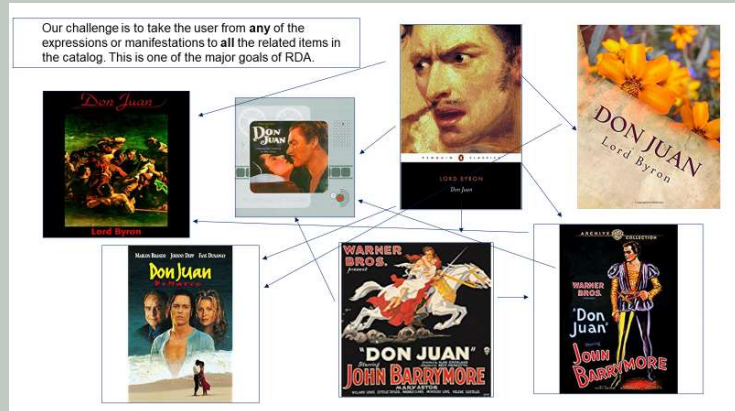


Looking to the Future: How to Learn About Linked Data and BIBFRAME

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Cataloging Maintenance Center/IHLS
January 12, 2023



Welcome to Looking to the Future: How to Learn About Linked Data and BIBFRAME. You keep hearing about “linked data” and “BIBFRAME” and want to know more...but where do you start? I am going to walk you through my process of learning about linked data and BIBFRAME from the perspective of a beginner. This presentation will provide a brief overview of linked data and BIBFRAME, how linked data works, and share resources for continuing your learning experience. I will answer questions at the end of the presentation.



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Linked data

VIAF

BIBFRAME

Summary

Questions

This is the agenda today.

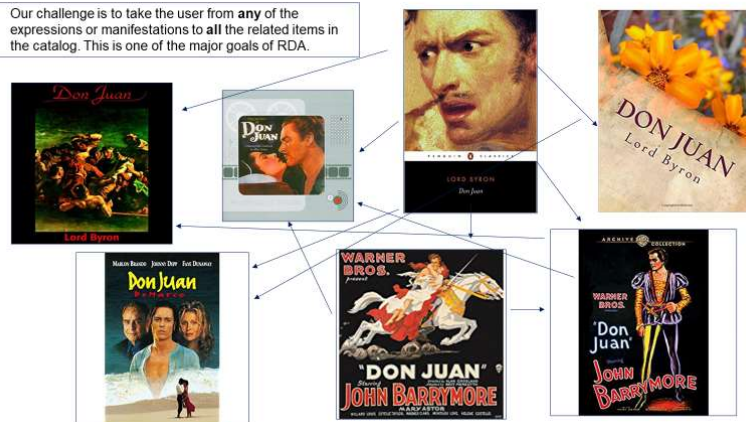


Linked Data

Library linked data (LLD) is the use of [linked data](#) standards by libraries. These standards are usually applied to [bibliographic](#) and [authority](#) data sets with the hope of decreasing redundant cataloging work; and increasing visibility of library resources and interoperability with non-library systems--[Wikipedia](#)

