexContent>
      <extension base="mpeg7:AnalyticTransitionType" />
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition the EditedMovingRegion DS (11.9.17)  -->
```


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```
  <!-- ################################################ -->
  <!-- Definition of EditedMovingRegion DS -->
  <complexType name="EditedMovingRegionType">
    <complexContent>
      <extension base="mpeg7:MovingRegionType">
        <sequence>
          <element name="RegionDepthType" type="mpeg7:TermUseType" minOccurs="0" />
          <element name="BoundaryType" type="mpeg7:TermUseType" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of TextSegment DS (11.11.2) (AMD/1) -->
  <!-- ################################################ -->
  <!-- Definition of TextSegment DS (AMD/1) -->
  <complexType name="TextSegmentType">
    <complexContent>
      <extension base="mpeg7:SegmentType">
        <sequence>
          <element name="TextMask" type="mpeg7:StreamMaskType" minOccurs="0" />
          <element name="TextDecomposition" type="mpeg7:TextDecompositionType"
minOccurs="0" maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################### -->
  <!--  Definition of TextDecomposition DS (11.11.3) (AMD/1) -->
  <!-- ################################################### -->
  <!-- Definition of TextDecomposition DS (AMD/1) -->
  <complexType name="TextDecompositionType">
    <complexContent>
      <extension base="mpeg7:MediaSourceSegmentDecompositionType">
        <choice maxOccurs="unbounded">
          <element name="TextSegment" type="mpeg7:TextSegmentType" />
          <element name="TextSegmentRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of SemanticBase DS (12.3.2)  -->
  <!-- ######################################## -->
  <!-- Definition of SemanticBase DS -->
  <complexType name="SemanticBaseType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="AbstractionLevel" type="mpeg7:AbstractionLevelType" minOccurs="0"
/>
          <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" />
```

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```
                <element name="MediaInformationRef" type="mpeg7:ReferenceType" />
                <element name="MediaLocator" type="mpeg7:MediaLocatorType" />
              </choice>
              <element name="Mask" type="mpeg7:MaskType" minOccurs="0" />
              <element name="AudioDescriptor" type="mpeg7:AudioDType" minOccurs="0"
maxOccurs="unbounded" />
              <element name="AudioDescriptionScheme" type="mpeg7:AudioDSType"
minOccurs="0" maxOccurs="unbounded" />
              <element name="VisualDescriptor" type="mpeg7:VisualDType" minOccurs="0"
maxOccurs="unbounded" />
              <element name="VisualDescriptionScheme" type="mpeg7:VisualDSType"
minOccurs="0" maxOccurs="unbounded" />
            </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:termAliasReferenceType" />
                  </simpleType>
                  <simpleType>
                    <restriction base="mpeg7:termURIReferenceType" />
                  </simpleType>
                </union>
              </simpleType>
            </attribute>
          </complexType>
        </element>
        <element name="Relation" type="mpeg7:RelationType" minOccurs="0"
maxOccurs="unbounded" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ######################################## -->
<!--  Definition of SemanticBag DS (12.3.3)  -->
<!-- ######################################## -->
<!-- Definition of SemanticBag DS -->
<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>
<!-- ################################## -->
<!--  Definition of Semantic DS (12.3.4)  -->
```


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```
  <!-- ################################### -->
  <!-- Definition of Semantic DS -->
  <complexType name="SemanticType">
    <complexContent>
      <extension base="mpeg7:SemanticBagType" />
    </complexContent>
  </complexType>
  <!-- ################################### -->
  <!--  Definition of Object DS (12.3.5)  -->
  <!-- ################################### -->
  <!-- Definition of Object DS -->
  <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>
  <!-- ######################################## -->
  <!--  Definition of AgentObject DS (12.3.6)  -->
  <!-- ######################################## -->
  <!-- Definition of AgentObject DS -->
  <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>
  <!-- ################################### -->
  <!--  Definition of Event DS (12.3.7)  -->
  <!-- ################################### -->
  <!-- Definition of Event DS -->
  <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>
  <!-- ################################### -->
  <!--  Definition of Concept DS (11.3.8)  -->
  <!-- ################################### -->
  <!-- Definition of Concept DS -->
  <complexType name="ConceptType">
```

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```
    <complexContent>
      <extension base="mpeg7:SemanticBaseType" />
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of SemanticState DS (12.3.9)  -->
  <!-- ######################################### -->
  <!-- Definition of SemanticState DS -->
  <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>
              </sequence>
            </complexType>
          </element>
          <element name="SemanticTime" type="mpeg7:SemanticTimeType" minOccurs="0" />
          <element name="SemanticPlace" type="mpeg7:SemanticPlaceType" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of SemanticPlace DS (12.3.10)  -->
  <!-- ######################################### -->
  <!-- Definition of SemanticPlace DS -->
  <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>
  <!-- ######################################### -->
```


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```
<!--  Definition of SemanticTime DS (12.3.11)  -->
<!-- ########################################## -->
<!-- Definition of SemanticTime DS -->
<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>
<!-- ################################################## -->
<!--  Definition of AbstractionLevel datatype (12.4.2)  -->
<!-- ################################################## -->
<!-- Definition of AbstractionLevel DS -->
<complexType name="AbstractionLevelType">
  <attribute name="dimension" type="nonNegativeInteger" use="required" />
</complexType>
<!-- ######################################## -->
<!--  Definition of Extent datatype (12.4.3)  -->
<!-- ######################################## -->
<!-- Definition of Extent datatype -->
<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>
<!-- ######################################### -->
<!--  Definition of Position datatype (12.4.4)  -->
<!-- ######################################### -->
<!-- Definition of Position datatype -->
<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>
<!-- ######################################### -->
<!--  Definition of Summarization DS (13.2.2)  -->
<!-- ######################################### -->
<!-- Definition of Summarization DS -->
<complexType name="SummarizationType">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
        <element name="Summary" type="mpeg7:SummaryType" maxOccurs="unbounded" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
```

