OAIS in the Lifecycle Management of Records

December 11, 2001

Kenneth Thibodeau
National Archives and Records Administration
OAIS in the Context of Records Management

- Preservation of archival electronic records
  - InterPARES Project Model: “Preserve Electronic Records
- Management of current records
  - Department of Defense standard for records management applications (DoD 5015.2-STD.)
Records

- **Instruments and by-products of practical activity**
- Not created for publication, *in general*
- Intended to communicate in specific contexts where there is an exceptionally high degree of shared information and knowledge
- In the case of transactional records, where the parties involved are well known.
Archival Fonds

- Records exist only as members of organized collections with specific provenance.
- The Archival Fonds is an *organic* collection that is accumulated in the course of activities.
  - Organic in the relationships among records in an archival fonds
  - Organic in the relationships between the fonds and the activities in which the records were created and used.
InterPARES

• International research on Permanent Authentic Records in Electronic Systems

• 7 multidisciplinary research teams
  – Asia, Australia, Canada, CENSA, Italy, Northern Europe, United States

• 4 Task Forces
  – Authenticity, Appraisal, Preservation, Strategies

• 10 National Archives
  – Canada, China, France, Hong Kong, Ireland, Italy, The Netherlands, Sweden, United Kingdom, United States

• 1998-2001 www.interpares.org
OAIS Overview

Producer

Submission Information Packages

OAIS

Archival Information Packages

Result sets

orders

queries

Dissemination Information Packages

Consumer
‘Preserve Electronic Records’ Model

- Extends over same range as OAIS
- A Subset of OAIS functions, excluding
  - Decisions related to what will be preserved
    - covered in the InterPARES ‘Select Electronic Records’ model
    - Decisions on customers, customer services, and access rights
- Adds specifications and processes for preserving collections of records
**IDEF0 Notation**

**Input**
- Transformed or consumed in the process

**PROCESS**
- Mechanism
  - Used to carry out the process

**Control**
- On the process

**Output**
- Produced by the process

**Viewpoint**
IDEF0 Example

Viewpoint: Baker

Make a Cake

Input:
- Ingredients

Mechanisms:
- Recipe
- Timer
- Thermostat

Controls:
- Bowl
- Pan
- Stove

Output:
- Cake
Management and Execution

1. State of the Art of IT
2. Archival Requirements
3. Institutional Requirements

Preservation Strategies

Preservation Methods

Execute Preservation Process

Management Information

Infrastructure Technology

Manage Preservation Function

IT

Information about Records Selected for Preservation

1. 2. 3.
Ingest Function

- Manage Preservation Function
- Bring In Electronic Records
  - Records transferred for preservation
  - Strategy
  - Methods
  - Rejected Transfer
  - Management Feedback
    - Maintained Electronic Records
    - Submitter
Dissemination Function

- Manage Preservation Function
  - Bring In Electronic Records
  - Maintain Electronic Records
  - Output Electronic Record
Manage the Preservation Function
**Manage Preservation**

<table>
<thead>
<tr>
<th>NODE</th>
<th>TITLE</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1.1</td>
<td>Determine Preservation Requirements</td>
<td>v. 5.1 draft</td>
</tr>
</tbody>
</table>
Determine Preservation Requirements

- Identify archival properties that must be preserved
  - For records
  - For archival aggregations of records
  - For expression of archival bonds
- Synthesize requirements for a body of records
- Determine basis of authenticity
  - Certification by preserver
  - Verification by user
Baseline Requirements for Preserving Authentic Electronic Records

1. Controls over records transfer, maintenance, and reproduction
   - 1.a Unbroken custody of the records is maintained
   - 1.b Security and control procedures are implemented and monitored
   - 1.c The content of the record remains unchanged after reproduction

2. Documentation of preservation & reproduction processes and their effects

3. Archival description of the fonds includes information about changes the records have undergone since they were first created.
OAIS Information Object Taxonomy

- Information Object
  - Content Information
  - Preservation Description Information
  - Packaging Information
  - Descriptive Information
  - Reference Information
  - Provenance Information
  - Context Information
  - Fixity Information
  - Knowledge Package
  - .....
“Long-term” preservation issues arise in many cases of maintaining current records:
- Patent Case Files
- Drug Case Files
- Medical Records
- Real Property Records
- Aircraft Records
- Weapons Systems Records
OAIS Overview

- Producer
- Submission Information Packages
- OAIS
  - Archival Information Packages
  - Dissemination Information Packages
- Consumer
  - Result sets
  - orders
  - queries
- Consumer's queries/orders feed into OAIS, which returns result sets.
OAIS v. Records Management Application

RMA = Records Management Application, DoD 5015.2-STD.
OAIS & Records Management Application

- Producer = Records Creator = Consumer
- Submission Information Packages:
  - Individual records
- Archival Information Packages:
  - Records aggregated over time
- Dissemination Information Packages:
  - individual records & aggregates (files)
- The RMA standard (DoD 5015.2) leaves preservation over time as an implementation issue
Thank You

www.nara.gov/era