

Joseph T. Tennis, University of Washington

Corinne Rogers, Sherry Xie, and Randy Preston, The University of British Columbia



# Metadata Developments (1)

Interoperability across systems, time, and conceptions

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## Outline

1. Definitions: metadata, interoperability
2. Three types of interoperability: synchronic, diachronic, and intentional
3. Constructs that help us achieve these types of interoperability: application profiles, change schemas, and conceptual models



# Metadata

Information that characterizes another information resource, especially for purposes of documenting, describing, preserving or managing that resource.



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*InterPARES 2 Glossary*

The word metadata is used in many different ways, and by many different communities.



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For example, in the information sciences we design metadata primarily for document retrieval and discovery.



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And tho' *finding* is a concern for archives, metadata for records and aggregations of records is required first for the presumption of authenticity, and secondarily for retrieval.



# Archival Metadata

Authenticity

Identity

Integrity

Form and Content

Contextual Description

## Archival Metadata

Authenticity

Identity

Integrity

Form and Content

Contextual Description

## Identity Metadata:

Names of persons

Action or matter

Dates of creation and  
transmission

Expression of archival  
bond

Indication of attachments



## Archival Metadata

Authenticity

Identity

Integrity

Form and Content

Contextual Description

## Integrity Metadata:

Name of handling office

Name of office of primary responsibility (if different from handling office)

Indication of types of annotations added to the record

Indication of technical modifications



## Archival Description

The creation of an accurate representation of a unit of description and its component parts, if any, by capturing, analyzing, organizing and recording information that serves to identify, manage, locate and explain archival materials and the context and records systems which produced it.



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The creation of an accurate representation of a unit of description and its component parts, if any, by capturing, analyzing, organizing and recording information that serves to identify, manage, locate and explain archival materials and the context and records systems which produced it.

This is the view from the bluff, the narrative, rather than discrete pieces like names and dates. That is not to say archival description would not use names and dates, but instead is made of names and dates coupled with the archivist's view of body of records and their context.



Interoperability



## Interoperability

The ability of one application/system  
to communicate or work with  
another.

*InterPARES 2 Glossary*



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Interoperability can happen

(1) at one point in time  
- synchronic

(2) through time  
- diachronic

(3) and that aligns  
purposes - intentional



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Interoperability can happen

- (1) at one point in time  
- synchronic

For example, one recordkeeping system may successfully capture all names (author, writer, originator, and addressee), while another only captures one type of name.



## Interoperability

The ability of one application/system to communicate or work with another.

*InterPARES 2 Glossary*

RK1

Author

Writer

Originator

Addressee

RK2

Author

?

?

?





## Interoperability

The ability of one application/system to communicate or work with another.

*InterPARES 2 Glossary*

### RK1

Author

Writer

Originator

Addressee

### RK2/DC

Creator

Creator

Creator

Audience?



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For example, a metadata scheme (or even a classification) could change over time, and we want our permanent preservation system to handle this.



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## Application Profiles

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## Application Profiles

is a declaration of the metadata terms an organization, information resource, application, or user community uses in its metadata.

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An application profile is not considered complete without documentation that defines the policies and best practices appropriate to the application.

