

Metadata in NCBO BioPortal

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BioPortal Metadata

- **Ontology metadata**
 - Pertinent information about the ontology itself
 - Provided by authors and reviewers
- Marginal notes
- Ontology mappings
- Metadata on ontology mappings
- Ontology reviews
- Users and projects

Representing Metadata

- We use **ontologies and ontology instances** to represent metadata
- In BioPortal, we **extend** several existing metadata vocabularies
 - Ontology Metadata Vocabulary (OMV)
 - Protégé change and annotations ontology (ChAO)
- It is a **work in progress**
 - http://www.bioontology.org/wiki/index.php/BioPortal_Metadata

Metadata as Ontology Instances

BioPortal Metadata Ontology
(including the imports: OMV, changes, mappings)

Class
OMV:Ontology

Class
Review

Class
mappings:One_to_one_mapping

owl:imports

BioPortal Metadata Knowledge Base

FMA, v.1.0
Instance of OMV:Ontology

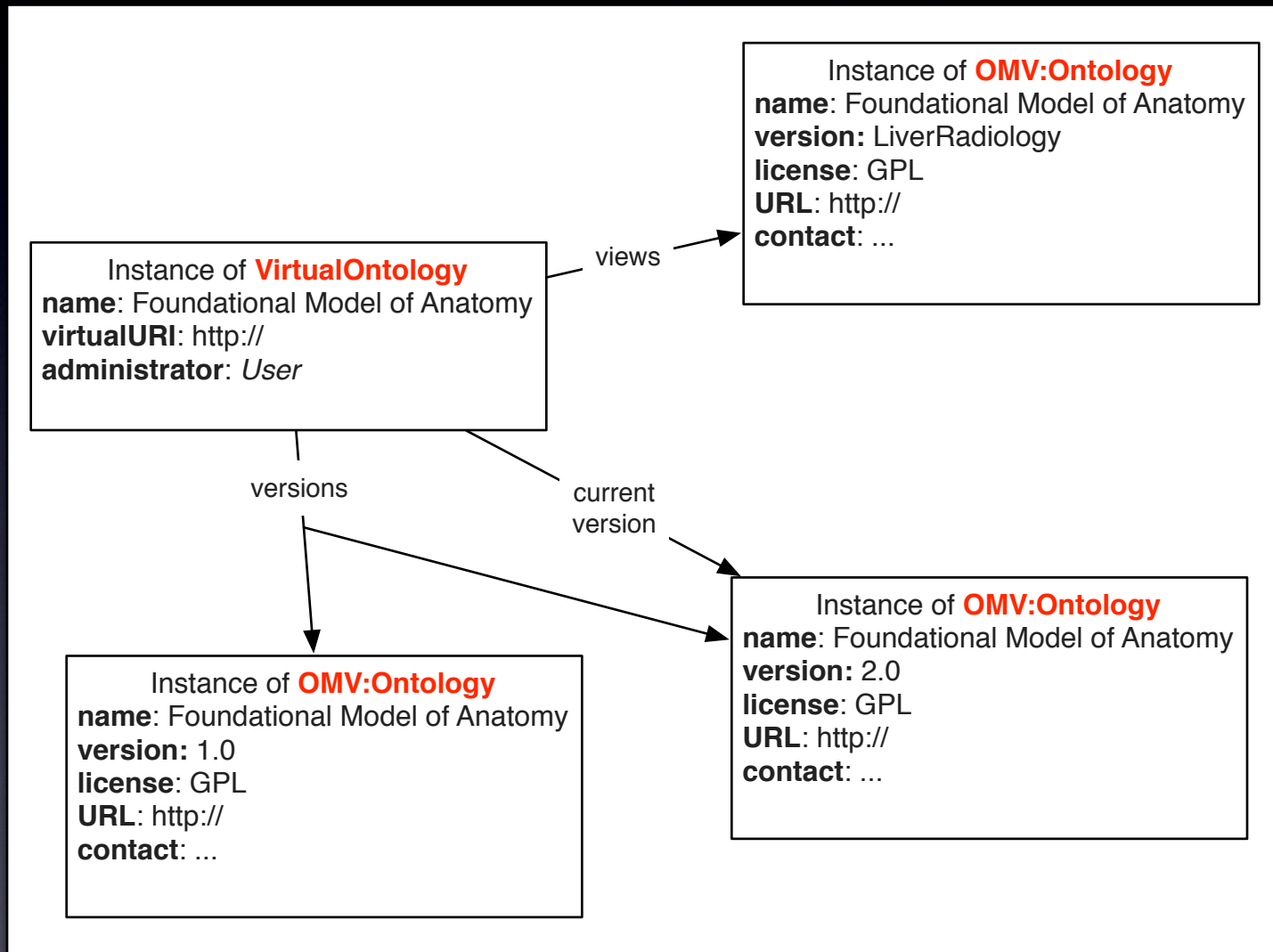
FMA, v.2.0
Instance of OMV:Ontology

Review
Ontology: FMA
Text: Key enabler in
bioinformatics

