

Enhanced Content Models

State and University Library, Denmark

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Program

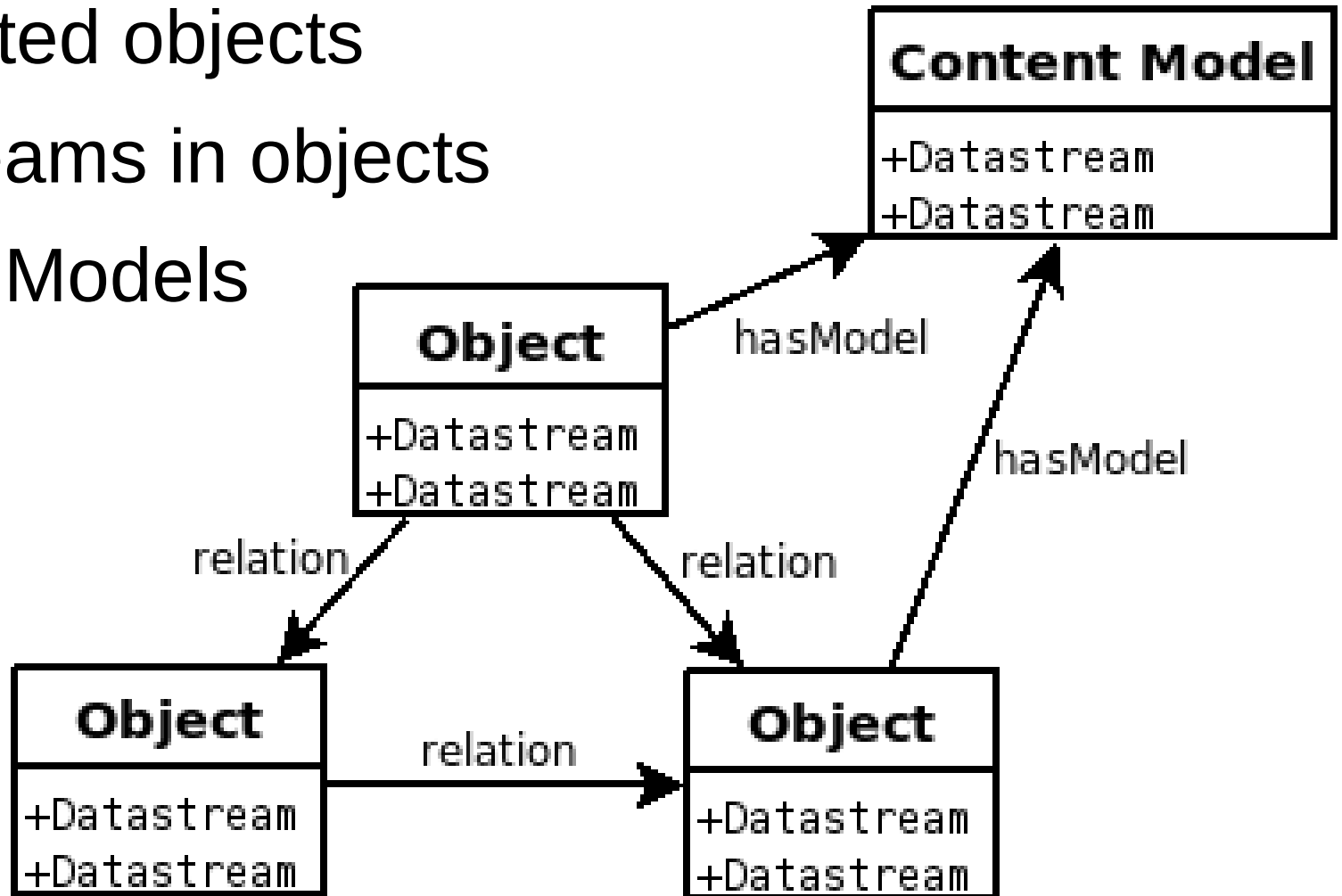
- Introduction
 - A look at Fedora Objects
- Traditional Content Models
- Enhanced Content Models
 - Description languages
 - Validator
- Templates
- Repository Views
- GUI based on the Enhanced Content Models

