Linked Data Working Group Update

IGELU 2018 | Prague, Czech Republic

Josh Weisman | VP Development, Resources Management
Nili Natan | Primo Product Manager
Agenda

1. Collaboration
2. Linked Data in Alma
3. Linked Data in Discovery
4. Q & A
Collaboration
BIBFRAME Collaboration

- As part of the work leading up to the release of the initial BIBFRAME support in Alma, Ex Libris has been collaborating with Harvard University and the Library of Congress.
- The LC MARC21 to BIBFRAME 2 converter has been integrated into Alma, and Harvard has provided initial feedback on the implementation of these features.
- Now that the BIBFRAME features have been released for general availability, additional feedback is welcome via the Basecamp.
Linked Data in Alma
Tech Blog

Journey to Linked Open Data Support - An Update
Josh Weisman on January 15th, 2018

Ex Libris has been hard at work implementing linked open data (LOD) features, in close cooperation with the IGLULU:ELINA Working Group on Linked Open Data. LOD has appeared in roadmap highlights going back several years. Now at the beginning of 2018 I’d like to highlight several features released in the past few months, and to cause to take stock of where support for linked data stands today.

MARC-based records can be enriched and transformed to linked data formats such as JSON/LD, RDA/RDF, and BIBFRAME. These records can be accessed in Alma via API endpoints, publishing, and special views in the Alma user interface. The current status of these recent developments can be represented by the table below.

<table>
<thead>
<tr>
<th>Format</th>
<th>API</th>
<th>Publishing</th>
<th>View in Alma</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSON/LD</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>RDA/RDF</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>BIBFRAME</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

APIs

Alma provides API endpoints for all three linked data formats. Once activated, the APIs are open and available to anyone. In addition, Alma refers back to the relevant endpoints when publishing LDRs for bibliographic and authority records stored in Alma.

Publishing

Records in Alma can be publishing to linked data output formats. The result is files containing Work/Manifestation (RDA/RDF) or Work/Instance (BIBFRAME) records. For more information on configuring publishing profiles, including linked data enrichment, see the online help.
Bibliographic records in Alma are enriched before the following processes:

<table>
<thead>
<tr>
<th></th>
<th>API</th>
<th>Publishing</th>
<th>View in Alma</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSON/LD</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>RDA/RDF</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>BIBFRAME</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Sample URIs

- RDA/RDF Work
- RDA/RDF Manifestation
- BIBFRAME Work
- BIBFRAME Instance
- JSON-LD
Publishing

- Enriched URIs in $$0 can be published in MARC

- In addition, Alma supports the publishing of RDA/RDF and BIBFRAME as output formats
Publishing in BIBFRAME

- Publishing target option in the publishing profile
- Linked data enrichment
- Uses Library of Congress MARC-2-BIBFRAME2 Converter
- Same methodology will be used for BIBFRAME display and APIs
BIBFRAME Record View

History

MMS ID: 99263941400561
Export to Libraries Australia: Don't publish
Originating system: CKB

Suppress from publishing: Yes
Brief level: 01 Video
Originating system ID: 99255000001149011

Export to WorldCat: Publish Bibliographic records
Record format: marc21
Originating system version: -

MARC

BIBFRAME

<!DOCTYPE rdf:RDF>
<html xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<head>
<meta name="generator" content="BibFrame Editor"/>
<meta http-equiv="content-type" content="text/html; charset=utf-8"/>
<title>Work</title>
</head>
<body>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:bibframe="http://id.loc.gov/ontologies/bibframe/"
  xmlns:mads="http://www.loc.gov/mads/rdf/v1#"
  xmlns:dcterms="http://purl.org/dc/terms/"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:bfc="http://id.loc.gov/ontologies/bfc/">
    <bfc:adminMetadata>
      <bfc:generationProcess>
        <bfc:code-nv>bfc:code-nv</bfc:code-nv>
      </bfc:generationProcess>
    </bfc:adminMetadata>
    <bfc:status>
      <bfc:Status/>
    </bfc:status>
  </bfc:Work>
</rdf:RDF>
</body>
</html>
DEMO: Linked Data in Alma
Short Term Roadmap