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```
  <!-- ################################### -->
  <!--  Definition of Summary DS (13.2.3)  -->
  <!-- ################################### -->
  <!-- Definition of Summary DS -->
  <complexType name="SummaryType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Name" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="SourceID" type="mpeg7:UniqueIDType" minOccurs="0" />
          <element name="SourceLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0" />
          <element name="SourceInformation" type="mpeg7:ReferenceType" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################### -->
  <!--  Definition of HierarchicalSummary DS (13.2.4)  -->
  <!-- ############################################### -->
  <!-- Definition of HierarchicalSummary DS -->
  <complexType name="HierarchicalSummaryType">
    <complexContent>
      <extension base="mpeg7:SummaryType">
        <sequence>
          <element name="SummaryThemeList" type="mpeg7:SummaryThemeListType" minOccurs="0"
/>
          <choice maxOccurs="unbounded">
            <element name="SummarySegmentGroup" type="mpeg7:SummarySegmentGroupType" />
            <element name="SummarySegmentGroupRef" type="mpeg7:ReferenceType" />
          </choice>
        </sequence>
        <attribute name="components" use="optional">
          <simpleType>
            <list>
              <simpleType>
                <restriction base="NMTOKEN">
                  <enumeration value="keyAudioVisualClips" />
                  <enumeration value="keyVideoClips" />
                  <enumeration value="keyAudioClips" />
                  <enumeration value="keyFrames" />
                  <enumeration value="keySounds" />
                  <enumeration value="keyThemes" />
                </restriction>
              </simpleType>
            </list>
          </simpleType>
        </attribute>
        <attribute name="hierarchy" use="required">
          <simpleType>
            <restriction base="NMTOKEN">
              <enumeration value="independent" />
              <enumeration value="dependent" />
            </restriction>
          </simpleType>
        </attribute>
      </extension>
    </complexContent>
  </complexType>
```


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```
  <!-- ############################################ -->
  <!--  Definition of SummaryThemeList DS (13.2.5)  -->
  <!-- ############################################ -->
  <!-- Definition of SummaryThemeList DS -->
  <complexType name="SummaryThemeListType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="SummaryTheme" maxOccurs="unbounded">
            <complexType>
              <simpleContent>
                <extension base="mpeg7:TextualType">
                  <attribute name="id" type="ID" use="required" />
                  <attribute name="parentID" type="IDREF" use="optional" />
                </extension>
              </simpleContent>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of SummarySegmentGroup DS (13.2.6)   -->
  <!-- ################################################ -->
  <!-- Definition of SummarySegmentGroup DS -->
  <complexType name="SummarySegmentGroupType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Name" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="Caption" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded" />
          <choice maxOccurs="unbounded">
            <element name="SummarySegment" type="mpeg7:SummarySegmentType" />
            <element name="SummarySegmentRef" type="mpeg7:ReferenceType" />
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="SummarySegmentGroup" type="mpeg7:SummarySegmentGroupType" />
            <element name="SummarySegmentGroupRef" type="mpeg7:ReferenceType" />
          </choice>
        </sequence>
        <attribute name="level" type="integer" use="optional" />
        <attribute name="duration" type="mpeg7:mediaDurationType" use="optional" />
        <attribute name="numOfKeyFrames" type="nonNegativeInteger" use="optional" />
        <attribute name="fidelity" type="mpeg7:zeroToOneType" use="optional" />
        <attribute name="themeIDs" type="IDREFS" use="optional" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of SummarySegment DS (13.2.7)  -->
  <!-- ######################################### -->
  <!-- Definition of SummarySegment DS -->
  <complexType name="SummarySegmentType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
```

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```
          <element name="Name" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="SourceID" type="mpeg7:UniqueIDType" minOccurs="0" />
          <choice minOccurs="0">
            <element name="KeyAudioVisualClip" type="mpeg7:TemporalSegmentLocatorType" />
            <sequence>
              <element name="KeyVideoClip" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0" />
              <element name="KeyAudioClip" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0" />
            </sequence>
          </choice>
          <element name="KeyFrame" type="mpeg7:ImageLocatorType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="KeySound" type="mpeg7:TemporalSegmentLocatorType" minOccurs="0"
maxOccurs="unbounded" />
        </sequence>
        <attribute name="themeIDs" type="IDREFS" use="optional" />
        <attribute name="order" type="positiveInteger" use="optional" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of SequentialSummary DS (13.2.8)  -->
  <!-- ############################################ -->
  <!-- Definition of SequentialSummary DS -->
  <complexType name="SequentialSummaryType">
    <complexContent>
      <extension base="mpeg7:SummaryType">
        <sequence>
          <choice>
            <element name="AudioVisualSummaryLocator"
type="mpeg7:TemporalSegmentLocatorType" minOccurs="0" />
            <sequence>
              <element name="VideoSummaryLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0" />
              <element name="AudioSummaryLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0" />
            </sequence>
          </choice>
          <element name="VisualSummaryComponent" type="mpeg7:VisualSummaryComponentType"
minOccurs="0" maxOccurs="unbounded" />
          <element name="AudioSummaryComponent" type="mpeg7:AudioSummaryComponentType"
minOccurs="0" maxOccurs="unbounded" />
          <element name="TextualSummaryComponent" type="mpeg7:TextualSummaryComponentType"
minOccurs="0" maxOccurs="unbounded" />
        </sequence>
        <attribute name="components" use="optional">
          <simpleType>
            <list>
              <simpleType>
                <restriction base="NMTOKEN">
                  <enumeration value="visual" />
                  <enumeration value="audio" />
                  <enumeration value="textual" />
                </restriction>
              </simpleType>
            </list>
          </simpleType>
        </attribute>
```


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```
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of VisualSummaryComponent D (13.2.9)  -->
  <!-- ################################################ -->
  <!-- Definition of VisualSummaryComponent D -->
  <complexType name="VisualSummaryComponentType">
    <complexContent>
      <extension base="mpeg7:DType">
        <sequence>
          <element name="VideoSourceID" type="mpeg7:UniqueIDType" minOccurs="0" />
          <element name="VideoSourceLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0" />
          <element name="ComponentSourceTime" type="mpeg7:MediaTimeType" minOccurs="0" />
          <element name="ImageLocator" type="mpeg7:ImageLocatorType" minOccurs="0" />
          <element name="SyncTime" type="mpeg7:MediaTimeType" minOccurs="0" />
          <element name="FrameActivity" type="mpeg7:zeroToOneType" minOccurs="0" />
          <element name="Region" type="mpeg7:RegionLocatorType" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of AudioSummaryComponent D (13.2.10)  -->
  <!-- ################################################ -->
  <!-- Definition of AudioSummaryComponent D -->
  <complexType name="AudioSummaryComponentType">
    <complexContent>
      <extension base="mpeg7:DType">
        <sequence>
          <element name="Title" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="AudioSourceID" type="mpeg7:UniqueIDType" minOccurs="0" />
          <element name="AudioSourceLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0" />
          <element name="ComponentSourceTime" type="mpeg7:MediaTimeType" minOccurs="0" />
          <element name="SoundLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0" />
          <element name="SyncTime" type="mpeg7:MediaTimeType" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of TextualSummaryComponent D (13.2.11)  -->
  <!-- ################################################ -->
  <!-- Definition of TextualSummaryComponent D -->
  <complexType name="TextualSummaryComponentType">
    <complexContent>
      <extension base="mpeg7:DType">
        <sequence>
          <element name="AudioVisualSourceID" type="mpeg7:UniqueIDType" minOccurs="0" />
          <element name="AudioVisualSourceLocator" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0" />
          <element name="ComponentSourceTime" type="mpeg7:MediaTimeType" minOccurs="0" />
          <element name="FreeText" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded" />
          <element name="SyncTime" type="mpeg7:MediaTimeType" minOccurs="0" />
        </sequence>
```

