DSpace 2.0 Modelling Fedora in RDF

Here is a recent translation of the Fedora Rels Ext ontology in n3 for discussion purposes

Namespaces

These are the namespace/prefix mappiings utilized int he examples below

```
@prefix r: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>.
@prefix s: <http://www.w3.org/2000/01/rdf-schema#>.
@prefix rels: <info:fedora/fedora-system:def/relations-external#>.
```

Abstract Fedora Relationship

The primitive property for all object-to-object relationships in the fedora ontology

```
<rels:fedoraRelationship>
   a    r:Property.
```

Comments:

- *This can be classified as similar to a UML Association (representing some sort of relationship between two objects)* --Mark Diggory 16:59, 1 October 2008 (EDT)

Abstract Parts

Is Part Of

A definition of the generic part/whole relationship between fedora objects. The subject is a fedora object representing a part and the predicate is a fedora object representing a whole.

```
<rels:isPartOf>
   a    r:Property;
   s:subPropertyOf
      <rels:fedoraRelationship>.
```

Has Part

A definition of the generic part/whole relationship between fedora objects. The subject is a fedora object representing a whole and the predicate is a fedora object representing a part.

```
<rels:hasPart>
   a    r:Property;
   s:subPropertyOf
      <rels:fedoraRelationship>.
```

Comments:

- *Parts represent Composition Associations from UML, Compositions reflect a "whole/part" relationship.* --Mark Diggory 17:02, 1 October 2008 (EDT)
- _ I have questions how this relates to http://dublincore.org/documents/dcmi-terms/#terms-isPartOf I believe theres should be some documentation around this otherwise, these should just be refinements of "isPart"._ --Mark Diggory 17:19, 1 October 2008 (EDT)

Constituents

Is Constituent Of

This is a refinement of the generic part/whole relationship in the "made of" sense with referential integrity implications. The subject is a fedora object representing a constituent part and the predicate is a fedora object representing a whole of which the subject is a constituent. The constituent part cannot stand alone in any meaningful way without reference to the whole.

```
<rels:isConstituentOf>
   a    r:Property;
   s:subPropertyOf
      <rels:isPartOf>.
```

Has Constituent

This is a refinement of the generic part/whole relationship in the "made of" sense with referential integrity implications. The subject is a fedora object representing a whole that is made of constituent parts and the predicate is a fedora object representing one of the constituent parts. The whole loses its integrity if the constituent part is removed.

```
<rels:hasConstituent>
   a    r:Property;
   s:subPropertyOf
      <rels:hasPart>.
```

Comments:

- *This is a further refinement a Composition Association, forcing referential integrity to be maintained, I'm not 100% convinced its neccessary but may have a usefulness if the system is allowing Compositions that do not require addressablitiy.* --Mark Diggory 17:24, 1 October 2008 (EDT)

Members

Is Member Of

This is a refinement of the generic part/whole relationship that defines a set membership relationship between fedora objects. The subject is a fedora object representing a member of a set and the predicate is a fedora object representing a whole set of which the subject is a member. The member can be separated from the set and still stand alone as an object in its own right.

```
<rels:isMemberOf>
   a    r:Property;
   s:subPropertyOf
      <rels:isPartOf>.
```

Has Member

This is a refinement of the generic part/whole relationship that defines a set membership relationship between fedora objects. The subject is a fedora object representing a whole set and the predicate is a fedora object representing a member in the set. The set does not lose its integrity if a member is removed from the set.

```
<rels:hasMember>
   a    r:Property;
   s:subPropertyOf
      <rels:hasPart/>.
```

Comments:

- *I'm not convinced this is very different at all from a "hasPart" because "Constitutent" could just be considered a restriction on Membership.* --Mark Diggory 17:26, 1 October 2008 (EDT)

Subsets

Is Subset Of

This is a refinement of the generic set membership relationship to indicate the notion of a subset. The subject is a fedora object that represents a subset and the predicate is a fedora object that represents the set of which the subject is a subset.

```
<rels:isSubsetOf>
   a    r:Property;
   s:subPropertyOf
      <rels:isMemberOf>.
```

Has Subset

This is a refinement of the generic set membership to indicate the notion of a subset. The subject is a fedora object that represents a set of objects and the predicate is a fedora object that represents a subset of the subject set.

```
<rels:hasSubset>
   a    r:Property;
   s:subPropertyOf
      <rels:hasMember>.
```

