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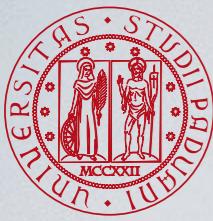


DIPARTIMENTO
DI INGEGNERIA
DELL'INFORMAZIONE

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

Maristella Agosti, Nicola Ferro, and Gianmaria Silvello

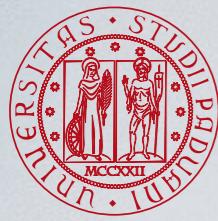
Information Management Systems (IMS) Research Group
Department of Information Engineering (DEI)
University of Padua, Italy



Outline

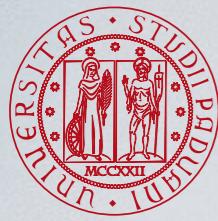
- Interoperability in the context of Libraries, Archives, and Museums (LAM)
- Semantically mapping between DL foundational models to foster deeper interoperability
- Digital annotations as a use case example

Where are we?



LAM: Heterogeneity, Commonalities, Interoperability





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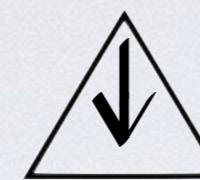
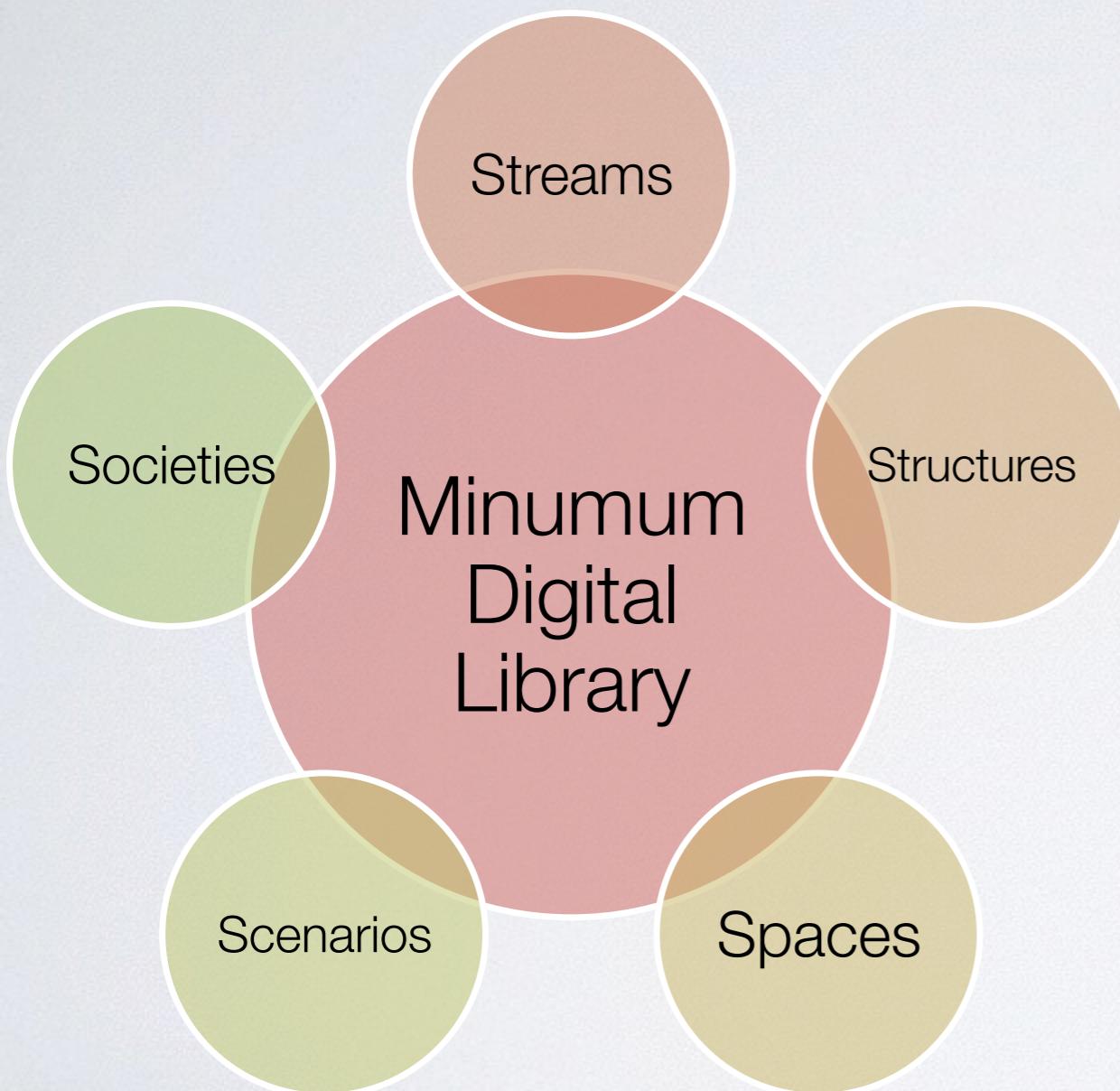




