

Metadata for Research and Education

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- 1 General Points about Metadata
 - Metadata & Vocabularies
 - Interoperability
 - A New Thinking
- 2 Metadata for Research
 - Research Papers in Physical Libraries
 - Open Access Initiative
 - Open Access Software
- 3 Metadata for Education
 - Problem Statement
 - The Learning Object Model (LOM)
 - Intergeo European Project

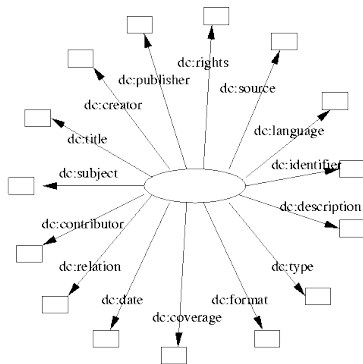


Outline

- 1 **General Points about Metadata**
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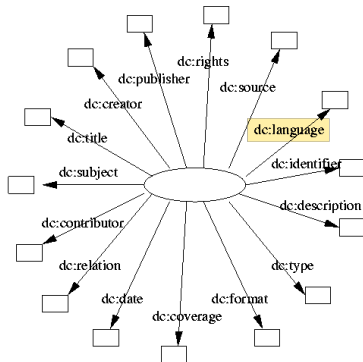
Dublin Core Hedgehog



(source: Dublin Core Metadata Initiative)



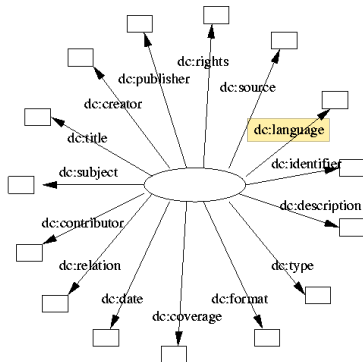
Controlled Vocabulary



- attribute = Language



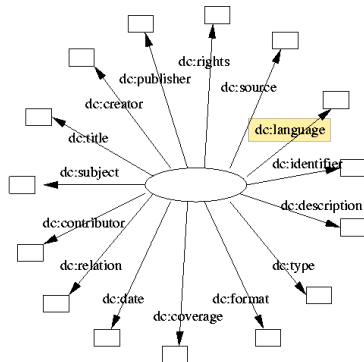
Controlled Vocabulary



- attribute = Language
- standard classification = iso 639-2 – iso 639-3



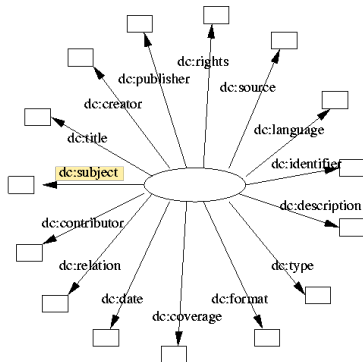
Controlled Vocabulary



- attribute = Language
- standard classification = iso 639-2 – iso 639-3
- issues = Chinese: written or spoken?



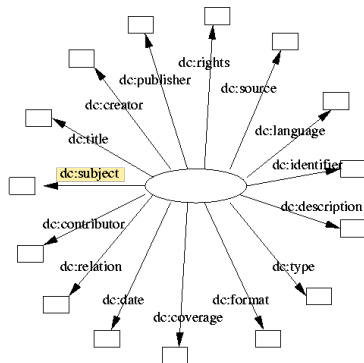
Thesaurus



- attribute = Subject



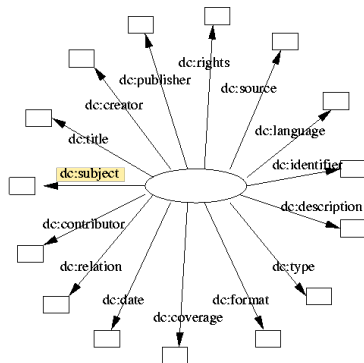
Thesaurus



- attribute = Subject
- standard classification = Dewey/Library of Congress



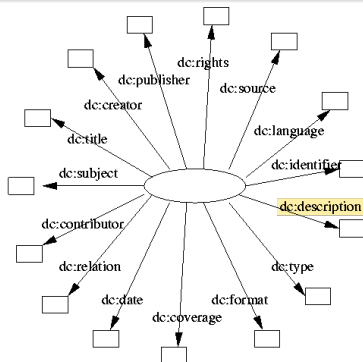
Thesaurus



- attribute = Subject
- standard classification = Dewey/Library of Congress
- issues = educational subject depends on audience



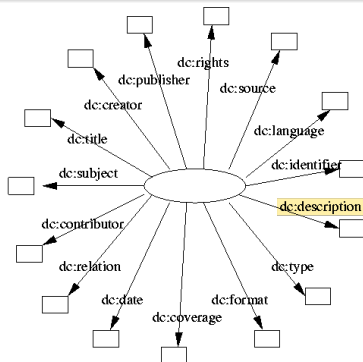
Thesaurus (2)



