Decentralizing Knowledge
Open Source and Open Data in Libraries

Tamir Borensztajn

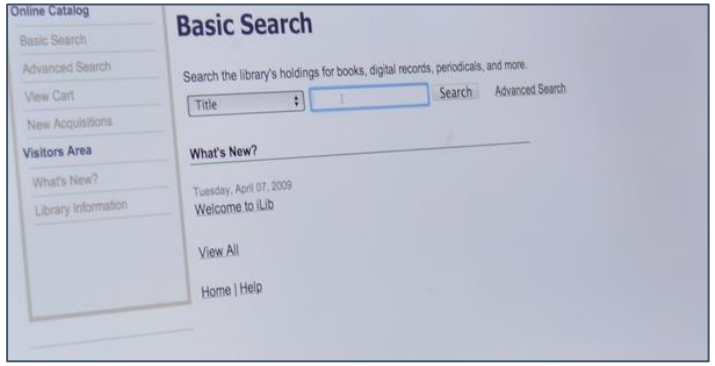
tamirb@ebsco.com

EBSCO

How do we accelerate research and help users gain new insights?

Accelerate research

Today, we assume certain pathways to information



Accelerate research

Creating *new pathways* to information by meeting users where they are.

Creating *new insights* by making relationships between people, places, disciplines, etc. more visible.

Library collections today

```
000     00778cam a2200253u  4500
001     6888761
005     20090112073138.0
008     830721s1934    nyua          000 0 eng
906     __      |a 0 |b cbc |c premunv |d u |e ncip |f 19 |g y-gencatlg
035     __      |9 (DLC) 34027294
010     __      |a  34027294
040     __      |a DLC |c CarP |d DLC
050     00      |a AC35 |b .E52
100     1_      |a Einstein, Albert, |d 1879-1955.
240     10      |a Mein Weltbild. |l English
245     14      |a The world as I see it.
260     __      |a New York, |b Covici, Friede, |c 1934.
300     __      |a xvi p., 1 l., |b 19-290 p. diagrs. |c 21 cm.
650     _0      |a Physics.
650     _0      |a Jews.
650     _0      |a Peace.
700     1_      |a Harris, Allan, [from old catalog] |e tr.
991     __      |b c-GenColl |h AC35 |i .E52 |t Copy 1 |w PREM
991     __      |b c-GenColl |h AC35 |i .E52 |p 00026241947 |t Copy 2 |w CCF
```

- Catalogs (MARC)
- Repositories (DC)
- Archives (EAD)

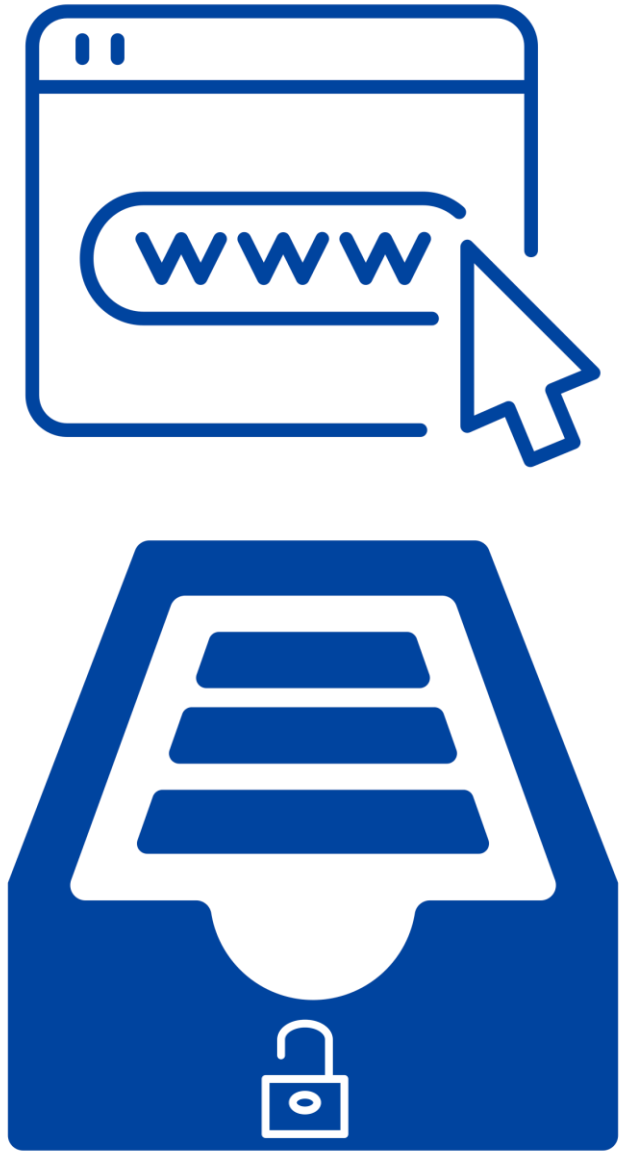
Library collections today

Libraries have rich and diverse collections, but today:

