ACCESSING DDI 3 AS LINKED DATA: COLECTICA RDF SERVICES
In This Talk

- Brief Overview of Colectica
- DDI serializations in RDF
- Colectica RDF Services Architecture
- Examples
## The Colectica Platform

<table>
<thead>
<tr>
<th>Colectica Desktop Applications</th>
<th>Colectica Repository</th>
<th>Colectica Web</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Create, ingest, manage, and edit metadata</td>
<td>• Centralized, authoritative, metadata store built on DDI 3, ISO 11179, and Web Service standards</td>
<td>• Search and browse metadata from Colectica Repository</td>
</tr>
<tr>
<td>• Usable DDI 3 for end-users</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Colectica Platform

Colectica SDK

- Allows programmers to work with DDI 3 and interact with Colectica Repository

Colectica Toolkit

- Command line utilities to perform specific tasks
Examining Current RDF work

- The DDI Alliance does not yet publish a DDI Ontology for RDF representation

- There are efforts underway
  - Thomas Bosch – A full generated mapping using schema inspection
  - Working Series – An ontology for a portion of DDI emphasizing discovery
Current RDF work

- Colectica RDF model
  - Created by hand based on the Colectica DDI 3 model
  - Reuses Dublin Core, DC Terms, FOAF
  - Does not yet serialize DDI NCubes or Comparison module
    - See DataCube vocabulary
  - Each concise bounded description of a metadata item is stored as a named graph
Colectica supports side by side formatters for managed metadata items

- DDI 3.1, DDI 3.2, RDF

Can be deployed with Colectica Repository

- All DDI metadata stored and versioned in the Repository is also stored in RDF
- Two deployment scenarios
RDF Services Architecture

- Scenario 1 – Using Colectica Repository’s internal RDF store
- Colectica Portal support
  - SPARQL 1.0 and draft 1.1 query support
  - SPARQL Update is disabled to maintain metadata integrity
  - URIs resolve to an item’s page on Portal
  - REST based request for a meta data item’s concise bounded description in RDF
Scenario 2 – External RDF store

Colectica Repository replicates the RDF to your existing RDF store

- SPARQL Graph Store HTTP Protocol Stores
- Virtuoso and Sesame

All security and ACLs need to be handled externally
RDF DDI Examples

- SPARQL is the standardized query language for RDF
  - It can be used to construct very precise questions about DDI metadata, referencing multiple items
- Which studies has Dan authored since the beginning of 2010?
- How many times has a variable been reused/harmonized across several datasets?
PREFIX ddi: <urn:ddirdf:>
PREFIX ddit: <urn:ddirdf:type:>
PREFIX dc: <http://purl.org/dc/elements/1.1/>

SELECT ?study
WHERE
{
  ?study a ddit:StudyUnit;
  dc:date ?creation_date;
  FILTER ( xsd:dateTime(?creation_date) > "2010-01-01 00:00:00"^^xsd:dateTime ) .
}
ORDER BY ?study
PREFIX ddi: <urn:ddirdf:>
PREFIX ddit: <urn:ddirdf:type:>
PREFIX dc: <http://purl.org/dc/elements/1.1/>

SELECT ?variable COUNT (?parent) AS c
WHERE
{
  ?variable a ddit:Variable ;
  ?parent a ddit:Dataset.
}
GROUP BY ?variable
Examples of the DDI RDF serializations are available:

Colectica RDF Services - Next

- Available now with Colectica 4.0
- Does not support Colectica Repository’s per item or per type role permissions
  - Everything is read only to authenticated users
- Predicates will be updated when official or community adopted Ontology is available
Thank you

Web colectica.com
Blog blogs.colectica.com
Twitter @Colectica
YouTube youtube.com/colectica