

A first foray into Linked Data: practical aspects of working with BIBFRAME from the viewpoint of three academic libraries

Trevor Hough, *Metadata & Discovery Coordinator, University of Leeds*

Kim Taylor, *Metadata & Discovery Manager, University of Leeds*

Claire Delamore, *Metadata Librarian, Newcastle University*

Margarita Perez Martinez, *Cataloging, Metadata, and IR Librarian, University of Miami School of Law*



Outline

- About the Ex Libris Linked Data focus group
- Sinopia/Alma workflow
- About Miami, Newcastle and Leeds Universities
- Cataloguing in Sinopia
- Testing BIBFRAME records in Alma Sandbox and Primo
- What works
- What doesn't work yet
- Next steps

Ex Libris Linked Data Focus Group

- Initial meeting July 2023
- Phase One Goals
 - Trial Sinopia editor
 - Test BIBFRAME records in Alma and Primo
 - Provide feedback
 - Help to develop and refine Alma BIBFRAME workflows
 - Participate in discussions



also ...

Harvard

National Library of Medicine (U.S.)

Princeton

Yale

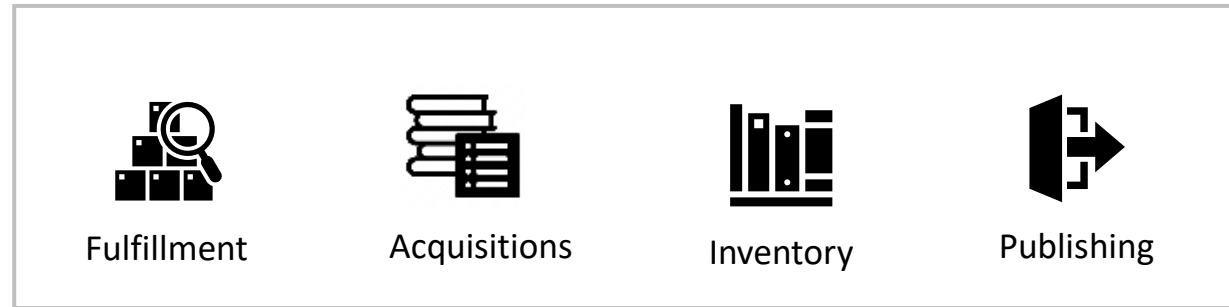
Sinopia – Alma Workflow

SINOPIA



Cataloging - BIBFRAME

ExLibris Alma



Management



Discovery



Analytics

University of Miami

Reasons to join the Exlibris Linked Data Focus Group

- Implement first linked data project
- Lack of knowledge (Linked Data, Bibframe, Sinopia)
- Collaboration among members of the group

- Private university founded in 1925.
- Located in Miami, FL USA
- 19,000+ students
- UM Libraries:
Architecture, Business, Medical, Music,
Interdisciplinary (Main Library), Marine Science
and LAW.
4.5 million active titles



<https://library.law.miami.edu/>

Pilot project at the UMiami Law Library

The collection

Law Library pilot project BIBFRAME collection: *Faculty Publication materials*

- Print monograph MARC records already cataloged in our ALMA production environment
- Re-cataloged titles in BIBFRAME using SINOPIA's print monograph templates
- Integrated SINOPIA with ALMA Sandbox via API
- Exported BIBFRAME records (Work and Instance) from SINOPIA to Alma Sandbox
- Worked the BIBFRAME record as another MARC record in ALMA and PRIMO.

Future collection:

The Law Library plans to move into production with BIBFRAME soon.