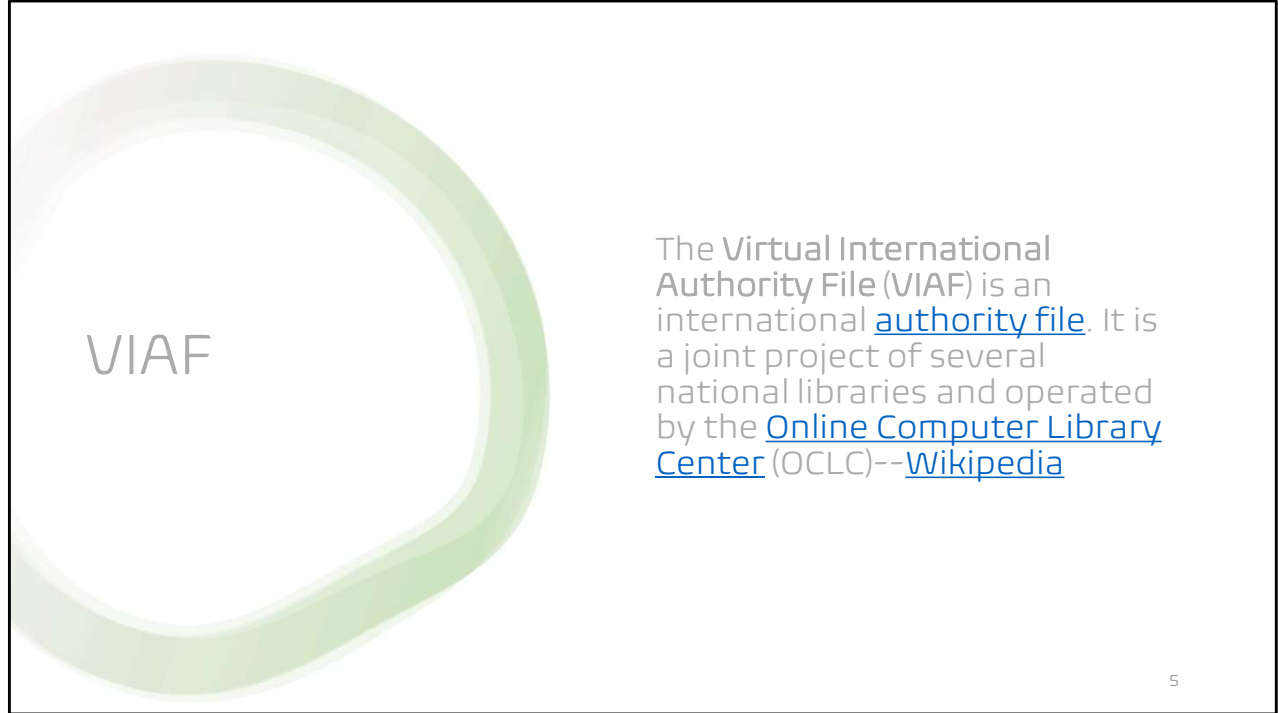
Don Juan

Our challenge is to take the user from **any** of the expressions or manifestations to **all** the related items in the catalog. This is one of the major goals of RDA.



4

Let's look a little more closely at the diagram that was on the title slide. We have two different print editions of Don Juan, an audiobook, a DVD version of the movie, a VHS version, a soundtrack, and a movie based loosely on the original book and now the related manifestations/items need to be linked to each other. Now, think of all the works that have been manifested and expressed into print books, e-books, audiobooks, streaming audio, videos (motion pictures, VHS, DVD, Blu-Ray), streaming video, etc. Although your local public library might not own all manifestations and expressions of this one work, your patron might want to find all these different items and borrow one or many of them. As you know, patrons are no longer restricted to borrowing the resources owned by their public library. The majority of library resources are accessible, even if you can only use some of them in the library.



VIAF links authority file data. My description won't do it justice, so let's take a look at VIAF!

Searching VIAF

VIAF
Virtual International Authority File






Search

Select Field: Select Index: Search Terms:

VIAF: The Virtual International Authority File

The VIAF® (Virtual International Authority File) combines multiple name & available on the Web. [Learn more.](#)

VIAF Contributors


-  Library of Congress/NACO
-  National Library of Mexico
-  British Library
-  Library and Archives Canada
-  National Agricultural Library (U.S.)

Search Terms:

- Thomas Jefferson, 1743-1826
- Thomas Jefferson Snodgrass, 1835-1910
- Thomas Jefferson Barfield, 1950-
- Thomas Jefferson Wertenbaker, 1879-1966
- Thomas Jefferson University., Jefferson Medical College
- Thomas Jefferson Jackson See, 1866-1962
- Thomas Jefferson Kline, 1942-
- Thomas Jefferson American athlete
- Thomas Jefferson Hogg, 1792-1862
- Thomas Jefferson Anderson 1928-

Search

the goal of the service



I decided to do a Thomas Jefferson search. As you see in the screenshot above, the search box populates, giving you choices. I selected Thomas Jefferson, 1743-1826.























Thomas Jefferson in VIAF

Search

Select Field: Select Index: Search Terms:

117 headings found for Thomas Jefferson, 1743 1826


Heading


- 1 Jefferson, Thomas, 1743-1826. 
 Jefferson, Thomas. 
 Thomas Jefferson. 
 1826-1743. 
 1743-1826. 
 Jefferson, Thomas (American statesman, architect, and draftsman, 1743-1826). 
 1826-1743. 
- 2 Madison, James, 1751-1836. 
 Madison, James. 
 James Madison, Jr. 
 Madison, James 1750-1836. 
 1836-1751. 
 1836-1751. 
 1751-1836. 
 Masquon, J., 1751-1836. 
- 3 Castillon, Sébastien, 1515-1563. 
 Châteillon, Sébastien, 1515-1563. 
 Castillon, Sébastien, 1515-1563. 
 Кастильон, Себастьян, 1515-1563. 
 Castillon, Sébastien. 
 Châteillon, Sébastien. 
 Chatillon, Sébastien, 1515-1563. 