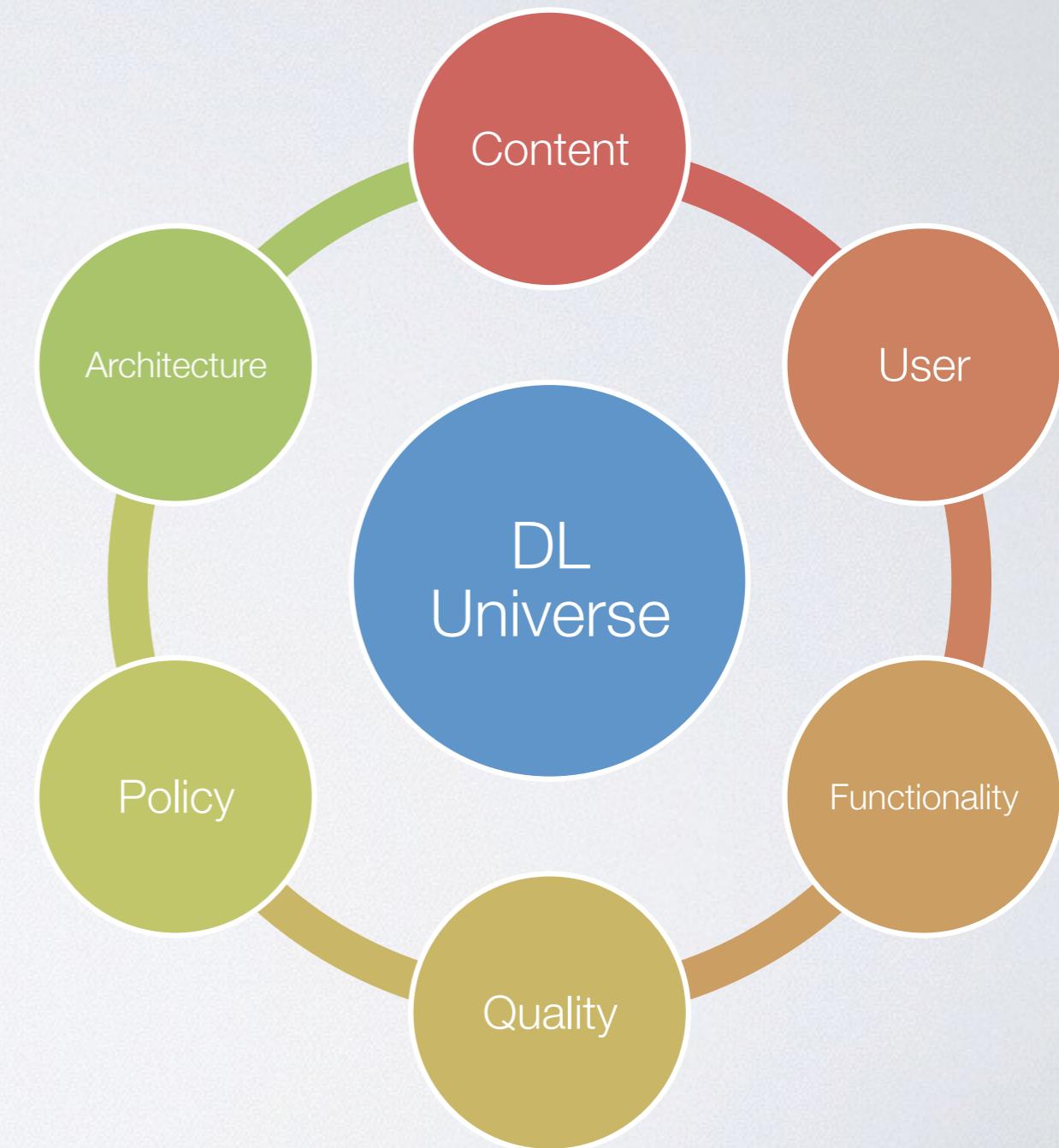
Digital Library Models

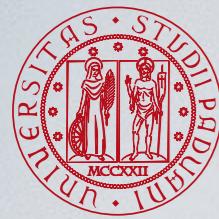


5S Model

