

OOOR Federation

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Panel Session:

Coordinating our OOOR Software Development

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- OOR Federation allows metadata that is hosted remotely to be browsed locally.
- Our implementation is patterned after the “*OBO Pull*” capability.
 - Runs periodically via the Quartz Scheduler.
 - Retrieves metadata from remote hosts using their RESTful services.
 - Synchronizes local copies using the BioPortal core management functions.
 - Ignores remote metadata that is itself federated.
- The initial version just supports Ontologies and their Views.
 - Other RESTful services could be exploited (e.g. diffs, metrics).
 - We may want to add a RESTful service for mappings.
 - The requirements for other items such as users and projects are unclear.
 - Might need to employ a unique global identification scheme?
- The software resides in our Subversion repository, extended from:
 - bioportalui: branch OOR, rev 434
 - bioportal_core: tag 1023, rev 2405
 - bioportal_admin: rev 120

Access all ontologies that are available in Raytheon BBN OOR: You can filter this list by category to display ontologies relevant for a certain domain. You can also filter ontologies that belong to a certain group. [Subscribe to the Raytheon BBN OOR RSS feed](#) to receive alerts for submissions of new ontologies, new versions of ontologies, new notes, and new projects. You can subscribe to feeds for a specific ontology at the individual ontology page. Add a new ontology to Raytheon BBN OOR using the Submit New Ontology link (you need to [sign in](#) to see this link).

SUBMIT ONTOLOGY

[Submit New Ontology](#)

FILTER BY CATEGORY

All Categories

FILTER BY GROUP

All Groups

[Link To This Filter](#)


FILTER BY TEXT

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| ONTOLOGY NAME ▲ | FORMAT | VERSION | AUTHOR | UPLOADED ON | GROUP | STATUS |
|---|------------|-----------------|----------------|-------------|-------|-------------------------|
| Amphibian gross anatomy (AAC) [Federated] | OBO Format | 1.8 | AmphiAnat list | 02/12/2010 | | Explore |
| Amphibian taxonomy (ATO) [Federated] | OBO Format | See Remote Site | AmphiAnat list | 02/12/2010 | | |
| Animal natural history and life history (ADV) [Federated] | PROTEGE | See Remote Site | Animal Web | 02/12/2010 | | |


Federated Ontology Example

- Federation creates local copies of Ontology Beans and Files.
- Editing of local copies is disallowed.
- But links to the remote OOR hosts are provided.

COSMO [Federated]  [Subscribe to updates](#)


| Metadata | Views (0) | Projects (0) | Reviews (0) | Metrics | Ontology Widgets |
|----------------------------|--|--------------|-------------|---------|------------------|
| ONTOLOGY NAME: | COSMO | | | | |
| ONTOLOGY ID: | 1105 | | | | |
| FORMAT: | OWL | | | | |
| CATEGORIES: | Other | | | | |
| CONTACT: | Patrick Cassidy, cassidy@micra.com | | | | |
| HOME PAGE: | | | | | |
| PUBLICATIONS PAGE: | | | | | |
| DOCUMENTATION PAGE: | http://micra.com/COSMO/ | | | | |
| DESCRIPTION: | A Foundation Ontology in OWL. Contains representations of most of the words in the Longman dictionary defining vocabulary, but still needs supplementation with another 300 words. This will be used to test the utility of a foundation ontology based on primitive concepts to support general accurate semantic interoperability. | | | | |
| FEDERATE: | http://oor-01f.cim3.net:3000/ontologies/10021 | | | | |

| VERSION NUMBER | RELEASE DATE | ONTOLOGY FILE | VISUALIZE | DOWNLOAD DIFF FILE |
|----------------|--------------|-----------------------------------|------------------|--------------------|
| 0.61-875 | 02/11/2010 | Download Ontology | Parsing Ontology | |

BBN Ont 1 ver2 [Federated]  [Subscribe to updates](#)