This is a screenshot of the partial search results. As you see at the top, there are 117 headings, which are all related to Thomas Jefferson.


Garden and Farm Books of Thomas Jefferson


The screenshot displays two bibliographic records. The top record is from VIAF, showing the title 'The Garden and Farm Books of Thomas Jefferson' with a cover image of a house and flowers. It lists the author as 'Jefferson, Thomas, 1743-1826' and provides various identifiers including VIAF ID 41866059 and a permalink. The bottom record is from WorldCat, showing the same title and author, along with a summary of the book's content, a 4-star rating, and publication details: 'Print Book. English, ©1987' by Fulcrum.


Jefferson, Thomas, 1743-1826. 


Jefferson, Thomas 

Thomas Jefferson 

1826-1743 جفرسون، توماس 

1743-1826 ג'פרסון, תומס 

Jefferson, Thomas (American statesman, architect, and draftsman, 1743-1826) 

1826-1743 جفرسون، توماس 

VIAF ID: 41866059 (Personal)


Permalink: <http://viaf.org/viaf/41866059>

The garden and farm books of Thomas Jefferson ★★★★★ 4 reviews

Authors: [Thomas Jefferson](#), [Robert C. Baron](#)

Summary: Includes Jefferson's correspondence, drawings, and plans for Monticello's gardens. Jefferson's journals on horticulture at Monticello, his achievements, failures, and plans with some of his letters on the subject to Washington,....

Show more ▾

 Print Book. English, ©1987

Edition: [View all formats and editions](#)

Publisher: Fulcrum, Golden, Colo., ©1987

Show more information ▾

I chose Garden and farm books of Thomas Jefferson from the VIAF website to examine further. The top image is from VIAF which can then take you to the WorldCat record for The garden and farm books of Thomas Jefferson (bottom screenshot). In the VIAF image, you can see all the country flags that have a linked record—either to an authority or bibliographic record. WorldCat links data—formats, creators, subjects, titles, etc.

Thomas Jefferson in Wikipedia

Categories: Thomas Jefferson | 1743 births | 1826 deaths | 18th-century American philosophers | 18th-century vice presidents of the United States | 18th-century American writers | 19th-century American philosophers | 19th-century vice presidents of the United States | 19th-century presidents of the United States | Ambassadors of the United States to France | American architects | American book and manuscript collectors | American colonization movement | American deists | American foreign policy writers | American gardeners | American inventors | American lawyers admitted to the practice of law by reading law | American male non-fiction writers | American neoclassical architects | American people of English descent | American people of Welsh descent | American planters | American political party founders | American political philosophers | American political writers | American religious skeptics | American slave owners | American surveyors | Burials at Monticello | Candidates in the 1792 United States presidential election | Candidates in the 1796 United States presidential election | Candidates in the 1800 United States presidential election | Candidates in the 1804 United States presidential election | College of William & Mary alumni | Continental Congressmen from Virginia | Democratic-Republican Party presidents of the United States | Democratic-Republican Party vice presidents of the United States | Enlightenment philosophers | Fellows of the American Academy of Arts and Sciences | Free speech activists | Governors of Virginia | Hall of Fame for Great Americans inductees | 1800s in the United States | House of Burgesses members | Independent scientists | Jefferson family | Members of the American Antiquarian Society | Members of the American Philosophical Society | Members of the Royal Netherlands Academy of Arts and Sciences | Members of the Virginia House of Delegates | People from Monticello | People of the American Enlightenment | Philosophers from Virginia | Physiocrats | Pre-19th-century cryptographers | Presidents of the United States | Randolph family of Virginia | Signers of the United States Declaration of Independence | United States Secretaries of State | University and college founders | University of Virginia people | Vice presidents of the United States | Virginia colonial people | Virginia Democratic-Republicans | Virginia lawyers | Washington administration cabinet members | Writers from Virginia | Writers of American Southern literature | Recipients of the AIA Gold Medal | Virginia dynasty

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Here is another example of linked data. All of these “topics” are linked in the Wikipedia article on Thomas Jefferson.

