INTERNATIONAL STANDARD

ISO/IEC 15938-5

First edition
2003-05-15

AMENDMENT 4
2012-10-01

Information technology — Multimedia content description interface —

Part 5: Multimedia description schemes

AMENDMENT 4: Social metadata

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

Partie 5: Schémas de description multimédia

AMENDEMENT 4: Métadonnées sociales

Reference number
ISO/IEC 15938-5:2003/Amd.4:2012(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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.

Amendment 4 to ISO/IEC 15938-5:2003 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

This Amendment provides means for describing a person beyond the context of the `Person` DS. The description especially targets the annotation of a person's interests in the context of social networking platforms as well as the collaborative review and rating of media entities.

Information technology — Multimedia content description interface —

Part 5: Multimedia description schemes

AMENDMENT 4: Social metadata

In 4.4.1, replace the entire text of the subclause with the following text:

4.4.1 Introduction

This subclause specifies the top-level types. The top-level types are used in complete descriptions to describe multimedia content and metadata related to content management. Each top-level type contains the description tools that are relevant for a particular description task, i.e., describing an image or a video. The following top-level types are defined in this subclause:

- `CompleteDescriptionType` (abstract): top-level type for complete descriptions.
    - `ContentDescriptionType` (abstract): top-level type for complete descriptions of multimedia content.
        - `ContentEntityType`: top-level type for describing multimedia content entities such as images, videos, audio, collections, and so forth.
        - `ContentAbstractionType` (abstract): top-level type for describing abstractions of multimedia content:
            - `SemanticDescriptionType`: top-level type for describing semantics of multimedia content.
            - `ModelDescriptionType`: top-level type for describing models of multimedia content.
            - `SummaryDescriptionType`: top-level type for describing summaries of multimedia content.
            - `ViewDescriptionType`: top-level type for describing views and view decompositions of audio-visual signals.
            - `VariationDescriptionType`: top-level type for describing variations of multimedia content.
    - `ContentManagementType` (abstract): top-level type for describing metadata related to content management:
        - `UserDescriptionType`: top-level type for describing a user of a multimedia system.

- `MediaDescriptionType`: top-level type for describing the media information of multimedia content.
- `CreationDescriptionType`: top-level type for describing the process of creating multimedia content.
- `UsageDescriptionType`: top-level type for describing the usage of multimedia content.
- `ClassificationSchemeDescriptionType`: top-level type for describing a classification scheme for multimedia content.
- `MediaReviewDescriptionType` (abstract): top-level type for describing collaborative media review and rating:
    - `IndividualMediaReviewDescriptionType`: top-level type for describing a review conducted by a single entity.
    - `AggregatedMediaReviewDescriptionType`: top-level type for describing a review that has been aggregated from several individual (or aggregated) reviews.

The top-level types are organized under the type hierarchy shown in Figure 3. The `CompleteDescriptionType` forms the root base type of the hierarchy. The top-level types `ContentDescriptionType` and `ContentManagementType` extend `CompleteDescriptionType`. The top-level types `ContentEntityType` and `ContentAbstractionType` extend `CompleteDescriptionType`.