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```
    </extension>
  </complexContent>
</complexType>
<!-- ######################################### -->
<!--  Definition of Partition Datatype (13.3.2)  -->
<!-- ######################################### -->
<!-- Definition of Partition datatype -->
<complexType name="PartitionType">
  <sequence>
    <element name="Origin" type="mpeg7:SignalPlaneOriginType" minOccurs="0" />
    <element name="Start" type="mpeg7:SignalPlaneType" />
    <choice>
      <element name="End" type="mpeg7:SignalPlaneType" />
      <element name="Extent" type="mpeg7:SignalPlaneType" />
    </choice>
  </sequence>
  <attribute name="dim" use="optional">
    <simpleType>
      <restriction base="positiveInteger">
        <maxInclusive value="4" />
      </restriction>
    </simpleType>
  </attribute>
</complexType>
<!-- Definition of SignalPlane datatype -->
<complexType name="SignalPlaneType" abstract="true">
  <sequence>
    <element name="Origin" type="mpeg7:SignalPlaneOriginType" minOccurs="0" />
  </sequence>
  <attribute name="dim" use="optional">
    <simpleType>
      <restriction base="positiveInteger">
        <maxInclusive value="4" />
      </restriction>
    </simpleType>
  </attribute>
</complexType>
<!-- Definition of SignalPlaneFraction datatype -->
<complexType name="SignalPlaneFractionType">
  <complexContent>
    <extension base="mpeg7:SignalPlaneType">
      <attribute name="x" type="double" use="optional" />
      <attribute name="y" type="double" use="optional" />
      <attribute name="z" type="double" use="optional" />
      <attribute name="t" type="double" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- Definition of SignalPlaneSample datatype -->
<complexType name="SignalPlaneSampleType">
  <complexContent>
    <extension base="mpeg7:SignalPlaneType">
      <attribute name="x" type="integer" use="optional" />
      <attribute name="y" type="integer" use="optional" />
      <attribute name="z" type="integer" use="optional" />
      <attribute name="t" type="integer" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- Definition of SignalPlaneOrigin datatype -->
```


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```
<complexType name="SignalPlaneOriginType">
  <attribute name="xOrigin" use="optional" default="left">
    <simpleType>
      <restriction base="NMTOKEN">
        <enumeration value="left" />
        <enumeration value="right" />
      </restriction>
    </simpleType>
  </attribute>
  <attribute name="yOrigin" use="optional" default="bottom">
    <simpleType>
      <restriction base="NMTOKEN">
        <enumeration value="top" />
        <enumeration value="bottom" />
      </restriction>
    </simpleType>
  </attribute>
  <attribute name="zOrigin" use="optional" default="back">
    <simpleType>
      <restriction base="NMTOKEN">
        <enumeration value="back" />
        <enumeration value="front" />
      </restriction>
    </simpleType>
  </attribute>
  <attribute name="timeOrigin" use="optional" default="past">
    <simpleType>
      <restriction base="NMTOKEN">
        <enumeration value="past" />
        <enumeration value="future" />
      </restriction>
    </simpleType>
  </attribute>
</complexType>
<!-- ######################################### -->
<!--  Definition of Filter datatypes (13.3.3)  -->
<!-- ######################################### -->
<!-- Definition of Filter datatype -->
<complexType name="FilterType" abstract="true">
  <attribute name="dim" type="positiveInteger" use="optional" />
</complexType>
<!-- Definition of Filter1D datatype -->
<complexType name="Filter1DType">
  <complexContent>
    <extension base="mpeg7:FilterType">
      <sequence>
        <element name="Terms" type="mpeg7:DoubleMatrixType" />
      </sequence>
      <attribute name="phase" type="integer" use="optional" default="0" />
    </extension>
  </complexContent>
</complexType>
<!-- Definition of Filter2D datatype -->
<complexType name="Filter2DType">
  <complexContent>
    <extension base="mpeg7:FilterType">
      <sequence>
        <element name="Terms" type="mpeg7:DoubleMatrixType" />
      </sequence>
      <attribute name="xPhase" type="integer" use="optional" default="0" />
```

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```
      <attribute name="yPhase" type="integer" use="optional" default="0" />
    </extension>
  </complexContent>
</complexType>
<!-- Definition of FilterSeparable datatype -->
<complexType name="FilterSeparableType">
  <complexContent>
    <extension base="mpeg7:FilterType">
      <sequence>
        <element name="Filter1D" type="mpeg7:Filter1DType" maxOccurs="unbounded" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################### -->
<!--  Definition of Filtering datatype (13.3.4)  -->
<!-- ########################################### -->
<!-- Definition of Filtering datatype -->
<complexType name="FilteringType">
  <sequence>
    <element name="Filter" type="mpeg7:FilterType" />
    <element name="PadSize" type="mpeg7:SignalPlaneSampleType" minOccurs="0" />
    <element name="Shift" type="mpeg7:SignalPlaneSampleType" minOccurs="0" />
    <element name="CropStart" type="mpeg7:SignalPlaneSampleType" minOccurs="0" />
    <element name="CropEnd" type="mpeg7:SignalPlaneSampleType" minOccurs="0" />
  </sequence>
  <attribute name="xPad" type="mpeg7:paddingType" use="optional" default="periodic" />
  <attribute name="yPad" type="mpeg7:paddingType" use="optional" default="periodic" />
  <attribute name="zPad" type="mpeg7:paddingType" use="optional" default="periodic" />
  <attribute name="tPad" type="mpeg7:paddingType" use="optional" default="periodic" />
</complexType>
<!-- Definition of padding datatype -->
<simpleType name="paddingType">
  <union>
    <simpleType>
      <restriction base="NMTOKEN">
        <enumeration value="zero" />
        <enumeration value="replication" />
        <enumeration value="periodic" />
        <enumeration value="symmetric" />
        <enumeration value="antiSymmetric" />
      </restriction>
    </simpleType>
    <simpleType>
      <restriction base="mpeg7:termAliasReferenceType" />
    </simpleType>
    <simpleType>
      <restriction base="mpeg7:termURIReferenceType" />
    </simpleType>
  </union>
</simpleType>
<!-- ################################ -->
<!--  Definition of View DS (13.3.5)  -->
<!-- ################################ -->
<!-- Definition of View DS -->
<complexType name="ViewType" abstract="true">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
        <element name="Target" type="mpeg7:SignalType" />
```


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```
          <element name="Source" type="mpeg7:SignalType" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of SpaceView DS (13.3.6)  -->
  <!-- ######################################## -->
  <!-- Definition of SpaceView DS -->
  <complexType name="SpaceViewType">
    <complexContent>
      <extension base="mpeg7:ViewType">
        <choice>
          <element name="SpacePartition" type="mpeg7:PartitionType" />
          <element name="SpaceRegion" type="mpeg7:RegionLocatorType" />
          <element name="SpatioTemporalRegion" type="mpeg7:SpatioTemporalLocatorType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of FrequencyView DS (13.3.7)  -->
  <!-- ######################################### -->
  <!-- Definition of FrequencyView DS -->
  <complexType name="FrequencyViewType">
    <complexContent>
      <extension base="mpeg7:ViewType">
        <sequence>
          <element name="FrequencyPartition" type="mpeg7:PartitionType" />
          <element name="Filtering" type="mpeg7:FilteringType" minOccurs="0" />
          <element name="DownSamplingFactor" type="mpeg7:SignalPlaneSampleType"
minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################### -->
  <!--  Definition of SpaceFrequencyView DS (13.3.8)  -->
  <!-- ############################################### -->
  <!-- Definition of SpaceFrequencyView DS -->
  <complexType name="SpaceFrequencyViewType">
    <complexContent>
      <extension base="mpeg7:ViewType">
        <sequence>
          <choice>
            <element name="SpacePartition" type="mpeg7:PartitionType" />
            <element name="SpaceRegion" type="mpeg7:RegionLocatorType" />
          </choice>
          <element name="FrequencyPartition" type="mpeg7:PartitionType" />
          <element name="Filtering" type="mpeg7:FilteringType" minOccurs="0" />
          <element name="DownSamplingFactor" type="mpeg7:SignalPlaneSampleType"
minOccurs="0" />
        </sequence>
        <attribute name="order" use="optional" default="spaceFrequency">
          <simpleType>
            <restriction base="NMTOKEN">
              <enumeration value="spaceFrequency" />
              <enumeration value="frequencySpace" />
              <enumeration value="commutative" />
              <enumeration value="partitionable" />
```