- Library collections are not visible anywhere on the Web
- Library collections are not connected to other data sources on the Web

As a result:

- Users have fewer access points and pathways to information
- Library collections miss out on usage (new visitors from the Web)
- Library collections lack potential enrichments and connections to many topics, places, people, etc. that the Web has to offer



transform

Make catalogs portable, visible and connected on the Web

bf:
BIBFRAME

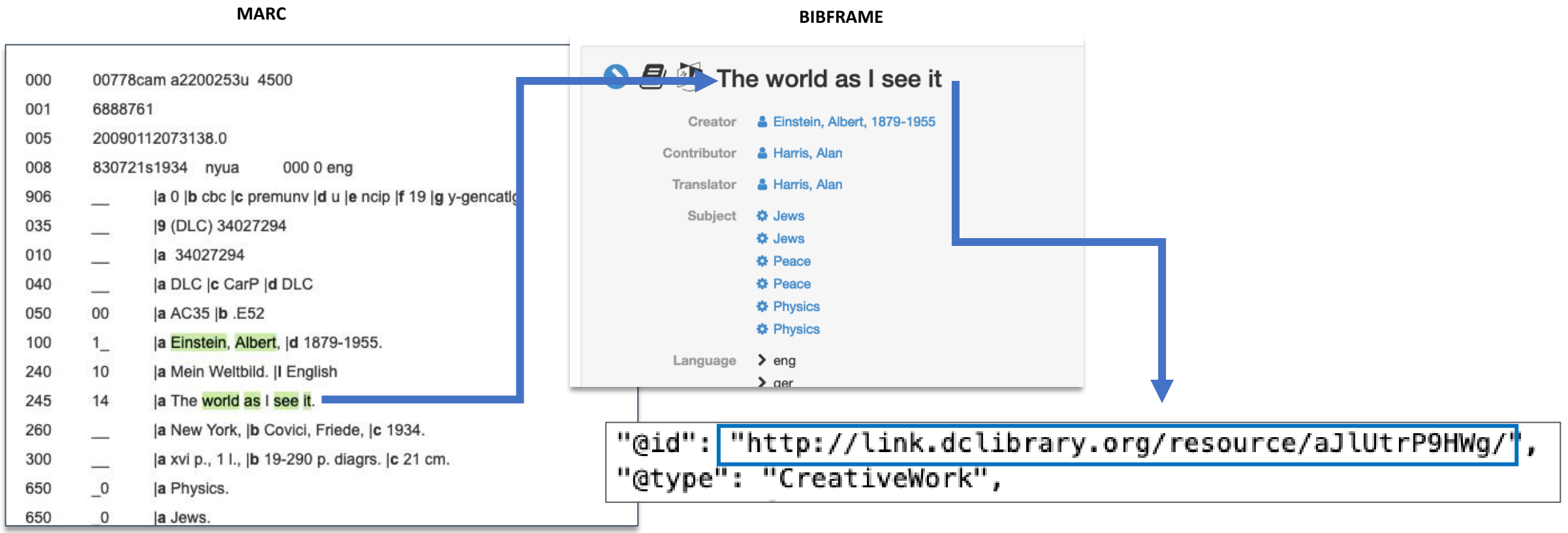
…expresses library resources (e.g., works, people, genres, etc.) and relationships (to places, people, genres, etc.) as links – for use on the web.

transform

bibliograph

Example: how we use MARC to create BIBFRAME

Let's look at the Einstein example…



Transforming MARC to BIBFRAME resources.
each resource becomes a link that serves as a unique identifier

Example: how we use MARC to create BIBFRAME

Let's look at the Einstein example…

MARC

000		00778cam a2200253u 4500
001		6888761
005		20090112073138.0
008		830721s1934 nyua 000 0 eng
906	__	|a 0 |b cbc |c premunv |d u |e ncip |f 19 |g y-gencatlg
035	__	|9 (DLC) 34027294
010	__	|a 34027294
040	__	|a DLC |c CarP |d DLC
050	00	|a AC35 |b .E52
100	1_	|a Einstein, Albert, |d 1879-1955.
240	10	|a Mein Weltbild. |l English
245	14	|a The world as I see it.
260	__	|a New York, |b Covici, Friede, |c 1934.
300	__	|a xvi p., 1 l., |b 19-290 p. diagrs. |c 21 cm.
650	_0	|a Physics.
650	_0	|a Jews.

