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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member 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 shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 11179-1 was prepared by Technical Committee ISO/IEC JTC1, *Information Technology*, Subcommittee SC32, *Data Management and Interchange*.

ISO/IEC 11179 consists of the following parts, under the general title *Information technology — Metadata registries (MDR)*:

— *Part 1: Framework*

— *Part 2: Semantics*

— *Part 3: Registry metamodel and basic attributes*

— *Part 4: Formulation of data definitions*

— *Part 5: Naming and identification principles*

— *Part 6: Registration*

Introduction

Semantics management is a primary intent of ISO/IEC 11179 family of international standards. The initial edition of ISO/IEC 11179 focused on managing the semantics of the permissible values for data elements. Subsequent editions are evolving this capability to provide broader support for semantics management. Edition 3 carries this evolution forward to provide the stronger semantics management and semantics services needed for semantics based computing that focuses processing on the meaning of data rather than the manipulation of syntactic structures. To address the requirements of semantics based software approaches, Part 2 provides a translation of the ISO/IEC 11179 UML metamodel as specified in Part 3 into normative versions in alternate formalisms--one in common logic (ISO/IEC 24707) and another in OWL (W3C recommendation xxx). These two formalisms have different expressivity than UML, thus the translations provide an authoritative expression of the metamodel using the expressivity of CL and OWL.

Edition 3 of Part 3 extends the metamodel to better handle the registration of complex metadata structures including concept systems (or knowledge organization systems) such as thesauri, taxonomies, ontologies and graphs. There are many efforts underway to specify semantic content and to use the concept systems to build and populate the data structures for traditional information systems, semantic web applications and other advanced semantic applications. For the purpose of this standard, the following are all considered types concept systems of varying discriminatory power: key words, thesauri, taxonomies, and ontologies. These concept systems have potentially great utility for documenting objects in the real world, including administered items in an MDR.

There are several purposes for applying semantic systems to real world objects. Semantic systems assist users to find a single object from among a large collection of objects, facilitate the administration and analysis of a collection of objects, and, through inheritance, conveys semantic content that is often only incompletely specified by other attributes, such as names and definitions.

MDR capabilities for concept systems have utility for

- Linking concepts to data

- Finding and registering correspondences between concept systems

- ensuring appropriate attribute and attribute-value inheritance,

- deriving names from a controlled vocabulary

- disambiguating

- recognizing superordinate, coordinate, and subordinate administered item concepts

- recognizing relationships among administered items.

Each type of concept system mentioned above has particular strengths and weaknesses, and provides the foundation upon which particular capabilities can be built. Keywords, for example, are a quick way to provide users some assistance in locating potentially useful administered items. A thesaurus provides a more structured approach, arranging descriptive terms in a structure of broader, narrower, and related classification categories. A taxonomy provides a classification structure that adds the power of inheritance of meaning from generalized taxa to specialized taxa. Ontologies, with associated epistemologies, can provide rich, rigorously

defined structures (e.g., directed acyclic graphs with multiple inheritance) that can convey information needed by software, such as intelligent agents and mediators that are useful in the provision of intelligent information services.

Information technology — Metadata registries (MDR) — Part 2: Semantics

1   Scope

This Part of the International Standard restates and elaborates the metmodel in Part 3.

This Part of the International Standard specifies the metamodel alternative formalisms, with an authoritative expreseion of the metamodel using the expressivity of Common Logic and OWL. The names, definitions, and other aspects of the metamodel are established in Part 3. Users may extend the set of attributes as necessary.

Use of one or more concept systems is intended to provide a sound conceptual basis for the development of metadata having enhanced semantic purity and design integrity.

This International Standard does not establish a particular concept system or knowledge organization system as preeminent. Sanction of a particular taxonomic approach and/or a particular epistemology is also beyond the scope of this International Standard. These are addressed by other standards committees and/or tend to be tailored to a particular domain of discourse. The power of the classification scheme and the utility of the content are appropriate areas for competition. Other standards committees are developing or have developed normative languages for use in specifying concept systems and/or particular techniques and structures that can be accommodated by this International Standard. For example, the National Information Standards Organization (NISO) has developed a standard for development of a thesaurus. It is appropriate for each classification structure to be documented as to how it was developed and how it can be extended and maintained. Such attributes could be added, by the principle of extensibility, to the attributes specified in this International Standard. They are not, however, included here.

Each Registration Authority, as described and specified in Part 6 of this International Standard, may utilize concept systems in developing administered items according to, structures, and content that it deems appropriate. In documenting the semantic aspects of administered items, the Registration Authority shall do so according to the principles, methods, procedures, and attributes specified in this International Standard.

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 11179 (all parts), *Information technology — Metadata Registries (MDR)*

ISO/IEC 24707 Information technology — Common Logic (CL) – Framework for a family of logic-based languages

W3C OWL Recommendation dated 10 Feb 2004

3   Terms and definitions

For the purposes of this document, the following terms, abbreviations, and definitions apply.

3.1
Common logic
A language designed for use in the representation and interchange of knowledge among disparate computer systems.

3.2
OWL
A Web Ontology Language designed for creation of ontologies for use by applications.

4   Specification of 11179 metamodel in Common Logic and OWL

4.1   Common Logic

ISO/IEC 24707 specifies a language designed for use in the representation and interchange of knowledge among disparate computer systems. The following features of ISO/IEC 24707 are essential to the specification of the ISO/IEC 11179 metamodel in Common Logic:

- The language has declarative semantics. It is possible to understand the meaning of expressions in the language without appeal to an interpreter for manipulating those expressions.

- The language is logically comprehensive—at its most general, it provides for the expression of arbitrary logical sentences.

ISO/IEC 11179 Part 2 makes use of the following capabilities specified in ISO/IEC 24707:

- interchange of knowledge among heterogeneous computer systems;

- representation of knowledge in ontologies and knowledge bases;

- specification of expressions that are the input or output of inference engines.

4.2   Specification in Common Logic

To enhance the readability of this standard, the normative specification in Common Logic is included as annex A.

4.3   OWL

OWL is a W3C Recommendation completed on 10 Feb 2004. The OWL Web Ontology Language is designed for creation of ontologies for use by applications. OWL facilitates greater machine interpretability of Web content, extending XML, RDF, and RDF Schema (RDF-S) by providing additional vocabulary along with

a formal semantics. OWL has three increasingly-expressive sublanguages: OWL Lite, OWL DL, and OWL Full. OWL DL is used in this standard.

4.4   Specification in OWL

To enhance the readability of this standard, the normative specification in OWL is included as annex B.

A pictorial representation is presented as an informative in Annex C.

Annex A
(normative)

Specification in Common Logic

To be furnished.

Annex B
(normative)