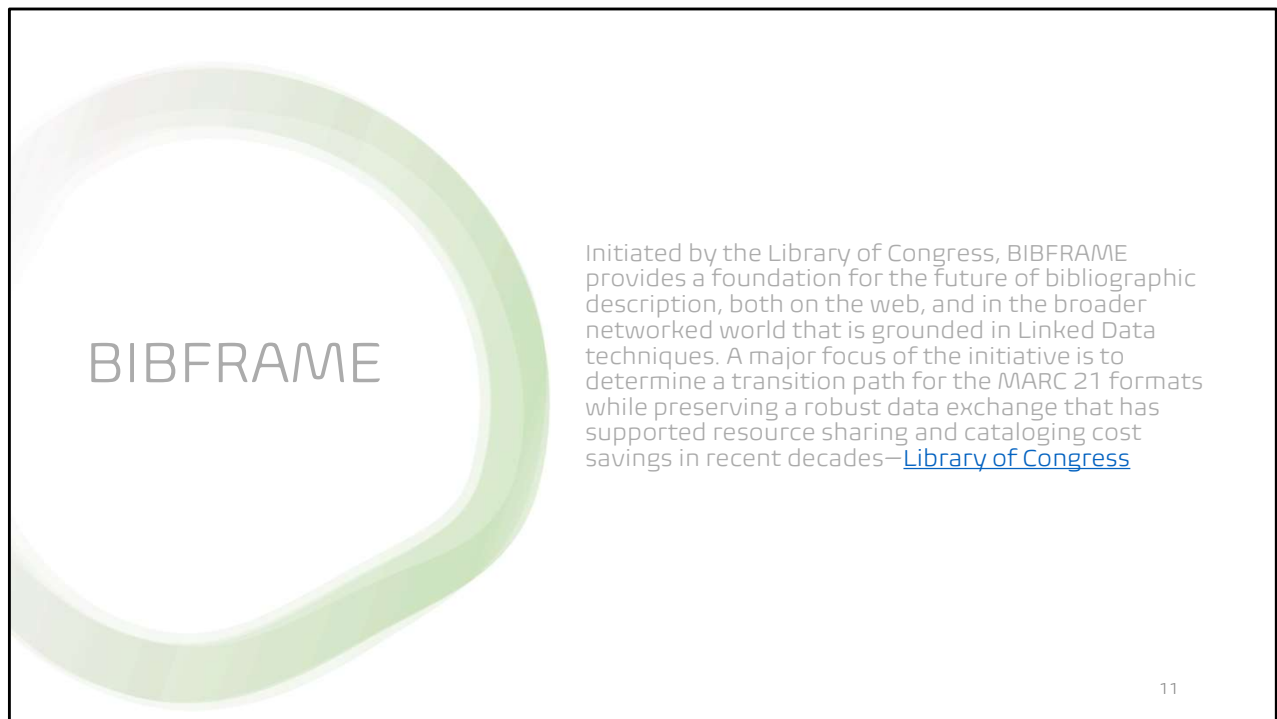
Linked Data in MARC Records

```

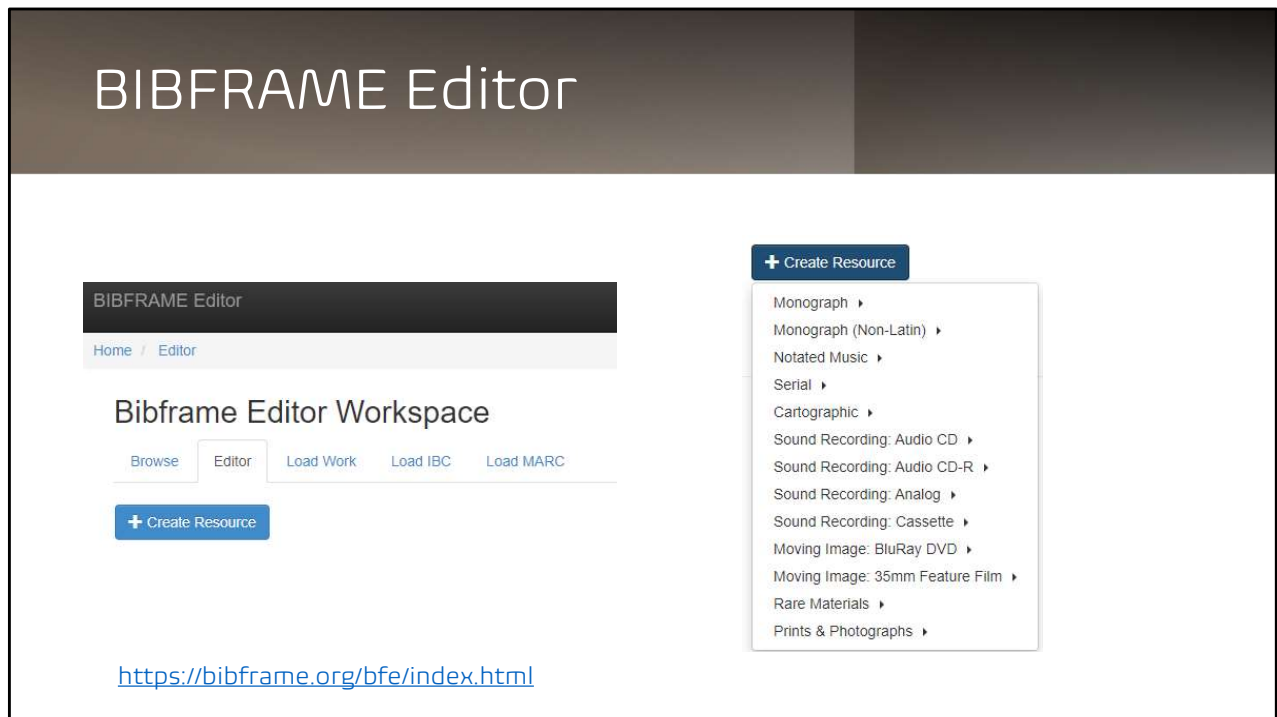
110 2   NORC \(Organization\). ‡e author.
245 1 0   Exploring metropolitan anchor hospitals and the communities they serve : ‡b final report / ‡c NORC.
650 0   Hospital utilization.
650 0   Hospitals ‡x Research.
650 0   Hospitals ‡z United States.
650 2   Hospitals.
650 2   Environment and Public Health.
856 4 0   ‡u http://www.aha.org ‡y American Health Association website
856 4 0   ‡u https://www.aha.org/system/files/media/file/2022/10/Exploring-Metropolitan-Anchor-Hospitals-and-the-Communities-They-Serve-202210.pdf ‡y Electronic resource (PDF)
  