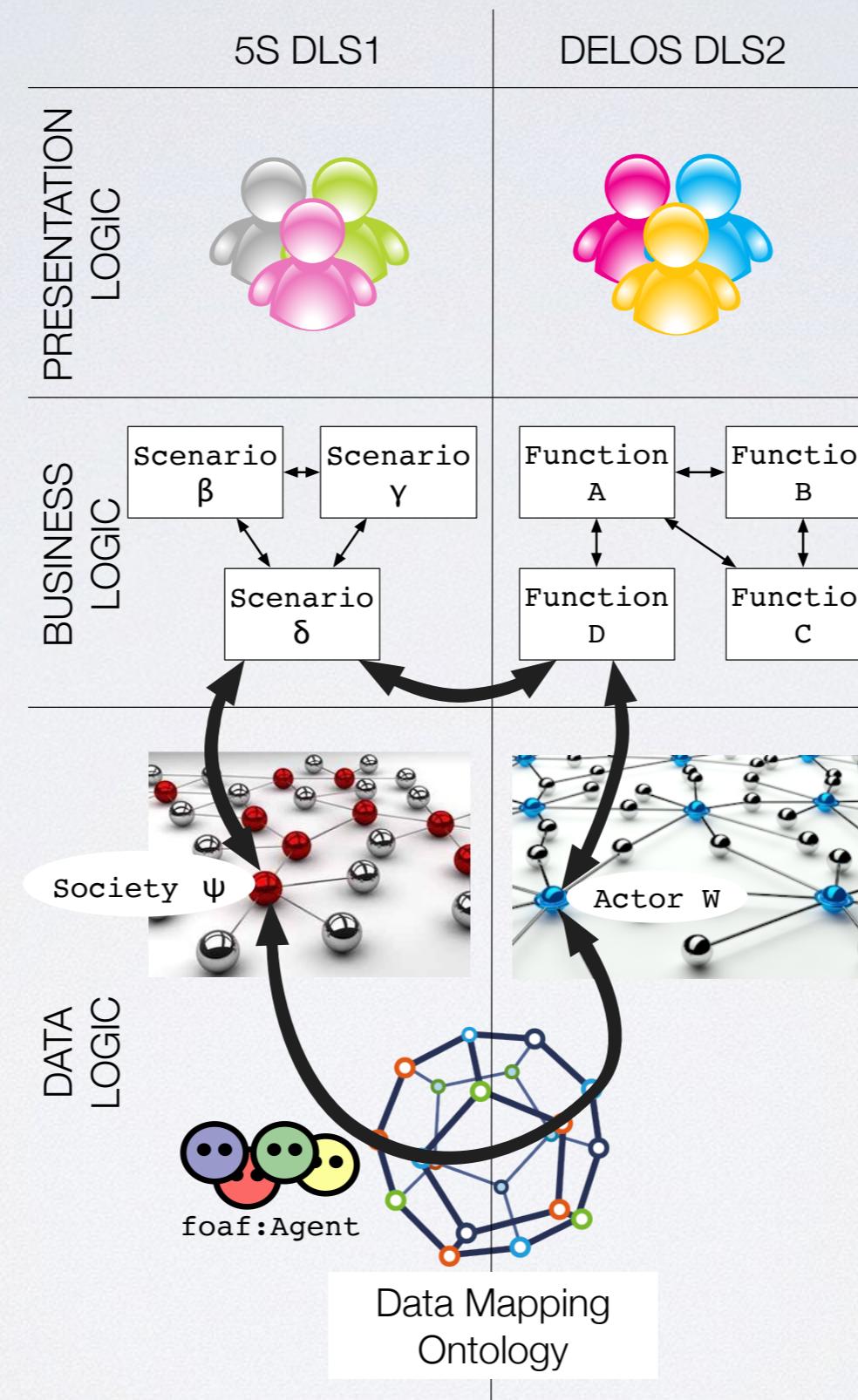


DELOS Reference Model

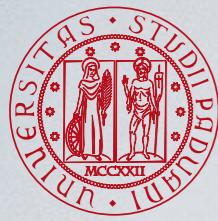




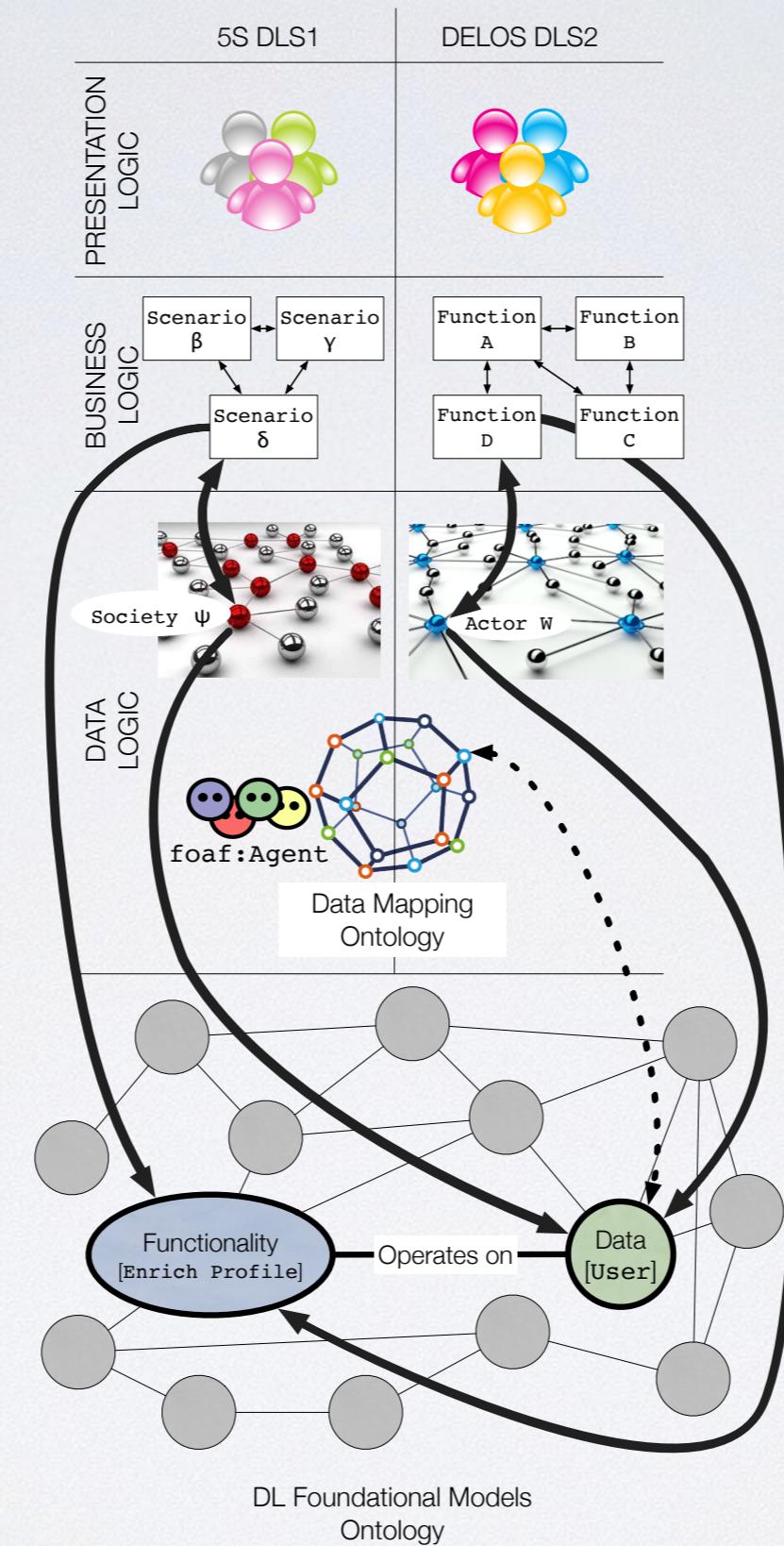