Specification in OWL

The following is the specification in OWL:

```
<?xml version="1.0"?>
<rdf:RDF
    xmlns:protege="http://protege.stanford.edu/plugins/owl/protege#"
    xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns="http://hpcrd.lbl.gov/SDM/XMDR/ont/iso11179-3v2.owl#"
    xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
    xmlns:owl="http://www.w3.org/2002/07/owl#"
  xml:base="http://hpcrd.lbl.gov/SDM/XMDR/ont/iso11179-3v2.owl">
  <owl:Ontology rdf:about="">
   <rdfs:label>ISO/IEC 11179-3 version 2 Ontology</rdfs:label>
   <rdfs:comment rdf:datatype="http://www.w3.org/2001/XMLSchema#string"
   >A (non-normative, unofficial) OWL ontology for ISO/IEC 11179-3 version

2.  Authored by Kevin D. Keck (kdkeck@lbl.gov).  Last modified 2005-Jan-

21.</rdfs:comment>
  </owl:Ontology>
  <owl:Class rdf:ID="ClassificationSchemeItemRelationship">
   <owl:disjointWith>
    <owl:Class rdf:ID="ConceptualDomainRelationship"/>
   </owl:disjointWith>
   <rdfs:subClassOf>
    <owl:Class rdf:ID="Relationship"/>
   </rdfs:subClassOf>
   <owl:disjointWith>
    <owl:Class rdf:ID="ValueDomainRelationship"/>
   </owl:disjointWith>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:ObjectProperty rdf:ID="item"/>
     </owl:onProperty>
     <owl:allValuesFrom>
      <owl:Class rdf:ID="ClassificationSchemeItem"/>
     </owl:allValuesFrom>
    </owl:Restriction>
   </rdfs:subClassOf>
   <owl:disjointWith>
    <owl:Class rdf:ID="DataElementConceptRelationship"/>
   </owl:disjointWith>
  </owl:Class>
  <owl:Class rdf:ID="Submitter">
   <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
   <rdfs:subClassOf>
```

```
   <owl:Restriction>
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  <rdfs:subClassOf>
   <owl:Restriction>
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    <owl:onProperty>
     <owl:FunctionalProperty rdf:ID="contact"/>
    </owl:onProperty>
   </owl:Restriction>
  </rdfs:subClassOf>
 </owl:Class>
 <owl:Class rdf:ID="PermissibleValue">
  <rdfs:subClassOf>
   <owl:Restriction>
    <owl:onProperty>
     <owl:ObjectProperty rdf:ID="aggregate"/>
    </owl:onProperty>
    <owl:allValuesFrom>
     <owl:Class rdf:ID="EnumeratedValueDomain"/>
    </owl:allValuesFrom>
   </owl:Restriction>
  </rdfs:subClassOf>
  <rdfs:subClassOf>
   <owl:Restriction>
    <owl:onProperty>
     <owl:DatatypeProperty rdf:ID="value"/>
    </owl:onProperty>
    <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
    >1</owl:cardinality>
   </owl:Restriction>
  </rdfs:subClassOf>
  <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
  <rdfs:subClassOf>
   <owl:Restriction>
    <owl:onProperty>
     <owl:DatatypeProperty rdf:ID="beginDate"/>
    </owl:onProperty>
    <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
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   </owl:Restriction>
  </rdfs:subClassOf>
  <rdfs:subClassOf>
   <owl:Restriction>
    <owl:onProperty>
     <owl:FunctionalProperty rdf:ID="meaning"/>
    </owl:onProperty>
    <owl:allValuesFrom>
     <owl:Class rdf:ID="ValueMeaning"/>
```

```
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     </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
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    </owl:Restriction>
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   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:allValuesFrom>
      <owl:Class rdf:about="#EnumeratedValueDomain"/>
     </owl:allValuesFrom>
     <owl:onProperty>
      <owl:ObjectProperty rdf:ID="containingDomain"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
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     >1</owl:cardinality>
     <owl:onProperty>
      <owl:ObjectProperty rdf:about="#containingDomain"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:ID="Identifier"/>
  <owl:Class rdf:about="#DataElementConceptRelationship">
   <owl:disjointWith rdf:resource="#ClassificationSchemeItemRelationship"/>
   <rdfs:subClassOf>
    <owl:Class rdf:about="#Relationship"/>
   </rdfs:subClassOf>
   <owl:disjointWith>
    <owl:Class rdf:about="#ConceptualDomainRelationship"/>
   </owl:disjointWith>
   <owl:disjointWith>
    <owl:Class rdf:about="#ValueDomainRelationship"/>
   </owl:disjointWith>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:allValuesFrom>
      <owl:Class rdf:ID="DataElementConcept"/>
     </owl:allValuesFrom>
     <owl:onProperty>
      <owl:ObjectProperty rdf:about="#item"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
  </owl:Class>
```

```
 <owl:Class rdf:ID="SimpleIdentifier">
  <rdfs:comment rdf:datatype="http://www.w3.org/2001/XMLSchema#string"
  >Unstructured identifier, encapsulating only a single string. Needed

because in OWL-DL the range of property cannot include both datatypes and

classes.</rdfs:comment>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
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      <owl:DatatypeProperty rdf:ID="string"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
   <owl:disjointWith>
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   <rdfs:subClassOf rdf:resource="#Identifier"/>
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  </owl:Class>
  <owl:Class rdf:ID="Property">
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    <owl:Class rdf:ID="Context"/>
   </owl:disjointWith>
   <owl:disjointWith>
    <owl:Class rdf:ID="DerivationRule"/>
   </owl:disjointWith>
   <owl:disjointWith>
    <owl:Class rdf:ID="ObjectClass"/>
   </owl:disjointWith>
   <owl:disjointWith>
    <owl:Class rdf:about="#DataElementConcept"/>
   </owl:disjointWith>
   <owl:disjointWith>
    <owl:Class rdf:ID="ConceptualDomain"/>
   </owl:disjointWith>
   <rdfs:subClassOf>
    <owl:Class rdf:ID="AdministeredItem"/>
   </rdfs:subClassOf>
   <owl:disjointWith>
    <owl:Class rdf:ID="ClassificationScheme"/>
   </owl:disjointWith>
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    <owl:Class rdf:ID="RepresentationClass"/>
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    <owl:Class rdf:ID="ValueDomain"/>
   </owl:disjointWith>
   <owl:disjointWith>
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     </owl:onProperty>
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   <rdfs:subClassOf>
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     </owl:onProperty>
    </owl:Restriction>
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   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:allValuesFrom>
      <owl:Class rdf:ID="EnumeratedConceptualDomain"/>
     </owl:allValuesFrom>
     <owl:onProperty>
      <owl:ObjectProperty rdf:about="#containingDomain"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
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      <owl:DatatypeProperty rdf:about="#beginDate"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
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     </owl:onProperty>
     <owl:allValuesFrom rdf:resource="#PermissibleValue"/>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
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      <owl:InverseFunctionalProperty rdf:about="#identifier"/>
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```