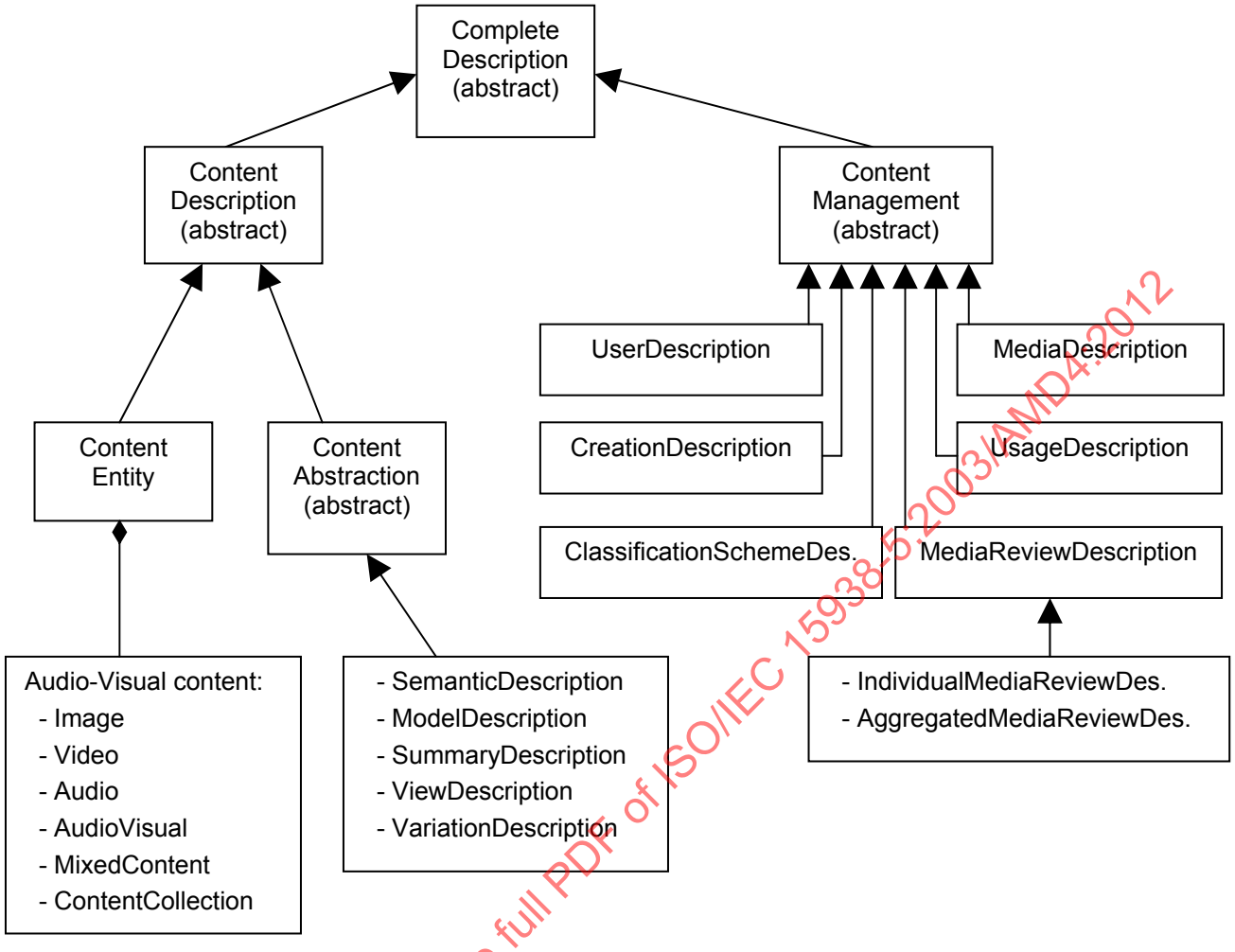

Figure 3 — Illustration of the type derivation hierarchy for top-level types

In 4.4.4.2, replace schema definition by the following Schema text:

```
<!-- ################################################### -->
<!--  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>
        <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 MediaReviewDescription Top-level Type (AMD/4)  -->
<complexType name="MediaReviewDescriptionType" abstract="true">
  <complexContent>
    <extension base="mpeg7:ContentManagementType">
      <sequence>
        <element name="ContentRef" type="mpeg7:ReferenceType"/>
```

```
        <element name="Tags" type="mpeg7:KeywordAnnotationType" minOccurs="0"/>
        <element name="FreeTextReview" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
        <element name="MediaRating" type="mpeg7:RatingType" minOccurs="0"
maxOccurs="unbounded"/>
        <element name="IdentityRating" type="mpeg7:RatingType" minOccurs="0"/>
        <element name="QualityRating" type="mpeg7:MediaQualityType" minOccurs="0"
maxOccurs="unbounded"/>
      </sequence>
      <attribute name="reviewTime" type="mpeg7:timePointType" use="required"/>
    </extension>
  </complexContent>
</complexType>

<!-- Definition of IndividualMediaReviewDescription Top-level Type (AMD/4)  -->
<complexType name="IndividualMediaReviewDescriptionType">
  <complexContent>
    <extension base="mpeg7:MediaReviewDescriptionType">
      <choice>
        <element name="Reviewer" type="mpeg7:AgentType"/>
        <element name="ReviewerRef" type="mpeg7:ReferenceType"/>
      </choice>
    </extension>
  </complexContent>
</complexType>

<!-- Definition of AggregatedMediaReviewDescription Top-level Type (AMD/4)  -->
<complexType name="AggregatedMediaReviewDescriptionType">
  <complexContent>
    <extension base="mpeg7:MediaReviewDescriptionType">
      <sequence>
        <element name="ObservationPeriod" type="mpeg7:TimeType"
maxOccurs="unbounded"/>
        <element name="ReviewCount" type="nonNegativeInteger"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>
```

At the end of 4.4.4.3, add the following:

