Mammalian database and standard ontology of microscopy

Objectives

- Development of ontology that describes microscopy (meta)data including scanning electron microscope (SEM) data
- Support for existing image data framework such as OME data model which is a de facto standard microscopy image metadata schema.

Tasks

- Translate the OME data model described in XML into RDF
- Add new vocabularies for electron microscopy experiments and images as an extension of RDF version of OME data model
- Create a prototype database of electron microscopy image data obtained using RIKEN MetaDatabase

Ontology design

The Open Microscopy Environment (**OME**), the Ontology for Biomedical Investigations (**OBI**) and the Cellular Microscopy Phenotype Ontology (**CMPO**) can be used.

References

- The Open Microscopy Environment (OME) http://www.openmicroscopy.org/site
- RIKEN MetaDatabase http://metadb.riken.jp/

Participants

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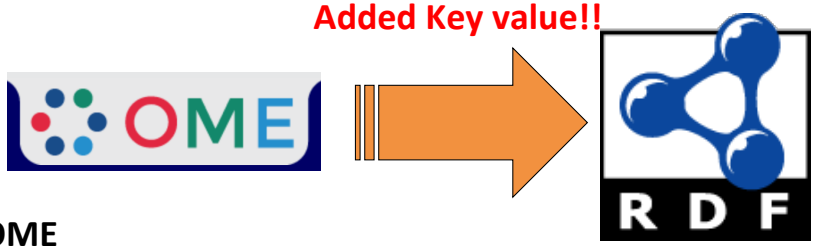
Achievement

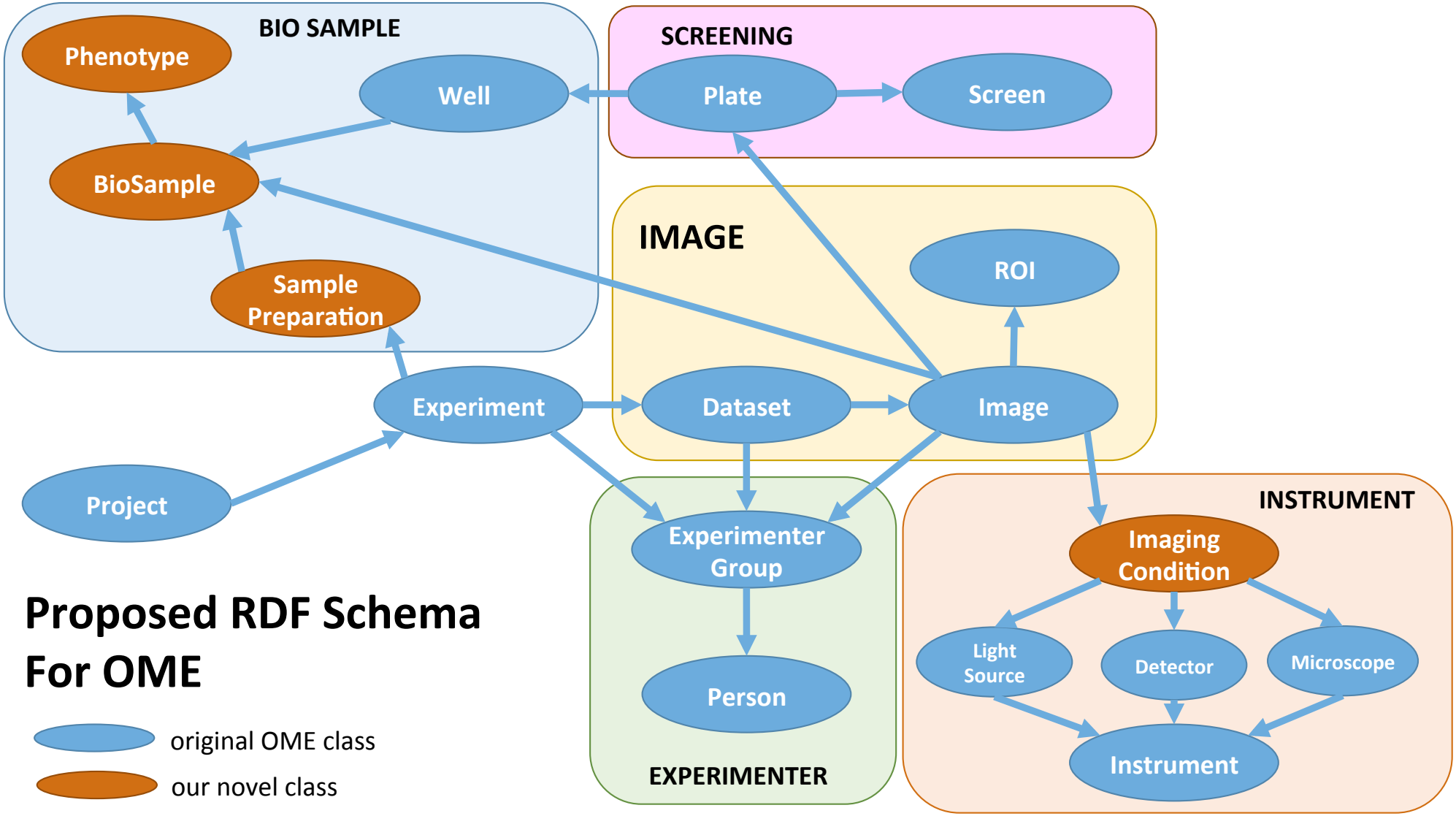
- **XML-based OME (Open Microscopy Environment) data model into RDF/OWL**
- **Newly defined the ontologies of physical wave, electron microscopy, microscope imaging conditions, and bio-samples.**
- **Integration of our microscopy database and ontology with bio-resource database from RIKEN BRC.**

Ontologies of microscopy Translated!!
Added Key value!!



OME
Open Microscopy Environment

RDF/OWL


BIO SAMPLE
Phenotype
Well
BioSample
Sample Preparation
SCREENING
Plate
Screen
IMAGE
ROI
Experiment
Dataset
Image
Project
Experimenter Group
Person
EXPERIMENTER
INSTRUMENT
Imaging Condition
Light Source
Detector
Microscope
Instrument
Proposed RDF Schema For OME
original OME class
our novel class