```
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      </owl:Restriction>
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  <owl:Class rdf:about="#Context">
    <owl:disjointWith>
      <owl:Class rdf:about="#DataElementConcept"/>
    </owl:disjointWith>
    <owl:disjointWith>
      <owl:Class rdf:about="#ValueDomain"/>
    </owl:disjointWith>
    <owl:disjointWith rdf:resource="#Property"/>
    <owl:disjointWith>
      <owl:Class rdf:about="#ClassificationScheme"/>
    </owl:disjointWith>
    <owl:disjointWith>
      <owl:Class rdf:about="#DerivationRule"/>
    </owl:disjointWith>
    <owl:disjointWith>
      <owl:Class rdf:about="#ObjectClass"/>
    </owl:disjointWith>
    <owl:disjointWith>
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    </owl:disjointWith>
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  </owl:Class>
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    </rdfs:subClassOf>
    <owl:disjointWith>
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    </owl:disjointWith>
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        </owl:allValuesFrom>
      </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:Restriction>
```

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 </owl:Restriction>
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</owl:Class>
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 <rdfs:subClassOf>
  <owl:Restriction>
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   >1</owl:cardinality>
   <owl:onProperty>
    <owl:FunctionalProperty rdf:about="#contact"/>
   </owl:onProperty>
  </owl:Restriction>
 </rdfs:subClassOf>
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:onProperty>
    <owl:InverseFunctionalProperty rdf:about="#identifier"/>
   </owl:onProperty>
   <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
   >1</owl:cardinality>
  </owl:Restriction>
 </rdfs:subClassOf>
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
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   </owl:onProperty>
  </owl:Restriction>
 </rdfs:subClassOf>
 <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:onProperty>
    <owl:InverseFunctionalProperty rdf:about="#identifier"/>
   </owl:onProperty>
   <owl:allValuesFrom>
    <owl:Class rdf:ID="RegistrarIdentifier"/>
   </owl:allValuesFrom>
  </owl:Restriction>
 </rdfs:subClassOf>
</owl:Class>
<owl:Class rdf:about="#DerivationRule">
 <owl:disjointWith>
  <owl:Class rdf:about="#RepresentationClass"/>
 </owl:disjointWith>
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:onProperty>
```

```
     <owl:DatatypeProperty rdf:ID="RuleSpecification"/>
    </owl:onProperty>
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    >1</owl:cardinality>
   </owl:Restriction>
  </rdfs:subClassOf>
  <owl:disjointWith>
   <owl:Class rdf:about="#DataElementConcept"/>
  </owl:disjointWith>
  <owl:disjointWith>
   <owl:Class rdf:about="#ClassificationScheme"/>
  </owl:disjointWith>
  <owl:disjointWith rdf:resource="#Property"/>
  <owl:disjointWith>
   <owl:Class rdf:about="#DataElement"/>
  </owl:disjointWith>
  <owl:disjointWith rdf:resource="#Context"/>
  <rdfs:subClassOf>
   <owl:Class rdf:about="#AdministeredItem"/>
  </rdfs:subClassOf>
 </owl:Class>
 <owl:Class rdf:ID="DocumentIdentifier">
  <owl:disjointWith>
   <owl:Class rdf:about="#RegistrarIdentifier"/>
  </owl:disjointWith>
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  <owl:disjointWith>
   <owl:Class rdf:about="#ValueMeaningIdentifier"/>
  </owl:disjointWith>
 </owl:Class>
 <owl:Class rdf:ID="Concept">
  <owl:disjointWith>
   <owl:Class rdf:ID="ConceptRelationship"/>
  </owl:disjointWith>
  <rdfs:subClassOf>
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  </rdfs:subClassOf>
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 <owl:Class rdf:about="#ClassificationScheme">
  <owl:disjointWith rdf:resource="#Property"/>
  <owl:disjointWith rdf:resource="#DerivationRule"/>
  <owl:disjointWith>
   <owl:Class rdf:about="#ObjectClass"/>
  </owl:disjointWith>
  <owl:disjointWith>
   <owl:Class rdf:about="#DataElementConcept"/>
  </owl:disjointWith>
  <owl:disjointWith>
   <owl:Class rdf:about="#DataElement"/>
  </owl:disjointWith>
  <owl:disjointWith rdf:resource="#Context"/>
  <owl:disjointWith>
   <owl:Class rdf:about="#ConceptualDomain"/>
  </owl:disjointWith>
  <owl:disjointWith>
```

```
      <owl:Class rdf:about="#RepresentationClass"/>
     </owl:disjointWith>
     <rdfs:subClassOf>
      <owl:Class rdf:about="#AdministeredItem"/>
     </rdfs:subClassOf>
     <owl:disjointWith>
      <owl:Class rdf:about="#ValueDomain"/>
     </owl:disjointWith>
     <rdfs:subClassOf>
      <owl:Restriction>
       <owl:allValuesFrom>
        <owl:Class rdf:about="#ClassificationSchemeItem"/>
       </owl:allValuesFrom>
       <owl:onProperty>
        <owl:InverseFunctionalProperty rdf:ID="component"/>
       </owl:onProperty>
      </owl:Restriction>
     </rdfs:subClassOf>
    </owl:Class>
    <owl:Class rdf:about="#ValueDomain">
     <owl:disjointWith rdf:resource="#ClassificationScheme"/>
     <owl:equivalentClass>
      <owl:Class>
       <owl:unionOf rdf:parseType="Collection">
        <owl:Class rdf:about="#EnumeratedValueDomain"/>
        <owl:Class rdf:about="#NonEnumeratedValueDomain"/>
       </owl:unionOf>
      </owl:Class>
     </owl:equivalentClass>
     <owl:disjointWith>
      <owl:Class rdf:about="#DataElement"/>
     </owl:disjointWith>
     <rdfs:subClassOf>
      <owl:Restriction>
       <owl:onProperty>
        <owl:InverseFunctionalProperty rdf:ID="application"/>
       </owl:onProperty>
       <owl:allValuesFrom>
        <owl:Class rdf:about="#DataElement"/>
       </owl:allValuesFrom>
      </owl:Restriction>
     </rdfs:subClassOf>
     <owl:disjointWith>
      <owl:Class rdf:about="#ConceptualDomain"/>
     </owl:disjointWith>
     <rdfs:subClassOf>
      <owl:Class rdf:about="#AdministeredItem"/>
     </rdfs:subClassOf>
     <rdfs:subClassOf>
      <owl:Restriction>
       <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
       >1</owl:cardinality>
       <owl:onProperty>
        <owl:FunctionalProperty rdf:about="#meaning"/>
       </owl:onProperty>
```

```
      </owl:Restriction>
    </rdfs:subClassOf>
    <owl:disjointWith>
     <owl:Class rdf:about="#DataElementConcept"/>
    </owl:disjointWith>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:onProperty>
       <owl:FunctionalProperty rdf:ID="datatype"/>
      </owl:onProperty>
      <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >1</owl:cardinality>
     </owl:Restriction>
    </rdfs:subClassOf>
    <owl:disjointWith rdf:resource="#Property"/>
    <owl:disjointWith rdf:resource="#Context"/>
    <owl:disjointWith>
     <owl:Class rdf:about="#ObjectClass"/>
    </owl:disjointWith>
    <owl:disjointWith>
     <owl:Class rdf:about="#RepresentationClass"/>
    </owl:disjointWith>
   </owl:Class>
   <owl:Class rdf:about="#EnumeratedConceptualDomain">
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:allValuesFrom rdf:resource="#ValueMeaning"/>
      <owl:onProperty>
       <owl:ObjectProperty rdf:ID="memberValue"/>
      </owl:onProperty>
     </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:minCardinality

rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >1</owl:minCardinality>
      <owl:onProperty>
       <owl:ObjectProperty rdf:about="#memberValue"/>
      </owl:onProperty>
     </owl:Restriction>
    </rdfs:subClassOf>
    <owl:disjointWith rdf:resource="#NonEnumeratedConceptualDomain"/>
    <rdfs:subClassOf>
     <owl:Class rdf:about="#ConceptualDomain"/>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:onProperty>
       <owl:InverseFunctionalProperty rdf:about="#representation"/>
      </owl:onProperty>
      <owl:allValuesFrom>
       <owl:Class rdf:about="#EnumeratedValueDomain"/>
      </owl:allValuesFrom>
```

```
     </owl:Restriction>
    </rdfs:subClassOf>
   </owl:Class>
   <owl:Class rdf:about="#RegistrationAuthorityIdentifier">
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:onProperty>
       <owl:FunctionalProperty rdf:ID="internationalCodeDesignator"/>
      </owl:onProperty>
      <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >1</owl:cardinality>
     </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf rdf:resource="#Identifier"/>
    <owl:disjointWith rdf:resource="#SimpleIdentifier"/>
    <owl:disjointWith>
     <owl:Class rdf:about="#ItemIdentifier"/>
    </owl:disjointWith>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >1</owl:cardinality>
      <owl:onProperty>
       <owl:DatatypeProperty rdf:ID="organizationIdentifier"/>
      </owl:onProperty>
     </owl:Restriction>
    </rdfs:subClassOf>
   </owl:Class>
   <owl:Class rdf:about="#EnumeratedValueDomain">
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:allValuesFrom rdf:resource="#EnumeratedConceptualDomain"/>
      <owl:onProperty>
       <owl:FunctionalProperty rdf:about="#meaning"/>
      </owl:onProperty>
     </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:minCardinality

rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >2</owl:minCardinality>
      <owl:onProperty>
       <owl:ObjectProperty rdf:about="#memberValue"/>
      </owl:onProperty>
     </owl:Restriction>
    </rdfs:subClassOf>
    <owl:disjointWith>
     <owl:Class rdf:about="#NonEnumeratedValueDomain"/>
    </owl:disjointWith>
    <rdfs:subClassOf rdf:resource="#ValueDomain"/>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:onProperty>
```

```
       <owl:ObjectProperty rdf:about="#memberValue"/>
      </owl:onProperty>
      <owl:allValuesFrom rdf:resource="#PermissibleValue"/>
     </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:allValuesFrom rdf:resource="#PermissibleValue"/>
     <owl:onProperty>
      <owl:InverseFunctionalProperty rdf:about="#component"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:ID="Organization">
   <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:DatatypeProperty rdf:ID="name"/>
     </owl:onProperty>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
    </owl:Restriction>
   </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:about="#ClassificationSchemeItem">
   <rdfs:subClassOf>
    <owl:Class rdf:ID="Component"/>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:ObjectProperty rdf:about="#aggregate"/>
     </owl:onProperty>
     <owl:allValuesFrom rdf:resource="#ClassificationScheme"/>
    </owl:Restriction>
   </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:ID="UnitOfMeasure">
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:DatatypeProperty rdf:about="#name"/>
     </owl:onProperty>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
     <owl:onProperty>
      <owl:DatatypeProperty rdf:ID="precision"/>
```

```
      </owl:onProperty>
     </owl:Restriction>
    </rdfs:subClassOf>
   <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
  </owl:Class>
  <owl:Class rdf:ID="AdministrationRecord">
   <owl:disjointWith>
    <owl:Class rdf:about="#AdministeredItem"/>
   </owl:disjointWith>
   <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
     <owl:onProperty>
      <owl:FunctionalProperty rdf:ID="administrativeStatus"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
     <owl:onProperty>
      <owl:DatatypeProperty rdf:ID="registrationStatus"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
     <owl:onProperty>
      <owl:DatatypeProperty rdf:ID="creationDate"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:about="#ValueDomainRelationship">
   <owl:disjointWith rdf:resource="#DataElementConceptRelationship"/>
   <owl:disjointWith>
    <owl:Class rdf:about="#ConceptualDomainRelationship"/>
   </owl:disjointWith>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:allValuesFrom rdf:resource="#ValueDomain"/>
     <owl:onProperty>
      <owl:ObjectProperty rdf:about="#item"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
   <owl:disjointWith rdf:resource="#ClassificationSchemeItemRelationship"/>
   <rdfs:subClassOf>
    <owl:Class rdf:about="#Relationship"/>
   </rdfs:subClassOf>
```

```
    </owl:Class>
    <owl:Class rdf:about="#ItemIdentifier">
     <owl:disjointWith rdf:resource="#SimpleIdentifier"/>
     <owl:disjointWith rdf:resource="#RegistrationAuthorityIdentifier"/>
     <rdfs:subClassOf>
      <owl:Restriction>
       <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
       >1</owl:cardinality>
       <owl:onProperty>
        <owl:FunctionalProperty rdf:ID="version"/>
       </owl:onProperty>
      </owl:Restriction>
     </rdfs:subClassOf>
     <rdfs:subClassOf rdf:resource="#Identifier"/>
     <rdfs:subClassOf>
      <owl:Restriction>
       <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
       >1</owl:cardinality>
       <owl:onProperty>
        <owl:FunctionalProperty rdf:ID="registrationAuthorityIdentifier"/>
       </owl:onProperty>
      </owl:Restriction>
     </rdfs:subClassOf>
     <rdfs:subClassOf>
      <owl:Restriction>
       <owl:onProperty>
        <owl:FunctionalProperty rdf:ID="dataIdentifier"/>
       </owl:onProperty>
       <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
       >1</owl:cardinality>
      </owl:Restriction>
     </rdfs:subClassOf>
    </owl:Class>
    <owl:Class rdf:ID="Designation">
     <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
     <rdfs:subClassOf>
      <owl:Restriction>
       <owl:onProperty>
        <owl:ObjectProperty rdf:about="#aggregate"/>
       </owl:onProperty>
       <owl:allValuesFrom>
        <owl:Class rdf:ID="LanguageSection"/>
       </owl:allValuesFrom>
      </owl:Restriction>
     </rdfs:subClassOf>
     <rdfs:subClassOf>
      <owl:Restriction>
       <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
       >1</owl:cardinality>
       <owl:onProperty>
        <owl:DatatypeProperty rdf:about="#name"/>
       </owl:onProperty>
      </owl:Restriction>
     </rdfs:subClassOf>
    </owl:Class>
```

```
<owl:Class rdf:about="#ConceptRelationship">
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:allValuesFrom rdf:resource="#Concept"/>
   <owl:onProperty>
    <owl:ObjectProperty rdf:about="#item"/>
   </owl:onProperty>
  </owl:Restriction>
 </rdfs:subClassOf>
 <rdfs:subClassOf>
  <owl:Class rdf:about="#Relationship"/>
 </rdfs:subClassOf>
 <rdfs:comment rdf:datatype="http://www.w3.org/2001/XMLSchema#string"
 >In the standard the two ends of Concept_Relationship are named "using"
```