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```
            <enumeration value="mixed" />
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!-- Definition of ResolutionView DS (13.3.9)         -->
<!-- ################################################ -->
<!-- Definition of ResolutionView DS -->
<complexType name="ResolutionViewType">
  <complexContent>
    <extension base="mpeg7:ViewType">
      <sequence>
        <element name="FrequencyPartition" type="mpeg7:PartitionType" minOccurs="0" />
        <element name="Filtering" type="mpeg7:FilteringType" minOccurs="0" />
        <element name="DownSamplingFactor" type="mpeg7:SignalPlaneSampleType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of SpaceResolutionView DS (13.3.10)  -->
<!-- ################################################ -->
<!-- Definition of SpaceResolutionView DS -->
<complexType name="SpaceResolutionViewType">
  <complexContent>
    <extension base="mpeg7:ViewType">
      <sequence>
        <choice>
          <element name="SpacePartition" type="mpeg7:PartitionType" />
          <element name="SpaceRegion" type="mpeg7:RegionLocatorType" />
        </choice>
        <element name="FrequencyPartition" type="mpeg7:PartitionType" minOccurs="0" />
        <element name="Filtering" type="mpeg7:FilteringType" minOccurs="0" />
        <element name="DownSamplingFactor" type="mpeg7:SignalPlaneSampleType" />
      </sequence>
      <attribute name="order" use="optional" default="spaceFrequency">
        <simpleType>
          <restriction base="NMTOKEN">
            <enumeration value="spaceFrequency" />
            <enumeration value="frequencySpace" />
            <enumeration value="commutative" />
            <enumeration value="partitionable" />
            <enumeration value="mixed" />
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of ViewDecomposition DS (13.3.11)  -->
<!-- ################################################ -->
<!-- Definition of ViewDecomposition DS -->
<complexType name="ViewDecompositionType" abstract="true">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
```

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```
        <element name="Source" type="mpeg7:SignalType" minOccurs="0" />
      </sequence>
      <attribute name="complete" type="boolean" use="optional" />
      <attribute name="nonRedundant" type="boolean" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################### -->
<!--  Definition of ViewSet DS (13.3.12)  -->
<!-- ################################### -->
<!-- Definition of ViewSet DS -->
<complexType name="ViewSetType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <choice maxOccurs="unbounded">
        <element name="View" type="mpeg7:ViewType" />
        <element name="ViewRef" type="mpeg7:ReferenceType" />
      </choice>
      <attribute name="setProperty" use="optional">
        <simpleType>
          <union>
            <simpleType>
              <restriction base="NMTOKEN">
                <enumeration value="space" />
                <enumeration value="frequency" />
                <enumeration value="subband" />
                <enumeration value="uniformSubband" />
                <enumeration value="wavelet" />
              </restriction>
            </simpleType>
            <simpleType>
              <restriction base="mpeg7:termAliasReferenceType" />
            </simpleType>
            <simpleType>
              <restriction base="mpeg7:termURIReferenceType" />
            </simpleType>
          </union>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>
<!-- ###################################### -->
<!--  Definition of SpaceTree DS (13.3.13)  -->
<!-- ###################################### -->
<!-- Definition of SpaceTree DS -->
<complexType name="SpaceTreeType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <sequence>
        <choice minOccurs="0">
          <element name="View" type="mpeg7:SpaceViewType" />
          <element name="ViewRef" type="mpeg7:ReferenceType" />
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="Child" type="mpeg7:SpaceTreeType" />
          <element name="ChildRef" type="mpeg7:ReferenceType" />
        </choice>
      </sequence>
      <attribute name="branching" type="nonNegativeInteger" use="required" />
```

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```
    </extension>
  </complexContent>
</complexType>
<!-- ########################################## -->
<!--  Definition of FrequencyTree DS (13.3.14)  -->
<!-- ########################################## -->
<!-- Definition of FrequencyTree DS -->
<complexType name="FrequencyTreeType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <sequence>
        <choice minOccurs="0">
          <element name="View" type="mpeg7:FrequencyViewType" />
          <element name="ViewRef" type="mpeg7:ReferenceType" />
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="Child" type="mpeg7:FrequencyTreeType" />
          <element name="ChildRef" type="mpeg7:ReferenceType" />
        </choice>
      </sequence>
      <attribute name="branching" type="nonNegativeInteger" use="required" />
    </extension>
  </complexContent>
</complexType>
<!-- ############################################### -->
<!--  Definition of SpaceFrequencyGraph DS (13.3.15)  -->
<!-- ############################################### -->
<!-- Definition of SpaceFrequencyGraph DS -->
<complexType name="SpaceFrequencyGraphType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <sequence>
        <choice minOccurs="0">
          <element name="View" type="mpeg7:SpaceFrequencyViewType" />
          <element name="ViewRef" type="mpeg7:ReferenceType" />
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="SpaceChild" type="mpeg7:SpaceFrequencyGraphType" />
          <element name="SpaceChildRef" type="mpeg7:ReferenceType" />
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="FrequencyChild" type="mpeg7:SpaceFrequencyGraphType" />
          <element name="FrequencyChildRef" type="mpeg7:ReferenceType" />
        </choice>
      </sequence>
      <attribute name="branching" type="nonNegativeInteger" use="required" />
    </extension>
  </complexContent>
</complexType>
<!-- ######################################### -->
<!--  Definition of VideoViewGraph DS (13.3.16)  -->
<!-- ######################################### -->
<!-- Definition of VideoViewGraph DS -->
<complexType name="VideoViewGraphType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <sequence>
        <choice minOccurs="0">
          <element name="View" type="mpeg7:FrequencyViewType" />
          <element name="ViewRef" type="mpeg7:ReferenceType" />
```


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```
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="SpaceFrequencyChild" type="mpeg7:VideoViewGraphType" />
          <element name="SpaceFrequencyChildRef" type="mpeg7:ReferenceType" />
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="TimeFrequencyChild" type="mpeg7:VideoViewGraphType" />
          <element name="TimeFrequencyChildRef" type="mpeg7:ReferenceType" />
        </choice>
      </sequence>
      <attribute name="branching" type="nonNegativeInteger" use="required" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of MultiResolutionPyramid DS (13.3.17)  -->
<!-- ################################################ -->
<!-- Definition of MultiResolutionPyramid DS -->
<complexType name="MultiResolutionPyramidType">
  <complexContent>
    <extension base="mpeg7:ViewDecompositionType">
      <sequence>
        <choice minOccurs="0">
          <element name="View" type="mpeg7:ResolutionViewType" />
          <element name="ViewRef" type="mpeg7:ReferenceType" />
        </choice>
        <choice minOccurs="0">
          <element name="Child" type="mpeg7:MultiResolutionPyramidType" />
          <element name="ChildRef" type="mpeg7:ReferenceType" />
        </choice>
      </sequence>
      <attribute name="level" type="nonNegativeInteger" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- ######################################### -->
<!--  Definition of VariationSet DS (13.4.2)  -->
<!-- ######################################### -->
<!-- Definition of VariationSet DS -->
<complexType name="VariationSetType">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
        <element name="Source" type="mpeg7:MultimediaContentType" />
        <element name="Variation" type="mpeg7:VariationType" maxOccurs="unbounded" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of Variation content entity -->
<complexType name="VariationType">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
        <element name="Source" type="mpeg7:MultimediaContentType" minOccurs="0" />
        <element name="Content" type="mpeg7:MultimediaContentType" />
        <element name="VariationRelationship" minOccurs="0" maxOccurs="unbounded">
          <simpleType>
            <union>
              <simpleType>
```