Current Approach to Interoperability

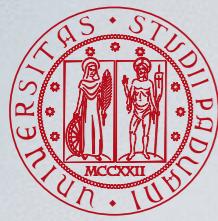


Our Contribution

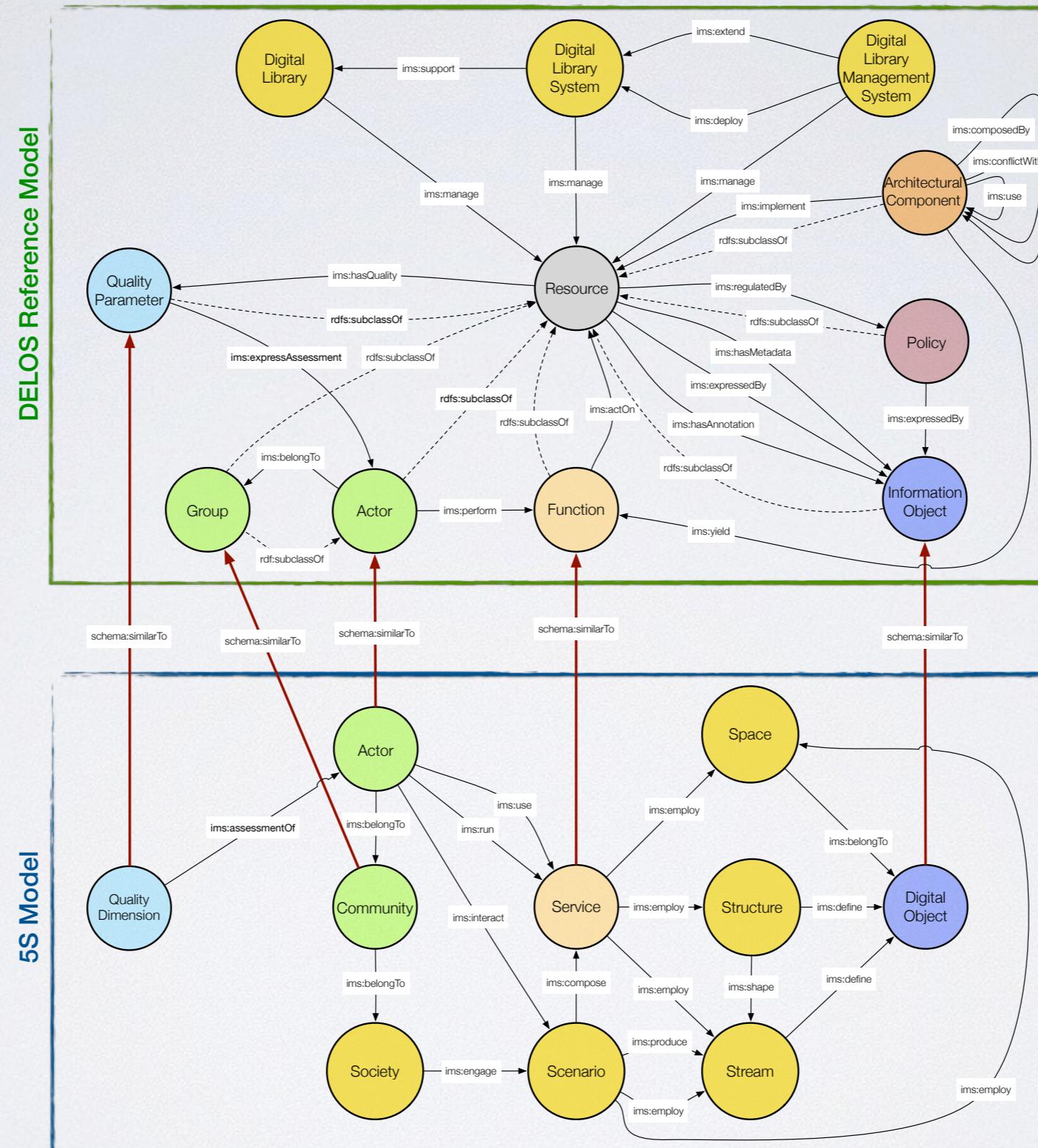