Semantics of the `MediaReviewDescriptionType`:

Name	*Definition*
`MediaReviewDescriptionType`	Top-level type for describing collaborative media review and rating. `MediaReviewDescriptionType` extends `ContentManagementType`.
`ContentRef`	Reference to the content or identifier of the content that is reviewed.
`Tags`	Free text descriptive keywords about the content.
`FreeTextReview`	Textual reviews of the content.

Name	*Definition*
MediaRating	Rating of the media content (i.e., how much the User likes the media content). RatingType is defined in 8.2.6. Terms for the RatingScheme of the media rating are specified by the MediaRatingSchemeCS.
IdentityRating	Rating that indicates whether the content is the actual content it should be (i.e., to mark fakes). RatingType is defined in 8.2.6. Terms for the RatingScheme of the identity rating are specified by the IdentityRatingSchemeCS.
QualityRating	Rating of the media quality of the content. MediaQualityType is defined in 8.2.6. The terms defined in the QualityRatingSchemeCS can be used in the RatingScheme.
reviewTime	Date and time when the review was conducted.

Semantics of the IndividualMediaReviewDescriptionType:

Name	*Definition*
IndividualMediaReviewDescriptionType	Top-level type for a review conducted by a single entity. IndividualMediaReviewDescriptionType extends MediaReviewDescriptionType.
Reviewer	Entity that performed the review. AgentType is defined in 7.5.2. Note: the RatingSource of the QualityRating should not differ from the Reviewer.
ReviewerRef	Reference to the entity that performed the review. Note: the RatingSource of the QualityRating should not differ from the ReviewerRef.

Semantics of the AggregatedMediaReviewDescriptionType:

Name	*Definition*
AggregatedMediaReviewDescriptionType	Top-level type for a review that has been aggregated from several individual (or aggregated) reviews. AggregatedMediaReviewDescriptionType extends MediaReviewDescriptionType.
ObservationPeriod	Time period in which all individual reviews that this

Name	*Definition*
	aggregated review aggregates where conducted.
`ReviewCount`	Number of all individual reviews that this aggregated review aggregates.

