The PREMIS Data Dictionary

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Session outline

- Background
  - Metadata and preservation metadata
  - The PREMIS Working Group
- The PREMIS Data Dictionary
  - Main aims and objectives
  - Data model
  - Maintenance activities
  - Limits to scope

Preservation metadata

- Metadata
  - Structured information about objects that supports various types of activity: discovery, retrieval, management, etc.
  - Divided into descriptive, structural and administrative categories (e.g. METS)

- Preservation metadata
  - "The information a repository uses to support the digital preservation process" (PREMIS)
  - Cuts across all metadata categories

PREMIS Working Group (1)

- Working Group on Preservation Metadata: Implementation Strategies
  - Supported by OCLC and RLG
  - Established in 2003
  - International working group and advisory committee
  - Chairs: Priscilla Caplan and Rebecca Guenther

PREMIS Working Group (2)

- Building on older activity:
  - Working Group on Preservation Metadata (2000-02)
    - Preservation Metadata Framework (June 2002)
    - Based on the OAIS Information Model

- PREMIS objectives:
  - A ‘core' set of preservation metadata elements (Data Dictionary)
  - Strategies for encoding, packaging, storing, managing, and exchanging metadata

PREMIS Working Group (3)

- Main PREMIS outputs:
  - Implementation Survey report (September 2004)
    - Based on ~50 responses
    - Snapshot of practice, noting trends
  - PREMIS Data Dictionary 1.0 (May 2005)
    - 237 pp.
  - All WG documents are available from: http://www.oclc.org/research/projects/pmwg/
PREMIS data dictionary (1)

- Background:
  - OAIS remains the conceptual foundation (but there are now some differences in terminology)
  - The data dictionary is a translation of the OAIS-based 2002 Framework into a set of implementable semantic units
  - Preservation metadata = "the information a repository uses to support the digital preservation process"

PREMIS data dictionary (2)

- Core preservation metadata:
  - Data Dictionary defines metadata that supports "maintaining viability, renderability, understandability, authenticity, and identity in a preservation context."
  - Core metadata = "things that most working repositories are likely to need to know in order to support digital preservation."
  - Recognition of the need for automatic capture of metadata

PREMIS data dictionary (3)

- The Data Dictionary is implementation independent, i.e. does not define how it should be stored
- Based on simple entity-relationship data model that defines five types of entities

PREMIS data model (1)

- **Entities:**
  - Digital Object, Intellectual Entity, Event, Agent, & Rights
- **Relationships** are statements of association between instances of entities
- **Semantic Units** are the properties of an entity, and have values

PREMIS data model (2)
PREMIS data model (3)

- **Digital Object** = a discrete unit of information
  - Files = named and ordered sequence of bytes known by an operating system
  - Bitstream = a set of bits embedded within a file
  - Representation = the set of files needed for a "complete and reasonable" rendering of an Intellectual Entity

PREMIS data model (4)

- **Intellectual Entity** = a coherent set of content that can be viewed as a single unit
- **Event** = an action involving at least one Object or Agent known to the repository
  - Documents actions that modify Digital Objects, records validity checks, etc.
  - Objects can be associated with any number of events

PREMIS data model (5)

- **Agent** = persons, organisations, or programs associated with preservation events
  - Not the main focus of the data dictionary
- **Rights Statements** = assertions of rights pertaining to Objects or Agents
  - WG concentrates on rights and permissions associated with preservation activities

PREMIS data model (6)

- **Relationships**:
  - Relationships between Objects:
    - Structural relationships, e.g. how files combine to make up an Intellectual Entity
    - Derivation relationships, e.g. resulting from format transformations or replications
    - Dependency relationships, e.g. when Objects depend on others, e.g. fonts, DTDs, etc.
  - 1:1 principle

PREMIS documentation

- **Data Dictionary, v 1.0**
  - Defines semantic units for Objects, Events, Agents and Rights
  - Implementation independent
    - Defines semantics
    - Proposed XML binding
- **PREMIS Maintenance Agency**
  - Library of Congress
  - http://www.loc.gov/standards/premis/schemas.html

Limits to scope (1)

- Does not focus on descriptive metadata
  - Domain specific and dealt with by many other schemes
- Does not define the specific characteristics of Agents
- Does not directly consider rights and permissions not directly associated with preservation actions, e.g. access or reuse
Limits to scope (2)

- Does not deal with technical metadata for all different types of digital file (left to format experts)
- Does not deal with the detailed documentation of media or hardware (left to media and hardware specialists)
- Does not consider in detail the business rules of a repository, e.g. roles, policies, and strategies (but this could be added to data model)

Some links:

- PREMIS Data Dictionary for Preservation Metadata (May 2005):
  http://www.oclc.org/research/projects/pmwg/
- Brian Lavoie and Richard Gartner, Preservation metadata, DPC Technology Watch Report 05-01 (September 2005):
  http://www.dpconline.org/docs/reports/dpcw05-01.pdf
  http://www.dcc.ac.uk/resource/curation-manual/chapters/metadata/
- OAIS Reference Model (January 2002):
  http://public.ccsds.org/publications/archive/650x0b1.pdf

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