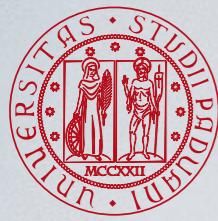
Proposed Approach to Interoperability



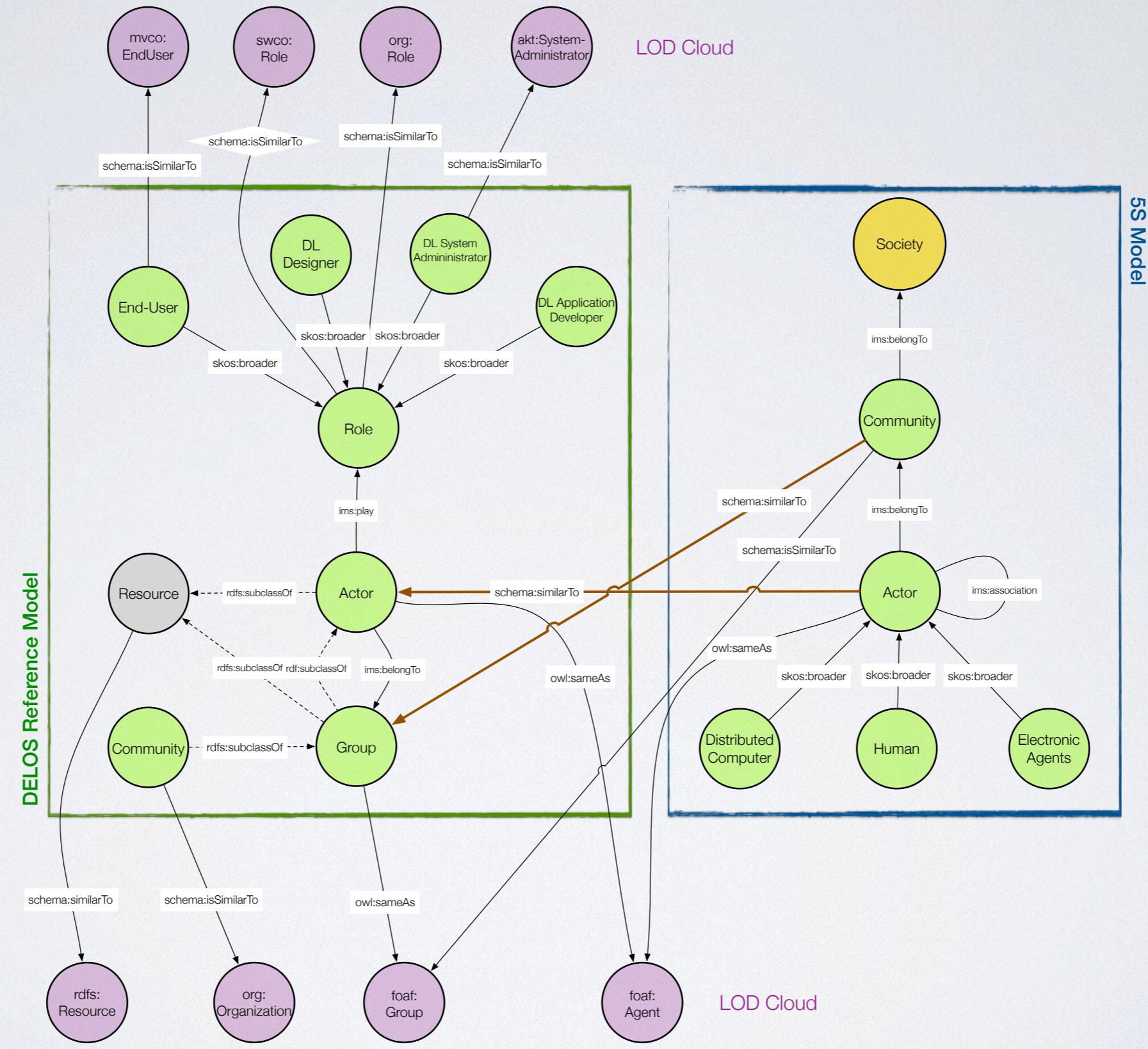