At the end of 4.4.4.4, add the following:

The following example shows the use of the content management type `MediaReviewDescriptionType` for describing media review information for an individual media review and for an aggregated media review.

```
<Mpeg7>
  <Description xsi:type="IndividualMediaReviewType" reviewTime="2011-12-
01T17:40:00">
    <ContentRef href="http://example.com/content/some.content"/>
    <IdentityRating>
      <RatingValue>0</RatingValue>
      <RatingScheme style="higherBetter" worst="-1" best="0"
href="urn:mpeg:mpeg7:cs:IdentityRatingSchemeCS:2012:1">
        <Name>Identity</Name>
      </RatingScheme>
    </IdentityRating>
    <QualityRating>
      <QualityRating type="objective">
        <RatingValue>40.05</RatingValue>
        <RatingScheme style="higherBetter"
href="urn:mpeg:mpeg7:cs:QualityRatingSchemeCS:2001:2.3">
          <Name>PSNR Y</Name>
        </RatingScheme>
      </QualityRating>
    </QualityRating>
    <ReviewerRef href="http://example.com/user/john.doe"/>
  </Description>

  <Description xsi:type="AggregatedMediaReviewType" reviewTime="2011-12-
02T00:00:01">
    <ContentRef href="http://example.com/content/some.content"/>
    <FreeTextReview>Nice movie, but the end was quite sad.</FreeTextReview>
    <FreeTextReview>Best movie I have seen in years.</FreeTextReview>
    <MediaRating>
      <RatingValue>4.5</RatingValue>
      <RatingScheme style="higherBetter" worst="1" best="5"
href="urn:mpeg:mpeg7:cs:MediaRatingSchemeCS:2012:1">
        <Name>Five-Star</Name>
      </RatingScheme>
    </MediaRating>
    <ObservationPeriod>
      <TimePoint>2011-12-01T00:00:00</TimePoint>
      <Duration>P1D</Duration>
    </ObservationPeriod>
    <ReviewCount>42</ReviewCount>
  </Description>
</Mpeg7>
```

After 7.5.7,add 7.5.8:

7.5.8 UserProfile DS

7.5.8.1 Introduction

The `UserProfile` DS provides means for describing a person beyond the context of the `Person` DS. The description especially targets the annotation of a person's interests in the context of social networking platforms.