```

10

Let's look at an example of linked data in a Machine Readable Cataloging Record (MARC). I recently cataloged an e-book for the American Hospital Association (AHA) Library in Chicago. This is OCLC #1350812795, Exploring metropolitan anchor hospitals and the communities they serve. The corporate author (110 2_), LCSH (650_0), and the electronic location and access (856 40) fields all have linked data in them. Notice that the first 856 field takes the patron to the American Health Association website while the second 856 field is a link to the PDF version of the e-book.



BIBFRAME was created in 2012. Currently, LC cataloging staff are creating records in MARC & in BIBFRAME. This has been their current practice for several years. The current version of BIBFRAME is BIBFRAME 2.0.



You can access the BIBFRAME editor (demo version) at <https://bibframe.org/bfe/index.html>. Click on the editor tab (as shown in the image above, left). Then, click on the “Create Resource” button. Now, you have a choice to make. What type of resource are you cataloging?

BIBFRAME: Creating an Instance Record

Monograph Instance ⓘ

Instance of BIBFRAME Work

Title Information Instance Title Variant Title Parallel Title

Statement of Responsibility

Edition Statement

Provision Activity Publication Distribution Manufacture Production

Transcribed Provider Statement

Copyright Date

Series statement

Series enumeration

Contribution Contribution

Mode of Issuance single unit ⓘ

Identifiers LCCN ISBN Other Identifier Local system number

Notes about the Instance Note

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From the “Create Resource” button, I selected Monograph, Instance (the two choices are instance and work). This is the screen that appears. For any of the grayed boxes, you can click on them and provide more information. We are going to look at the other options for BIBFRAME Work in two slides.

BIBFRAME Instance, cont.

Media type	<input type="text" value="unmediated"/>	
Extent	<input type="text" value="Extent"/>	
Dimensions	<input type="text"/>	
Carrier type	<input type="text" value="volume"/>	
Has Item	<input type="text" value="BIBFRAME Item"/>	
Uniform Resource Locator	<input type="text"/>	
Projected publication date (YYMM)	<input type="text"/>	
Administrative Metadata	<input type="text" value="lc:RTbf2:Monograph Instance 2022-11-29T18:13:30"/>	
Add Property	<input type="text" value="Type for suggestions"/>	

14

These are the rest of the boxes you can fill in for an instance.

