Metadata - general introduction

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Event timetable

- 09:30 Registration
- **10:00 Metadata - general introduction**
- **10:15 Discovery metadata**
- 11:00 *Break*
- 11:15 Learning Object metadata
- **12:00 Other types of metadata**
- 13:00 *Lunch*
- 14:00 Metadata in practice - JORUM & LOM
- 15:00 Feedback and final discussion
- 15:30 *Close*

Session overview

- Metadata - general overview
  - Definitions
  - Some basic questions
  - Metadata standards

Defining metadata (1)

- Some definitions:
  - Literally, "data about data"
    - Defines the basic concept, but is (perhaps) not very meaningful
    - Refers to everything and nothing (Wendy Duff, 2004)
  - "Machine-understandable information about Web resources or other things" - Tim Berners-Lee, W3C (1997)

Defining metadata (2)

- "Structured data about resources that can be used to help support a wide range of operations - Michael Day, 2001
- "Structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use or manage" information objects - NISO, 2004
  - Hints at the many roles metadata can support

Defining metadata (3)

- Metadata is now typically defined by *function*
  - "Data associated with objects which relieves their potential users of having to have full advance knowledge of their existence or characteristics" (Dempsey & Heery, 1998)
  - Popular categorisation:
    - » Descriptive metadata
    - » Structural metadata
    - » Administrative metadata

What functions can be supported?

- Resource disclosure & discovery
- The retrieval and use of resources
- Resource management, including preservation
- Verification of authenticity
- Intellectual property rights management
- Commerce
- Content-rating
- Authentication and authorisation
- Personalisation and localisation of services
- …

To what can metadata be applied?

- "Web resources or other things," e.g.:
- Web sites, Web pages, digital images, databases, books, museum objects, archival records, collections, services, geographical locations, organisations, events, concepts, … even metadata itself

Where can metadata be found?

- Within a resource, e.g.:
  - Title page and table of contents (books), META tags in document headers (Web pages), ID3 metadata (MP3), "file properties" (office documents), EXIF data (images)
- Directly linked to the resource, e.g.:
  - Link rel="meta" elements (Web pages)
- Independently managed in a separate database; can be linked by identifiers
  - This is the most common approach

How important is metadata?

- … "is recognised as a critically important, and yet increasingly problematic and complex concept with relevance for information objects as they move through time and space" -- Gilliland-Swetland (2004)