7.5.8.2 UserProfile DS syntax

```
<!-- ##################################### -->
<!--  Definition of UserProfile DS (7.5.8)  -->
<!-- ##################################### -->

<!-- Definition of UserProfile DS (AMD/4)  -->
<complexType name="UserProfileType">
  <complexContent>
    <extension base="mpeg7:PersonType">
      <sequence>
        <element name="PublicIdentifier" type="mpeg7:UniqueIDType" minOccurs="0"
maxOccurs="unbounded"/>
        <element name="Description" type="mpeg7:TextAnnotationType"
minOccurs="0"/>
        <element name="TimeZone" type="mpeg7:TimeZoneType" minOccurs="0"/>
        <element name="PrimaryLanguage" type="language" minOccurs="0"/>
        <element name="Relations" type="mpeg7:RelationsType" minOccurs="0"/>
        <element name="PersonalInterests" type="mpeg7:PersonalInterestsType"
minOccurs="0"/>
      </sequence>
      <attribute name="sex">
        <simpleType>
          <restriction base="string">
            <enumeration value="male"/>
            <enumeration value="female"/>
          </restriction>
        </simpleType>
      </attribute>
    </extension>
  </complexContent>
</complexType>

<!-- Definition of TimeZone datatype (AMD/4)  -->
<complexType name="TimeZoneType">
  <attribute name="value">
    <simpleType>
      <restriction base="string">
        <pattern value="Z|((\-|\+)\d{2}:\d{2})"/>
        <!-- Restricted version of the time zone part of ISO 8601 -->
      </restriction>
    </simpleType>
  </attribute>
  <attribute name="dst" type="boolean" default="false"/>
</complexType>

<!-- Definition of Relations datatype (AMD/4)  -->
<complexType name="RelationsType">
  <sequence>
```

```
    <element name="Affiliation" type="mpeg7:AffiliationType" minOccurs="0"
maxOccurs="unbounded"/>
    <element name="Relation" type="mpeg7:RelationType" minOccurs="0"
maxOccurs="unbounded"/>
  </sequence>
</complexType>

<!-- Definition of RelationBase datatype (AMD/4)  -->
<complexType name="RelationBaseType" abstract="true">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
        <element name="Role" type="mpeg7:ControlledTermUseType">
          <annotation>
            <documentation xml:lang="en">
              Proposed Classification Schemes:
urn:mpeg:mpeg7:cs:AffiliationRoleCS:2012 and
urn:mpeg:mpeg7:cs:RelationRoleCS:2012
            </documentation>
          </annotation>
        </element>
      </sequence>
      <attribute name="dateFrom" type="mpeg7:timePointType"/>
      <attribute name="dateTo" type="mpeg7:timePointType"/>
    </extension>
  </complexContent>
</complexType>

<!-- Definition of Affiliation datatype (AMD/4)  -->
<complexType name="AffiliationType">
  <complexContent>
    <extension base="mpeg7:RelationBaseType">
      <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>
    </extension>
  </complexContent>
</complexType>

<!-- Definition of Relation datatype (AMD/4)  -->
<complexType name="RelationType">
  <complexContent>
    <extension base="mpeg7:RelationBaseType">
      <choice>
        <element name="Person" type="mpeg7:PersonType"/>
        <element name="PersonRef" type="mpeg7:ReferenceType"/>
      </choice>
    </extension>
  </complexContent>
</complexType>

<!-- Definition of PersonalInterests datatype (AMD/4)  -->
<complexType name="PersonalInterestsType">
  <sequence>
    <element name="Activity" type="mpeg7:SemanticBaseType" minOccurs="0"
maxOccurs="unbounded"/>
    <element name="Interest" type="mpeg7:SemanticBaseType" minOccurs="0"
maxOccurs="unbounded"/>
```

```
    <element name="Favorite" type="mpeg7:SemanticBaseType" minOccurs="0"
maxOccurs="unbounded"/>
  </sequence>
</complexType>

<!-- Definition of ExtendedElectronicAddress datatype (AMD/4)  -->
<complexType name="ExtendedElectronicAddressType">
  <complexContent>
    <extension base="mpeg7:ElectronicAddressType">
      <sequence>
        <element name="InstantMessagingScreenName"
type="mpeg7:InstantMessagingScreenNameType" minOccurs="0" maxOccurs="unbounded"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>

<!-- Definition of InstantMessagingScreenName datatype (AMD/4)  -->
<complexType name="InstantMessagingScreenNameType">
  <simpleContent>
    <extension base="string">
      <attribute name="service" type="anyURI" use="required"/>
    </extension>
  </simpleContent>
</complexType>
```

7.5.8.3 UserProfile DS semantics

Semantics of the `UserProfileType`:

Name	*Definition*
`UserProfileType`	Describes the social metadata of a person. `UserProfileType` extends `PersonType`. Terms for the `Role` of the `Address` are specified by the `AddressRoleCS`.
`PublicIdentifier`	Unique identifier, e.g., for login of a user or for referencing a person.
`Description`	Textual description of the person.
`TimeZone`	The time zone that the person resides in.
`PrimaryLanguage`	The person's preferred language for communication.
`Relations`	List of affiliations and relations the person has with other people and entities.
`PersonalInterests`	List of personal interests of the person.
`sex`	Sex of the person. This attribute specifies the biological sex rather than the social gender of a person.

Semantics of the `TimeZoneType`:

Name	*Definition*
`TimeZoneType`	Type for representing time zones.
`value`	Value for the time zone offset represented relative to UTC as specified in ISO 8601.
`dst`	Indicates whether the time zone offset uses daylight saving time (DST). Note: the `dst` does not indicate whether the daylight saving time is currently active in that time zone. Note: the `dst` value does not affect the interpretation of the time zone offset.

Semantics of the `RelationsType`:

Name	*Definition*
`RelationsType`	Type for a list of affiliations and relations.
`Affiliation`	Affiliation that a person has or had with another entity (e.g., education, employer).
`Relation`	Relations that a person has with another person (e.g., family member, life partner, friend).