BIBFRAME Work

[Save changes](#)

Lookup

OR

Creator of Work Primary Contribution

Title Information Work Title

Form of Work Form/Genre

Date of Work

Place of Origin of the Work Place

(Geographic) Coverage of the Content Geographic coverage

(Time) Coverage of the Content

Intended Audience Intended audience

Contribution Contribution

Notes about the Work Note

Contents Contents note

Summary Summary note

Subject of the Work Subject components Geographic subjects Work as subject

Classification numbers Library of Congress Classification Dewey Decimal Classification

Content Type

Language Language

Script

When I clicked on BIBFRAME Work, this is the screen that appeared.

BIBFRAME Example

BIBFRAME 2.0 Monograph (Non-Latin) Instance ?

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

☐ OFF ☒ ON

Instance of BIBFRAME Work

Title Information Garden and farm books of Thomas Jefferson ☒ ☐

Statement of Responsibility Title in Original Script Variant Title Parallel Title

Edition Statement

Provision Activity Publication Distribution Manufacture Production

Transcribed Provider Statement

Copyright Date 1987 ☒ ☐

Series statement

Series enumeration

Contribution Contribution

Mode of Issuance single unit ☒ ☐

Identifiers LCCN ISBN Other identifier Local system number

Notes about the Instance Note

Media type unmediated ☒ ☐

Extent Extent

Dimensions 528 pages ☒ ☐

Carrier type 23 cm ☒ ☐

Carrier type volume ☒ ☐

16

In the demo editor, I created a BIBFRAME record for the Garden and farm books of Thomas Jefferson that we looked at earlier. When you are in the demo editor, you need to enter information in the blank box, click the plus sign, and then save it. Hopefully, if you are using the real editor, it's less clunky to use.

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In the top image, I typed in Limited edition in the Edition Statement box, selected English (en) as the language, then clicked on the plus sign (far right). The bottom image shows that “Limited edition” now displays under the blank box, but you can see that your choice is to edit or delete it.

BIBFRAME Preview

Preview

```
@prefix bf: <http://id.loc.gov/ontologies/bibframe/>.
@prefix bflc: <http://id.loc.gov/ontologies/bflc/>.
@prefix madsrdf: <http://www.loc.gov/mads/rdf/v1#>.
@prefix pmo: <http://performedmusicontology.org/ontology/>.
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>.
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#>.
@prefix xsd: <http://www.w3.org/2001/XMLSchema#>.
@prefix datatypes: <http://id.loc.gov/datatypes/>.
@prefix lclocal: <http://id.loc.gov/ontologies/lclocal/>.

<http://id.loc.gov/authorities/names/n79089957> a bf:Person;
  rdfs:label "Jefferson, Thomas, 1743-1826".
<http://id.loc.gov/resources/instances/ell2359429537705836404872679219451120150> a bf:Instance;
  bf:adminMetadata _:b0_b0;
  bf:carrier <http://id.loc.gov/vocabulary/carriers/nc>;
  bf:copyrightDate "1987";
  bf:dimensions "23 cm";
  bf:editionStatement "Limited edition"@en;
  bf:extent _:b0_b1;
  bf:instanceOf _:b0_b2;
  bf:issuance <http://id.loc.gov/vocabulary/issuance/mono>;
  bf:media <http://id.loc.gov/vocabulary/mediaTypes/n>;
  bf:note _:b0_b3;
  bf:provisionActivity _:b0_b4.
_:b0_b0 a bf:AdminMetadata;
  bflc:procInfo "create instance";
  bflc:profile "lc:RT:b2:MonographNR:Instance";
  bf:changeDate "2022-11-29T18:46:57"^^xsd:dateTime;
  bf:creationDate "2022-11-29"^^xsd:date;
  bf:descriptionAuthentication <http://id.loc.gov/vocabulary/marcauthen/pcc>;
  bf:descriptionConventions <http://id.loc.gov/vocabulary/descriptionConventions/rda>;
  bf:descriptionLanguage <http://id.loc.gov/vocabulary/languages/eng>;
  bf:descriptionModifier <http://id.loc.gov/vocabulary/organizations/dlc>;
  bf:identifiedBy <https://bibframe.org/resources/e87792705677286190434361993986679502384>.
<http://id.loc.gov/vocabulary/carriers/nc> a bf:Carrier;
  rdfs:label "volume".
_:b0_b1 a bf:Extent;
  rdfs:label "528 pages".
_:b0_b3 a bf:Note;
```

Here is the first part of the preview of Garden and farm books of Thomas Jefferson. All the schemas are shown at the top (bf, bflc, madsrdf, pmo, rdf, rdfs, xsd, datatypes, and lclocal). These prefixes are “defined” at the top of the screen. Bf is for BIBFRAME, Bflc is BIBFRAME Library of Congress. Madsrdf is Metadata Authority Description Schema in Resource Description Framework. Pmo is performed music ontology. RDF is Resource Description Framework. RDFS is Resource Description Framework Schema. Xsd is XML Schema Definition. Datatypes is the Library of Congress datatypes. Lclocal is the Library of Congress local ontologies.