Comments:

- *I wonder about this one as well, because RDF is an open model, unless stated otherwise, almost any relation may be expressed by another agent /authority to the point that there may be additional assertions of inclusion into any such Collection.* --Mark Diggory 17:29, 1 October 2008 (EDT)

Collections

Is Member of Collection

This is a refinement of the generic membership relationship to indicate the notion of a digital collection. The subject is a fedora object representing an item in a digital collection and the predicate is a fedora object representing a whole digital collection.

```
<rels:isMemberOfCollection>
   a    r:Property;
   s:subPropertyOf
      <rels:isMemberOf>.
```

Has Collection Member

This is a refinement of the generic membership to indicate the notion of a digital collection. The subject is a fedora object representing a whole digital collection and the predicate is a fedora object representing an item that is a member of the digital collection.

```
<rels:hasCollectionMember>
   a    r:Property;
   s:subPropertyOf
      <rels:hasMember>.
```

Derivations

Is Derivation Of

A definition of a generic derivation relationship between fedora objects. The subject is a fedora object that represents a derivation of the predicate which is another fedora object.

```
<rels:isDerivationOf>
   a    r:Property;
   s:subPropertyOf
      <rels:fedoraRelationship>.
```

Has Derivation

A definition of a generic derivation relationship between fedora objects. The subject is a fedora object and the predicate is a fedora object that represents a derivation of the subject.

```
<rels:hasDerivation>
   a    r:Property;
   s:subPropertyOf
      <rels:fedoraRelationship>.
```

Dependencies

Is Dependent Of

A definition of a generic dependency relationship between fedora objects. The subject is a fedora object that represents a dependent and the predicate is another fedora object that is depended upon by the subject.

```
<rels:isDependentOf>
   a    r:Property;
   s:subPropertyOf
      <rels:fedoraRelationship>.
```

Has Dependent

A definition of a generic dependency relationship between fedora objects. The subject is a fedora object that is depended upon and the predicate is a fedora object that represents a dependent of the subject.

```
<rels:hasDependent>
   a    r:Property;
   s:subPropertyOf
      <rels:fedoraRelationship>.
```

Descriptions

Is Description Of

A generic descriptive relationship between fedora objects. The subject is a fedora object that represents a descriptive entity and the predicate is a fedora object that is being described in some manner by the subject.

```
<rels:isDescriptionOf>
   a    r:Property;
   s:subPropertyOf
      <rels:fedoraRelationship>.
```

Has Description

A generic descriptive relationship between fedora objects. The subject is a fedora object that is being described in some manner and the predicate is a fedora object that represents a descriptive entity that is about the subject.

```
<rels:HasDescription>
   a    r:Property;
   s:subPropertyOf
      <rels:fedoraRelationship>.
```

Metadata

Is MetadataFor

A refinement of the generic descriptive relationship indicating a metadata relationship between fedora objects. The subject is a fedora object that represents metadata and the predicate is a fedora object for which the subject serves as metadata.

```
<rels:isMetadataFor>
   a    r:Property;
   s:subPropertyOf
      <rels:isDescriptionOf>.
```

Has Metadata

A refinement of the generic descriptive relationship indicating a metadata relationship between fedora objects. The subject is a fedora object and the predicate is a fedora object that represents metadata about the subject.

```
<rels:HasMetadata>
   a    r:Property;
   s:subPropertyOf
      <rels:hasDescription>.
```

Annotations

Is Annotation Of

A refinement of the generic descriptive relationship indicating a commentary relationship between fedora objects. The subject is a fedora object that represents an annotation or comment and the predicate is a fedora object that is being commented upon by the subject.

```
<rels:isAnnotationOf>
   a    r:Property;
   s:subPropertyOf
      <rels:isDescriptionOf>.
```

Has Annotation

A refinement of the generic descriptive relationship indicating a commentary relationship between fedora objects. The subject is a fedora object that is being commented on and the predicate is a fedora object that represents an annotation or comment about the subject.

```
<rels:HasAnnotation>
   a    r:Property;
   s:subPropertyOf
      <rels:hasDescription>.
```

Equivalencies

Has Equivalent

A definition of a generic equivalence relationship between fedora objects. The subject is a fedora object that is equivalent to the predicate which is another fedora objects.

```
<rels:hasEquivalent>
   a    r:Property;
   s:subPropertyOf
      <rels:fedoraRelationship>.
```