

A Cooperative Project by Libraries and Museums of China: Metadata Standards for the Digital Preservation of Cultural Objects

Ying Feng
CALIS Administrative Center,
China
fengy@calis.edu.cn

Long Xiao
Peking University Library,
China
lxiao@lib.pku.edu.cn

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This poster introduces a project that aims to build metadata standards for digital preservation of cultural objects in China. Research and demonstration will be made by collaborative effort among seven libraries and museums.

1. Background and Objectives

In addition to preserving cultural objects, the objective of digitization of cultural objects is to share cultural objects and related knowledge in an effective, rapid and convenient manner in context of networked environment, to provide information and knowledge services relating to the cultural objects. At present, a number of museums in China have been digitalizing their culture objects. However, it is difficult to integrate, share, and apply these digital outcomes due to the lack of uniform standards. At the same time, a large number of cultural objects remain to be digitized. To avoid repeated problems, a standard metadata system for digital cultural objects is required for comprehensive information organization, description, management and preservation. Additionally, other standards such as classification system for cultural objects are also needed for building knowledge database of digitized cultural objects. Thus, it is urgent to establish a uniform metadata standard for digital preservation of cultural objects.

Metadata Standards for Digital Preservation of Cultural objects is one of key research areas and a sub-project of the Research and Demonstration Project on Standard Systems and Key Standards for Digital Preservation of Cultural Objects which was funded by the Ministry of Science and Technology of China in 2014. The objectives focus on the demands for business management, digitization, management and long-term preservation of digital contents, and the establishment of a knowledge database for cultural objects. The research will be based on existing metadata standards and use the application logic of the digital preservation of cultural objects as its starting point. Then construct the metadata framework, core standards, description standards, administrative and preservative standards, and application technology specifications for digital preservation of cultural objects, thereby standardizing metadata generation during digitization and preservation of cultural objects, supporting and promoting the construction of digital preservation for cultural objects, and driving the research, presentation, applying, and development of cultural objects preservation.

Composition of the project team: Seven entities are involved in research as follows: Peking University, the Palace Museum, Dunhuang Research Academy, National Library of China, Zhejiang University, Tsinghua University and University of Science and Technology of China, with Peking University being the team leader.

Project development timeframe: 2014–2017.