New Special Collection project: *U-Matic videocassettes (videos)*



Newcastle University

- Russell Group University, North-East of England
- 27,000 students
- 1,500 students at Singapore & Malaysia campuses

Library

- Three libraries: central, medical & law
- Customer Services Excellence Award



Newcastle and the Linked Data Focus Group

An opportunity to:

- Develop knowledge of Resource Description Framework (RDF), Linked Data, BIBFRAME
- First look at BIBFRAME in Alma
- Build partnerships

Collection

- Ebook collection – 20 titles
- Already catalogued in MARC
- Copy-catalogued ebook records in Sinopia
- Exported into Alma Sandbox

University of Leeds

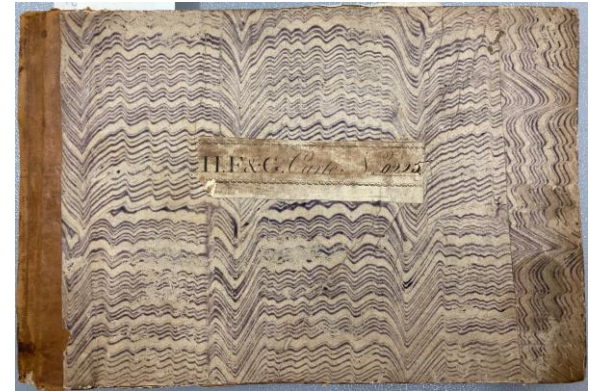
- In Leeds, West Yorkshire
- 39,000 students
- Part of the Russell Group of research-intensive UK universities

- Five libraries with 2.7 million items
- The Arts Council designated five collections as nationally and internationally significant



Leeds and the Linked Open Data Focus Group

- An opportunity to
 - Learn more about BIBFRAME
 - Experiment with the Sinopia BIBFRAME editor
 - Explore Linked Data opportunities
 - See how BIBFRAME represents copy-specific information
- The records for testing in Sinopia:
 - 25 records from a recent Special Collections acquisition
 - Worked from MARC records, not original cataloguing
 - Plenty of copy-specific metadata, also bound-withs



Cover from *Trade catalogue for H. F. & G. Carte? of brass and iron handles ...* c.1800. Bedford Collection. University of Leeds Libraries.



Copy-specific details from *Examples of ornamental metal work*. 1836. Bedford Collection. University of Leeds Libraries.

Cataloguing in Sinopia

University of Leeds Work (Monograph)

URI for this resource: <https://api.development.sinopia.io/resource/1489b69e-4289-4fe8-87ae-d96553e82047> [Copy URI](#)

Owned/editable
by
University of
Leeds

[Help](#)

View: Form view

Class: *Work* (<http://id.loc.gov/ontologies/bibframe/Work>)

Work Title * [i](#) [e](#)

Title--Work Title

Property: *Title* (<http://id.loc.gov/ontologies/bibframe/title>)

Class: <http://id.loc.gov/ontologies/bibframe/Title>

▼ Preferred Title for Work * [i](#) [e](#)

Examples of ornamental metal work [en]

University of Leeds Instance (Monograph)

URI for this resource: <https://api.development.sinopia.io/resource/e65763a4-45e7-4f67-9c0f-ed8895d2486> [Copy URI](#)

Owned/editable
by
University of
Leeds

View: Form view

Class: *Instance* (<http://id.loc.gov/ontologies/bibframe/Instance>)

Instance of [i](#)

Examples of ornamental metal work [en]: <https://api.development.sinopia.io/resource/1489b69e-4289-4fe8-87ae-d96553e82047>

Instance Title * [e](#)

Title--Instance Title

Property: *Title* (<http://id.loc.gov/ontologies/bibframe/title>)

Class: <http://id.loc.gov/ontologies/bibframe/Title>

▼ Title Proper * [i](#) [e](#)

Examples of ornamental metal work / [en]

University of Leeds Item (Monograph)

URI for this resource: <https://api.development.sinopia.io/resource/2b248a0c-0048-4a6f-a7cb-b3631dde2d7f> [Copy URI](#)

Owned/editable
by
University of
Leeds

View: Form view

Class: <http://id.loc.gov/ontologies/bibframe/Item>

Held By [i](#) [e](#)

University of Leeds, Library [en]: <http://id.loc.gov/rwo/agents/no90027604>

Holding For (Item of) [i](#)

Examples of ornamental metal work / [en]: <https://api.development.sinopia.io/resource/e65763a4-45e7-4f67-9c0f-ed8895d2486>

Data Editor

BIBFRAME Records in Sinopia

Title--Instance Title

Property: title (http://id.loc.gov/ontologies/bibframe/title)
Class: http://id.loc.gov/ontologies/bibframe/Title

