Designing Metadata Standards for Peking University Rare Book Digital Library

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Introduction

● About Peking University Rare Book Digital Library
  - collections: rare books, rubbings, atlases, Dunhuang scrolls
  - metadata database
  - object databases
  - network and hardware devices
  - RBDL application system

● Metadata Project
  - metadata standards for rubbings, atlases, Dunhuang scrolls
  - framework of metadata standards
Introduction about the framework

- Basic concepts and terms
- Functions of metadata
- Fundamentals for designing metadata standard
- Workflow: step by step
- Structure
- Elements
- Interoperability and syntax structure
- Semantic structure, related rules and authorities
Framework of metadata standard
Basic concepts and terms

- Metadata: data about data
  - our definition: it is the data to be used in describing the attributes of a certain type of object, in locating, administrating and assisting to retrieve the resources

- Metadata standard:
  - a set of rules that are used in describing a certain type of object (resource), including: both of rules based on the semantic structure and syntax structure (meta-language and DTD)
Basic concepts and terms (cont’d)

- Framework of metadata standard:
  - standards or rules that are followed in designing a metadata standard for a specific type of object (resource). Actually, it is nonobjective metadata or methodology, which defines the concepts, functions, structure, format, designing methods, syntax and semantic structure of metadata at a higher level.
Functions of metadata

- Description
- Location
- Administration
- Retrieval
- Evaluation and selection
- Interaction
Fundamentals for designing metadata standard

- Designing metadata based on the three kinds of requirements of:
  - professional / non-professional catalogers
  - resources / objects
  - users of digital library

- Simplicity and accuracy
- Specialization and generalization
- Interchangeability and extensibility
- User requirement
Workflow: step by step

- Researches on existing metadata standards
- Analysis of the objects, including:
  - the relations among the objects
  - minimal description unit
  - description items
- Investigation to resource users
  - which description contents the users are most interested
  - which entries they access most
Workflow: step by step (cont’d)

- Preliminary design of the structure, format and elements of the metadata
- Test descriptions and corrections
- Preliminary design of the metadata standard for a certain type of object: structure, format, elements, description contents and rules, related authorities, etc.
- Change to another type of object
Workflow: step by step (cont’d)

- Software development
- Test description in the system and correct the metadata standard
- Final design of the metadata standard
Structure

Three parts:

- Descriptive metadata
- Administrative metadata
- GIS metadata
  - coordinates element (longitude : latitude)
Descriptive metadata

核心元素：各类对象通用，与DC保持一致，易于交换。
本地核心元素：本馆各类对象通用，馆内保持一致。
个别元素：某一类对象使用，不用于交换。
Descriptive metadata

- 其它馆对象A (Other馆对象A)
- 本馆对象B (本馆对象B)
- 核心元素 (Core element)
- 本馆核心元素 (local core element)
- 个别元素 (unique element)
Administrative metadata

- **Management data**: Includes information such as digitization method, conditions, date, creator, physical identifier, and copyright information.
- **Object data**: Includes information such as URL, URN.
- **Instance data**: Includes information such as file size, image format, precision, processing history, and date of modification.
- **Usage rights**: Includes usage rights information.
- **Evaluation data**: Users can provide suggestions for improvement or comments on the current metadata elements.
Elements

- Descriptive metadata
  - core element: 15 DC elements, optional
  - local core element: 2 elements, optional
    - edition, physical description
    - unique element

- Administrative metadata
  - object creation statement
  - instance
  - user remark/comments
Interoperability of metadata and syntax structure

• What is the interoperability of metadata, as we think?
  – Support the interoperability between different application systems
  – Interchange ability with other metadata standards, such as Dublin Core, GILS, CDWA, etc.
  – Interchange ability among the different metadata standards based on different types of objects (atlas, rubbings, Dunhuang scrolls)
Interoperability of metadata and syntax structure (cont’d)

- XML+RDF as syntax structure
- Mapping with DC
  - other metadata standards not based on DC
  - different metadata standards based on DC
  - Chinese metadata
- Other standards
  - XML Schema, DTD, RDF Schema, etc.
  - Element definition: ISO/IEC 11179
  - Character code set: Unicode (ISO10646)
  - more...
Interoperability and syntax structure (sketch map)
Semantic structure, related rules and authorities

- Description rules
- Element statements
- Authorities
  - name authorities (for personal and place names)
  - chronology
  - subject
  - classification (taxonomy)
Related issues

- Applications of GIS technology
- A mapping list of Chronology of Chinese Lunar Calendar and the Gregorian Calendar
- A mapping list of Chinese ancient and current place names
- Networked knowledge organization systems/schemes/services, NKOS
  - standard thesaurus, subject headings lists, semantic networks, taxonomies
Thank you for joining us!