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## Metadata-Registries



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# Metadata

- Metadata are (structured) data about data
- They describe the content, quality, conditions (like rights, access), and other characteristics of (digital) objects
- For discovery, description, archiving, etc.
- Each metadata element has a detailed definition (semantic, syntax)
- Set of metadata elements = metadata element set (or schema)



# Metadata is a language

- A metadata "sentence" might say:
  - "This book has **Author** *Johann Wolfgang von Goethe*, **Title** *Faust I*, and **Date Published** 1808
- Dublin Core was designed as a simple metadata language for the discovery of digital objects (Tom Baker: "pidgin language for a digital tourist").
- In unqualified Dublin Core, the sentence above would say:
  - "This resource has **Author** *Johann Wolfgang von Goethe*, **Title** *Faust I*, and **Date** 1808



# Application Profile

- Dublin Core Metadata Element Set
  - Too simple for most local application
  - Need to extend this set locally
- An application profile is a schema which consists of terms (metadata elements) drawn from one or more metadata schema optimised for a particular local application
- Examples
  - Dublin Core Library Application Profile
  - Renardus Application Profile
  - ...



# Application Profiles and Interoperability

Contents:

- Keep precision in the meaning (semantics) of the terms used
- Make the sources of the terms explicit
- Spell out the local restrictions of use (value range, syntax, repeatability, obligation etc.)

Goal:

- Exchange of data with other providers:  
**Interoperability!**



# Interoperability

- *... enables different communities, with different types of information and technologies, to achieve a general level of information sharing ...*
- *... is defined as the ability of digital library components or services to be functionally and logically interchangeable ...*
- *... different services and components can communicate with each other through open interfaces ...*

*Eric Miller, W3C*

...

Level 3	<b>Attribute Space</b> e.g. DCMES, LOM	<b>Value Space</b> e.g. DDC, LCSH
Level 2	<b>Representation &amp; Exchange</b> e.g. METS, XML, RDF, SOAP, OAI – PMH	
Level 1	<b>Transport</b> e.g. Z39.50, LDAP, HTTP	

© based on White Paper of the DELOS Working Group on Registries



# Metadata Registry

## Need of registration of Application Profiles

- Clear declaration of rights holder
- Somebody is responsible for maintenance and updates
- Guarantees interoperability between metadata implementers
- Increase cooperation (metadata exchange, metadata sharing)
- Avoid double work by re-using already defined metadata elements
- ...



## Examples

### MetaForm (SUB Göttingen)

- Local "manifestations" of Dublin Core for specific projects introduce variations -- like "dialects"
- "Crosscuts": how are elements used in different implementations?
- Provides "mappings" and "crosswalks" between Dublin Core and other schemas of similar scope
- Demonstrates the sort of output one would want from queries to a distributed registry

**<http://www2.sub.uni-goettingen.de/>**

# METAFORM

CROSSWALKS, CROSSCUTS & MAPPINGS

## Crosswalks

Database containing Dublin Core manifestations and other metadata formats

Format	Project description	Version	Mappings
<i>Dublin Core and its Dialects</i>			
AGLS	Australian Government Locator Service		Mapping
BIBLINK	BIBLINK Project	Stand: 28.07.1998	Mapping
BSZ	Dublin Core in der Interpretation des <a href="#">BSZ</a> (Bibliotheksservice-Zentrum Baden-Württemberg)	Draft Stand: 27.09.2000	Mapping
CEDARS	Metadata for digital preservation	Stand 2002	Mapping
CIMI - Z39.50	CIMI Z.39.50 Application Profile for use in project CHIO	Draft Version 3 15.07.1996	Mapping
CIC	Gesellschaft Deutscher Chemiker Keine Formatbeschreibung vorhanden		Mapping
DEF	Denmarks Elektroniske	Stand: 2000	Mapping

# CEDARS

CEDARS	Definition CEDARS	DC-Element	DC Definition
Preservation Description Information.Provenance Information.Rights Management.Rights Information.Copyright Statement.Name of Publisher	This sub-element contains the name of the publisher of the digital object.	DC.Publisher	An entity responsible for making the resource available
Preservation Description Information.Provenance Information.Rights Management.Rights Information.Copyright Statement.Publication-Place	This sub-element contains the place of publication of this version of this digital object.		
Preservation Description Information.Provenance Information.Rights Management.Rights Information.Copyright Statement.Date of Publication	This sub-element contains the date of publication of this version of this digital object.	DC.Date.Created	Date of creation of the resource
Preservation Description Information.Context Information.Related Information Objects	This element specifies any other information objects which were judged, at the time of ingest, to be significantly related to the ingested digital object.	DC.Relation	A reference to a related resource
Preservation Description Information.Provenance Information.Rights Management	This metadata section contains information relating to the intellectual property rights relevant to the digital object.	DC.Rights	Information about rights held in and over the resource



