



europaena
think culture

Europeana and (many) linked open vocabularies

Valentine Charles
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Context

- Europeana is a service that aggregates data from the cultural heritage sector in Europe.
 - libraries, museums, archives and audio-visual archives
 - <http://www.europeana.eu/>
- Provides a portal for users to access that data
 - Metadata, previews and links to source
- Will make the metadata freely available for anyone to re-use
 - under Creative Commons Zero (CC0) -public domain dedication
- Enriches data, provides tools
 - Link to data from other sites, embed on wikipedia, API
- Makes data available as Linked Open Data (experimentally)
 - <http://data.europeana.eu/>



Solving a problem of data integration

- Europeana is aggregating data from the cultural heritage sector in Europe.
 - Each domains is using its specific metadata standards and vocabularies
 - Athena for museums with Lido
 - APEnet for Archives with EAD
- Until now.. the Europeana Semantic Elements (ESE)
 - represents lowest common denominator for object metadata
 - forces interoperability
 - flat model, mostly with text string values
 - one-to-one principle violated
 - major drawback: richness of the original metadata is lost



First steps for providing semantics enabled services

- Enrichment of the data with selected vocabularies and datasets:
 - DBpedia
 - Geonames
 - GEMET
 - Enrichment process based on a selection of Dublin Core elements
- Europeana needs to have access to open resources



First steps for providing semantics enabled services



Labradora de Oporto ; A. Pe

Creator: [Gimenez Manuel](#)

Contributor: [Perea y Rojas](#)

Date: [1872, 1876] ; [1875]

Geographic coverage: Sp

Type: Two-dimensional gr

Subject: 39(469.121)18"(0

Description: Páez Ríos, El

bibliographic level: Monogr

Data provider: [Biblioteca N](#)

Provider: [The European Li](#)

View item at

[Biblioteca Nacional de Portugal -](#)

[National Library of Portugal](#)

Format: 1 gravura ; cromolitografia ; ;

Dim. da comp. sem letra: 20,5x21,1

cm : alphabet of Title: Latin

Where ▾

Place Label: españa ; la madre

patria ; hispania ; spain ;

ισπανία ; kingdom of spain ;

espagne ; hiszpania ; spagna ;

spanyolország ; reino de españa ;

spania ; estado español ;

spanien ; spanyol ; la piel de toro ;

španielsko ; hesperia ; ispanija ;

spanje ; іспанія ; испания ;

španělsko ; spanish state ;

hispaania ; espanha ; es ;

španija ; espanja

Place Term:

<http://sws.geonames.org/2510769/>



Re-building the service on rich metadata format

- The Europeana Data Model (EDM) provides a new environment
 - Provides an open environment for Cultural Heritage data
- Re-use OAI ORE for organization of metadata about an object
 - Distinguish between the real world **object** (painting, book, program) and its **digital representation**
 - And the **object** and the **metadata record** describing the object
 - Supports several statements per resources
- EDM gives support for contextual resources (semantic layer)
- Re-use existing standards
 - OAI-ORE
 - Dublin Core
 - SKOS...



Requirements for Linked Open Vocabulary

Access and maintenance

- Vocabularies should be technically available and documented
 - Organisational support is key
- Vocabularies should be well-connected together
 - Key to avoid duplication and redundancy
- Elements sets should address specific requirements instead of semantic specifications
- The necessity of a map of the vocabulary landscape
 - Linked Open vocabularies: <http://labs.mondeca.com/datasets/lov>
 - Open Metadata Registry: <http://metadataregistry.org>



Requirements for Linked Open Vocabulary Tools

→ MINT: <http://mint.image.ece.ntua.gr/>

Define your mappings and when you are done click the 'Finished' button below to make them available to the rest of the users in your organization.
**Mapping relations are automatically saved every time you edit, delete or create a new one.*

Finished Preview Summary

The screenshot displays the MINT tool interface with three main panels:

- Source Schema:** A tree view showing the structure of the source schema, including elements like `museumdatWrap`, `descriptiveMetadata`, `eventWrap`, and `indexingEventSet`.
- Mappings:** A central table defining mappings between source and target elements. The table includes columns for the source property, its type, and the target value. For example, `wasPresentAt` is mapped to `structural`, and `happenedAt` is mapped to `place` with a target value of `Athens`.
- Target Schema:** A list of target schema elements, including `Aggregation`, `Europeana`, `DC`, `DCTerms`, `Events` (highlighted), `Related`, `Aggregated CHO`, and `Web Resources`.