▼ **Title Proper*** ⓘ ↗

Property: main title (http://id.loc.gov/ontologies/bibframe/mainTitle)
Enter a literal

Needlework, affect and social transformation

▼ **Number of Non-Filing Characters** ⓘ

Property: Nonfiling Indicator (http://sinopia.io/vocabulary/bf/nonfiling)
Enter an integer

0

▼ **Other Title Information** ⓘ ↗

Property: subtitle (http://id.loc.gov/ontologies/bibframe/subtitle)
Enter a literal

the everyday textures of feminist activism /

▼ **Year of Publication***

Property: date (http://id.loc.gov/ontologies/bibframe/date)
Enter a literal

2023

▼ **Country of Publication*** ⓘ

Property: place (http://id.loc.gov/ontologies/bibframe/place)

URI

Label

+ Add another Country of Publication

▼ **Place of Publication*** ⓘ ↗

Property: simplePlace (http://id.loc.gov/ontologies/bflc/simplePlace)
Enter a literal

London :

Testing BIBFRAME in Alma

- View the Instance and Work records in Alma (and the MDE)
- Add holdings, items
- Add portfolios and link to collection
- Place orders
- Visualize BIBFRAME records in Primo Sandbox
- Publish BIBFRAME in MARC format to OCLC
- Test Alma Infocard

BIBFRAME in Alma - electronic

Newcastle University Philip Robinson Library - Acquisitions Department

Monitor and View Imports (Resources) | Run a Job | Manage Purchase Requests | Manage Import Profiles (Resources) | Add Local Electronic Collection | Monitor Jobs | Search Resources | Manage Sets

All titles Keywords 9913103709302411

Alma Sandbox

Acquisitions Resources Discovery Fulfillment Admin Analytics

Facets << All Titles (1 - 1 of 1) 9913103709302411

Material Type Book (1)

Resource Type Book - Electronic (1)

Language English (1)

Publication Year 2023 (1)

Record Format LC BF INSTANCE (1)

Institution Community

Select All Sort by: Rank Secondary Sort by: Rank 0 rows selected Expand: All

1 **Needlework, affect and social transformation the everyday textures of feminist activism Katja May.** Edit Record Portfolio List

Book {Book - Electronic} text; online resource By May, Katja (2023) Language: English Orders: 1
Creation Date: 14/08/2024 12:32:15 MMS ID: 9913103709302411
Subject: Needlework in art Feminism in art
Modification Date: 14/08/2024 12:37:19 ISBN: 9781350283619

Electronic (1)

Interface Name	Collection Name	Service Type	Availability	Portfolio
-	Bloomsbury Collections: Art & Visual Culture 2023 (BIBFRAME Testing)	Full Text	Active	View

Portfolio List

Instance & Work – RDF/MXL Tags

The screenshot displays the Alma Sandbox interface for managing library records. The top navigation bar includes search and utility icons. The main content area is divided into two views: Instance View and Work View.

Instance View: The "LC BF Instance" tab is selected. The record's RDF/XML code is shown, including tags for description conventions, agent information, and instance-specific data.

Work View: The "LC BF Work" tab is selected. The record's RDF/XML code is shown, including tags for description conventions, agent information, and work-specific data.

Table: A table of LDR and MARC fields is displayed on the right side of the Work View.

LDR	Field	Value
nam	a22 c	4500
001		971031993821002976
007	tj	
008		700101 xx ka 00 0 eng
040		__ a fmul b eng e rda c fmul
050		_4 a KF9657 b .R67 2011
100		1_ a Rose, Laurence M. 0 http://id.loc.gov/authorities/names/no2010010081
245		10 a State v. Harris case file SINOPIA work
246		1_ a State versus Harris
336		__ a text b txt 0 http://id.loc.gov/vocabulary/contentTypes/txt
340		__ p Forms 0 http://id.loc.gov/vocabulary/millus/for
340		__ p illustrations 0 http://id.loc.gov/vocabulary/millus/ill
500		__ a An adaptation of "Fordyce v. Harris and Felson," originally written by Abraham P. Ordover
650		_0 a Trial practice z United States 0 http://id.loc.gov/authorities/subjects/sh2008112924
655		_4 a Problems and Exercises 0 http://id.nlm.nih.gov/mesh/D020497
884		__ a DLC bibframe2marc v2.3.0 (Saxonica) g 20240308172609.0 u https://github.com/lcnetdev/bibframe2marc