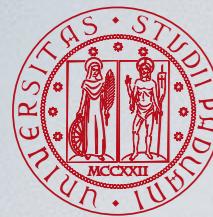
High Level Concepts



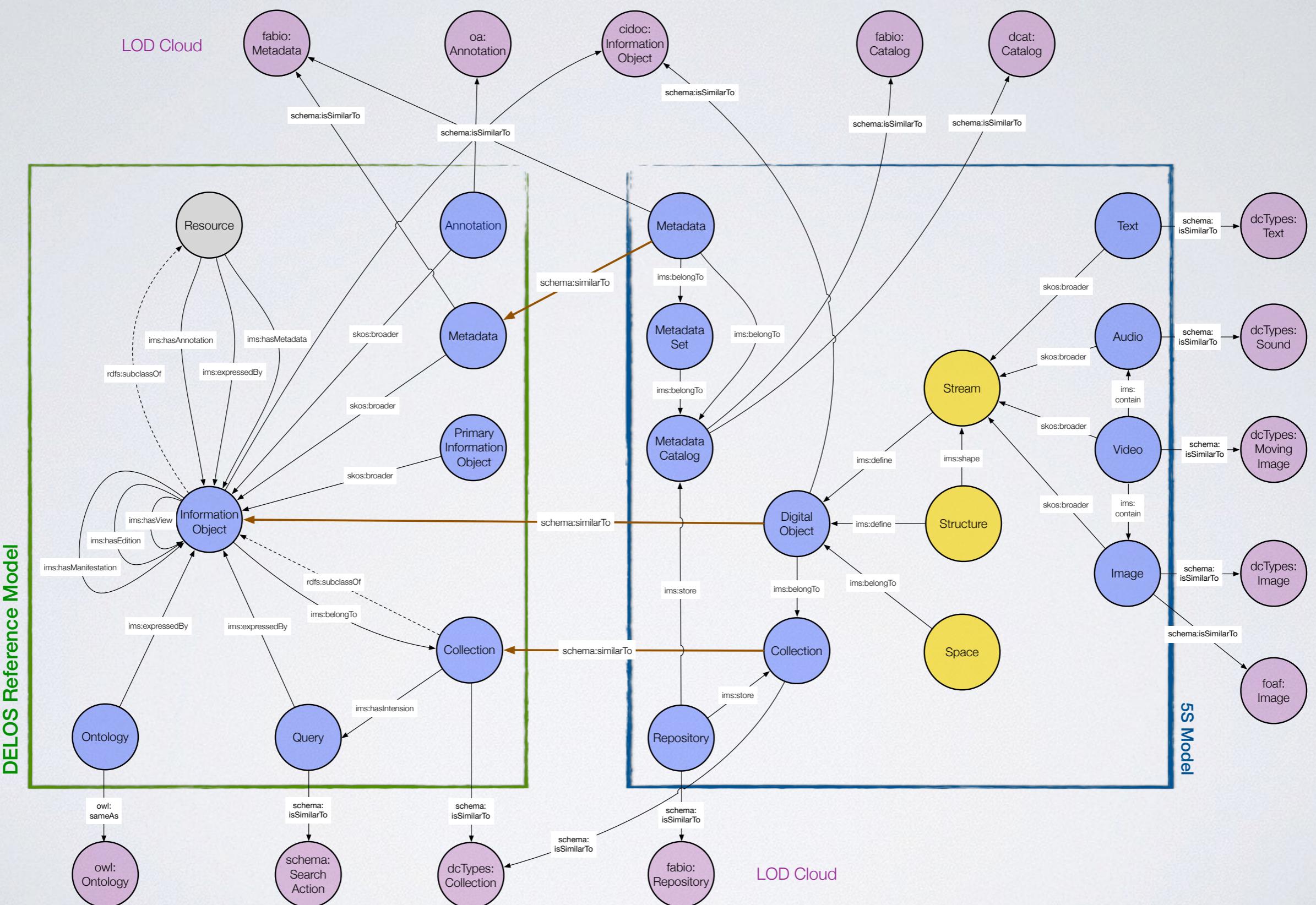


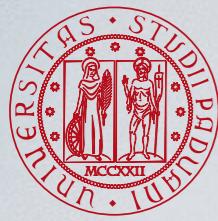
