A specialisation of the Europeana Data Model for the representation of manuscripts
The DM2E model

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Introducing the DM2E Project

Digitised Manuscripts to Europeana (DM2E)
• EU-funded Europeana satellite project
• Duration: Three years (2012 – 2015)
• Partners from Germany, Austria, Norway, Greece, UK and Italy
• Primary aims:
  – Enable an easy integration of rich metadata into Europeana
  – Stimulate the creation of new tools and services for reuse of Europeana data in the Digital Humanities

IBI at the Humboldt-Universität zu Berlin
• Project coordination
• Data model, mapping, ingestion infrastructure
The Goal:

Creation of rich metadata mappings for Europeana
Metadata Interoperability in Europeana

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TEI
Dublin Core
METS/MODS
MARC21
MAB
EAD
Provider-specific formats
## Europeana Models: From ESE to EDM

<table>
<thead>
<tr>
<th>ESE (Europeana Semantic Elements)</th>
<th>EDM (Europeana Data Model)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First model</td>
<td>Current model</td>
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<tr>
<td>XML</td>
<td>RDF</td>
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<tr>
<td>Provided CHO</td>
<td>Provided CHO, Aggregation, WebResource, Context</td>
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<tr>
<td>DC, DCTerms, Europeana</td>
<td>DC, DCTerms, EDM, FOAF, SKOS, ORE-OAI, rdaGr2, wgs84_pos</td>
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<tr>
<td>Literals</td>
<td>Resources and literals</td>
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<tr>
<td>One class with properties</td>
<td>Different classes and properties</td>
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</table>

Subpart of EDM

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Core Classes in EDM

Metadata, Cultural Heritage Object (CHO), Web Resource

- `ore:Aggregation`: URI metadata class
- `edm:WebResource`: URL
- `edm:ProvidedCHO`: URI provided object

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EDM: All Classes

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Specialising the EDM

EDM

... covers different object descriptions used in cultural heritage

... **but:** is still very broad and generic

... can be specialised (refined and extended) for different domains and tasks via application profiles
The DM2E Model

• Specialises the EDM for manuscripts
• Namespaces:
  – dm2e: <http://onto.dm2e.eu/schemas/dm2e/>
  – dm2edata: <http://data.dm2e.eu/data/>
• Ontology reuse:
  – Bibliographic Ontology (Bibo), FRBR-aligned Bibliographic Ontology (FaBiO), Publishing Roles Ontology, VIVO Ontology, VoID
  – Usage of reused resources is described with dm2e:scopeNote
  – Original definitions remain and must be fulfilled
  – Original definitions are broader
  – Narrower restrictions and recommendations in the DM2E model
Modelling Approach

Bottom-up model creation

Data analysis → Creation of a draft model → Production of rich mappings → Integration of provider feedback → Evaluation → DM2E model
Underlying Data

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Heterogeneous object data in independent resources
Mapping Workshops

Workshops and conceptual mappings
Provider and Developer Feedback

- Proposals for model changes are discussed via GitHub
- Quick feedback
- Everyone is involved
- Model and Mapping issues
Specialised Classes

edm:NonInformationResource

edm:PhysicalThing

dm2e:Cover

dm2e:File

dm2e:Page

dm2e:Document

dm2e:Manuscript

bibo:Journal

bibo:Book

bibo:Letter

Example: New subclasses of edm:PhysicalThing
Specialised Properties

Example: New properties of dc:creator

- pro:illustrator
- dm2e:artist
- pro:author
- dm2e:composer
- dm2e:writer
Properties for Additional Functionalities

- **dm2e:hasAnnotatableVersionAt**
  - Property for the semantic annotation tool Pundit
  - Restricted to specific MIME-Types: image/jpeg, application/pdf etc.

- **dm2e:levelOfHierarchy**
  - Shows the order of levels in hierarchical objects

- **dm2e:displayLevel**
  - Used for search functionality
  - If **true** the object is shown in the search results

- **dm2e:scopeNote**
  - Used for mapping notes and DM2E-specific views on a resource

- **crm:P79F.beginning_is_qualified_by** and **crm:P80F.end_is_qualified_by**
  - Unsure or estimated timespans
DM2E Model: An Example
DM2E Data

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Model Evaluation

• Analysis:
  – General usage of properties and classes
  – Overall usage of properties and classes
  – Differences between mappings from different providers and mapping institutions
Evaluation: Unused Classes and Properties

- Bottom-up approach led to many model extensions
  → The larger the model, the less of it is used
- Examples of unused classes: events, institutions, CHO types
- Examples of unused properties: CHOs, person roles, places

**Consequence 1:** Check if unused resources can be removed

- Different providers create different mappings

**Consequence 2:** Refine mapping recommendations
Collaborative ontology creation:

(Some) lessons learned
Next Steps

• Ingest data into Europeana
  – Test ingestions were checked

• Add evaluation results to the model
  – Remove unused and unneeded classes and properties
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wiki.dm2e.eu
Thank You!

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References

Literature

• Documentation of the „Digital Public Library of America Metadata Application Profile” (DPLA MAP V3). Online: http://dp.la/about/map (07.04.2014).


Images

• Goal (Slide 3). http://www.clker.com/cliparts/F/D/w/Z/V/P/soccer-goal-hi.png


• Footsteps (Slide 23). http://openclipart.org/detail/left-footprint-by-anonymous.