BIBFRAME in Alma - print

The screenshot displays the Alma library system interface. At the top, the header includes the Miami Sandbox logo, navigation links (Run a Job, Open Metadata Editor, etc.), and the user's role (Law Library - LAW Acquisitions Department). The search bar contains the query: "State v. Harris SINOPIA instance update Feb2024 case file Laurence M. Rose." The left sidebar shows navigation options like Resources, Admin, Acquisitions, Fulfillment, and Analytics. The main content area shows a list of records with details for the selected record: "State v. Harris SINOPIA instance update Feb2024 case file Laurence M. Rose." The record is identified as a "Book {Book - Physical} text; unmediated; volume" by Laurence M. Rose (©2011). It includes fields for Language (English), Creation Date (03/08/2024 11:28:14 EST), ISBN (9781601561695), and Record number (994598712). The record is currently set to "Physical (2)" format. Below the record details, there are 2 holdings, both of which are available. The "Edit Record" button is circled in orange.

MIAMI SANDBOX

Law Library - LAW Acquisitions Department

Run a Job | Open Metadata Editor | Import (Resources) | Design Analytics | Manage Exports | Monitor Jobs | Manage Collections | Manage Sets

Alma Sandbox

Resources

Admin

Acquisitions

Fulfillment

Analytics

Show MDE

All titles ▾ Keywords ▾ State v. Harris SINOPIA instance update Feb2024 case file Laurence M. Rose. [Home] [Search]

Facets << All Titles (1 - 1 of 1) where (Record Format contains keywords "LC BF INSTANCE (Under Construction)") [Push Selected to MDE] [Save and Filter Query]

Material Type ▾ Book (1)

Resource Type ▾ Book - Physical (1)

Language ▾ English (1)

Publication Year ▾ 2011 (1)

Institution Community

Select All Sort by: Rank Secondary Sort by: Rank 0 rows selected Expand: Physical [Settings]

1 [] State v. Harris SINOPIA instance update Feb2024 case file Laurence M. Rose. [Edit Record] [Holdings] [More]

Book {Book - Physical} text; unmediated; volume By Rose, Laurence M. (©2011) Language: English MMS ID: 991031993820902976

Subject: Trial practice--United States Problems and Exercises Creation Date: 03/08/2024 11:28:14 EST

Modification Date: 03/08/2024 11:28:14 EST ISBN: 9781601561695 Record number: 994598712

Physical (2) Electronic Digital Other details

2 Holdings | 2 of 2 items are available

Library	Location	Call Number	Accession Number	Item Availability	Related Record
LAW	av	KF9657 .R67 2011	-	1 of 1 Available	-
LAW	arch	KF9657 .R67 2011	-	1 of 1 Available	-

Holdings | Items

Edit BF record, add inventory: holdings, items

MIAMI SANDBOX | Law Library - LAW Acquisitions Department

All titles | Keywords | State v. Harris

Run a Job | Open Metadata Editor | Import (Resources) | Design Analytics | Manage Exports | Monitor Jobs | Manage Collections | Manage Sets

Records | Templates | Rules

MARC21 Bib (1) | LC BF Instance (1) | **Holdings (1)** | DC

Search in list

State v. Harris SINOPIA instance updat... (22434469060002976)

New

State v. Harris SINOPIA instance update Feb2024 cas... (991031993820902976)