and "used_in", without any further explanation. Since the editor of this

ontology does not know how to guess the intended meaning of these labels, no

attempt has been made to do so. Instead, this class has been fitted into the

same undirected (symmetric) "Relationship" generalization as the many other

relationship classes in that second edition of the Part 3

```
standard.</rdfs:comment>
  <owl:disjointWith rdf:resource="#Concept"/>
  <rdfs:subClassOf>
   <owl:Class rdf:about="#ObjectClass"/>
  </rdfs:subClassOf>
 </owl:Class>
 <owl:Class rdf:ID="ReferenceDocument">
  <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
  <rdfs:subClassOf>
   <owl:Restriction>
    <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
    >1</owl:cardinality>
    <owl:onProperty>
     <owl:InverseFunctionalProperty rdf:about="#identifier"/>
    </owl:onProperty>
   </owl:Restriction>
  </rdfs:subClassOf>
  <rdfs:subClassOf>
   <owl:Restriction>
    <owl:onProperty>
     <owl:InverseFunctionalProperty rdf:about="#identifier"/>
    </owl:onProperty>
    <owl:allValuesFrom rdf:resource="#DocumentIdentifier"/>
   </owl:Restriction>
  </rdfs:subClassOf>
 </owl:Class>
 <owl:Class rdf:about="#DataElementConcept">
  <owl:disjointWith>
   <owl:Class rdf:about="#RepresentationClass"/>
  </owl:disjointWith>
```

```
    <owl:disjointWith rdf:resource="#DerivationRule"/>
    <owl:disjointWith rdf:resource="#Context"/>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:onProperty>
       <owl:ObjectProperty rdf:ID="domain"/>
      </owl:onProperty>
      <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >1</owl:cardinality>
     </owl:Restriction>
    </rdfs:subClassOf>
    <owl:disjointWith rdf:resource="#Property"/>
    <owl:disjointWith>
     <owl:Class rdf:about="#DataElement"/>
    </owl:disjointWith>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:onProperty>
       <owl:ObjectProperty rdf:about="#domain"/>
      </owl:onProperty>
      <owl:allValuesFrom>
       <owl:Class rdf:about="#ConceptualDomain"/>
      </owl:allValuesFrom>
     </owl:Restriction>
    </rdfs:subClassOf>
    <owl:disjointWith>
     <owl:Class rdf:about="#ObjectClass"/>
    </owl:disjointWith>
    <owl:disjointWith rdf:resource="#ClassificationScheme"/>
    <rdfs:subClassOf>
     <owl:Class rdf:about="#AdministeredItem"/>
    </rdfs:subClassOf>
    <owl:disjointWith>
     <owl:Class rdf:about="#ConceptualDomain"/>
    </owl:disjointWith>
    <owl:disjointWith rdf:resource="#ValueDomain"/>
   </owl:Class>
   <owl:Class rdf:ID="TerminologicalEntry">
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:onProperty>
       <owl:InverseFunctionalProperty rdf:about="#component"/>
      </owl:onProperty>
      <owl:minCardinality

rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >1</owl:minCardinality>
     </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:onProperty>
       <owl:ObjectProperty rdf:ID="entryItem"/>
      </owl:onProperty>
      <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
```

```
       >1</owl:cardinality>
      </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:allValuesFrom>
       <owl:Class rdf:about="#LanguageSection"/>
      </owl:allValuesFrom>
      <owl:onProperty>
       <owl:InverseFunctionalProperty rdf:about="#component"/>
      </owl:onProperty>
     </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >1</owl:cardinality>
      <owl:onProperty>
       <owl:FunctionalProperty rdf:ID="entryContext"/>
      </owl:onProperty>
     </owl:Restriction>
    </rdfs:subClassOf>
   </owl:Class>
   <owl:Class rdf:about="#RepresentationClass">
    <owl:disjointWith rdf:resource="#Property"/>
    <owl:disjointWith>
     <owl:Class rdf:about="#DataElement"/>
    </owl:disjointWith>
    <owl:disjointWith rdf:resource="#DataElementConcept"/>
    <owl:disjointWith rdf:resource="#ValueDomain"/>
    <owl:disjointWith rdf:resource="#Context"/>
    <owl:disjointWith rdf:resource="#ClassificationScheme"/>
    <owl:disjointWith>
     <owl:Class rdf:about="#ObjectClass"/>
    </owl:disjointWith>
    <owl:disjointWith rdf:resource="#DerivationRule"/>
    <owl:disjointWith>
     <owl:Class rdf:about="#ConceptualDomain"/>
    </owl:disjointWith>
    <rdfs:subClassOf>
     <owl:Class rdf:about="#AdministeredItem"/>
    </rdfs:subClassOf>
   </owl:Class>
   <owl:Class rdf:about="#Component">
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:onProperty>
       <owl:ObjectProperty rdf:about="#aggregate"/>
      </owl:onProperty>
      <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >1</owl:cardinality>
     </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
```

```
</owl:Class>
<owl:Class rdf:about="#DataElement">
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:onProperty>
    <owl:FunctionalProperty rdf:about="#meaning"/>
   </owl:onProperty>
   <owl:allValuesFrom rdf:resource="#DataElementConcept"/>
  </owl:Restriction>
 </rdfs:subClassOf>
 <owl:disjointWith>
  <owl:Class rdf:about="#ObjectClass"/>
 </owl:disjointWith>
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
   >1</owl:cardinality>
   <owl:onProperty>
    <owl:ObjectProperty rdf:about="#domain"/>
   </owl:onProperty>
  </owl:Restriction>
 </rdfs:subClassOf>
 <rdfs:subClassOf>
  <owl:Class rdf:about="#AdministeredItem"/>
 </rdfs:subClassOf>
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:allValuesFrom rdf:resource="#ValueDomain"/>
   <owl:onProperty>
    <owl:ObjectProperty rdf:about="#domain"/>
   </owl:onProperty>
  </owl:Restriction>
 </rdfs:subClassOf>
 <owl:disjointWith rdf:resource="#RepresentationClass"/>
 <owl:disjointWith rdf:resource="#ClassificationScheme"/>
 <owl:disjointWith rdf:resource="#Context"/>
 <owl:disjointWith>
  <owl:Class rdf:about="#ConceptualDomain"/>
 </owl:disjointWith>
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:onProperty>
    <owl:FunctionalProperty rdf:about="#meaning"/>
   </owl:onProperty>
   <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
   >1</owl:cardinality>
  </owl:Restriction>
 </rdfs:subClassOf>
 <owl:disjointWith rdf:resource="#ValueDomain"/>
 <owl:disjointWith rdf:resource="#DataElementConcept"/>
 <owl:disjointWith rdf:resource="#Property"/>
 <owl:disjointWith rdf:resource="#DerivationRule"/>
</owl:Class>
<owl:Class rdf:ID="Definition">
 <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
```

```
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:DatatypeProperty rdf:ID="text"/>
     </owl:onProperty>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:ObjectProperty rdf:about="#aggregate"/>
     </owl:onProperty>
     <owl:allValuesFrom>
      <owl:Class rdf:about="#LanguageSection"/>
     </owl:allValuesFrom>
    </owl:Restriction>
   </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:about="#RegistrarIdentifier">
   <rdfs:subClassOf rdf:resource="#SimpleIdentifier"/>
   <owl:disjointWith rdf:resource="#DocumentIdentifier"/>
   <owl:disjointWith>
    <owl:Class rdf:about="#ValueMeaningIdentifier"/>
   </owl:disjointWith>
  </owl:Class>
  <owl:Class rdf:ID="RegistrationAuthority">
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:ObjectProperty rdf:ID="languageUsed"/>
     </owl:onProperty>
     <owl:minCardinality

rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:minCardinality>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:FunctionalProperty rdf:ID="registrar"/>
     </owl:onProperty>
     <owl:minCardinality

rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:minCardinality>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:InverseFunctionalProperty rdf:about="#identifier"/>
     </owl:onProperty>
```

```
      <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >1</owl:cardinality>
     </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf rdf:resource="#Organization"/>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:onProperty>
       <owl:InverseFunctionalProperty rdf:about="#identifier"/>
      </owl:onProperty>
      <owl:allValuesFrom rdf:resource="#RegistrationAuthorityIdentifier"/>
     </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:minCardinality

rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >1</owl:minCardinality>
      <owl:onProperty>
       <owl:ObjectProperty rdf:ID="documentationLanguageIdentifier"/>
      </owl:onProperty>
     </owl:Restriction>
    </rdfs:subClassOf>
   </owl:Class>
   <owl:Class rdf:ID="LanguageIdentification">
    <rdfs:subClassOf>
     <owl:Restriction>
      <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
      >1</owl:cardinality>
      <owl:onProperty>
       <owl:DatatypeProperty rdf:ID="language"/>
      </owl:onProperty>
     </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
   </owl:Class>
   <owl:Class rdf:about="#ObjectClass">
    <owl:disjointWith>
     <owl:Class rdf:about="#ConceptualDomain"/>
    </owl:disjointWith>
    <owl:disjointWith rdf:resource="#DataElementConcept"/>
    <owl:disjointWith rdf:resource="#DataElement"/>
    <owl:disjointWith rdf:resource="#Context"/>
    <owl:disjointWith rdf:resource="#RepresentationClass"/>
    <owl:disjointWith rdf:resource="#ClassificationScheme"/>
    <owl:disjointWith rdf:resource="#Property"/>
    <rdfs:subClassOf>
     <owl:Class rdf:about="#AdministeredItem"/>
    </rdfs:subClassOf>
    <owl:equivalentClass>
     <owl:Class>
      <owl:unionOf rdf:parseType="Collection">
       <owl:Class rdf:about="#Concept"/>
       <owl:Class rdf:about="#ConceptRelationship"/>
```

```
      </owl:unionOf>
     </owl:Class>
   </owl:equivalentClass>
   <owl:disjointWith rdf:resource="#ValueDomain"/>
 </owl:Class>
 <owl:Class rdf:about="#LanguageSection">
  <rdfs:subClassOf rdf:resource="#Component"/>
  <rdfs:subClassOf>
   <owl:Restriction>
    <owl:onProperty>
     <owl:ObjectProperty rdf:ID="sectionLanguage"/>
    </owl:onProperty>
    <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
    >1</owl:cardinality>
   </owl:Restriction>
  </rdfs:subClassOf>
  <rdfs:subClassOf>
   <owl:Restriction>
    <owl:onProperty>
     <owl:ObjectProperty rdf:about="#aggregate"/>
    </owl:onProperty>
    <owl:allValuesFrom rdf:resource="#TerminologicalEntry"/>
   </owl:Restriction>
  </rdfs:subClassOf>
 </owl:Class>
 <owl:Class rdf:ID="DataElementDerivation">
  <rdfs:subClassOf>
   <owl:Restriction>
    <owl:onProperty>
     <owl:ObjectProperty rdf:ID="rule"/>
    </owl:onProperty>
    <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
    >1</owl:cardinality>
   </owl:Restriction>
  </rdfs:subClassOf>
  <rdfs:subClassOf>
   <owl:Restriction>
    <owl:minCardinality

rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
    >1</owl:minCardinality>
    <owl:onProperty>
     <owl:ObjectProperty rdf:ID="derivedElement"/>
    </owl:onProperty>
   </owl:Restriction>
  </rdfs:subClassOf>
  <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
  <rdfs:subClassOf>
   <owl:Restriction>
    <owl:minCardinality

rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
    >1</owl:minCardinality>
    <owl:onProperty>
     <owl:ObjectProperty rdf:ID="input"/>
```

```
      </owl:onProperty>
     </owl:Restriction>
    </rdfs:subClassOf>
   </owl:Class>
  <owl:Class rdf:about="#AdministeredItem">
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
     <owl:onProperty>
      <owl:InverseFunctionalProperty rdf:about="#identifier"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
     <owl:onProperty>
      <owl:FunctionalProperty rdf:ID="administrationRecord"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:InverseFunctionalProperty rdf:about="#identifier"/>
     </owl:onProperty>
     <owl:allValuesFrom rdf:resource="#ItemIdentifier"/>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:ObjectProperty rdf:ID="terminologicalEntry"/>
     </owl:onProperty>
     <owl:minCardinality

rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:minCardinality>
    </owl:Restriction>
   </rdfs:subClassOf>
   <owl:disjointWith rdf:resource="#AdministrationRecord"/>
  </owl:Class>
  <owl:Class rdf:ID="Steward">
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
     <owl:onProperty>
      <owl:FunctionalProperty rdf:about="#contact"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
```

```
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:onProperty>
    <owl:ObjectProperty rdf:about="#organization"/>
   </owl:onProperty>
   <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
   >1</owl:cardinality>
  </owl:Restriction>
 </rdfs:subClassOf>
 <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
</owl:Class>
<owl:Class rdf:about="#Relationship">
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:onProperty>
    <owl:FunctionalProperty rdf:ID="typeDescription"/>
   </owl:onProperty>
   <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
   >1</owl:cardinality>
  </owl:Restriction>
 </rdfs:subClassOf>
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:onProperty>
    <owl:ObjectProperty rdf:about="#item"/>
   </owl:onProperty>
   <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
   >2</owl:cardinality>
  </owl:Restriction>
 </rdfs:subClassOf>
 <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
 <owl:equivalentClass>
  <owl:Class>
   <owl:unionOf rdf:parseType="Collection">
    <owl:Class rdf:about="#ConceptualDomainRelationship"/>
    <owl:Class rdf:about="#DataElementConceptRelationship"/>
    <owl:Class rdf:about="#ValueDomainRelationship"/>
    <owl:Class rdf:about="#ClassificationSchemeItemRelationship"/>
   </owl:unionOf>
  </owl:Class>
 </owl:equivalentClass>
</owl:Class>
<owl:Class rdf:about="#ConceptualDomainRelationship">
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:onProperty>
    <owl:ObjectProperty rdf:about="#item"/>
   </owl:onProperty>
   <owl:allValuesFrom>
    <owl:Class rdf:about="#ConceptualDomain"/>
   </owl:allValuesFrom>
  </owl:Restriction>
 </rdfs:subClassOf>
 <owl:disjointWith rdf:resource="#ClassificationSchemeItemRelationship"/>
 <rdfs:subClassOf rdf:resource="#Relationship"/>
```

```
  <owl:disjointWith rdf:resource="#ValueDomainRelationship"/>
  <owl:disjointWith rdf:resource="#DataElementConceptRelationship"/>
</owl:Class>
<owl:Class rdf:ID="Contact">
 <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:onProperty>
    <owl:FunctionalProperty rdf:ID="information"/>
   </owl:onProperty>
   <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
   >1</owl:cardinality>
  </owl:Restriction>
 </rdfs:subClassOf>
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
   >1</owl:cardinality>
   <owl:onProperty>
    <owl:DatatypeProperty rdf:about="#name"/>
   </owl:onProperty>
  </owl:Restriction>