The User Domain





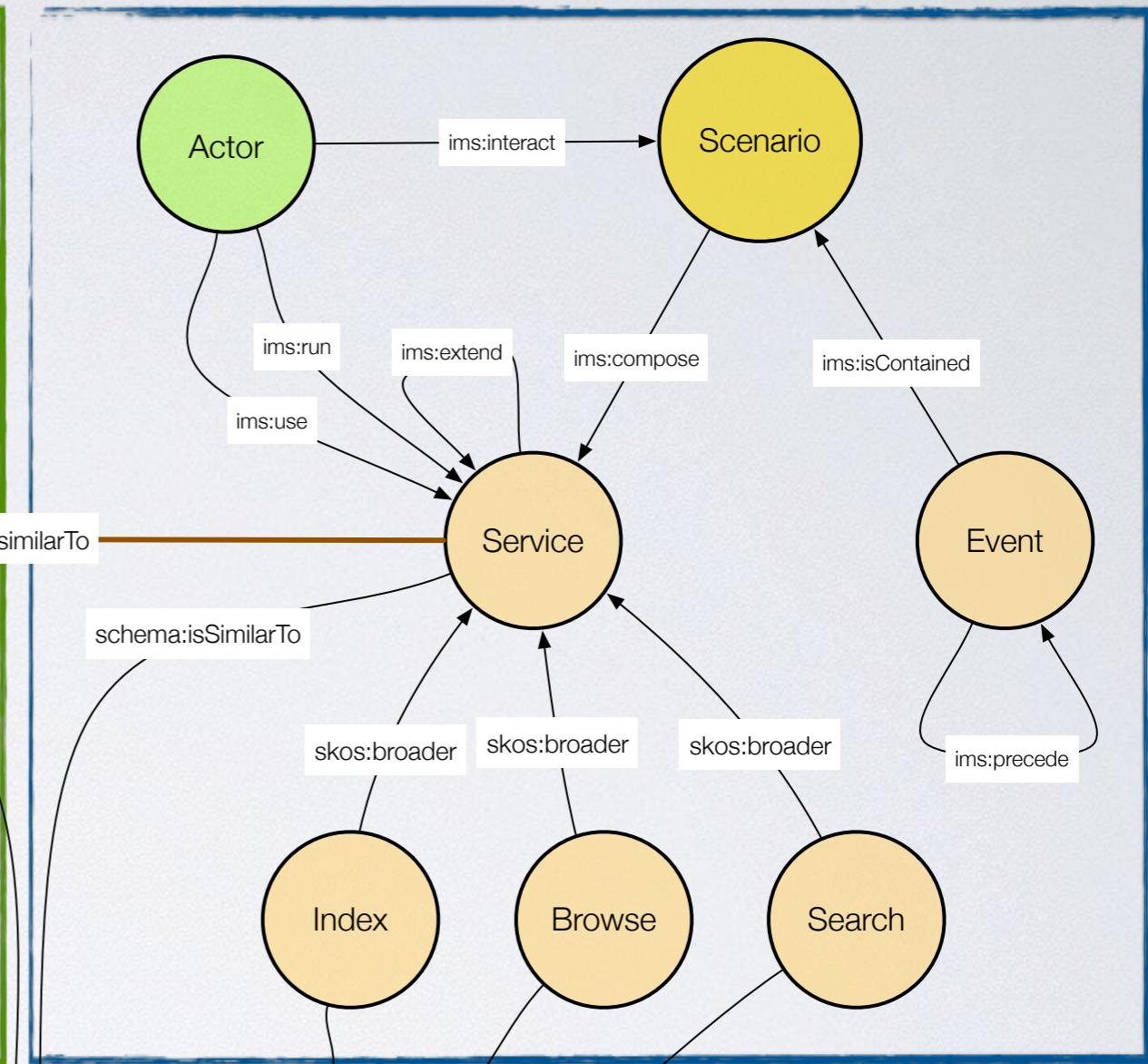
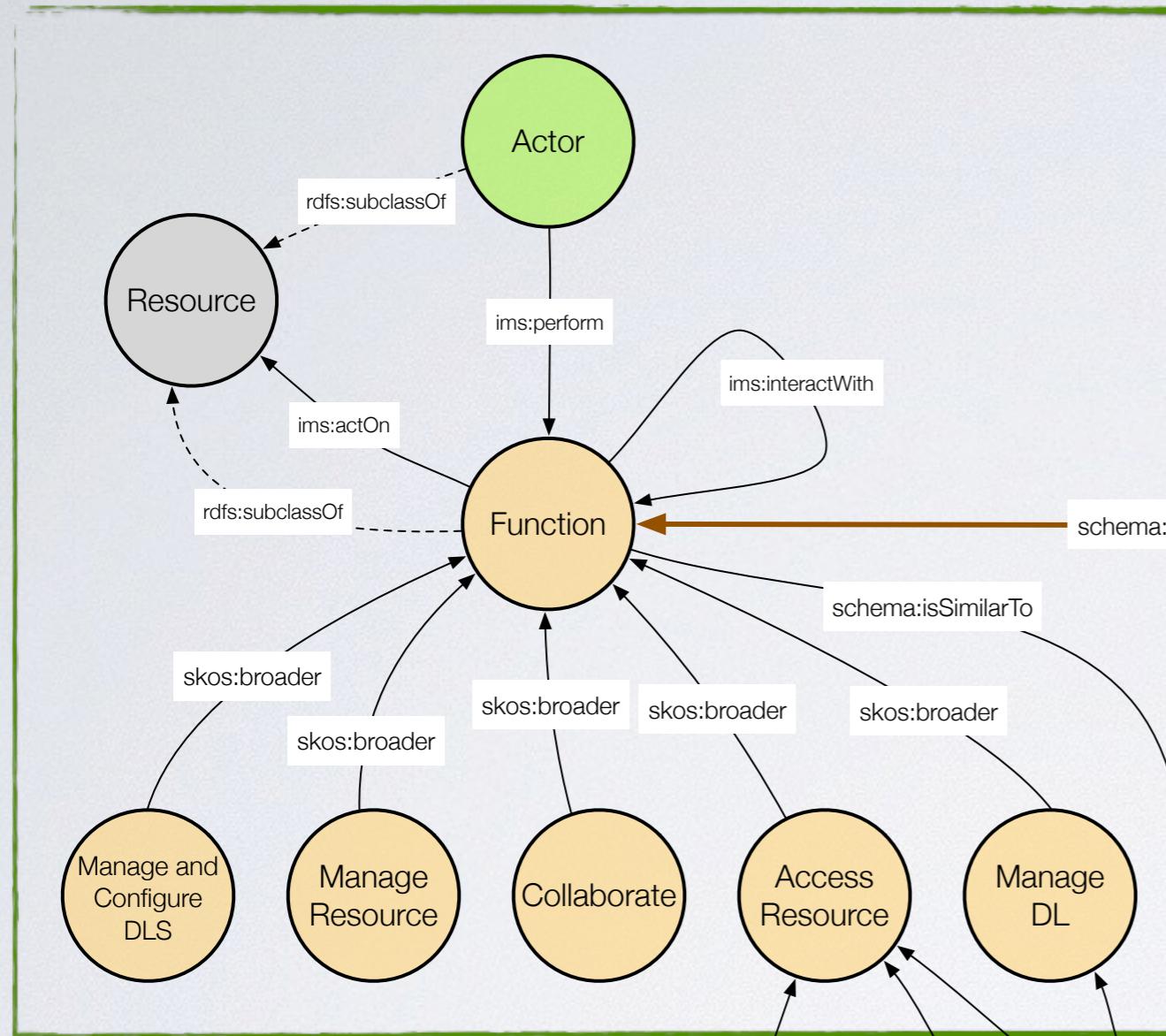
The Content Domain