View Only

```

1 <record>
2   <rdf:RDF xmlns:bf="http://id.loc.gov/ontologies/bibframe/"
3     xmlns:bflc="http://id.loc.gov/ontologies/bflc/"
4     xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
5     xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
6     xmlns:sinopia="http://sinopia.io/vocabulary/"
7   >
8     <bf:DescriptionConventions rdf:about="http://id.loc.gov/vocabulary/d
9       <rdfs:label xml:lang="en">Resource description and access</rdfs:la
10    </bf:DescriptionConventions>
11    <bf:Agent rdf:about="http://id.loc.gov/vocabulary/organizations/fmul
12      <rdfs:label xml:lang="en">University of Miami, Law Library</rdfs:l
13    </bf:Agent>
14    <rdf:Description rdf:about="http://id.loc.gov/vocabulary/menclvl/f">
15      <rdfs:label xml:lang="en">full</rdfs:label>
16    </rdf:Description>
17    <rdf:Description rdf:about="http://id.worldcat.org/fast/1204155">
18      <rdfs:label xml:lang="en">United States</rdfs:label>
19    </rdf:Description>
20    <bf:Agent rdf:about="http://id.loc.gov/authorities/names/n94049985">
21      <rdf:type rdf:resource="http://id.loc.gov/ontologies/bibframe/Pers
22      <rdfs:label xml:lang="en">White, Patricia D.</rdfs:label>
23    </bf:Agent>
24    <rdf:Description rdf:about="http://id.loc.gov/vocabulary/relators/dn
25      <rdfs:label>Donor</rdfs:label>
26    </rdf:Description>
27    <rdf:Description rdf:about="https://id.loc.gov/vocabulary/languages/
28      <rdfs:label xml:lang="en">English</rdfs:label>

```

Inventory

Holdings(1) | Portfolio(0) | Representation(0) | Electronic Collection(0)

1 Library: Law Library Location: av
Call Number: KF9657 .R67 2011
No. of items: 1 Available: 1

1	<input type="checkbox"/>	350515044869420	Law Library	Reserve Audiovisual	KF9657 .R67 2011	CD	-	-	-	-	Item in place	-	-	-	...
---	--------------------------	-----------------	-------------	------------------------	---------------------	----	---	---	---	---	------------------	---	---	---	-----

Primo VE – Full Display and Display Source Record... RDF/XML tags


The screenshot shows the Primo VE search results page. At the top, there is a navigation bar with 'LIBRARIES' and various search options. The search bar contains the query 'State v. Harris SINOPIA instance update Feb2024 case file Laurence M. Rose.' Below the search bar, there are filters for 'All items', 'that contain my query words', and 'anywhere in the record'. A 'Sign in' button is visible. The results section shows '0 selected' and '1 of 1 Results'. A single result is displayed with a book cover and the title 'State v. Harris SINOPIA instance update Feb2024 case file' by Rose, Laurence M.; White, Patricia D. ©2011. It is available at Law Library Archives (KF9657 .R67 2011) and other locations. The 'Results Per Page' is set to 10.