Introduction

- Extension of Fedora 3.x Content Models
 - Precise description of XML datastreams
 - Precise description of relations
- Additionally
 - System for creating new data objects
 - System for transforming data objects into information bundles
 - Webservice presenting the new functionality

A look at Fedora Objects

- Interrelated objects
- Datastreams in objects
- Content Models



Traditional Content Models

- Content Models declare the classes of data objects
- Content Models declare the existence of datastreams in data objects
- Content Models associate disseminators with data objects

Enhanced Content Models

- Extra information in Content Models.
Backwards compatible.
- ECMs declare the allowed relations, with cardinality and target classes for data objects
- ECMs declare the schemas for xml datastreams.
- ECMs:
 - Describe only properties about subscribing objects
 - Describe all properties about subscribing objects

Description Languages

- Datastreams
 - XML
 - XMLSchema
- Relations
 - RDF
 - OWL Lite

Description Languages - Datastreams

```
<dsCompositeModel>  
  <dsTypeModel ID="DC">  
    <form MIME="text/xml"/>  
  </dsTypeModel>  
</dsCompositeModel>
```


Description Languages - Datastreams

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Description Languages - Datastreams

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<dsCompositeModel>  
  <dsTypeModel ID="DC">  
    <form MIME="text/xml"/>  
    <extensions name="SCHEMA">  
  
    </extensions>  
  </dsTypeModel>  
</dsCompositeModel>
```

Description Languages - Datastreams

```
<dsCompositeModel>  
  <dsTypeModel ID="DC">  
    <form MIME="text/xml"/>  
    <extensions name="SCHEMA">  
      <schema:schema  
        type="xsd"  
        object="example:example_schema_object"  
        datastream="DC_SCHEMA"/>  
    </extensions>  
  </dsTypeModel>  
</dsCompositeModel>
```

Ontology datastream

```
<rdf:RDF xml:base="http://doms.statsbiblioteket.dk/relations/default/0/1/#">
```

```
  <owl:ObjectProperty rdf:about="#isPartOfCollection"/>
```

```
  <owl:Class rdf:about="info:fedora/doms:ContentModel_DOMS">
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  </owl:Class>
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Ontology datastream

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  <owl:ObjectProperty rdf:about="#isPartOfCollection"/>  
  
  <owl:Class rdf:about="info:fedora/doms:ContentModel_DOMS">  
    <rdfs:subClassOf>  
      <owl:Restriction>  
        <owl:onProperty rdf:resource="#isPartOfCollection"/>  
        <owl:minCardinality rdf:datatype="integer">1</owl:minCardinality>  
      </owl:Restriction>  
    </rdfs:subClassOf>  
  </owl:Class>  
  
</rdf:RDF>
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  <owl:Class rdf:about="info:fedora/doms:ContentModel_DOMS">  
    <rdfs:subClassOf>  
      <owl:Restriction>  
        <owl:onProperty rdf:resource="#isPartOfCollection"/>  
        <owl:minCardinality rdf:datatype="integer">1</owl:minCardinality>  
      </owl:Restriction>  
    </rdfs:subClassOf>  
  
    <rdfs:subClassOf>  
      <owl:Restriction>  
        <owl:onProperty rdf:resource="#isPartOfCollection"/>  
        <owl:allValuesFrom  
rdf:resource="info:fedora/doms:ContentModel_Collection"/>  
      </owl:Restriction>  
    </rdfs:subClassOf>  
  </owl:Class>  
  