 </rdfs:subClassOf>
</owl:Class>
<owl:Class rdf:about="#ConceptualDomain">
 <owl:disjointWith rdf:resource="#Context"/>
 <owl:equivalentClass>
  <owl:Class>
   <owl:unionOf rdf:parseType="Collection">
    <owl:Class rdf:about="#EnumeratedConceptualDomain"/>
    <owl:Class rdf:about="#NonEnumeratedConceptualDomain"/>
   </owl:unionOf>
  </owl:Class>
 </owl:equivalentClass>
 <owl:disjointWith rdf:resource="#ObjectClass"/>
 <owl:disjointWith rdf:resource="#ClassificationScheme"/>
 <owl:disjointWith rdf:resource="#DataElement"/>
 <owl:disjointWith rdf:resource="#ValueDomain"/>
 <rdfs:subClassOf rdf:resource="#AdministeredItem"/>
 <owl:disjointWith rdf:resource="#Property"/>
 <owl:disjointWith rdf:resource="#RepresentationClass"/>
 <owl:disjointWith rdf:resource="#DataElementConcept"/>
 <rdfs:subClassOf>
  <owl:Restriction>
   <owl:allValuesFrom rdf:resource="#DataElementConcept"/>
   <owl:onProperty>
    <owl:InverseFunctionalProperty rdf:about="#application"/>
   </owl:onProperty>
  </owl:Restriction>
 </rdfs:subClassOf>
</owl:Class>
<owl:Class rdf:about="#ValueMeaningIdentifier">
 <rdfs:subClassOf rdf:resource="#SimpleIdentifier"/>
 <owl:disjointWith rdf:resource="#RegistrarIdentifier"/>
 <owl:disjointWith rdf:resource="#DocumentIdentifier"/>
```

```
    </owl:Class>
  <owl:Class rdf:ID="Datatype">
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
     <owl:onProperty>
      <owl:DatatypeProperty rdf:about="#name"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
     <owl:onProperty>
      <owl:DatatypeProperty rdf:ID="datatypeSchemeReference"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:about="#NonEnumeratedValueDomain">
   <owl:disjointWith rdf:resource="#EnumeratedValueDomain"/>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:onProperty>
      <owl:FunctionalProperty rdf:about="#description"/>
     </owl:onProperty>
     <owl:cardinality rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
     >1</owl:cardinality>
    </owl:Restriction>
   </rdfs:subClassOf>
   <rdfs:subClassOf rdf:resource="#ValueDomain"/>
   <rdfs:subClassOf>
    <owl:Restriction>
     <owl:allValuesFrom rdf:resource="#NonEnumeratedConceptualDomain"/>
     <owl:onProperty>
      <owl:FunctionalProperty rdf:about="#meaning"/>
     </owl:onProperty>
    </owl:Restriction>
   </rdfs:subClassOf>
  </owl:Class>
  <owl:ObjectProperty rdf:about="#domain">
   <rdfs:range>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#ConceptualDomain"/>
      <owl:Class rdf:about="#ValueDomain"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:range>
   <rdfs:domain>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
```

```
      <owl:Class rdf:about="#DataElementConcept"/>
      <owl:Class rdf:about="#DataElement"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:domain>
   <owl:inverseOf>
    <owl:InverseFunctionalProperty rdf:about="#application"/>
   </owl:inverseOf>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:ID="reference">
   <rdfs:comment rdf:datatype="http://www.w3.org/2001/XMLSchema#string"
   >Called "described_by" in UML model.</rdfs:comment>
   <rdfs:range rdf:resource="#ReferenceDocument"/>
   <rdfs:domain rdf:resource="#AdministeredItem"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:about="#derivedElement">
   <rdfs:range rdf:resource="#DataElement"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#InverseFunctionalProperty"/>
   <rdfs:domain rdf:resource="#DataElementDerivation"/>
   <owl:inverseOf>
    <owl:FunctionalProperty rdf:ID="derivation"/>
   </owl:inverseOf>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:about="#entryItem">
   <owl:inverseOf>
    <owl:ObjectProperty rdf:about="#terminologicalEntry"/>
   </owl:inverseOf>
   <rdfs:domain rdf:resource="#TerminologicalEntry"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:range rdf:resource="#AdministeredItem"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:about="#languageUsed">
   <rdfs:range rdf:resource="#LanguageIdentification"/>
   <rdfs:domain>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#ReferenceDocument"/>
      <owl:Class rdf:about="#RegistrationAuthority"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:domain>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:ID="type">
   <rdfs:range rdf:resource="#RepresentationClass"/>
   <rdfs:domain>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#DataElement"/>
```

```
      <owl:Class rdf:about="#ValueDomain"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:domain>
   <owl:inverseOf>
    <owl:ObjectProperty rdf:ID="instance"/>
   </owl:inverseOf>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:about="#instance">
   <owl:inverseOf rdf:resource="#type"/>
   <rdfs:domain rdf:resource="#RepresentationClass"/>
   <rdfs:range>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#DataElement"/>
      <owl:Class rdf:about="#ValueDomain"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:range>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#InverseFunctionalProperty"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:about="#sectionLanguage">
   <rdfs:domain rdf:resource="#LanguageSection"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:range rdf:resource="#LanguageIdentification"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:ID="registrationAuthority">
   <rdfs:domain rdf:resource="#AdministeredItem"/>
   <rdfs:range rdf:resource="#RegistrationAuthority"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:ID="submitter">
   <rdfs:domain rdf:resource="#AdministeredItem"/>
   <rdfs:range rdf:resource="#Submitter"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:about="#input">
   <rdfs:range rdf:resource="#DataElement"/>
   <rdfs:domain rdf:resource="#DataElementDerivation"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:ID="referent">
   <rdfs:range>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#AdministeredItem"/>
      <owl:Class rdf:about="#ReferenceDocument"/>
      <owl:Class rdf:about="#Registrar"/>
```

```
      <owl:Class rdf:about="#RegistrationAuthority"/>
      <owl:Class rdf:about="#ValueMeaning"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:range>
   <rdfs:domain rdf:resource="#Identifier"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#InverseFunctionalProperty"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <owl:inverseOf>
    <owl:InverseFunctionalProperty rdf:about="#identifier"/>
   </owl:inverseOf>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:ID="member">
   <rdfs:domain rdf:resource="#ClassificationSchemeItem"/>
   <owl:inverseOf>
    <owl:ObjectProperty rdf:ID="classification"/>
   </owl:inverseOf>
   <rdfs:range rdf:resource="#AdministeredItem"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:ID="relationship">
   <rdfs:range>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#Relationship"/>
      <owl:Class rdf:about="#ClassificationSchemeItemRelationship"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:range>
   <owl:inverseOf>
    <owl:ObjectProperty rdf:about="#item"/>
   </owl:inverseOf>
   <rdfs:domain>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#ClassificationSchemeItem"/>
      <owl:Class rdf:about="#DataElementConcept"/>
      <owl:Class rdf:about="#ConceptualDomain"/>
      <owl:Class rdf:about="#ValueDomain"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:domain>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:about="#item">
   <rdfs:domain>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#Relationship"/>
      <owl:Class rdf:about="#ClassificationSchemeItemRelationship"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:domain>
```

```
      <rdfs:range>
       <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
         <owl:Class rdf:about="#AdministeredItem"/>
         <owl:Class rdf:about="#ClassificationSchemeItem"/>
        </owl:unionOf>
       </owl:Class>
      </rdfs:range>
      <owl:inverseOf rdf:resource="#relationship"/>
     </owl:ObjectProperty>
     <owl:ObjectProperty rdf:about="#memberValue">
      <rdfs:range>
       <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
         <owl:Class rdf:about="#ValueMeaning"/>
         <owl:Class rdf:about="#PermissibleValue"/>
        </owl:unionOf>
       </owl:Class>
      </rdfs:range>
      <rdfs:domain>
       <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
         <owl:Class rdf:about="#EnumeratedConceptualDomain"/>
         <owl:Class rdf:about="#EnumeratedValueDomain"/>
        </owl:unionOf>
       </owl:Class>
      </rdfs:domain>
      <owl:inverseOf>
       <owl:ObjectProperty rdf:about="#containingDomain"/>
      </owl:inverseOf>
     </owl:ObjectProperty>
     <owl:ObjectProperty rdf:about="#classification">
      <owl:inverseOf rdf:resource="#member"/>
      <rdfs:domain rdf:resource="#AdministeredItem"/>
      <rdfs:range rdf:resource="#ClassificationSchemeItem"/>
      <rdfs:comment rdf:datatype="http://www.w3.org/2001/XMLSchema#string"
      >Called "classified_by" in UML model.</rdfs:comment>
     </owl:ObjectProperty>
     <owl:ObjectProperty rdf:about="#aggregate">
      <rdfs:range>
       <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
         <owl:Class rdf:about="#ClassificationScheme"/>
         <owl:Class rdf:about="#TerminologicalEntry"/>
        </owl:unionOf>
       </owl:Class>
      </rdfs:range>
      <rdfs:domain rdf:resource="#Component"/>
      <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
      <owl:inverseOf>
       <owl:InverseFunctionalProperty rdf:about="#component"/>
      </owl:inverseOf>
     </owl:ObjectProperty>
```

```
<owl:ObjectProperty rdf:ID="specificDesignation">
  <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#InverseFunctionalProperty"/>
  <rdfs:range rdf:resource="#Designation"/>
  <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <owl:inverseOf>
    <owl:FunctionalProperty rdf:ID="specificDefinition"/>
  </owl:inverseOf>
  <rdfs:domain rdf:resource="#Definition"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="unit">
  <rdfs:range rdf:resource="#UnitOfMeasure"/>
  <rdfs:domain rdf:resource="#ValueDomain"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="objectClass">
  <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <rdfs:domain rdf:resource="#DataElementConcept"/>
  <rdfs:range rdf:resource="#ObjectClass"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:about="#terminologicalEntry">
  <rdfs:range rdf:resource="#TerminologicalEntry"/>
  <rdfs:domain rdf:resource="#AdministeredItem"/>
  <owl:inverseOf rdf:resource="#entryItem"/>
  <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#InverseFunctionalProperty"/>
  </owl:ObjectProperty>
<owl:ObjectProperty rdf:about="#organization">
  <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <rdfs:range rdf:resource="#Organization"/>
  <rdfs:domain>
    <owl:Class>
      <owl:unionOf rdf:parseType="Collection">
        <owl:Class rdf:about="#Steward"/>
        <owl:Class rdf:about="#Submitter"/>
      </owl:unionOf>
    </owl:Class>
  </rdfs:domain>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:about="#containingDomain">
  <owl:inverseOf rdf:resource="#memberValue"/>
  <rdfs:domain>
    <owl:Class>
      <owl:unionOf rdf:parseType="Collection">
        <owl:Class rdf:about="#ValueMeaning"/>
        <owl:Class rdf:about="#PermissibleValue"/>
      </owl:unionOf>
    </owl:Class>
```

```
    </rdfs:domain>
    <rdfs:range>
     <owl:Class>
      <owl:unionOf rdf:parseType="Collection">
       <owl:Class rdf:about="#EnumeratedValueDomain"/>
       <owl:Class rdf:about="#EnumeratedConceptualDomain"/>
      </owl:unionOf>
     </owl:Class>
    </rdfs:range>
   </owl:ObjectProperty>
   <owl:ObjectProperty rdf:about="#documentationLanguageIdentifier">
    <rdfs:range rdf:resource="#LanguageIdentification"/>
   </owl:ObjectProperty>
   <owl:ObjectProperty rdf:about="#rule">
    <rdfs:domain rdf:resource="#DataElementDerivation"/>
    <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
    <rdfs:range rdf:resource="#DerivationRule"/>
   </owl:ObjectProperty>
   <owl:DatatypeProperty rdf:ID="opiSource">
    <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
    <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
    <rdfs:domain rdf:resource="#RegistrationAuthorityIdentifier"/>
   </owl:DatatypeProperty>
   <owl:DatatypeProperty rdf:ID="origin">
    <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
    <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
    <rdfs:domain rdf:resource="#AdministrationRecord"/>
   </owl:DatatypeProperty>
   <owl:DatatypeProperty rdf:about="#string">
    <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
    <rdfs:domain rdf:resource="#SimpleIdentifier"/>
    <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   </owl:DatatypeProperty>
   <owl:DatatypeProperty rdf:ID="isPreferred">
    <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
    <rdfs:domain>
     <owl:Class>
      <owl:unionOf rdf:parseType="Collection">
       <owl:Class rdf:about="#Designation"/>
       <owl:Class rdf:about="#Definition"/>
      </owl:unionOf>
     </owl:Class>
    </rdfs:domain>
    <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#boolean"/>
   </owl:DatatypeProperty>
```

```
  <owl:DatatypeProperty rdf:ID="explanatoryComment">
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:domain rdf:resource="#AdministrationRecord"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:about="#text">
   <rdfs:domain rdf:resource="#Definition"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:about="#datatypeSchemeReference">
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:domain rdf:resource="#Datatype"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:ID="unresolvedIssue">
   <rdfs:domain rdf:resource="#AdministrationRecord"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:about="#registrationStatus">
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:domain rdf:resource="#AdministrationRecord"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:ID="title">
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:domain>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#Contact"/>
      <owl:Class rdf:about="#ReferenceDocument"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:domain>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:about="#beginDate">
   <rdfs:domain>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#PermissibleValue"/>
      <owl:Class rdf:about="#ValueMeaning"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:domain>
```