BIBFRAME Preview, cont.

```
_:b0_b2 a bf:Work;
  bf:adminMetadata _:b0_b5;
  bf:content <http://id.loc.gov/vocabulary/contentTypes/txt>;
  bf:contribution _:b0_b6;
  bf:title _:b0_b7.
<http://id.loc.gov/vocabulary/issuance/mono> a bf:Issuance;
  rdfs:label "single unit".
<http://id.loc.gov/vocabulary/mediaTypes/n> a bf:Media;
  rdfs:label "unmediated".
_:b0_b3 a bf:Note;
  rdfs:label "Includes Jefferson's correspondence, drawings, and plans for Monticello's gardens."
_:b0_b4 a bf:Publication;
  bf:place _:b0_b8.
<http://id.loc.gov/vocabulary/contentTypes/txt> a bf:Content;
  rdfs:label "text".
<http://id.loc.gov/vocabulary/descriptionConventions/rda> a bf:DescriptionConventions;
  rdfs:label "RDA".
<http://id.loc.gov/vocabulary/languages/eng> a bf:Language;
  rdfs:label "English".
<http://id.loc.gov/vocabulary/marcauthen/pcc> a bf:DescriptionAuthentication;
  rdfs:label "pcc".
<http://id.loc.gov/vocabulary/organizations/dlc> a bf:DescriptionModifier;
  rdfs:label "dlc".
<https://bibframe.org/resources/e87792705677286190434361993986679502384> a bf:Local;
  rdf:value "e87792705677286190434361993986679502384".
_:b0_b5 a bf:AdminMetadata;
  bf:procInfo "create instance";
  bf:profile "lc:RT:bf2:MonographNR:Work";
  bf:changeDate "2022-11-29T18:46:57"^^xsd:dateTime;
  bf:creationDate "2022-11-29"^^xsd:date;
  bf:descriptionAuthentication <http://id.loc.gov/vocabulary/marcauthen/pcc>;
  bf:descriptionConventions <http://id.loc.gov/vocabulary/descriptionConventions/rda>;
  bf:descriptionLanguage <http://id.loc.gov/vocabulary/languages/eng>;
  bf:descriptionModifier <http://id.loc.gov/vocabulary/organizations/dlc>;
  bf:identifiedBy <https://bibframe.org/resources/e87792705677286190434361993986679502384>.
_:b0_b6 a bf:PrimaryContribution;
  bf:agent <http://id.loc.gov/authorities/names/n79089957>.
_:b0_b7 a bf:title;
  rdfs:label "Garden and farm books of Thomas Jefferson";
  bf:mainTitle "Garden and farm books of Thomas Jefferson".
_:b0_b8 a bf:Place;
  rdfs:label "Golden, Colorado".
```

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Here is the final screenshot of the preview. The summary note is not shown in its entirety for display purposes only.

LDUG Annual Meeting

BIBFRAME and Linked Data: System Readiness

Marshall Breeding
Independent Consultant, Author, and
Founder and Publisher, Library Technology Guides
<https://librarytechnology.org/>
<https://twitter.com/mbreeding>



November 2, 2022

Library Systems' Readiness for Linked Data

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During the Linked Data Users Group (LDUG) annual meeting, Marshall Breeding presented BIBFRAME and Linked Data: System Readiness (a link to the recording is on the resources slide). In summary, Breeding says that BIBFRAME is mainly being used for monographs (books)—print and e-books. However, monographs are a smaller part of many academic library's budgets. It is more challenging to apply linked data to article-level discovery services. OCLC is working with the Library of Congress to finalize the BIBFRAME standard. Academic and larger public libraries are more interested in BIBFRAME than mid-sized and smaller public libraries or school libraries, but the Integrated Library Systems (ILS) must have buy-in and support BIBFRAME. Cataloging costs will increase if BIBFRAME is adopted—technology development, staff training, and documentation. **The global bibliographic ecosystem is dominated by** Koha which does not currently support BIBFRAME. He also shares that the main criticism of MARC has been that it is library-centric and that LC has created another library-centric program, BIBFRAME. There are over 2.7 million libraries worldwide (according to the International Federation of Library Associations and Institutions (IFLA)) so having a library-centric program might not be totally negative but if libraries used a universal program or coding then just imagine all the possibilities!