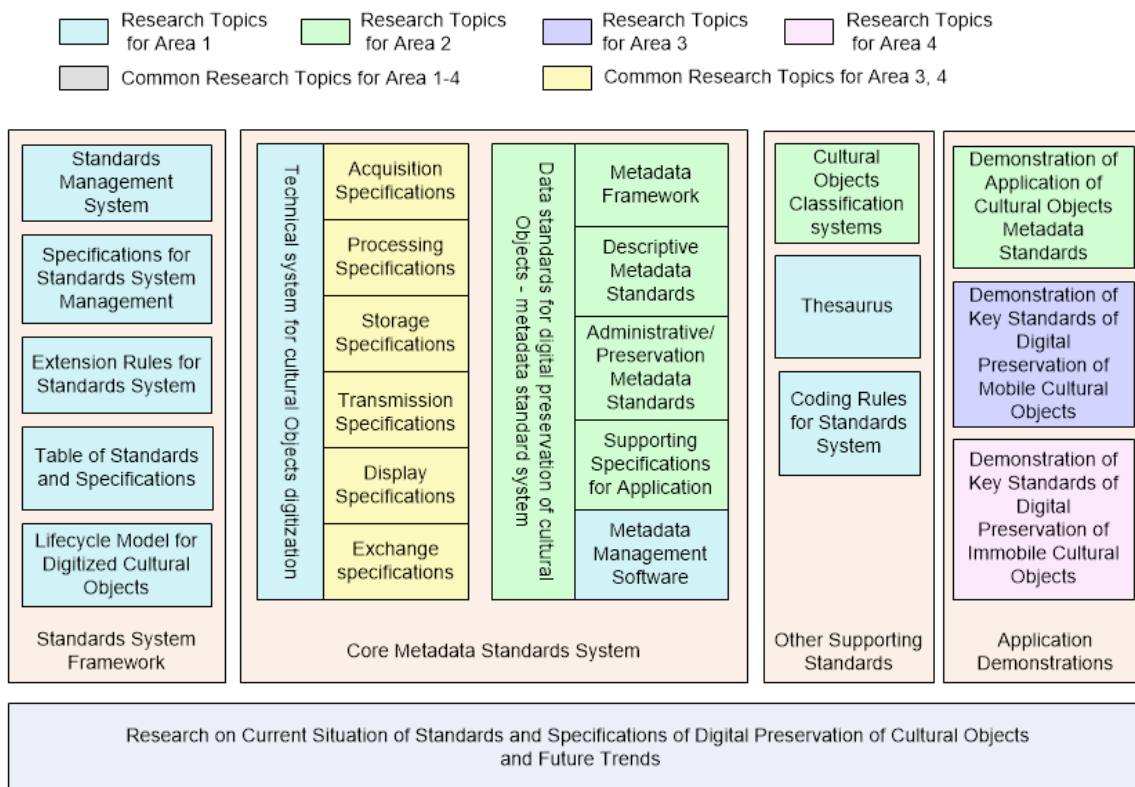


FIG. 1. Composition of the Research and Demonstration Project on Standard Systems and Key Standards for Digital Preservation of Cultural Objects

2. Key Barriers

The cultural objects metadata standards under this research project must be able to describe the basic information of cultural objects and meet the needs of business activity, while fulfilling the application requirements for digitizing cultural objects and constructing the knowledge database. Flexibility, scalability and applicability also need to be considered. The key barriers and difficulties are as below:

1. The research and development of metadata framework for the digital preservation of cultural objects. This is a fundamental technical issue for establishing the metadata framework for digital preservation of cultural objects, which will directly affect the scientificity and rationality. The difficulties include:

- Revealing of properties, digitization, business activities related, knowledge database construction of mobile and immovable cultural objects, as well as study and analysis on corresponding application requirements of cultural objects metadata standards.
- Abstracting application requirements and building relationships among the concepts, as well as constructing a metadata information model that meets the requirements of the client.

2. The establishment of cultural objects classification system. A cultural objects classification system needs to account for the characteristics of both the digital objects of cultural objects and physical entities. The scientific characteristics and practicality of each situation will directly influence the segmentation and design of the metadata standards description. Given the complex nature of cultural objects, it is relatively difficult to construct a scientific and rational classification system for them.

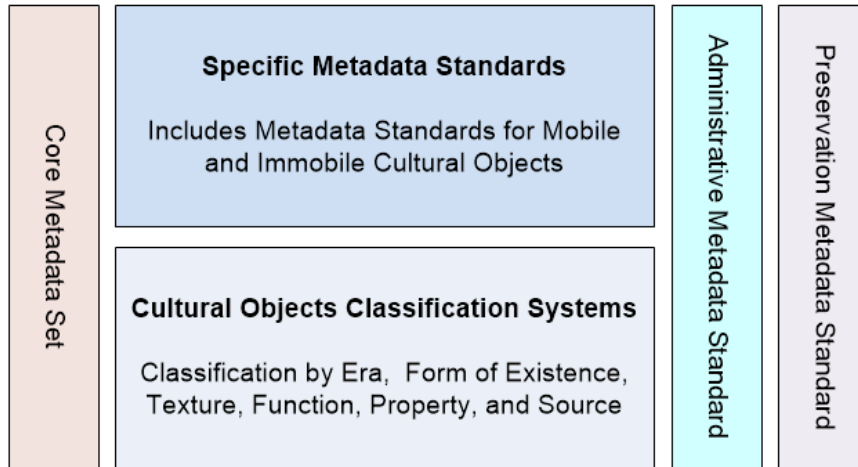


FIG. 2. The relationship between the cultural objects classification systems and metadata standard system.

3. Design of descriptive metadata system and specific metadata standards. The difficulties include the following:

- In order to meet different application requirements for cultural objects metadata, modular, scalable, generic and customized descriptive metadata system and specific metadata standards are needed.
- How to make use of and integrate the various types of digital contents of cultural objects already digitized to build foundation for implementing information sharing and the overall revealing of cultural objects metadata.