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## Application Profiles

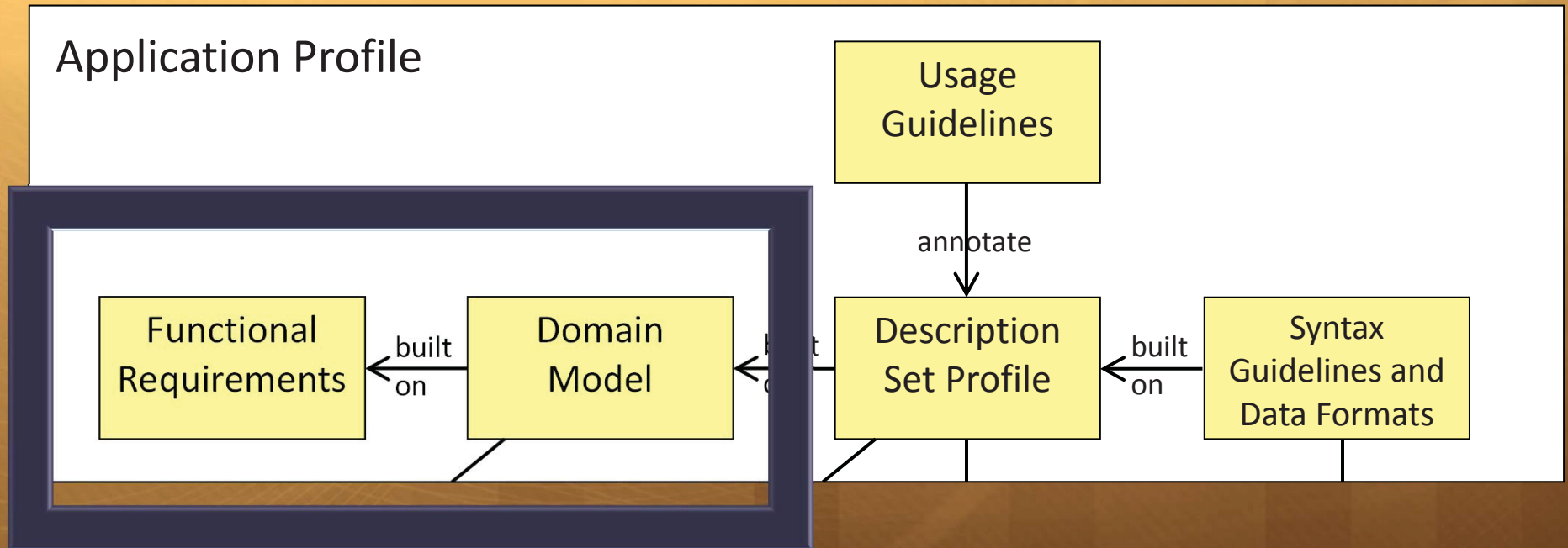
is a declaration of the metadata terms an organization, information resource, application, or user community uses in its metadata.

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Interoperability can happen

(3) and that aligns  
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That is, a clear and explicit statement of purpose and functional requirements is published with the metadata.



## Application Profile Components

As we can see we have functional requirements (retrieval or authenticity or both?)  
And a domain model archives, open web, museums? What is the purpose, and what is the context?



## Working With These Challenges

To date we have drafted both functional requirements and we have begun a domain model of archives based on the Chain of Preservation model.



## Working With These Challenges

To date we have drafted both functional requirements and begun a domain model of archives based on the Chain of Preservation model.

This required us to begin work on three application profiles (APs), one for each link in the chain (creation, keeping, and preservation).



## Working With These Challenges

But all of these APs should support the functional requirements.



## Working With These Challenges

Functional Requirements

1. Presumption of Authenticity
2. Interoperability
3. Parsimony and Adequacy for Archival Description
4. Retrieval

# Working With These Challenges

Functional Requirements

## 1. Presumption of Authenticity

- Metadata generated from these APs will aid in the presumption of authenticity by account for the minimal set of Benchmark and Baseline requirements translated into metadata properties





## Working With These Challenges

Functional Requirements

1. Presumption of Authenticity
2. Interoperability
3. Parsimony and Adequacy for Archival Description
4. Retrieval

# Working With These Challenges

Functional Requirements

## 2. Interoperability

- Two types of interoperability above and beyond the intentional interoperability afforded by the AP

# Working With These Challenges

Functional Requirements

## 2. Interoperability

- Synchronic (semantic)
- Diachronic (temporal)



# Working With These Challenges

Functional Requirements

3. Parsimony and Adequacy for  
Archival Description



## Working With These Challenges

Functional Requirements

4. Retrieval
  - Finally, we'll want the right kind of metadata to retrieve these authentic records.

# Working With These Challenges

Functional Requirements

3. Parsimony and Adequacy for Archival Description
  - Not all metadata will follow the aggregation of records into the preservation system.
  - The preserver describes the body of records, and discards redundant metadata.
  - However, there has to be enough metadata to do adequate description.
  - Ideally no more and no less.



# Working With These Challenges

Functional Requirements



# Working With These Challenges

Domain Model(s)





## Working With These Challenges


Domain Model(s)

Building an AP requires that we also model the entities in the domain.

This has been done in a number of formalisms for archives.

InterPARES has used the IDEFØ formalism to show activities in the chain of preservation.

This is useful, but incomplete for our purposes.



## Working With These Challenges

Domain Model(s)

We need to declare explicitly the entities and their relationships (different from the activities – tho' informed by them).

To that end we have begun to model the domains of Records Creation, Keeping, and Preservation.

A draft of this will be forthcoming.

## Working With These Challenges

The next steps for metadata work in the context of InterPARES is to continuing to work with all three types of interoperability as we publish our AP for use by small and medium sized organizations.

We will want systems to work together at one time, through time, and with clear articulation of purpose.



Thank you

[jtennis@uw.edu](mailto:jtennis@uw.edu)