Summary

Linked data is useful

WorldCat links data

VIAF actively linking data

Library of Congress invested in
BIBFRAME

MARC records have linked data

Need ILS buy-in & support for
BIBFRAME

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Linked data is useful and has endless possibilities. The Virtual International Authority File (VIAF) is a useful resource for linking authority records and linking works/expressions/manifestations/items (WEMIs) and connecting them to one creator. MARC records have linked data which also link WEMIs, connecting all WEMIs to one creator. WorldCat links data, allowing patrons to filter and sort by creator, format, publication date, subject, etc. The Library of Congress is clearly vested and invested in BIBFRAME (using Alma, an Ex Libris product). It was created in 2012 and is not universally available for all libraries to use (and may never be). Integrated Library Systems (Follett, Polaris, Evergreen, Ex Libris, etc.) all need to have buy-in and support BIBFRAME in order for libraries to use it.

Resources

- BIBFRAME definition, <https://www.loc.gov/bibframe/>
- BIBFRAME editor (demo mode), <https://bibframe.org/bfe/index.html>
- BIBFRAME FAQs, <https://www.loc.gov/bibframe/faqs/>
- BIBFRAME initiative, [BIBFRAME - Bibliographic Framework Initiative \(Library of Congress\) \(loc.gov\)](#)
- Breeding, Marshall (2022). BIBFRAME and linked data: System readiness, <https://youtu.be/MQSaAmiBY2Q>
- CMC Evaluation Form, [Course evaluation survey \(Edit\) Microsoft Forms \(office.com\)](#)
- IFLA world map, <https://librarymap.ifla.org/>
- Jefferson, Thomas (Wikipedia), https://en.wikipedia.org/wiki/Thomas_Jefferson
- Linked data definition (Wikipedia), https://en.wikipedia.org/wiki/Library_linked_data
- OCLC. Linked data overview, <https://www.oclc.org/research/areas/data-science/linkddata/linked-data-overview.html>
- Thomas, Pamela (2018). Understanding WEMI (Work, Expression, Manifestation, Item), <https://www.railslibraries.info/events/152953>
- VIAF, <https://viaf.org/>

22

These are the resources I used to create this presentation and/or useful resources for you to explore. On a side note, I created and used the Don Juan diagram for a Reaching Across Illinois Libraries (RAILS) presentation on August 21, 2018. The link to the recording and slides is listed here. I have also included the link to our new CMC evaluation form in this list. The link to the form is also on the L2 event. I will give you a sneak peak of the form on the next slide.

Course evaluation survey ...

1. What is your name?

Enter your answer

2. What is the name of the library where you work?

Enter your answer

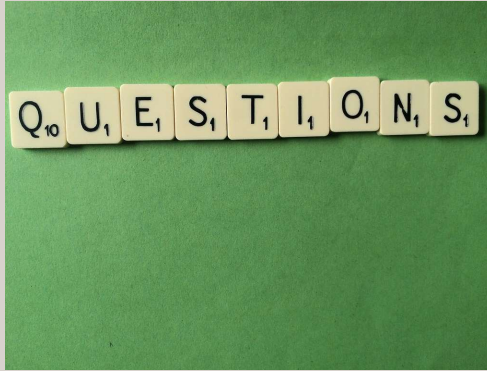
3. What library system do you work for?

Enter your answer

< Previous slide

Next slide >

This is our new evaluation survey.



[This Photo](#) by Unknown Author is licensed under [CC BY](#)

Dr. Pamela Thomas
pthomas@illinoisheartland.org
cmc@illinoisheartland.org

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Do you have any questions?

ON THE CALL TODAY

Questions? Contact the CMC:
cmc@illinoisheartland.org



Barbera Scoby
CMC Cataloger



Dr. Pamela
Thomas
CMC
Bibliographic
Grant Manager



Mary Cornell
CMC Cataloger



Eric McKinney
CMC Cataloger

On the call today are Barb Scoby, Dr. Pamela Thomas, Mary Cornell, and Eric McKinney.