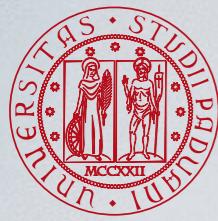
The Function Domain

DELOS Reference Model



LOD Cloud

An Example



Digital Annotations

The Web

Meaning

rdfs:seeAlso

Sign



Sign

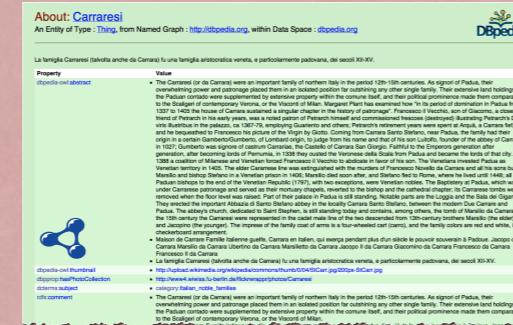
This illumination presents an extraordinay search for realism

Meaning

rdfs:comment

DLS1
(DELOS Reference Model)

<http://dbpedia.org/resource/Carraresi>



<dls1.org/manuscript/135/page/12>

<dls2.org/herbal/roccabonella/fig4>

DLS2
(5S Model)

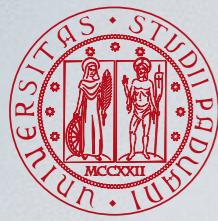
Meaning

dcmi:isVersionOf

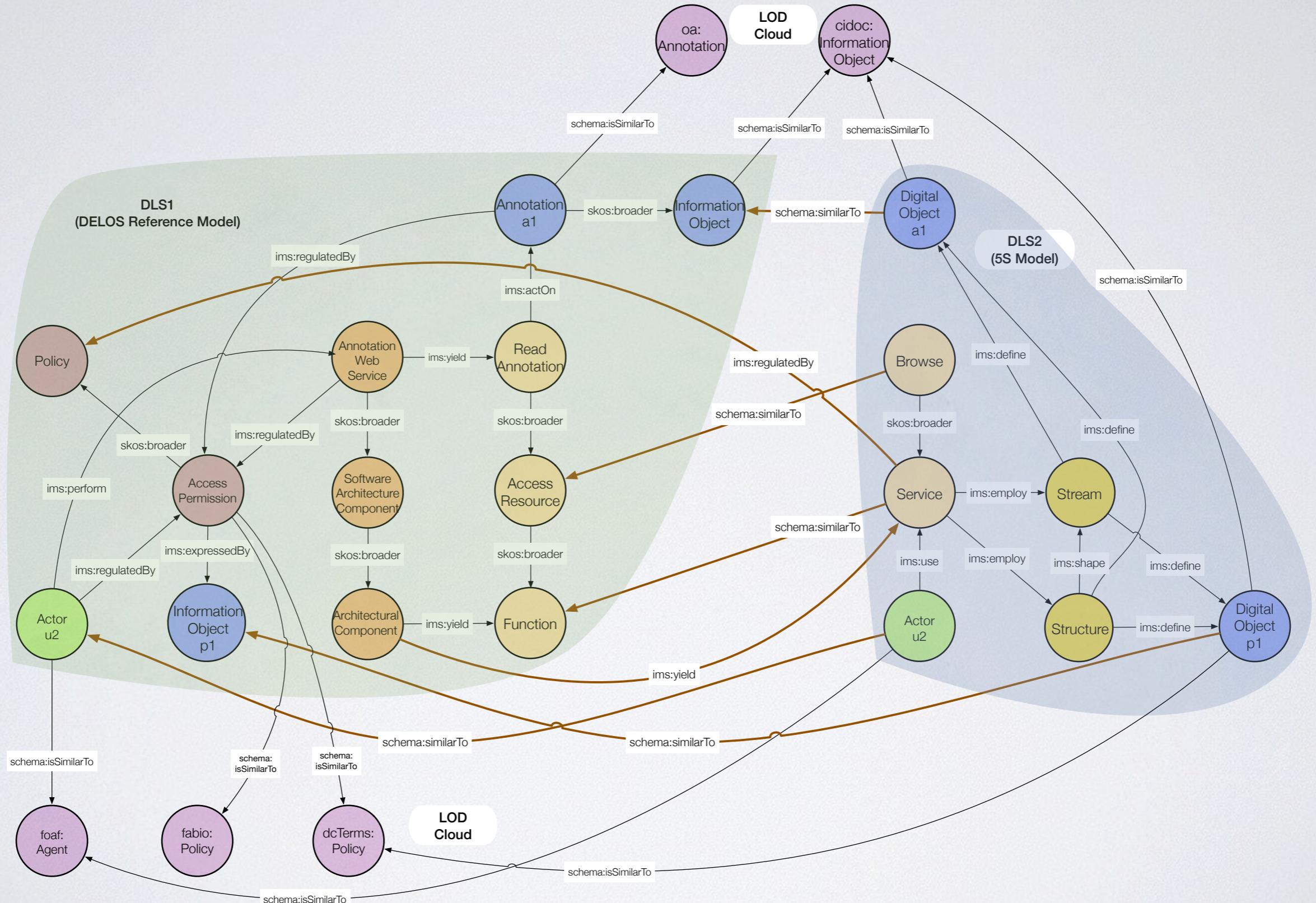
Sign

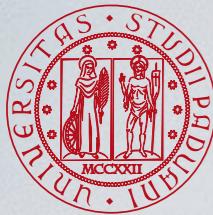
< p>The < i>Roccabonella Herbal</ i> illumination is clearly copied from the < i>Carrarese Herbal</ i> one, as it ...</ p>





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?
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