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    <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#date"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:ID="example">
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
   <rdfs:domain rdf:resource="#DataElement"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:about="#organizationIdentifier">
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:domain rdf:resource="#RegistrationAuthorityIdentifier"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:ID="objectClassQualifier">
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:domain rdf:resource="#DataElementConcept"/>
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:about="#creationDate">
   <rdfs:domain rdf:resource="#AdministrationRecord"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#date"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:ID="lastChangeDate">
   <rdfs:domain rdf:resource="#AdministrationRecord"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#date"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:about="#precision">
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:domain rdf:resource="#UnitOfMeasure"/>
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#int"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:ID="annotation">
   <rdfs:domain rdf:resource="#Datatype"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  </owl:DatatypeProperty>
  <owl:DatatypeProperty rdf:about="#value">
   <rdfs:domain>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#ClassificationSchemeItem"/>
```

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      <owl:Class rdf:about="#PermissibleValue"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:domain>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
 </owl:DatatypeProperty>
 <owl:DatatypeProperty rdf:about="#RuleSpecification">
  <rdfs:domain rdf:resource="#DerivationRule"/>
  <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
  <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
 </owl:DatatypeProperty>
 <owl:DatatypeProperty rdf:about="#language">
  <rdfs:domain rdf:resource="#LanguageIdentification"/>
  <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
  <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
 </owl:DatatypeProperty>
 <owl:DatatypeProperty rdf:about="#name">
  <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:domain>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#Contact"/>
      <owl:Class rdf:about="#Organization"/>
      <owl:Class rdf:about="#Designation"/>
      <owl:Class rdf:about="#Datatype"/>
      <owl:Class rdf:about="#UnitOfMeasure"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:domain>
 </owl:DatatypeProperty>
 <owl:DatatypeProperty rdf:ID="mailingAddress">
  <rdfs:domain rdf:resource="#Organization"/>
  <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
  <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
 </owl:DatatypeProperty>
 <owl:FunctionalProperty rdf:about="#version">
  <rdfs:domain rdf:resource="#ItemIdentifier"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
  <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
 </owl:FunctionalProperty>
 <owl:FunctionalProperty rdf:about="#administrativeStatus">
  <rdfs:domain rdf:resource="#AdministrationRecord"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
  <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
```