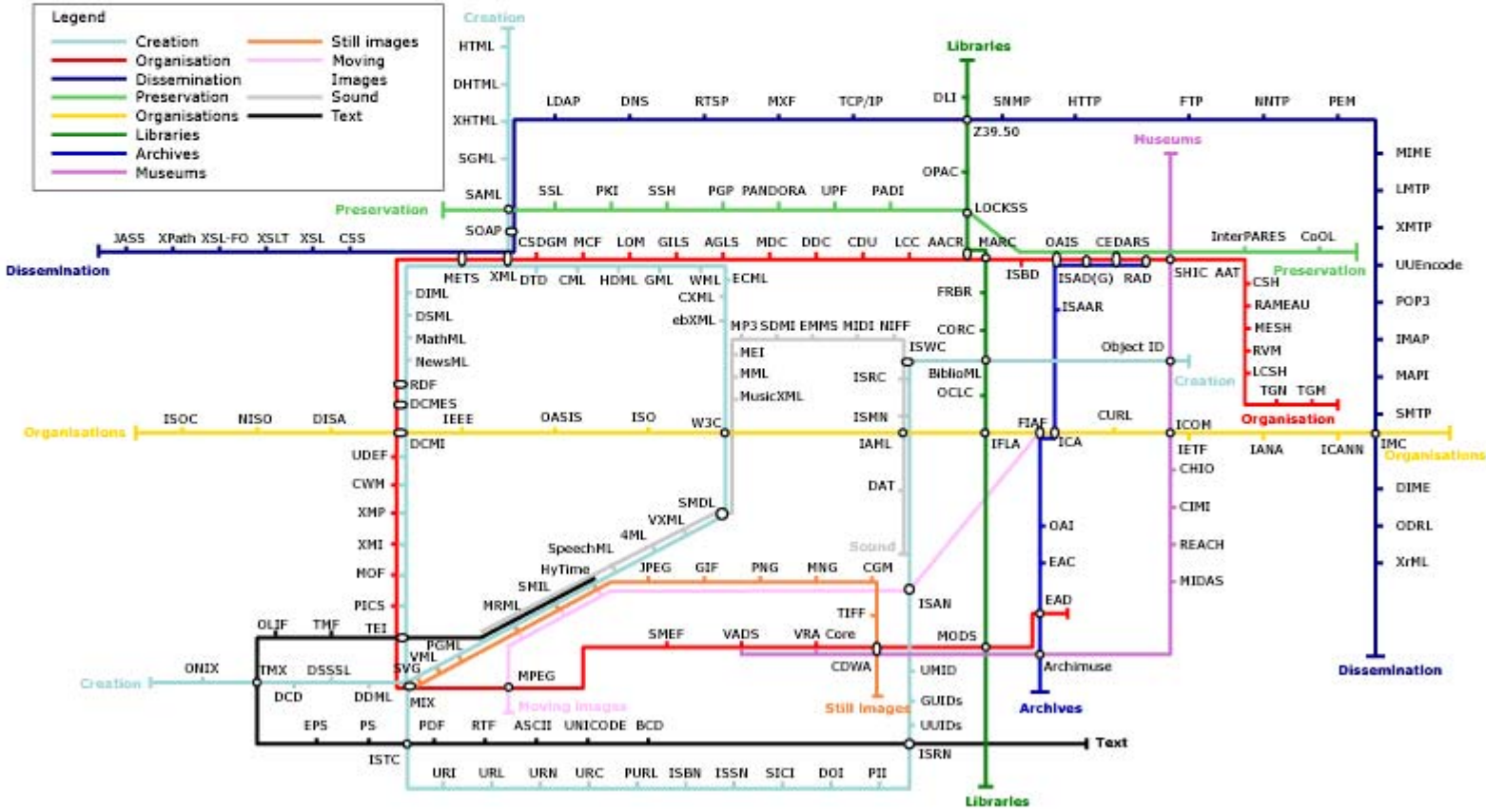
Metadata standards (1)

- But there are a large (and growing) number of metadata initiatives, formats, schemas, etc.
  - See James Turner's MetaMap for one attempt to visualise the metadata information space:
  - **http://mapageweb.umontreal.ca/turner/meta/english/**

MetaMap

[© 2004 James M. Turner, Véronique Moal, & Julie Desnoyers]

Position the mouse over an acronym to see what it stands for in a popup window.
Click on the acronym to see its definition and a link to its official site.



Metadata standards (2)

- Typically defined by "resource management communities"
  - Different traditions, perspectives, functional requirements
- Typically comprise:
  - A "conceptual model" (sometimes not explicit)
  - A set of named components ("terms", "elements" etc) and documentation on their meaning and use
  - A specification of how to represent a metadata instance in a digital format (binding)

Some examples (1)

- Bibliographic:
  - MARC (Machine-Readable Cataloguing) formats, e.g. MARC21
    - Exchange format since 1960s
    - Content often based on family of related standards, e.g. the ISBD series, AACR2
  - MODS (Metadata Object Description Schema)
    - A subset of MARC
  - ONIX
    - Used by publishers and the book trade

Some examples (2)

- Archives and records:
  - ISAD(G) (General International Standard Archival Description)
  - EAD (Encoded Archival Description)
  - EAC (Encoded Archival Context)
  - Recordkeeping metadata (e.g., ERMS (The National Archives), RKMS)
- Museum objects (and collections):
  - SPECTRUM

Some examples (3)

- Digital images:
  - VRA Core, NISO Technical Metadata for Digital Still Images
- Government information:
  - AGLS, e-GMS
- Learning objects:
  - IEEE LOM, UK LOM Core, IMS specifications
- Multimedia:
  - MPEG-7, MPEG-21 (for rights information)

Summing up

- Metadata is ubiquitous
- Metadata enables people and software applications to do things (functions)
  - Not only about "discovery"
  - Different functions require different metadata
- There are many different standards
- Challenges remain in working across standards, or in using standards in combination

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