# Examples

## Schemas/CORES

- Registry of “all” Application Profiles and Metadata Element Sets
  - “Rights holder”, maintainer
  - Updates
  - Search for Aps, single metadata elements etc.
  - ...
- <http://www.cores-eu.net/registry/>**



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## Application Profiles

Name	Version	Agency	
		<a href="#">Food and Agriculture Organization of the United Nations</a>	<a href="#">Detail</a>
<a href="#">Omnipaper Application Profile</a>	1.0	<a href="#">Universidade do Minho</a>	<a href="#">Detail</a>
<a href="#">Renardus Application Profile</a>		<a href="#">Renardus Consortium</a>	<a href="#">Detail</a>
<a href="#">The British Library Application Profile</a>	1.0	<a href="#">The British Library</a>	<a href="#">Detail</a>
<a href="#">The IEEE LOM Application Profile</a>	1.0	<a href="#">Metadata for Education Group</a>	<a href="#">Detail</a>
<a href="#">The IEEE LOM Metametadata Application Profile</a>	1.0	<a href="#">Metadata for Education Group</a>	<a href="#">Detail</a>
<a href="#">The Qualified Dublin Core Application Profile</a>		<a href="#">The Dublin Core Metadata Initiative</a>	<a href="#">Detail</a>
<a href="#">The RDN Record Sharing (rdn_dc) Application Profile</a>		<a href="#">Resource Discovery Network</a>	<a href="#">Detail</a>
<a href="#">The RSLP Collection Description Application Profile</a>	1.0	<a href="#">Research Support Libraries Programme</a>	<a href="#">Detail</a>
<a href="#">The Simple Dublin Core Application Profile</a>		<a href="#">The Dublin Core Metadata Initiative</a>	<a href="#">Detail</a>

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## Examples

### Dublin Core Registry

- Defines Dublin Core schemata (terms, controlled vocabularies etc.)
- And relation between them
- Translations of elements, refinements and their definitions in different languages

**<http://dublincore.org/dcregistry/index.html>**



The [Dublin Core Metadata Initiative's \(DCMI\)](#) Metadata Registry is designed to promote the discovery and reuse of existing metadata definitions. It provides users, and applications, with an authoritative source of information about the Dublin Core element set and related vocabularies. This simplifies the discovery of terms and related definitions, and illustrates the relationship between terms.

The reuse of existing metadata terms is essential to standardization, and promotes greater interoperability between metadata element sets. The discovery of existing terms is an essential, and prerequisite, step in this process. This application promotes the wider adoption, standardization and interoperability of metadata by facilitating its discovery, and reuse, across diverse disciplines and communities of practice.

This application was developed by the [OCLC Office of Research](#), in cooperation with the Dublin Core Metadata Initiative [Registry Working Group](#). It was developed, and is distributed, as an [open-source](#) project, built entirely upon open-source/open-standards software.

Please select from one of the following supported languages or click on the [Preferences](#) link above for additional options.

Information about the **application interface** can be found [here](#).

**Having trouble** displaying the international fonts? [Click here](#) for help.

\* Language support for those languages marked with an '\*' are limited to terms only and do not currently include user-interface support.

[العربية النسخة/عربي](#) [ar-SA]

[Castellano](#) [ca-ES]

[Česky](#) [cs-CZ]

[Cymraeg](#) [cy-GB]\*

[Dansk](#) [da-DK]\*

[Deutsch](#) [de-DE]

[Ελληνικά](#) [el-GR]

[English](#) [en-US]

[Español](#) [es-ES]

[Suomeksi](#) [fi-FI]

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[українська](#) [uk-UA]

[简体中文](#) [zh-CN]

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Display:

## Summary of DCMI Controlled Vocabulary Terms

Items Found: 12

[Collection](#)

[Dataset](#)

[Event](#)

[Image](#)

[InteractiveResource](#)

[MovingImage](#)

[PhysicalObject](#)

[Service](#)

