A little linked data from our systems and things to do with it.

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I've been Coordinator 2017-18 (and member since 2014)

- Just for Ex Libris (Proquest) product users.
- Our most recent use cases and presentations are on YouTube!
- ALMA: Publishing BIBFRAME (using LC conversion tools) from Alma and APIs to get it. Also a couple more flavors -
- Primo, a place to put URIs in PNX, and some add-on widgets that fetch linked data and add to Primo display.
- New/beta: Adding schema.org - sitemap - search engine optimization
- On the Roadmap for Alma: URI lookups for catalogers
- On the Roadmap for Alma: "Reference instance" of native linked data editing.
If you don't have Alma, you can get B

1. Export some records from your ILS in MARCXML
2. Use Oxygen XML Editor or MarcEdit

We used them for
At ALA Annual this year, Beecher Wiggins says LC is committed to replacing MARC with BIBFRAME for cataloging. Quoted as saying "2-5 years"!

Working on converting Authority records for Uniform titles to "Work" records and matching them up with BIBFRAME descriptions.

Will be looking for a vendor

Will need to backward convert BIBFRAME to MARC21 ... for those who need it.
BIBFRAME on my mind

- Problems and questions with BIBFRAME 2.0:
  - blank nodes,
  - "provenance" for the MARC record is attached to the Work!
  - Where to put RDA/FRBRR Expression - especially, identifiers?
  - Authority data for Uniform titles - some may become "work-expression" records?
  - What about holdings and items? How do they connect with BIBFRAME?

- What do you think?
**BIBFRAME from Alma web client**

![Alma web client interface showing a record view with BIBFRAME metadata]

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMS ID</td>
<td>990006022220302486</td>
</tr>
<tr>
<td>Brief level</td>
<td>Full</td>
</tr>
<tr>
<td>Originating system</td>
<td>BACKSTAGE</td>
</tr>
<tr>
<td>Suppress from publishing</td>
<td>No  marc21</td>
</tr>
<tr>
<td>Record format</td>
<td></td>
</tr>
<tr>
<td>Originating system ID</td>
<td>000602222-EMU01</td>
</tr>
<tr>
<td>Originating system version</td>
<td>20160515130857.0</td>
</tr>
</tbody>
</table>

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?><rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
 <bf:adminMetadata>
  <bf:generationProcess>
  </bf:generationProcess>
  <bf:Status>
   <bf:code>c</bf:code>
  </bf:Status>
 </bf:adminMetadata>
</rdf:RDF>
```
BIBFRAME FROM ALMA

https://open-na.hosted.exlibrisgroup.com/alma/01GALI_EMORY/bf/entity/instance/990006022220302486

Documented on Developer Network:
https://developers.exlibrisgroup.com/alma/apis/bibs/GET/gwPcGly021om4RTvtjbPlc5mU+8DB2nncwZbtv

BjCcrbmJlr9MLGJ78Jryq7vUf/af2fb69d-64f4-42bc-bb05-d8a0ae56936e
So say you want more than one record... you can make a set in Alma from whatever criteria or selection you want, and do a one-off incremental publish.
Then what do you do with it?

Well, you could just peruse it, or you could put it in a triplestore.

Free small cloud based database!

You can IMPORT FILE, copy/paste a record, USE API.
Import your RDF data

```xml
</bf:note>
<bf:item rdfs:resource="https://open-na.hosted.exlibrisgroup.com/alma/01GALI_EMORY/bf/entity/instance/9900060222220302486"/>
<bf:applicableInstitution>
  <bf:code>GEU-S</bf:code>
</bf:Agent>
</bf:applicableInstitution>
</bf:hasItem>
<bf:instance>
</bf:RDF>
```
Then add more triples

- Bibframe -> Bibframe ontology
- Bibframe -> id.loc.gov authority data for Persons, etc.
- id.loc.gov authority -> VIAF
- no VIAF link to dbpedia or wikidata 😞 -skip it!
- Wikidata - about persons, subjects etc. -- manually find it or.. ?
- Added (manually) an owl:sameAs between the authority ID and Wikidata ID for each entity:

  <http://id.loc.gov/authorities/names/n50034776>
  <http://www.w3.org/2002/07/owl#sameAs>
  <http://www.wikidata.org/entity/Q296898>

Visualise...
Or, build an interface. Sample code of:

```javascript
<script type=text/javascript>
(function () {
    window.addEventListener("load",
    function sparqlQuery() {
        var username = "<key>";
        var password = "<password>";
        var url = "https://rdf.ontotext.com/4134567067/Akerm_Bibframe_experiment/repositories/test1";
        var method = "POST";
        var str = "query goes here".join("\n");
        var dataString = "query=" + encodeURIComponent(str);
        var xhr = new XMLHttpRequest();
        xhr.open(method, url, true);
        xhr.withCredentials = true;
        xhr.setRequestHeader("Authorization", "Basic " + btoa(username + ":" + password));
        xhr.setRequestHeader("Accept", "application/sparql-results+xml");
        xhr.setRequestHeader("Content-Type", "application/x-www-form-urlencoded");
        xhr.setRequestHeader("Content-Length", base64DecToArr(btoa(str)).buffer.byteLength);
        xhr.send(dataString);
    });
    window.removeEventListener("load", sparqlQuery);
})();
</script>
A little linked data in Primo

Using the Linked Data Integration API to Enhance Discovery

Steve Meyer on September 22nd, 2016

At the University of Wisconsin-Madison we have been taking advantage of the Alma Linked Data integration API to enhance an experimental version of our local discovery system with info cards about some of the identities found in bibliographic records. See, for example, Gertrude Stein on Picasso. The catalog will attempt to retrieve some brief biographical information about Pablo Picasso and Gertrude Stein for this record:

Pablo Picasso  Collapse

Brief Biography

Description from Getty Linked Open Data: Long-lived and very influential Spanish artist, active in France. He dominated 20th-century European art. With Georges Braque, he is credited with inventing Cubism. (Sources: Grove Dictionary of Art online (1999-2002); LCNAF Library of Congress Name Authority File [n.d.])

http://vocab.getty.edu/ulan/500009666
So, what do you think?

Is what we're seeing so far enticing enough to make the jump to linked data?

What do you wish vendors would do or think about?

What does your institution plan to do?

Do you have a "vision"?
A little linked data links

IGELU-ELUNA Linked Open Data Working Group:
Website:  https://igelu.org/special-interests/lod
Dashboard:  https://goo.gl/W8F1ga
IGeLU Show and Tell LOD playlist:  https://goo.gl/L5616S

BIBFRAME site: slides from Library of Congress BIBFRAME update forum at ALA 2018:

GraphDB Cloud Database Service
https://cloud.ontotext.com/#/home

MARCEdit:  https://marcedit.reeset.net/


OCLC Research webinar: introduction to Wikidata for Librarians:
https://www.oclc.org/research/events/2018/06-12.html

Wikidata entity page for George Washington Carver:  https://www.wikidata.org/wiki/Q296898 (view page source to see alternate formats such as rdf_xml or turtle)
Thank you!

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Note: The opening image has nothing to do with linked data, except tangentially, it's a shot from a musical number, "Triplets" from the 1953 film of the musical, "The Bandwagon". Little triples, triplets, bad data? https://youtu.be/UjW_yvrC0cE