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```
                <restriction base="NMTOKEN">
                  <enumeration value="summarization" />
                  <enumeration value="abstraction" />
                  <enumeration value="extraction" />
                  <enumeration value="modalityTranslation" />
                  <enumeration value="languageTranslation" />
                  <enumeration value="colorReduction" />
                  <enumeration value="spatialReduction" />
                  <enumeration value="temporalReduction" />
                  <enumeration value="samplingReduction" />
                  <enumeration value="rateReduction" />
                  <enumeration value="qualityReduction" />
                  <enumeration value="compression" />
                  <enumeration value="scaling" />
                  <enumeration value="revision" />
                  <enumeration value="substitution" />
                  <enumeration value="replay" />
                  <enumeration value="alternativeView" />
                  <enumeration value="alternativeMediaProfile" />
                </restriction>
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termAliasReferenceType" />
              </simpleType>
              <simpleType>
                <restriction base="mpeg7:termURIReferenceType" />
              </simpleType>
            </union>
          </simpleType>
        </element>
      </sequence>
      <attribute name="fidelity" type="mpeg7:zeroToOneType" use="optional" />
      <attribute name="priority" type="nonNegativeInteger" use="optional" />
      <attribute name="timeOffset" type="mpeg7:mediaDurationType" use="optional" />
      <attribute name="timeScale" type="mpeg7:zeroToOneType" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- ##################################### -->
<!--  Definition of Collection DS (14.2.1)  -->
<!-- ##################################### -->
<!-- Definition of Collection DS -->
<complexType name="CollectionType" abstract="true">
  <complexContent>
    <extension base="mpeg7:DSType">
      <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>
```


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```
  </complexType>
  <!-- ################################################## -->
  <!--  Definition of ContentCollection DS (14.2.2) (AMD/2)  -->
  <!-- ################################################## -->
  <!-- Definition of ContentCollection DS (AMD/2)-->
  <complexType name="ContentCollectionType">
    <complexContent>
      <extension base="mpeg7:CollectionType">
        <sequence>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="VisualFeature" type="mpeg7:VisualDType" />
            <element name="GofGopFeature" type="mpeg7:GofGopFeatureType" />
            <element name="AudioFeature" type="mpeg7:AudioDType" />
          </choice>
          <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>
  <!-- ############################################ -->
  <!--  Definition of SegmentCollection DS (14.2.3)  -->
  <!-- ############################################ -->
  <!-- Definition of SegmentCollection DS -->
  <complexType name="SegmentCollectionType">
    <complexContent>
      <extension base="mpeg7:CollectionType">
        <sequence>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="Segment" type="mpeg7:SegmentType" />
            <element name="SegmentRef" type="mpeg7:ReferenceType" />
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="SegmentCollection" type="mpeg7:SegmentCollectionType" />
            <element name="SegmentCollectionRef" type="mpeg7:ReferenceType" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of DescriptorCollection DS (14.2.4)  -->
  <!-- ################################################ -->
  <!-- Definition of DescriptorCollection DS -->
  <complexType name="DescriptorCollectionType">
    <complexContent>
      <extension base="mpeg7:CollectionType">
        <sequence>
          <element name="Descriptor" type="mpeg7:DType" minOccurs="0"
maxOccurs="unbounded" />
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="DescriptorCollection" type="mpeg7:DescriptorCollectionType" />
            <element name="DescriptorCollectionRef" type="mpeg7:ReferenceType" />
          </choice>
```

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```
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of ConceptCollection DS (14.2.5)  -->
  <!-- ############################################ -->
  <!-- Definition of ConceptCollection DS -->
  <complexType name="ConceptCollectionType">
    <complexContent>
      <extension base="mpeg7:CollectionType">
        <sequence>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="Concept" type="mpeg7:SemanticBaseType" />
            <element name="ConceptRef" type="mpeg7:ReferenceType" />
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="ConceptCollection" type="mpeg7:ConceptCollectionType" />
            <element name="ConceptCollectionRef" type="mpeg7:ReferenceType" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################### -->
  <!--  Definition of MixedCollection DS (14.2.6)  -->
  <!-- ########################################### -->
  <!-- Definition of MixedCollection DS -->
  <complexType name="MixedCollectionType">
    <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="Segment" type="mpeg7:SegmentType" />
            <element name="SegmentRef" type="mpeg7:ReferenceType" />
          </choice>
          <element name="Descriptor" type="mpeg7:DType" minOccurs="0"
maxOccurs="unbounded" />
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="Concept" type="mpeg7:SemanticBaseType" />
            <element name="ConceptRef" type="mpeg7:ReferenceType" />
          </choice>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element name="MixedCollection" type="mpeg7:MixedCollectionType" />
            <element name="MixedCollectionRef" type="mpeg7:ReferenceType" />
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of StructuredCollection DS (14.2.7)  -->
  <!-- ################################################ -->
  <!-- Definition of StructuredCollection DS -->
  <complexType name="StructuredCollectionType">
    <complexContent>
```


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```
    <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="CollectionModel" type="mpeg7:CollectionModelType" />
          <element name="CollectionModelRef" type="mpeg7:ReferenceType" />
        </choice>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="ClusterModel" type="mpeg7:ClusterModelType" />
          <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>
<!-- ################################## -->
<!--  Definition of Model DS (14.3.2)  -->
<!-- ################################## -->
<!-- Definition of Model DS -->
<complexType name="ModelType" abstract="true">
  <complexContent>
    <extension base="mpeg7:DSType">
      <attribute name="confidence" type="mpeg7:zeroToOneType" use="optional" />
      <attribute name="reliability" type="mpeg7:zeroToOneType" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- ########################################### -->
<!--  Definition of ProbabilityModel DS (14.4.2) -->
<!-- ########################################### -->
<!-- Definition of ProbabilityModel DS -->
<complexType name="ProbabilityModelType" abstract="true">
  <complexContent>
    <extension base="mpeg7:ModelType" />
  </complexContent>
</complexType>
<!-- ################################################## -->
<!--  Definition of ProbabilityDistribution DS (14.4.3)  -->
<!-- ################################################## -->
<!-- Definition of ProbabilityDistribution DS -->
<complexType name="ProbabilityDistributionType">
  <complexContent>
    <extension base="mpeg7:ProbabilityModelType">
      <sequence>
        <element name="Mean" type="mpeg7:DoubleMatrixType" minOccurs="0" />
        <element name="Variance" type="mpeg7:DoubleMatrixType" minOccurs="0" />
        <element name="Min" type="mpeg7:DoubleMatrixType" minOccurs="0" />
        <element name="Max" type="mpeg7:DoubleMatrixType" minOccurs="0" />
        <element name="Mode" type="mpeg7:DoubleMatrixType" minOccurs="0" />
        <element name="Median" type="mpeg7:DoubleMatrixType" minOccurs="0" />
        <element name="Moment" minOccurs="0" maxOccurs="unbounded">
          <complexType>
```