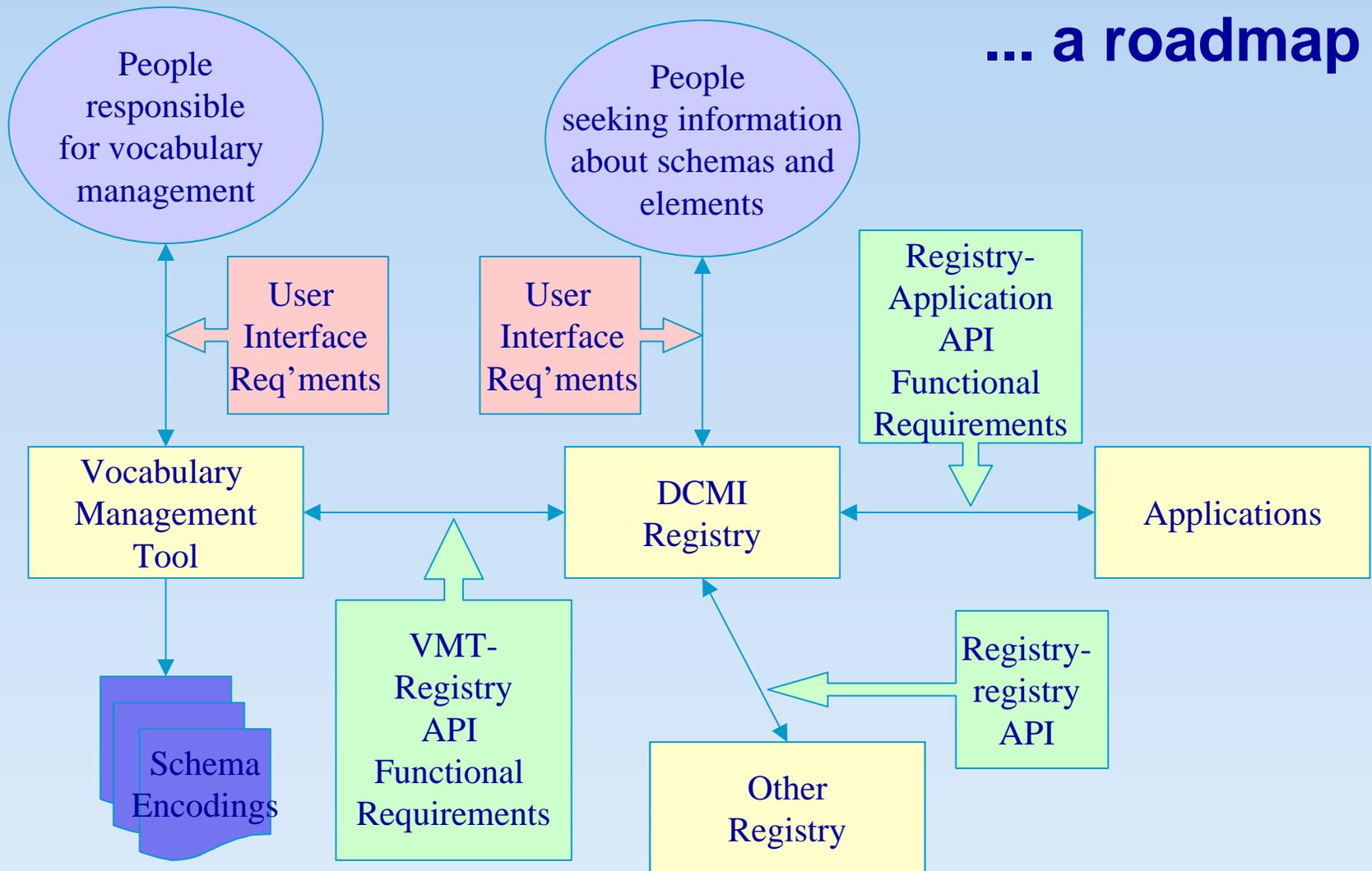
[Software](#)

[Sound](#)

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## ... a roadmap



DCMI Roadmap for Development of Vocabulary Management and Registry Systems  
(H. Wagner, R. Heery, S. Weibel)



# Metadata Registries: Services

Advanced Registries will provide services for metadata exchange and enhancements:

- Map from one data element to another
- Adjust value range (e.g. notation -> caption)
- Normalize data (e.g. date format)
- Support standardization (e.g by the use of authority files)



# Semantic Web

## *A vision*

"The Semantic Web is an extension of the current web in which *information is given well-defined meaning*, better enabling computers and people to work in cooperation."

*Tim Berners-Lee, James Hendler and Ora Lassila, The Semantic Web, Scientific American, May 2001*



# Metadata Registries & Semantic Web

- Metadata provides well-defined meanings to information
- Registries help to maintain this well-defined meanings
- Increase interoperability, also in (semi-) automatically ways (metadata exchange, metadata sharing, metadata re-use)
- **But:** all registries so far are very complicated, maintenance is very time-consuming (depending on metadata developers)
- ?Vision: more simple, concentrating on core set



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**Thank you very much  
for your attention**



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