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</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:ID="endDate">
 <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#date"/>
 <rdfs:domain>
  <owl:Class>
   <owl:unionOf rdf:parseType="Collection">
    <owl:Class rdf:about="#PermissibleValue"/>
    <owl:Class rdf:about="#ValueMeaning"/>
   </owl:unionOf>
  </owl:Class>
 </rdfs:domain>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:about="#dataIdentifier">
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
 <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
 <rdfs:domain rdf:resource="#ItemIdentifier"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:about="#datatype">
 <rdfs:domain rdf:resource="#ValueDomain"/>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
 <rdfs:range rdf:resource="#Datatype"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:about="#entryContext">
 <rdfs:range rdf:resource="#Context"/>
 <rdfs:domain rdf:resource="#TerminologicalEntry"/>
 <owl:inverseOf>
  <owl:InverseFunctionalProperty rdf:ID="contextEntry"/>
 </owl:inverseOf>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:ID="changeDescription">
 <rdfs:domain rdf:resource="#AdministrationRecord"/>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:about="#internationalCodeDesignator">
 <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
 <rdfs:domain rdf:resource="#RegistrationAuthorityIdentifier"/>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:about="#registrationAuthorityIdentifier">
 <rdfs:range rdf:resource="#RegistrationAuthorityIdentifier"/>
 <rdfs:domain rdf:resource="#ItemIdentifier"/>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:ID="typeName">
 <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
 <rdfs:domain rdf:resource="#ClassificationSchemeItem"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:about="#meaning">
 <owl:inverseOf>
  <owl:InverseFunctionalProperty rdf:about="#representation"/>
 </owl:inverseOf>
 <rdfs:domain>
```

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 <owl:Class>
  <owl:unionOf rdf:parseType="Collection">
   <owl:Class rdf:about="#ValueDomain"/>
   <owl:Class rdf:about="#PermissibleValue"/>
   <owl:Class rdf:about="#DataElement"/>
  </owl:unionOf>
 </owl:Class>
 </rdfs:domain>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
 <rdfs:range>
  <owl:Class>
   <owl:unionOf rdf:parseType="Collection">
    <owl:Class rdf:about="#ConceptualDomain"/>
    <owl:Class rdf:about="#ValueMeaning"/>
    <owl:Class rdf:about="#DataElementConcept"/>
   </owl:unionOf>
  </owl:Class>
 </rdfs:range>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:ID="effectiveDate">
 <rdfs:domain rdf:resource="#AdministrationRecord"/>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
 <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#date"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:ID="steward">
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
 <rdfs:range rdf:resource="#Steward"/>
 <rdfs:domain rdf:resource="#AdministeredItem"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:about="#registrar">
 <rdfs:domain rdf:resource="#RegistrationAuthority"/>
 <rdfs:range rdf:resource="#Registrar"/>
 <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#InverseFunctionalProperty"/>
 <owl:inverseOf>
  <owl:InverseFunctionalProperty rdf:about="#represents"/>
 </owl:inverseOf>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:ID="propertyQualifier">
 <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
 <rdfs:domain rdf:resource="#DataElementConcept"/>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:ID="property">
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
 <rdfs:domain rdf:resource="#DataElementConcept"/>
 <rdfs:range rdf:resource="#Property"/>
</owl:FunctionalProperty>
<owl:FunctionalProperty rdf:about="#derivation">
 <rdfs:range rdf:resource="#DataElementDerivation"/>
 <rdfs:domain rdf:resource="#DataElement"/>
 <owl:inverseOf rdf:resource="#derivedElement"/>
 <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
```