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```
            <sequence>
              <element name="Value">
                <complexType>
                  <simpleContent>
                    <extension base="mpeg7:DoubleMatrixType">
                      <attribute name="order" type="nonNegativeInteger" use="required"
/>
                    </extension>
                  </simpleContent>
                </complexType>
              </element>
              <element name="Center" type="mpeg7:DoubleMatrixType" minOccurs="0" />
            </sequence>
          </complexType>
        </element>
        <element name="Cumulant" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <sequence>
              <element name="Value">
                <complexType>
                  <simpleContent>
                    <extension base="mpeg7:DoubleMatrixType">
                      <attribute name="order" type="nonNegativeInteger" use="required"
/>
                    </extension>
                  </simpleContent>
                </complexType>
              </element>
              <element name="Center" type="mpeg7:DoubleMatrixType" minOccurs="0" />
            </sequence>
          </complexType>
        </element>
      </sequence>
      <attribute name="dim" type="nonNegativeInteger" default="1" />
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of Discrete distribution DSs (14.4.4)  -->
<!-- ################################################ -->
<!-- Definition of DiscreteDistribution DS -->
<complexType name="DiscreteDistributionType" abstract="true">
  <complexContent>
    <extension base="mpeg7:ProbabilityDistributionType" />
  </complexContent>
</complexType>
<!-- Definition of HistogramProbability DS -->
<complexType name="HistogramProbabilityType">
  <complexContent>
    <extension base="mpeg7:DiscreteDistributionType">
      <sequence>
        <element name="Distribution" type="mpeg7:ProbabilityMatrixType" minOccurs="0" />
      </sequence>
      <attribute name="momentNormalized" type="mpeg7:nonNegativeReal" use="optional" />
      <attribute name="count" type="nonNegativeInteger" use="optional" />
    </extension>
  </complexContent>
</complexType>
<!-- Definition of BinomialDistribution DS -->
<complexType name="BinomialDistributionType">
```


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```
    <complexContent>
      <extension base="mpeg7:DiscreteDistributionType">
        <sequence>
          <element name="SuccessProbability" type="mpeg7:ProbabilityMatrixType" />
          <element name="NumOfTrials" type="mpeg7:IntegerMatrixType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of HyperGeometricDistribution DS -->
  <complexType name="HyperGeometricDistributionType">
    <complexContent>
      <extension base="mpeg7:DiscreteDistributionType">
        <sequence>
          <element name="NumOfSuccesses" type="mpeg7:IntegerMatrixType" />
          <element name="NumOfTrials" type="mpeg7:IntegerMatrixType" />
          <element name="PopulationSize" type="mpeg7:IntegerMatrixType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of PoissonDistribution DS -->
  <complexType name="PoissonDistributionType">
    <complexContent>
      <extension base="mpeg7:DiscreteDistributionType">
        <sequence>
          <element name="Lambda" type="mpeg7:DoubleMatrixType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of GeometricDistribution DS -->
  <complexType name="GeometricDistributionType">
    <complexContent>
      <extension base="mpeg7:DiscreteDistributionType">
        <sequence>
          <element name="SuccessProbability" type="mpeg7:DoubleMatrixType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of DiscreteUniformDistribution DS -->
  <complexType name="DiscreteUniformDistributionType">
    <complexContent>
      <extension base="mpeg7:DiscreteDistributionType">
        <sequence>
          <element name="Range" type="mpeg7:DoubleMatrixType" />
          <element name="Scale" type="mpeg7:DoubleMatrixType" minOccurs="0" />
          <element name="Shift" type="mpeg7:DoubleMatrixType" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of Continuous distribution DSs (14.4.5)  -->
  <!-- ################################################ -->
  <!-- Definition of ContinuousDistribution DS -->
  <complexType name="ContinuousDistributionType" abstract="true">
    <complexContent>
      <extension base="mpeg7:ProbabilityDistributionType" />
```

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```
    </complexContent>
  </complexType>
  <!-- Definition of GaussianDistribution DS -->
  <complexType name="GaussianDistributionType">
    <complexContent>
      <extension base="mpeg7:ContinuousDistributionType">
        <sequence>
          <element name="Determinant" type="double" minOccurs="0" />
          <element name="CovarianceInverse" type="mpeg7:DoubleMatrixType" minOccurs="0" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of GeneralizedGaussianDistribution DS -->
  <complexType name="GeneralizedGaussianDistributionType">
    <complexContent>
      <extension base="mpeg7:GaussianDistributionType">
        <sequence>
          <element name="Shape" type="mpeg7:DoubleMatrixType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ExponentialDistribution DS -->
  <complexType name="ExponentialDistributionType">
    <complexContent>
      <extension base="mpeg7:ContinuousDistributionType">
        <sequence>
          <element name="Theta" type="mpeg7:DoubleMatrixType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of GammaDistribution DS -->
  <complexType name="GammaDistributionType">
    <complexContent>
      <extension base="mpeg7:ContinuousDistributionType">
        <sequence>
          <element name="Theta" type="mpeg7:DoubleMatrixType" />
          <element name="Shape" type="mpeg7:DoubleMatrixType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ContinuousUniformDistribution DS -->
  <complexType name="ContinuousUniformDistributionType">
    <complexContent>
      <extension base="mpeg7:ContinuousDistributionType">
        <sequence>
          <element name="MaxRange" type="mpeg7:DoubleMatrixType" />
          <element name="MinRange" type="mpeg7:DoubleMatrixType" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of LognormalDistribution DS -->
  <complexType name="LognormalDistributionType">
    <complexContent>
      <extension base="mpeg7:ContinuousDistributionType">
        <sequence>
```


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```
        <element name="NormalMean" type="mpeg7:DoubleMatrixType" />
        <element name="NormalVariance" type="mpeg7:DoubleMatrixType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of GaussianMixtureModel DS -->
<complexType name="GaussianMixtureModelType">
  <complexContent>
    <extension base="mpeg7:ContinuousDistributionType">
      <sequence maxOccurs="unbounded">
        <element name="Weight" type="mpeg7:nonNegativeReal" />
        <element name="GaussianDistribution" type="mpeg7:GaussianDistributionType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################### -->
<!--  Definition of FiniteStateModel DS (14.4.6)  -->
<!-- ########################################### -->
<!-- Definition of FiniteStateModel DS -->
<complexType name="FiniteStateModelType" abstract="true">
  <complexContent>
    <extension base="mpeg7:ProbabilityModelType">
      <attribute name="numOfStates" type="nonNegativeInteger" use="required" />
    </extension>
  </complexContent>
</complexType>
<!-- Definition of StateTransitionModel DS -->
<complexType name="StateTransitionModelType">
  <complexContent>
    <extension base="mpeg7:FiniteStateModelType">
      <sequence>
        <element name="Initial" type="mpeg7:ProbabilityMatrixType" minOccurs="0" />
        <element name="Transitions" type="mpeg7:ProbabilityMatrixType" />
        <element name="State" type="mpeg7:ModelStateType" maxOccurs="unbounded" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of DiscreteHiddenMarkovModel DS -->
<complexType name="DiscreteHiddenMarkovModelType">
  <complexContent>
    <extension base="mpeg7:StateTransitionModelType">
      <sequence maxOccurs="unbounded">
        <element name="NumOfObservationsPerState" type="nonNegativeInteger" />
        <element name="Observation" type="mpeg7:TextualType" maxOccurs="unbounded" />
        <element name="ObservationDistribution" type="mpeg7:DiscreteDistributionType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- Definition of ContinuousHiddenMarkovModel DS -->
<complexType name="ContinuousHiddenMarkovModelType">
  <complexContent>
    <extension base="mpeg7:StateTransitionModelType">
      <sequence>
        <element name="DescriptorModel" type="mpeg7:DescriptorModelType"
maxOccurs="unbounded" />
```

