An Ontology to Make the DELOS Reference Model and the 5S Model Interoperable

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Outline

- Interoperability in the context of Libraries, Archives, and Museums (LAM)

- Semantically mapping between DL foundational models to foster deeper interoperability

- Digital annotations as a use case example
Where are we?
LAM: Heterogeneity, Commonalities, Interoperability
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Digital Library Models

5S Model

- Streams
- Structures
- Societies
- Minumum Digital Library
- Spaces
- Scenarios

DELOS Reference Model

- Content
- Architecture
- Policy
- Quality
- Functionality
- User
- DL Universe

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Current Approach to Interoperability

![Diagram showing the current approach to interoperability between 5S DLS1 and DELOS DLS2.](image)

- **Presentation Logic**
  - Scenario β
  - Scenario γ

- **Business Logic**
  - Scenario δ
  - Function A
  - Function B

- **Data Logic**
  - Society ψ
  - Actor W
  - foaf:Agent

Data Mapping Ontology
Our Contribution
Proposed Approach to Interoperability

**Scenario β**

**Scenario γ**

**Scenario δ**

**Function A**

**Function B**

**Function C**

**Function D**

**foaf:Agent**

**Data Mapping Ontology**

**DL Foundational Models Ontology**

**Functionality [Enrich Profile]**

**Data [User]**

**5S DLS1**

**DELOS DLS2**

**DATA**

**LOGIC**

**BUSINESS**

**LOGIC**

**PRESENTATION**

**LOGIC**
High Level Concepts

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The User Domain
The Content Domain

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The Function Domain

DELOS Reference Model

5S Model

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An Example
This illumination presents an extraordinary search for realism. The *Roccabonella Herbal* illumination is clearly copied from the *Carrarese Herbal* one, as it ...
Interoperability of Digital Annotations
Conclusions

Interoperability is “the capability to communicate, execute programs, or transfer data among various functional units in a manner that requires minimal knowledge of the unique characteristics of those units” [ISO/ IEC 2382-2015]

- We addressed the need for interoperability among DLS at a high level of abstraction and we show how this is achieved by a semantically-enabled representation of foundational DL models.

- We moved a step forward in making interoperability among DL closer to the ISO definition, since it provides the high level concepts needed to communicate, execute programs or transfer data, by representing the knowledge required in a minimal and consistent manner.

- Much work is still ahead of us, since the proposed ontology needs to be operationalized into actual DLS and, probably, it will need to be extended both to accomplish specific details that arise when you make actual systems interoperate and to address peculiar needs of specialised domains, which may depart from the common general view.
Any Questions?