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  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:about="#administrationRecord">
   <rdfs:domain rdf:resource="#AdministeredItem"/>
   <owl:inverseOf>
    <owl:InverseFunctionalProperty rdf:ID="administeredItem"/>
   </owl:inverseOf>
   <rdfs:range rdf:resource="#AdministrationRecord"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#InverseFunctionalProperty"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:ID="source">
   <rdfs:domain rdf:resource="#Definition"/>
   <rdfs:range rdf:resource="#ReferenceDocument"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:ID="referenceDocumentTypeDescription">
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
   <rdfs:domain rdf:resource="#ReferenceDocument"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:ID="format">
   <rdfs:domain rdf:resource="#ValueDomain"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:ID="untilDate">
   <rdfs:domain rdf:resource="#AdministrationRecord"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#date"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:ID="organizationPartIdentifier">
   <rdfs:domain rdf:resource="#RegistrationAuthorityIdentifier"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:ID="administrativeNote">
   <rdfs:domain rdf:resource="#AdministrationRecord"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:ID="maximumCharacterQuantity">
   <rdfs:domain rdf:resource="#ValueDomain"/>
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#int"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:about="#information">
   <rdfs:domain rdf:resource="#Contact"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:ID="countryIdentifier">
   <rdfs:domain rdf:resource="#LanguageIdentification"/>
   <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#string"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:about="#specificDefinition">
```

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    <rdfs:range rdf:resource="#Definition"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
    <rdfs:domain rdf:resource="#Designation"/>
    <owl:inverseOf rdf:resource="#specificDesignation"/>
    <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#InverseFunctionalProperty"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:about="#typeDescription">
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
    <rdfs:domain rdf:resource="#Relationship"/>
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  <owl:FunctionalProperty rdf:about="#description">
    <rdfs:domain>
      <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
          <owl:Class rdf:about="#NonEnumeratedValueDomain"/>
          <owl:Class rdf:about="#NonEnumeratedConceptualDomain"/>
          <owl:Class rdf:about="#ValueMeaning"/>
          <owl:Class rdf:about="#Datatype"/>
        </owl:unionOf>
      </owl:Class>
    </rdfs:domain>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#DatatypeProperty"/>
  </owl:FunctionalProperty>
  <owl:FunctionalProperty rdf:about="#contact">
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
    <rdfs:domain>
      <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
          <owl:Class rdf:about="#Registrar"/>
          <owl:Class rdf:about="#Steward"/>
          <owl:Class rdf:about="#Submitter"/>
        </owl:unionOf>
      </owl:Class>
    </rdfs:domain>
    <rdfs:range rdf:resource="#Contact"/>
  </owl:FunctionalProperty>
  <owl:InverseFunctionalProperty rdf:ID="designation">
    <rdfs:range rdf:resource="#Designation"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
    <rdfs:domain rdf:resource="#LanguageSection"/>
  </owl:InverseFunctionalProperty>
  <owl:InverseFunctionalProperty rdf:about="#representation">
    <rdfs:comment rdf:datatype="http://www.w3.org/2001/XMLSchema#string"
    >Called "represented_by" in UML model.</rdfs:comment>
    <owl:inverseOf rdf:resource="#meaning"/>
    <rdfs:domain>
      <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
          <owl:Class rdf:about="#ConceptualDomain"/>
          <owl:Class rdf:about="#DataElementConcept"/>
          <owl:Class rdf:about="#ValueMeaning"/>
        </owl:unionOf>
      </owl:Class>
```

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      </rdfs:domain>
      <rdfs:range>
       <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
         <owl:Class rdf:about="#ValueDomain"/>
         <owl:Class rdf:about="#DataElement"/>
         <owl:Class rdf:about="#PermissibleValue"/>
        </owl:unionOf>
       </owl:Class>
      </rdfs:range>
      <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
     </owl:InverseFunctionalProperty>
     <owl:InverseFunctionalProperty rdf:about="#represents">
      <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
      <rdfs:range rdf:resource="#RegistrationAuthority"/>
      <rdfs:domain rdf:resource="#Registrar"/>
      <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
      <owl:inverseOf rdf:resource="#registrar"/>
     </owl:InverseFunctionalProperty>
     <owl:InverseFunctionalProperty rdf:about="#application">
      <rdfs:domain>
       <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
         <owl:Class rdf:about="#ConceptualDomain"/>
         <owl:Class rdf:about="#ValueDomain"/>
        </owl:unionOf>
       </owl:Class>
      </rdfs:domain>
      <owl:inverseOf rdf:resource="#domain"/>
      <rdfs:range>
       <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
         <owl:Class rdf:about="#DataElementConcept"/>
         <owl:Class rdf:about="#DataElement"/>
        </owl:unionOf>
       </owl:Class>
      </rdfs:range>
      <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
     </owl:InverseFunctionalProperty>
     <owl:InverseFunctionalProperty rdf:about="#identifier">
      <rdfs:domain>
       <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
         <owl:Class rdf:about="#AdministeredItem"/>
         <owl:Class rdf:about="#ReferenceDocument"/>
         <owl:Class rdf:about="#Registrar"/>
         <owl:Class rdf:about="#RegistrationAuthority"/>
         <owl:Class rdf:about="#ValueMeaning"/>
        </owl:unionOf>
       </owl:Class>
      </rdfs:domain>
      <rdf:type
```

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rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
    <owl:inverseOf rdf:resource="#referent"/>
    <rdfs:range rdf:resource="#Identifier"/>
  </owl:InverseFunctionalProperty>
  <owl:InverseFunctionalProperty rdf:about="#contextEntry">
   <rdfs:range rdf:resource="#TerminologicalEntry"/>
   <owl:inverseOf rdf:resource="#entryContext"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
   <rdfs:domain rdf:resource="#Context"/>
  </owl:InverseFunctionalProperty>
  <owl:InverseFunctionalProperty rdf:about="#component">
   <rdfs:domain>
    <owl:Class>
     <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#ClassificationScheme"/>
      <owl:Class rdf:about="#TerminologicalEntry"/>
     </owl:unionOf>
    </owl:Class>
   </rdfs:domain>
   <owl:inverseOf rdf:resource="#aggregate"/>
   <rdfs:range rdf:resource="#Component"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
  </owl:InverseFunctionalProperty>
  <owl:InverseFunctionalProperty rdf:ID="definition">
   <rdfs:domain rdf:resource="#LanguageSection"/>
   <rdfs:range rdf:resource="#Definition"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
  </owl:InverseFunctionalProperty>
  <owl:InverseFunctionalProperty rdf:about="#administeredItem">
   <rdfs:range rdf:resource="#AdministeredItem"/>
   <rdf:type

rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
   <rdfs:domain rdf:resource="#AdministrationRecord"/>
   <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
   <owl:inverseOf rdf:resource="#administrationRecord"/>
  </owl:InverseFunctionalProperty>
</rdf:RDF>

<!-- Created with Protege (with OWL Plugin 1.3, Build 220)

http://protege.stanford.edu -->
```

Annex C
(informative)

Specification in OWL, Visualization