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```
          <element name="ObservationDistribution" type="mpeg7:ContinuousDistributionType"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of AnalyticModel DS  (14.5.2)  -->
  <!-- ######################################## -->
  <!-- Definition of AnalyticModel DS -->
  <complexType name="AnalyticModelType" abstract="true">
    <complexContent>
      <extension base="mpeg7:ModelType">
        <choice minOccurs="0" maxOccurs="unbounded">
          <element name="Label">
            <complexType>
              <complexContent>
                <extension base="mpeg7:TermUseType">
                  <attribute name="relevance" type="mpeg7:zeroToOneType" use="optional" />
                  <attribute name="confidence" type="mpeg7:zeroToOneType" use="optional"
/>
                  <attribute name="reliability" type="mpeg7:zeroToOneType" use="optional"
/>
                </extension>
              </complexContent>
            </complexType>
          </element>
          <element name="Semantics">
            <complexType>
              <complexContent>
                <extension base="mpeg7:SemanticBaseType">
                  <attribute name="relevance" type="mpeg7:zeroToOneType" use="optional" />
                  <attribute name="confidence" type="mpeg7:zeroToOneType" use="optional"
/>
                  <attribute name="reliability" type="mpeg7:zeroToOneType" use="optional"
/>
                </extension>
              </complexContent>
            </complexType>
          </element>
        </choice>
        <attribute name="function" use="optional">
          <simpleType>
            <restriction base="string">
              <enumeration value="described" />
              <enumeration value="describing" />
            </restriction>
          </simpleType>
        </attribute>
      </extension>
    </complexContent>
  </complexType>
  <!-- Definition of ModelState DS -->
  <complexType name="ModelStateType">
    <complexContent>
      <extension base="mpeg7:AnalyticModelType" />
    </complexContent>
  </complexType>
  <!-- ######################################### -->
  <!--  Definition of CollectionModel DS (14.5.3)  -->
```


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```
<!-- ########################################### -->
<!-- Definition of CollectionModel DS -->
<complexType name="CollectionModelType">
  <complexContent>
    <extension base="mpeg7:AnalyticModelType">
      <choice minOccurs="0" maxOccurs="unbounded">
        <element name="Collection" type="mpeg7:CollectionType" />
        <element name="CollectionRef" type="mpeg7:ReferenceType" />
      </choice>
    </extension>
  </complexContent>
</complexType>
<!-- ########################################### -->
<!--  Definition of DescriptorModel DS (14.5.4)  -->
<!-- ########################################### -->
<!-- Definition of DescriptorModel DS -->
<complexType name="DescriptorModelType">
  <complexContent>
    <extension base="mpeg7:ModelType">
      <sequence>
        <element name="Descriptor" type="mpeg7:DType" />
        <element name="Field" type="mpeg7:xPathFieldType" maxOccurs="unbounded" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ################################################ -->
<!--  Definition of ProbabilityModelClass DS (14.5.5)  -->
<!-- ################################################ -->
<!-- Definition of ProbabilityModelClass DS -->
<complexType name="ProbabilityModelClassType">
  <complexContent>
    <extension base="mpeg7:AnalyticModelType">
      <sequence maxOccurs="unbounded">
        <element name="DescriptorModel" type="mpeg7:DescriptorModelType" />
        <element name="ProbabilityModel" type="mpeg7:ProbabilityModelType" />
      </sequence>
    </extension>
  </complexContent>
</complexType>
<!-- ######################################## -->
<!--  Definition of ClusterModel DS (14.6.2)  -->
<!-- ######################################## -->
<!-- Definition of ClusterModel DS -->
<complexType name="ClusterModelType">
  <complexContent>
    <extension base="mpeg7:AnalyticModelType">
      <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="ClusterModel" type="mpeg7:ClusterModelType" />
          <element name="ClusterModelRef" type="mpeg7:ReferenceType" />
        </choice>
        <sequence minOccurs="0">
          <element name="DescriptorModel" type="mpeg7:DescriptorModelType" />
          <element name="ProbabilityModel" type="mpeg7:ProbabilityModelType" />
        </sequence>
```

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```
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################ -->
  <!--  Definition of ClassificationModel DS (14.7.2)  -->
  <!-- ################################################ -->
  <!-- Definition of ClassificationModel DS -->
  <complexType name="ClassificationModelType" abstract="true">
    <complexContent>
      <extension base="mpeg7:ModelType">
        <attribute name="complete" type="boolean" use="optional" default="true" />
        <attribute name="redundant" type="boolean" use="optional" default="false" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################################## -->
  <!--  Definition of ClusterClassificationModel DS (14.7.3)  -->
  <!-- ######################################################## -->
  <!-- Definition of ClusterClassificationModel DS -->
  <complexType name="ClusterClassificationModelType">
    <complexContent>
      <extension base="mpeg7:ClassificationModelType">
        <choice maxOccurs="unbounded">
          <element name="ClusterModel" type="mpeg7:ClusterModelType" />
          <element name="ClusterModelRef" type="mpeg7:ReferenceType" />
        </choice>
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################################ -->
  <!--  Definition of ProbabilityClassificationModel DS (14.7.4)  -->
  <!-- ############################################################ -->
  <!-- Definition of ProbabilityClassificationModel DS -->
  <complexType name="ProbabilityClassificationModelType">
    <complexContent>
      <extension base="mpeg7:ClassificationModelType">
        <sequence>
          <element name="ProbabilityModelClass" type="mpeg7:ProbabilityModelClassType"
maxOccurs="unbounded" />
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################### -->
  <!--  Basic User Preference tools (15.2.2)  -->
  <!-- ################################### -->
  <!-- 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>
```


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```
                        <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:termAliasReferenceType" />
                        </simpleType>
                        <simpleType>
                          <restriction base="mpeg7:termURIReferenceType" />
                        </simpleType>
                      </union>
                    </simpleType>
                  </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 (15.2.3) (AMD/2)  -->
  <!-- ################################################ -->
  <!-- Definition of UserPreferences DS (AMD/2) -->
  <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" />
          <element name="RecordingPreferences" type="mpeg7:RecordingPreferencesType"
minOccurs="0" maxOccurs="unbounded" />
        </sequence>
```