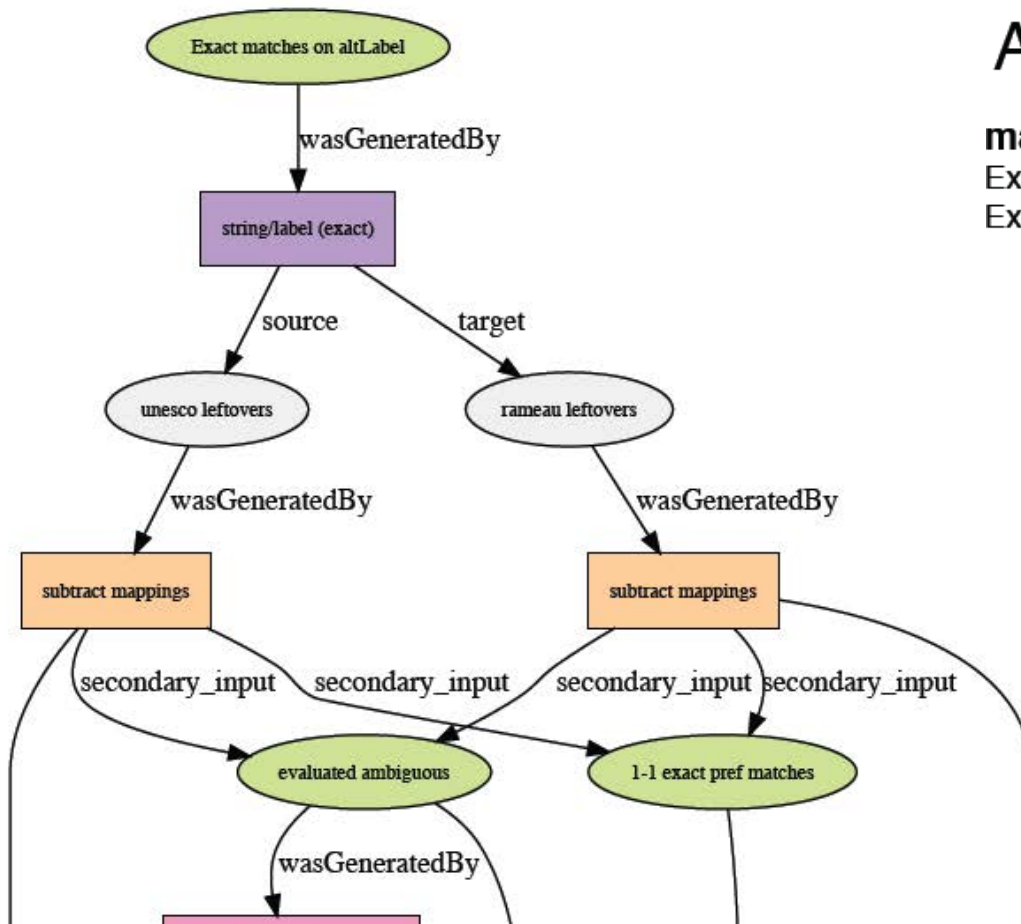
Red arrows point from labels below to the corresponding panels: "Import's schema structure" points to the Source Schema, "Mappings" points to the Mappings table, and "Target schema" points to the Target Schema list.

Requirements for Linked Open Vocabulary Tools

→ AMALGAME: <http://semanticweb.cs.vu.nl/amalgame/>

Analyse

mapping	sources	targets	total
Exact on altLabel	281 (8%)	299 (0.2%)	313
Exact on prefLabel	723 (16%)	703 (0.4%)	723
1-1 matches	683 (15%)	683 (0.4%)	683
n-m matches	40 (1%)	20 (0.01%)	40



source	relation	target
ACADEMIC ACHIEVEMENT	exact	Succès scolaire
ACADEMIC TEACHING PERSONNEL	close	Universités - Corps enseignant
ACTIVITY LEARNING	close	Apprentissage par la découverte
ADJUNCTURE	exact	Assurance
ADMINISTRATION OF JUSTICE		Justice - Administration
ADMINISTRATION OF JUSTICE	<input type="radio"/> exact <input type="radio"/> close <input type="radio"/> narrower <input type="radio"/> broader <input type="radio"/> related <input type="radio"/> unrelated <input type="radio"/> unknown because	Justice - Administration
Hierarchy		Justice - Administration
POLITICS, LAW AND ECONOMICS		Justice - Administration
LEGAL SYSTEMS		Justice - Administration
LEGAL PROCEDURE		Jurges
ADMINISTRATIVE TRIBUNALS		Justice relative
COURTS		Juris
more		
related		Justice - Administration, dans la Bible
CRIME		Lois - Applications
LAW ENFORCEMENT		
PUBLIC ADMINISTRATION		
RIGHT TO JUSTICE		
include all correspondences with the same [] source [] target		
<input type="button" value="cancel"/> <input type="button" value="submit"/> <input type="button" value="prev"/> <input type="button" value="next"/>		
AUDIOVISUAL INSTRUCTION		Enseignement - Méthodes audiovisuelles
AUDIOVISUAL INSTRUCTION		Étude et enseignement - Aires audiovisuelles
BALANCE OF POWER		Équilibre des puissances
BALANCE OF POWER		Séparation des pouvoirs
BANKS		Banques
BASIC NEEDS		Besoins fondamentaux
BASIC TRAINING		Éducation de base
BEHAVIOUR		Attitudes

References

Doerr, M., Gradmann, S., Hennicke, S., Isaac, A., Meghini, C., Van de Sompel, H. The Europeana Data Model (EDM). 76th IFLA General Conference and Assembly, 10-15 August, 2010, Gothenburg, Sweden.

<http://www.ifla.org/files/hq/papers/ifla76/149-doerr-en.pdf>

Europeana. Europeana Data Model Primer (2011). Available at <http://pro.europeana.eu/edm-documentation>

Europeana. Europeana Semantic Elements Specification (2011) Available at <http://pro.europeana.eu/technical-requirements>

Isaac, A. Waites, W., Young, J., Zeng, M., Library Linked Data Incubator Group: Datasets, Value Vocabularies, and Metadata Element Sets. W3C Incubator Group Report, 25 October 2011: <http://www.w3.org/2005/Incubator/llid/XGR-llid-vocabdataset/>





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Thank you

Valentine Charles

valentine.charles@kb.nl