The screenshot shows the 'Details' page for the book. The title is 'State v. Harris SINOPIA instance update Feb2024 case file'. The additional title is 'State versus Harris'. The author is Rose, Laurence M. The contributor is White, Patricia D. The subjects are 'Trial practice -- United States' and 'Problems and Exercises'. The genre is 'Problems and Exercises'. The publisher is Boulder, Colorado National Institute for Trial Advocacy. The creation date is ©2011. The format is 'xiii, 71 pages 28 cm', 'Forms', and 'Illustrations'. The language is English. The identifier is ISBN : 9781601561695. The note states: 'An adaptation of "Fordyce v. Harris and Felson," originally written by Abraham P. Ordover. U.M. Law library copy donated by Professor Patricia D. White. Contributed by Professor Laurence M. Rose, University of Miami School of Law. A companion file to Fordyce v. Harris and Felson. FBA 1169'. The source is 'Library Catalog'. At the bottom, under the 'Links' section, the 'Display Source Record' link is highlighted with a red circle.

```
<record>
  <rdf:RDF xmlns:bf="http://id.loc.gov/ontologies/bibframe/" xmlns:bfcl="http://id.loc.gov/ontologies/bfcl/" xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" >
    <bf:DescriptionConventions rdf:about="http://id.loc.gov/vocabulary/descriptionConventions/rda" >
      <rdfs:label xml:lang="en">Resource description and access</rdfs:label>
    </bf:DescriptionConventions>
    <bf:Agent rdf:about="http://id.loc.gov/vocabulary/organizations/fmul" >
      <rdfs:label xml:lang="en">University of Miami, Law Library</rdfs:label>
    </bf:Agent>
    <rdf:Description rdf:about="http://id.loc.gov/vocabulary/menclvl/f" >
      <rdfs:label xml:lang="en">full</rdfs:label>
    </rdf:Description>
    <rdf:Description rdf:about="http://id.worldcat.org/fast/1204155" >
      <rdfs:label xml:lang="en">United States</rdfs:label>
    </rdf:Description>
    <bf:Agent rdf:about="http://id.loc.gov/authorities/names/n94049985" >
      <rdf:type rdf:resource="http://id.loc.gov/ontologies/bibframe/Person"/>
      <rdfs:label xml:lang="en">White, Patricia D.</rdfs:label>
    </bf:Agent>
    <rdf:Description rdf:about="http://id.loc.gov/vocabulary/relators/dnr" >
      <rdfs:label>Donor</rdfs:label>
    </rdf:Description>
    <rdf:Description rdf:about="https://id.loc.gov/vocabulary/languages/eng" >
      <rdfs:label xml:lang="en">English</rdfs:label>
    </rdf:Description>
    <bf:Instance rdf:about="https://api.development.sinopia.io/resource/db4262ed-f598-4643-910f-7cf23ac01732" >
      <rdf:type rdf:resource="http://id.loc.gov/ontologies/bibframe/Print"/>
      <sinopia:hasResourceTemplate>pcc:bf2:Monograph:Instance</sinopia:hasResourceTemplate>
      <bf:instanceOf rdf:resource="https://api.development.sinopia.io/resource/4432d95f-9691-4f8e-9a7c-5ed5c0e75481"/>
      <bf:title>
        <bf>Title rdf:nodeID="f91343caa7db24e53a5b50ed62337b8bbb1">
          <bf:mainTitle xml:lang="en">State v. Harris SINOPIA instance update Feb2024</bf:mainTitle>
          <bf:subtitle xml:lang="en">case file</bf:subtitle>
        </bf>Title>
      </bf:title>
      <bf:responsibilityStatement xml:lang="en">Laurence M. Rose.</bf:responsibilityStatement>
      <bf:provisionActivity>
        <bf:Publication rdf:nodeID="f91343caa7db24e53a5b50ed62337b8bbb5">
          <bf:date rdf:datatype="http://id.loc.gov/datatypes/edtf">2011</bf:date>
          <bf:place rdf:resource="http://id.worldcat.org/fast/1204155"/>
          <bfcl:simplePlace xml:lang="en">Boulder, Colorado</bfcl:simplePlace>
          <bfcl:simpleAgent xml:lang="en">National Institute for Trial Advocacy</bfcl:simpleAgent>
        </bf:Publication>
      </bf:provisionActivity>
    </bf:Instance>
  </rdf:RDF>
</record>
```



What Works

- Searching (including by URI)
 - Adding inventory
 - Placing orders for physical and electronic material
 - Publishing to Primo VE
 - Publishing records in BIBFRAME as MARC to OCLC
- 

What Doesn't Work Yet

- Editing BIBFRAME records in Alma
- Normalisation rules and batch cataloguing
- Punctuation
- Exporting item records from Sinopia
- Item records for copy-specific details
- Interoperability with MARC
- Importing Embedded Order Records EOD via Import Profile

Next Steps

- Phase 2 - feedback on ExLibris' form editor
- Pairing up with other institutions
- Wider testing (Fulfilment, Analytics, Reading lists, etc.)
- Preparing colleagues for hybrid MARC-BIBFRAME environment
- Move to Production (?)

Thank you!

Claire Delamore claire.delamore@ncl.ac.uk

Kim Taylor k.r.taylor@leeds.ac.uk

Trevor Hough t.j.hough@leeds.ac.uk

Margarita Perez Martinez mperezm@law.miami.edu



MIAMI