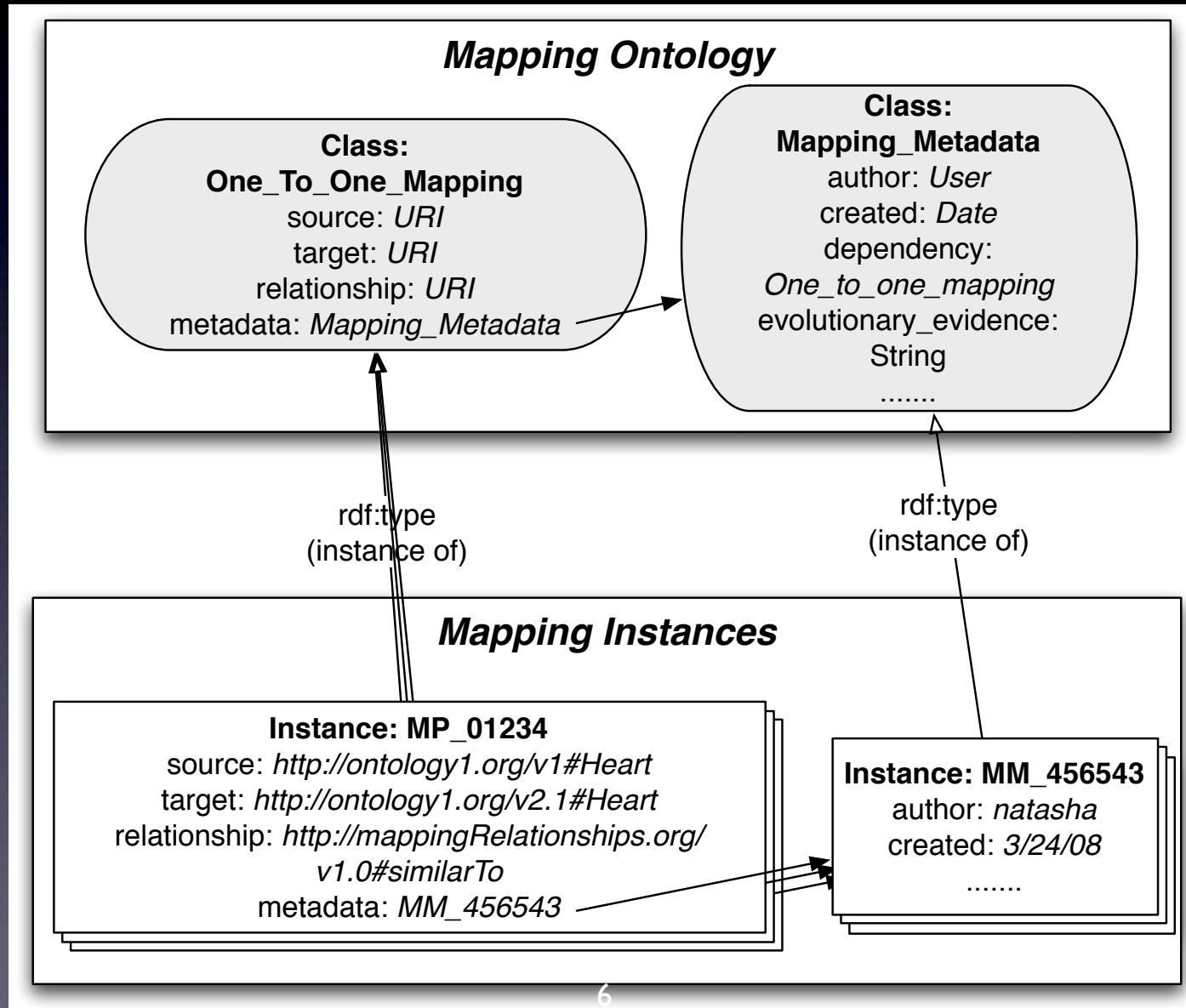
*A regular
ontology in
BioPortal
(administered
by BioPortal
developers)*

*not visible
directly to
BioPortal users
(accessed only
through the API
that processes
metadata)*

Ontologies, Versions, and Views



Mappings and Mapping Metadata



Mapping Metadata

- Users require a comprehensive set of metadata to augment mappings
 - mapping relationship
 - provenance (who created the mapping and when)
 - discussion and comments
 - application context
 - mapping dependency
 - algorithm used to create the mapping (configuration, parameters, etc.)
 - external references

Discussion

- Using ontologies to represent metadata facilitates evolution
- We can add new properties to metadata instances in RDF/OWL
- We generated APIs automatically from the service ontologies
- Components of our representations can easily be reused and extended

Challenges

- Migrating metadata to new versions of the domain ontologies
- Exchanging metadata with other tools and repositories
 - Requires standards (at least, de-facto ones)