Semantics of the `RelationBaseType`:

Name	*Definition*
`RelationBaseType`	Abstract base type for affiliations and relations. `RelationBaseType` extends `DSType`.
`Role`	Role of the relation that the other entity has with that person. Terms for the `Role` of the affiliation are specified by the `AffiliationRoleCS`. Terms for the `Role` of the relation are specified by the `RelationRoleCS`.
`dateFrom`	Start date of the affiliation or relation.
`dateTo`	End date of the affiliation or relation (if applicable).

Semantics of the `AffiliationType`:

Name	*Definition*

Name	*Definition*
`AffiliationType`	Type for affiliations that this person has with other entities (i.e., organizations or person groups). `AffiliationType` extends `RelationBaseType`. Terms for the `Role` of the affiliation are specified by the `AffiliationRoleCS`.
`Organization`	Organization with which this person has an affiliation.
`OrganizationRef`	Reference to the organization with which this person has an affiliation.
`PersonGroup`	Person group with which this person has an affiliation.
`PersonGroupRef`	Reference to the person group with which this person has an affiliation.

Semantics of the `RelationType`:

Name	*Definition*
`RelationType`	Type for relations that a person has with another person. `RelationType` extends `RelationBaseType`. Terms for the `Role` of the relation are specified by the `RelationRoleCS`.
`Person`	Another person with which this person has a relation.
`PersonRef`	Reference to another person with which this person has a relation.

Semantics of the `PersonalInterestsType`:

Name	*Definition*
`PersonalInterestsType`	Type for personal interests.
`Activity`	An activity that the person likes to carry out. Note: the activity is usually represented through a `SemanticType`. However, this standard does not mandate a specific representation.
`Interest`	Something that the person is interested in or likes. Note: the interest is usually represented through a `SemanticType`. However, this standard does not mandate a specific representation.
`Favorite`	A favorite thing for the person (e.g., favorite book, movie, song, etc.). Note: the favorite thing is usually represented through a `SemanticType`. However, this standard does not mandate a specific representation.

Semantics of the `ExtendedElectronicAddressType`:

Name	*Definition*
`ExtendedElectronicAddressType`	Type for electronic addresses that accommodates user names for instant messaging tools. `ExtendedElectronicAddressType` extends `ElectronicAddressType`.
`InstantMessagingScreenName`	User name through which the person can be found on a particular instant messaging service.

Semantics of the `InstantMessagingScreenNameType`:

Name	*Definition*
`InstantMessagingScreenNameType`	Type for user names on an instant messaging service.
`service`	Identification of the instant messaging service.

7.5.8.4 UserProfile DS examples (informative)

The following example shows the use of the `UserProfile` DS for describing a User named John Doe, his relations and affiliations, as well as his personal interests.

```
<Mpeg7>
  <Description xsi:type="UserDescriptionType">
    <User xsi:type="UserProfileType">
      <Icon xsi:type="ImageLocatorType">
        <MediaUri>http://example.com/user/john.doe/profile.jpg</MediaUri>
      </Icon>
      <Name dateFrom="1970-01-01">
        <GivenName>John</GivenName>
        <GivenName>Doe</GivenName>
      </Name>
      <Address>
        <NameTerm href="http://example.com/places/scary.place"/>
        <Role href="urn:mpeg:mpeg7:cs:AddressRoleCS:2012:1">
          <Name>Current Home</Name>
        </Role>
        <GeographicPosition>
          <Point latitude="66.6" longitude="66.6"/>
        </GeographicPosition>
        <PostalAddress>
          <AddressLine>Elm Street</AddressLine>
        </PostalAddress>
      </Address>
      <ElectronicAddress>
        <Email>john.doe@example.com</Email>
      </ElectronicAddress>
      <PublicIdentifier>http://example.com/user/john.doe</PublicIdentifier>
      <Description>
        <FreeTextAnnotation xml:lang="en">John is a nice and happy
person.</FreeTextAnnotation>
```