4. Research and design of administrative and preservation metadata standards. Difficulties of abstracting and generalizing the application requirements of administrative and preservation metadata arise because of different business processes and management approaches among different cultural organizations. It is also difficult to design practical and scalable framework for administrative and preservation metadata.

5. The research and development of metadata application profiles which is shown in Figure 3.

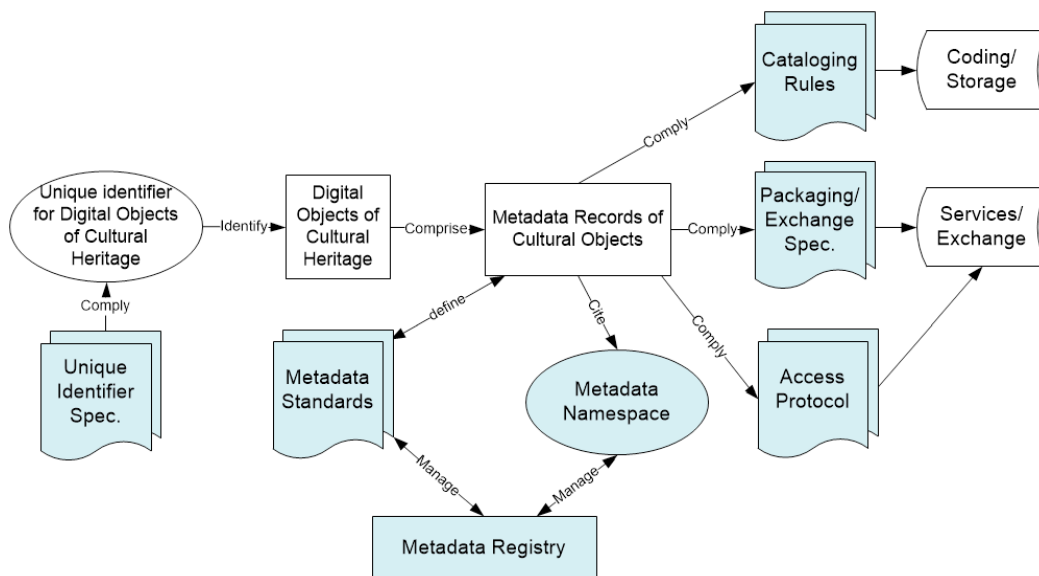


FIG. 3. Composition of metadata application profiles.

3. Design Principles and Expected Outcomes

It focuses on the digital objects of cultural objects in conjunction with the physical entities while designing cultural objects metadata. Meantime, the following principles will also be considered, includes simplicity and accuracy, specificity and versatility, scalability and sustainability, interoperability and openness, user requirements and applicability.

The following are expected outcomes.

- The metadata framework for the digital preservation of cultural objects: includes general principles of cultural objects metadata, metadata system for cultural objects, metadata information framework for cultural objects, core metadata set and its application guidelines, descriptive metadata application specification, and specific metadata design principles for cultural objects.
- Classification systems for cultural objects, for both digital and physical objects.
- Specific metadata standards for cultural objects: includes 12 specific metadata standards and their cataloging rules as well as application guidelines for mobile cultural objects, 7 specific metadata standards and their cataloging rules as well as application guidelines for immobile cultural objects.
- Administrative and preservation metadata standards for the digital preservation of cultural objects: includes metadata framework, element set and application guidelines for administrative and preservation metadata for cultural objects.
- Application profiles of metadata standards for the digital preservation of cultural objects: includes metadata identification system, encoding rules, metadata packaging and exchange specifications, access protocol and open mechanisms.

References

- CIDOC CRM (2013). Definition of the CIDOC Conceptual Reference Model. Retrieved June 10, 2013, from <http://www.cidoc-crm.org>.
- MIDAS Heritage (2012). MIDAS Heritage: the UK Historic Environment Data Standard. Retrieved July 2, from <http://www.english-heritage.org.uk/publications/midas-heritage/>