</rdf:RDF>
```

Validator service

- Validate a data object

GET: /ecm/validate/{objectpid}

- Also available as a disseminator

Templates

- Data objects created as instances of content models – just like in OO programming.
- An easy way to fill out default data in new objects

Template data objects

- A data object can be declared as a template by adding the relation:

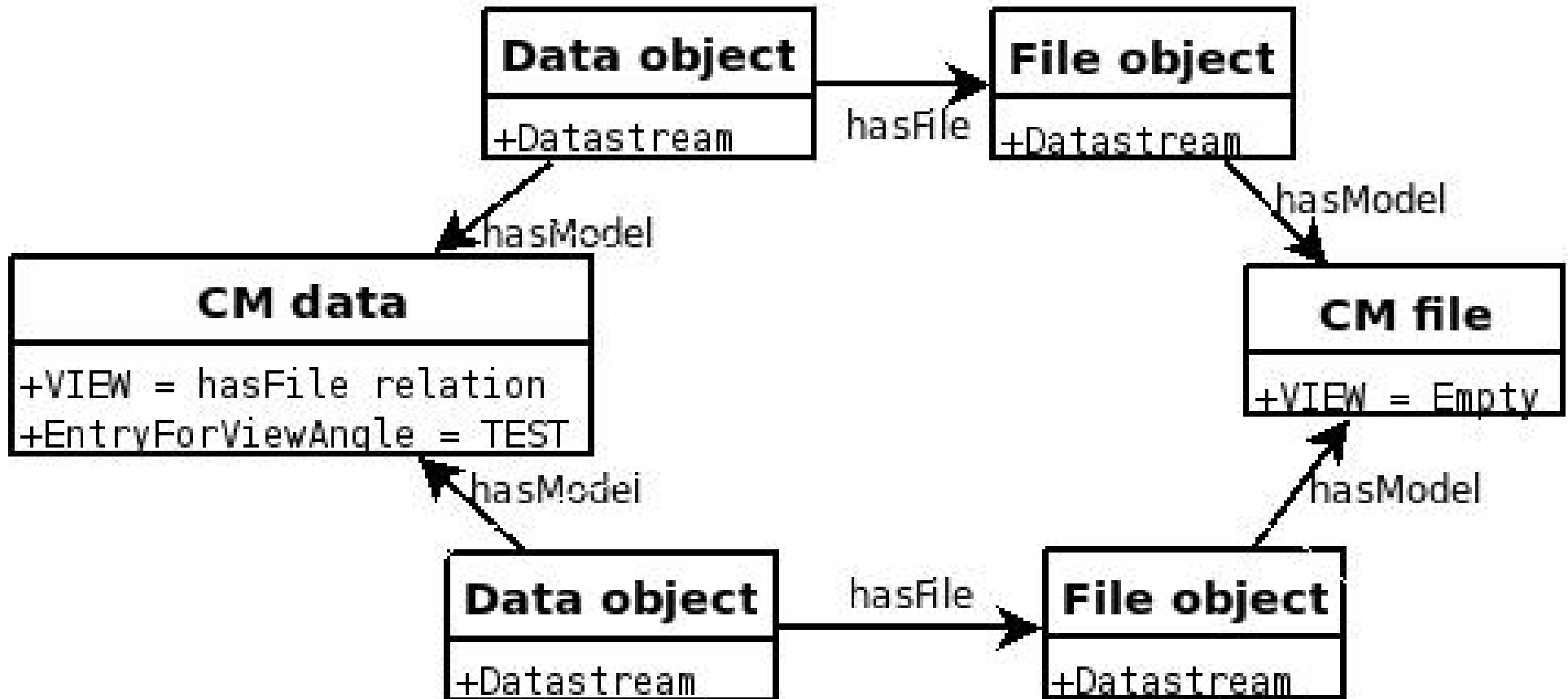
IsTemplateFor

to a content model

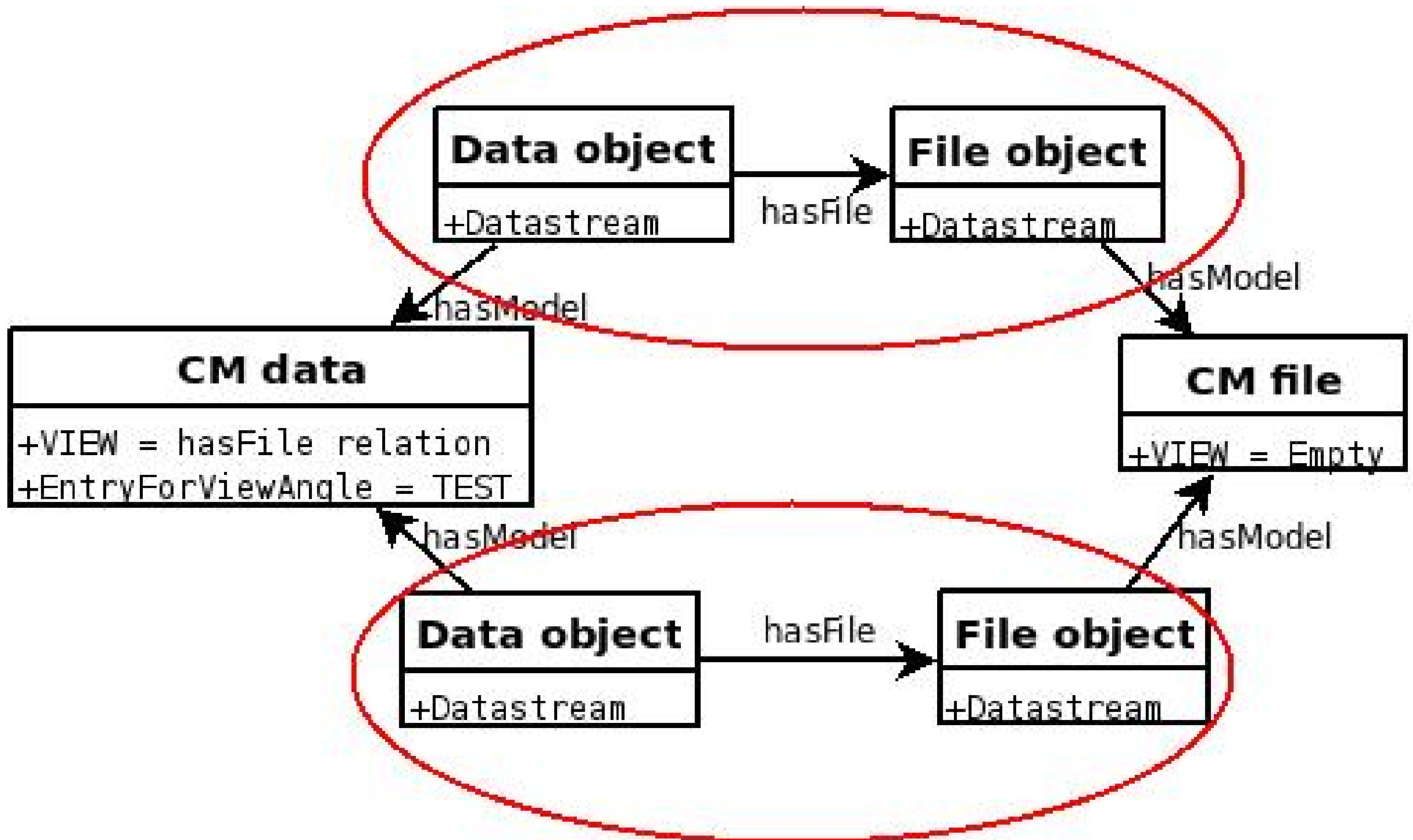
Repository Views

- Bundle atomic objects into logical records
 - Each search engine record might be made up of a bundle of fedora objects
- Defined by annotated relations
 - The view of an object is the object itself, and any object that is connected by a annotated relation
- Different View angles create different logical records

Repository Views



Repository Views



View services

- Get all entry objects for view angle

GET: /ecm/getEntryObjectsForViewAngle/
{viewAngle}

- Get objects in view

GET: /ecm/getViewObjectsForObject/
{objpid}/forAngle/{viewAngle}

- Also available as disseminator

Autogenerated user interfaces

- Precise description of contents allow for autogenerated programmatic interfaces
- In effect, a GUI could wrap itself around the objects in the repository
- Demo time :)

Rounding up

- Fedora wiki will soon host a collection of (enhanced) content models
- Websites
 - <http://ecm.sourceforge.net/>
 - <http://ecm.wiki.sourceforge.net/>
- This work has been funded by
 - DEFF, Denmark's Electronic Research Library
 - State and University Library, Denmark