- Support for representing MARC bibliographic records in BIBFRAME 2.0 format
  - Publish MARC bibliographic records in BIBFRAME format
  - View a MARC record as a BIBFRAME record
  - Expose MARC bibliographic records as BIBFRAME via API
- Support publishing to linked data consumer applications in RDA/RDF format
- Incremental enhancements to the existing APIs (e.g. JSON-LD changes)
Roadmap – Search External LD Sources

• Libraries will be able to use MD editor to catalog LD URIs
  • In MD editor, type field content and click alt+F3 to display a list of vocabulary resources that are supported for this field.
  • Choose a vocabulary resource – e.g. Geonames
### Roadmap – Search External LD Sources

<table>
<thead>
<tr>
<th>752</th>
<th>$$a London Heathrow Airport $$0 <a href="http://www.geonames.org/2647216/london-heathrow-airport.html">http://www.geonames.org/2647216/london-heathrow-airport.html</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>700</td>
<td>$$a Laska, Mark.</td>
</tr>
<tr>
<td>856</td>
<td>$$3 Contributor biographical information $$u <a href="http://catdir.loc.gov/catdir/enhancements/fy0831/99064160-b.html">http://catdir.loc.gov/catdir/enhancements/fy0831/99064160-b.html</a></td>
</tr>
<tr>
<td>856</td>
<td>$$3 Publisher description $$u <a href="http://catdir.loc.gov/catdir/enhancements/fy0831/99064160-d.html">http://catdir.loc.gov/catdir/enhancements/fy0831/99064160-d.html</a></td>
</tr>
</tbody>
</table>

**Linked Data**

- Context: https://open-na.hosted.exlibrisgroup.com/alma/contexts/bib
- bibo:oclcnum: http://www.worldcat.org/oclc/42619267
- Linked Data: http://www.geonames.org/2647216/london-heathrow-airport.html
Long Term Roadmap

• Support for native cataloging in BIBFRAME starting with a proof of concept version.

• Import records into the Alma catalog using BIBFRAME
Linked Data in Discovery
Making Library Catalog visible on the Web

- Expose library records in common schemas for structured data markup on web pages using schema.org.
- Linked Data is about creating relations among resources, building Library resources Graph.
First Phase

- **Making new UI deep links also available** for search engines crawlers
- Structured representation: mapping PNX fields to the corresponding Schema.org fields (using JSON-LD format)
- Working with two customers on this project
- Assisting Schema.org external consultant
Primo New UI Deep Links in Google

About 5,450 results (0.16 seconds)

Try Google Search Console
www.google.com/webmasters/
Do you own search.sl.nsw.gov.au? Get indexing and ranking data from Google.

Catalogue | State Library of New South Wales | The bells of St. Marys ...

Catalogue | State Library of New South Wales | Politics and the ...
Show Details; Hide Details; Location; State Library of NSW Mitchell Library - Onsite Storage 387.71/1A1; Hide Details. Availability: (1 copy, 1 available, ...

Catalogue | State Library of New South Wales | Students at Ku-Ring ...
https://search.sl.nsw.gov.au/primo-explore/fulldisplay?vid=SLNSW&docid=1 ...
Top Send to. Source Details Links Tags. graphic materials. Students at Ku-Ring-gai, Galston or Kelso High School. : 25.7.79 : Government Printing Office 4 - ...
Next Phase based on Report from Schema.org Consultant

• Improve SEO Related Issues:
  • HTML structure validator
  • Character Sets Encoding
  • Improve URL Formats
  • Suppress Crawl Access to None Accessible Links

• Identifying Template Entities for each of the bibliographic entity types
  • Consider to use templates for Organization
Define Successful Criteria for this Project

• How to improve ranking for Primo Records in the web?
• How to measure indexing success?
• Define the flow for a Google user

• Assisting SEO expert
• We'd glad to get input from libraries that had experience in this area
Long Term Roadmap

• Next phase of Linked Data is to create relations among resources
• Records with connections and availability should be ranked higher by search engine
• Linking
  • Author/Creator/Contributor
  • Subjects
  • IDs
  • customized link fields
• Availability
• Search Context
• Primo Central Resources Graph
Linked Data in Summon

• Improved exploration by connecting the discovery interface and external linked data sources
• Display links, data, and services based on harvested URIs, enriching the discovered content to make use of linked data*
• Examples may include displaying related subject terms and providing connections based on authors’ names

* Some of these services will rely on the maturity of publishers’ harvested linked data information.
Q & A