[Metadata](#) | [Views \(1\)](#) | [Projects \(0\)](#) | [Reviews \(0\)](#) | [Metrics](#) | [Ontology Widgets](#)

| | |
|---------------------|-------------------------------|
| ONTOLOGY NAME: | BBN O |
| ONTOLOGY ID: | 1107 |
| FORMAT: | OWL |
| CATEGORIES: | |
| CONTACT: | , jcha |
| HOME PAGE: | |
| PUBLICATIONS PAGE: | |
| DOCUMENTATION PAGE: | |
| DESCRIPTION: | Uploa |
| FEDERATE: | http:// |

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[Metadata](#) | [Views \(1\)](#) | [Projects \(0\)](#) | [Reviews \(0\)](#) | [Metrics](#) | [Ontology Widgets](#)

| | | |
|------------------|------------------|---------------------------|
| VIEW NAME: | BBN View 1 | CREATED BY: |
| VIEW ID: | 2012 | VIEW GENERATION ENGINE: |
| VIEW DEFINITION: | | VIEW DEFINITION LANGUAGE: |
| DESCRIPTION: | View on BBN_O1v2 | |

Versions

| VERSION | BASE VERSION | CREATED | ONTOLOGY FILE |
|---------|--------------|------------|-------------------------------|
| 3.0 | 2.0 | 02/12/2010 | Download View |
| 1.0 | 2.0 | 02/12/2010 | Download View |

| VERSION NUMBER | RELEASE DATE | ONTOLOGY FILE | VISUALIZE | DOWNLOAD |
|----------------|--------------|-----------------------------------|-----------|----------|
| 2.0 | 02/12/2010 | Download Ontology | | |
| 1.0 | 02/12/2010 | Download Ontology | | |

OOR Federation

OOR Federation completed successfully

This operation will refresh all of the local federated ontologies and views.

Run

Ontology Administration

- Parse Ontologies
- Deprecate/Delete Ontologies
- Calculate Ontology Metrics
- Reload Metadata Ontology
- Reassign Ontology Owner
- Update Ontology Metadata

Search Index Administration

- Index Ontologies
- Index All Ontologies
- Remove Ontologies from Index
- Empty/Reload Query Cache
- Backup Index
- Optimize Index

User Administration

- Create User
- Update User
- Delete User

OBO Pull Administration

- Execute OBO Pull

OOR Federation

- Refresh OOR Federation

- Added new federation configuration settings.
 - `oor_federation.xml.tmp1`: for remote host specifications.
 - `build.properties`: for resource path and Quartz options.
- Added properties to the OWL metadata model.
 - `federatedUrl`: Base URL of the remote RESTful services.
 - `federatedId`: ID attribute of the remote OntologyBean.
- Updated the Java/Ruby models and their dependencies accordingly.
- Integrated new service classes into `bioportal_core`.
 - `OORFederationService`: performs the federation operation.
 - `OORFederationRestlet`: allows federation to be invoked via a URL.
- Modified `bioportalui` to include federation info and to disallow editing.
- Added a federation utility to the `bioportal_admin` webapp.

Managing State

- State is represented as sets of OntologyBean instances.
 - A separate bean instance represents each ontology/view version.
- Beans are organized into “synchronizer” objects specific to each remote host.
 - Local state = all local beans that are federated from that host.
 - Remote state = all beans residing at that host that are not themselves federated.

Processing Steps

1. Synchronizers are populated to reflect the local and remote states.
 - If communicating with a remote host produces an error, it is skipped.
1. Local beans are deleted if:
 - Their remote host is not declared in the current configuration.
 - Their remote bean is found to no longer exist.
1. User-editable fields of the remaining local beans are updated as necessary.
2. New local beans are created for each new remote bean that was retrieved.

- We should merge our sources into the group's subversion repository.
- The group should more fully develop operational requirements.
 - Start with federation Use Cases?
- RESTful services should be implemented for all metadata artifacts that are deemed appropriate for federation.
 - And incorporated into the OWL metadata model?