- attribute = Keyword



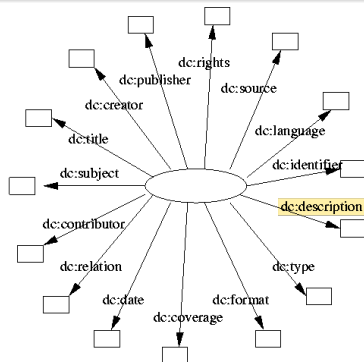
Thesaurus (2)



- attribute = Keyword
- standard classification? expl "Rameau" vocab. at the French National Library (BNF)



Thesaurus (2)



- attribute = Keyword
- standard classification? expl "Rameau" vocab. at the French National Library (BNF)
- issues = translation non univocal
 - "show" and "demonstrate" → same word in french



How do you export?

Interoperability: Exporting/Importing

- RSS, Atom = for Dublin Core only



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- OWL = rich but difficult



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- SKOS = easier
 - Library of Congress Subject Headings
 - Rameau



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- JSON = object serialization, not standardized



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Interoperability: Exporting/Importing

- RSS, Atom = for Dublin Core only
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 - Library of Congress Subject Headings
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- OAI = output format + harvesting protocol
- JSON = object serialization, not standardized
- REST = highly useful but not standardized in itself



A New Thinking

A New Thinking ref. newthinking.de

- Physical vs Electronical



A New Thinking

A New Thinking ref. newthinking.de

- Physical vs Electronical
- Text vs Hypertext



A New Thinking

A New Thinking ref. newthinking.de

- Physical vs Electronical
- Text vs Hypertext
- Hierarchical vs Semantic



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- Tree vs Graph



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- Ontology: grammar



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- Example: Harry Potter by Gautier Poupeau (French)



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Physical Library Standards



Research Papers in Physical Libraries

- MARC, UNIMARC, Z39-50 (BiblioML?)



Research Papers in Physical Libraries

- MARC, UNIMARC, Z39-50 (BiblioML?)
- Flat Records



Research Papers in Physical Libraries

- MARC, UNIMARC, Z39-50 (BiblioML?)
- Flat Records
- Physical Limitations: only one shelf



Open Access Initiative

- BOAI (B for Budapest)



Open Access Initiative

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- OAI format and query protocol



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- Example: HAL (Hyper Articles en Ligne) \approx 130 000 full-text documents



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- Example: HAL (Hyper Articles en Ligne) \approx 130 000 full-text documents
- Example: IFREMER, Archimer
- Find repositories: OAIster, OpenDOAR



OAI Software

- GNU eprints (Perl)



OAI Software

- GNU eprints (Perl)
- Fedora Commons, SDX (Java)



OAI Software

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- Fedora Commons, SDX (Java)
- Library Software like Koha, Greenstone ..



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- General use CMSs like Drupal



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- Fedora Commons, SDX (Java)
- Library Software like Koha, Greenstone ..
- General use CMSs like Drupal
- Specialized CMSs like Open Journal System, Lodel (PHP), Silva and MOAI (Python)



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Problem Statement

What difficulties?

- “Thales”



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- Theory of Probabilities



Problem Statement

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- Yet: Ease of translation in a few cases (Science, Foreign language ..)



Problem Statement

What difficulties?

- “Thales”
- Theory of Probabilities
- Yet: Ease of translation in a few cases (Science, Foreign language ..)
- Finally: education is a vocation and has its own needs



The Learning Object Model (LOM)

Note: In French: LOM-fr, AFNOR

- General: title, language, description, subject, document type, aggregation level, keywords, publisher ..



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- Cataloging: URL, identifier, metadata on metadata
- Educational: subject (more precise), level, audience, country (in some cases), learning resource type, difficulty, curriculum, age, skill/competency landmarking ..



LOM & Vocabularies

Vocabularies?

- Not always defined by the standard



LOM & Vocabularies

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- Not always defined by the standard
- Multiple possible sources and crafts (technical, legal, educational)



LOM & Vocabularies

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- Not always defined by the standard
- Multiple possible sources and crafts (technical, legal, educational)
- Politics, nations



LOM & Vocabularies

Vocabularies?

- Not always defined by the standard
- Multiple possible sources and crafts (technical, legal, educational)
- Politics, nations
- Education systems being so diverse



Interactive Geometry Interoperability

- Cabri, Geoplan, ..



Interactive Geometry Interoperability

- Cabri, Geoplan, ..
- Drawing, Scripting



Interactive Geometry Interoperability

- Cabri, Geoplan, ..
- Drawing, Scripting
- Cataloging, Indexing ..



Interactive Geometry Interoperability

- Cabri, Geoplan, ..
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- An OWL Ontology called GeoSkills of GeoSkills Project Page and GNU Edu/Intergeo SKOS export page