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```
      <attribute name="allowAutomaticUpdate" type="mpeg7:userChoiceType" use="optional"
default="false" />
    </extension>
  </complexContent>
 </complexType>
 <!-- ################################################ -->
 <!--  Definition of UserIdentifier Datatype (15.2.4)  -->
 <!-- ################################################ -->
 <!-- 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 (15.2.5)  -->
 <!-- ########################################################## -->
 <!-- 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>
    <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 (15.2.6)  -->
 <!-- ################################################ -->
 <!-- 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>
```


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```
          <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>
            </complexType>
          </element>
        </sequence>
        <attribute name="preferenceValue" type="mpeg7:preferenceValueType" use="optional"
default="10" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ################################################################ -->
  <!--  Definition of ClassificationPreferences DS (15.2.7) (AMD/2)  -->
  <!-- ################################################################ -->
  <!-- Definition of ClassificationPreferences DS (AMD/2)-->
```

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```
  <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" />
```

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```
              </extension>
            </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>
        <element name="AssociatedData" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <simpleContent>
              <extension base="mpeg7:TextualType">
                <attribute name="preferenceValue" type="mpeg7:preferenceValueType"
use="optional" default="10" />
              </extension>
            </simpleContent>
          </complexType>
        </element>
      </sequence>
      <attribute name="preferenceValue" type="mpeg7:preferenceValueType" use="optional"
default="10" />
    </extension>
  </complexContent>
</complexType>
```

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```
  <!-- 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:termAliasReferenceType" />
      </simpleType>
      <simpleType>
        <restriction base="mpeg7:termURIReferenceType" />
      </simpleType>
    </union>
  </simpleType>
  <!-- ############################################ -->
  <!--  Definition of SourcePreferences DS (15.2.8)  -->
  <!-- ############################################ -->
  <!-- Definition of SourcePreferences DS -->
  <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>
```

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```
              <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" />
        <attribute name="preferenceValue" type="mpeg7:preferenceValueType" use="optional"
default="10" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ########################################################## -->
  <!--  Definition of BrowsingPreferences DS (15.2.9) (AMD/2)  -->
  <!-- ########################################################## -->
  <!-- Definition of BrowsingPreferences DS (AMD/2) -->
  <complexType name="BrowsingPreferencesType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="SummaryPreferences" type="mpeg7:SummaryPreferencesType"
minOccurs="0" maxOccurs="unbounded" />
          <element name="BrowsingLocation" type="anyURI" 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>
```

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```
        </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 (15.2.10)  -->
  <!-- ################################################ -->
  <!-- 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" />
          <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" />
```


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```
          <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:termAliasReferenceType" />
      </simpleType>
      <simpleType>
        <restriction base="mpeg7:termURIReferenceType" />
      </simpleType>
    </union>
  </simpleType>
  <!-- ########################################################## -->
  <!--  Definition of RecordingPreferencesType (15.2.11) (AMD/2) -->
  <!-- ##########################################################  -->
  <!-- Definition of RecordingPreferencesType (AMD/2) -->
  <complexType name="RecordingPreferencesType">
    <sequence>
      <element name="RecordingRequest" type="mpeg7:RecordingRequestType"
maxOccurs="unbounded" />
    </sequence>
  </complexType>
  <!-- Definition of RecordingRequestType (AMD/2) -->
  <complexType name="RecordingRequestType">
    <sequence>
      <element name="ContentIdentifier" type="mpeg7:UniqueIDType" />
      <element name="DisseminationSource" type="mpeg7:TextualType" minOccurs="0" />
      <element name="Title" type="mpeg7:TextualType" minOccurs="0" />
      <element name="RecordingPeriod">
        <complexType>
          <choice>
            <element name="SpecificTimePeriod" type="mpeg7:TimeType" />
            <element name="EntireTimePeriod" />
          </choice>
        </complexType>
      </element>
      <element name="RecordingLocationPreferences" type="anyURI" maxOccurs="unbounded" />
      <element name="RecordingSourceTypePreferences" maxOccurs="2">
        <complexType>
          <choice>
            <element name="OriginalContents" />
            <element name="Summary" type="mpeg7:summaryComponentType"
maxOccurs="unbounded" />
          </choice>
        </complexType>
      </element>
      <element name="RecordAssociatedData" minOccurs="0">
        <complexType>
          <attribute name="type" use="required">
            <simpleType>
              <union>
                <simpleType>
                  <restriction base="NMTOKEN">
                    <enumeration value="none" />
```

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```
                    <enumeration value="all" />
                  </restriction>
                </simpleType>
                <simpleType>
                  <restriction base="mpeg7:termAliasReferenceType" />
                </simpleType>
                <simpleType>
                  <restriction base="mpeg7:termURIReferenceType" />
                </simpleType>
              </union>
            </simpleType>
          </attribute>
        </complexType>
      </element>
    </sequence>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of UsageHistory DS (15.3.2)  -->
  <!-- ######################################## -->
  <!-- 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"
maxOccurs="unbounded" />
        </sequence>
        <attribute name="allowCollection" type="mpeg7:userChoiceType" use="optional"
default="false" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ############################################ -->
  <!--  Definition of UserActionHistory DS (15.3.3)  -->
  <!-- ############################################ -->
  <!-- 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"
maxOccurs="unbounded" />
        </sequence>
        <attribute name="protected" type="mpeg7:userChoiceType" use="optional"
default="true" />
      </extension>
    </complexContent>
  </complexType>
  <!-- ######################################## -->
  <!--  Definition of UserActionList DS (15.3.4) -->
  <!-- ######################################## -->
  <!-- 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 (15.3.5)  -->
  <!-- ######################################## -->
  <!-- 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>
```

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Annex A
(informative)

Patent Statements

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Patent Statements

		Sys	DDL	Visual	Audio	MDS	Ref. Sof.
	Canon				X		
	CIE	X	X	X	X	X	X
	Denso	X				X	
	ETRI	X	X	X	X	X	X
	Expway	X	X	X	X	X	X
	FhG				X		
	Fraunhofer				X		
	Geocast	X	X	X	X	X	
	HHI			X			X
	Hitachi	X	X	X	X	X	X
	Hyundai			X		X	X
	IBM	X	X	X	X	X	X
	JVC	X	X	X	X	X	X
	KDDI			X	X	X	X
	LG Electronics	X	X	X	X	X	X
	Matsushita	X	X	X	X	X	X
	Mitsubishi Electric	X	X	X	X	X	X
	NEC						
	NHK	X	X	X	X	X	X
	Philips	X	X	X	X	X	X
	Ricoh	X	X	X	X	X	X

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	Samsung	X	X	X	X	X	X
	Sharp	X		X	X	X	X
	Siemens	X	X	X	X	X	X
	Sony	X	X	X	X	X	X
	Toshiba	X	X	X	X	X	X
	Vivcom					X	X

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