BIBFRAME

The world as I see it

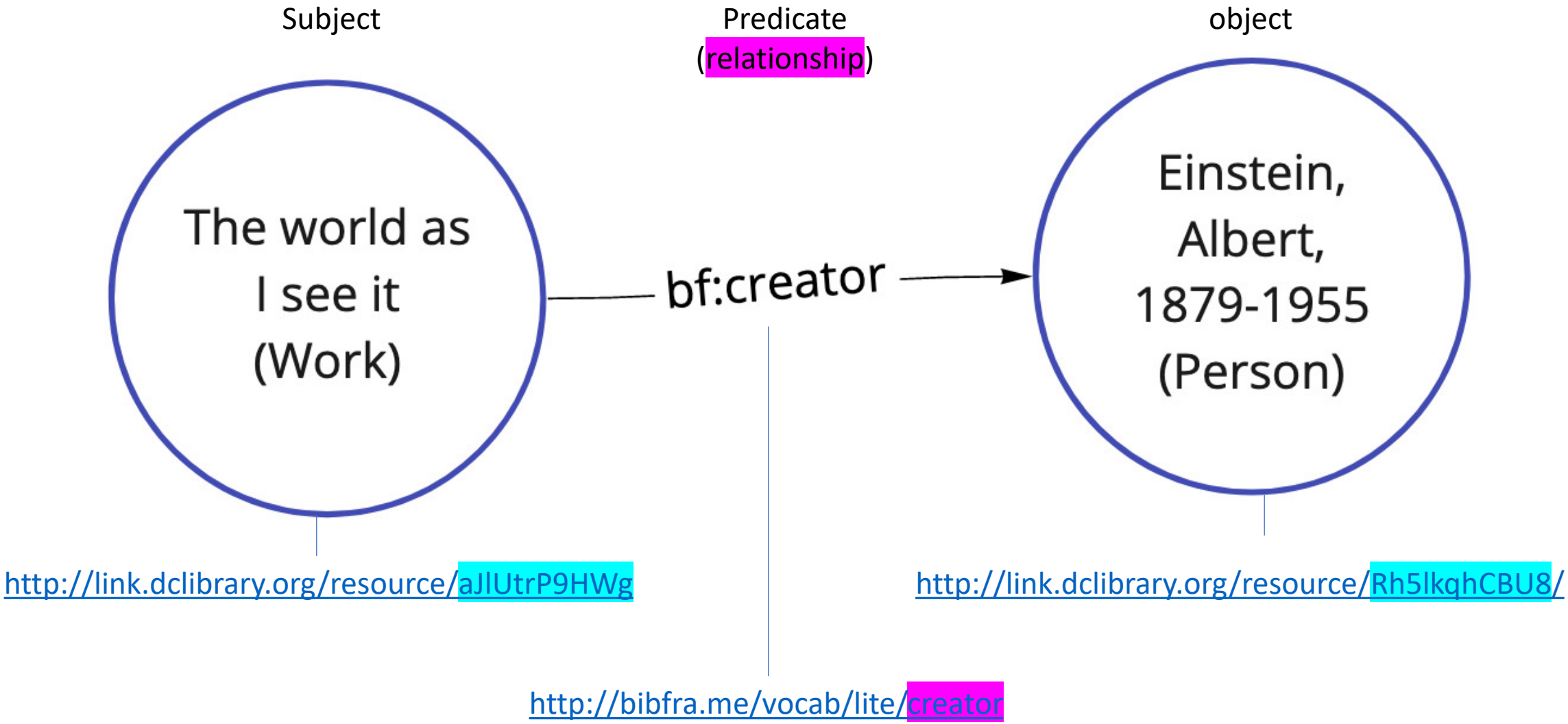
Creator	Einstein, Albert, 1879-1955
Contributor	Harris, Alan
Translator	Harris, Alan
Subject	Jews
	Jews
	Peace
	Peace
	Physics

```
{
    "@id": "http://link.dclibrary.org/resource/Rh5lkqhCBU8/",
    "@type": "Person",
    "name": "Einstein, Albert, 1879-1955",
    "url": "http://link.dclibrary.org/resource/Rh5lkqhCBU8/"
}
```

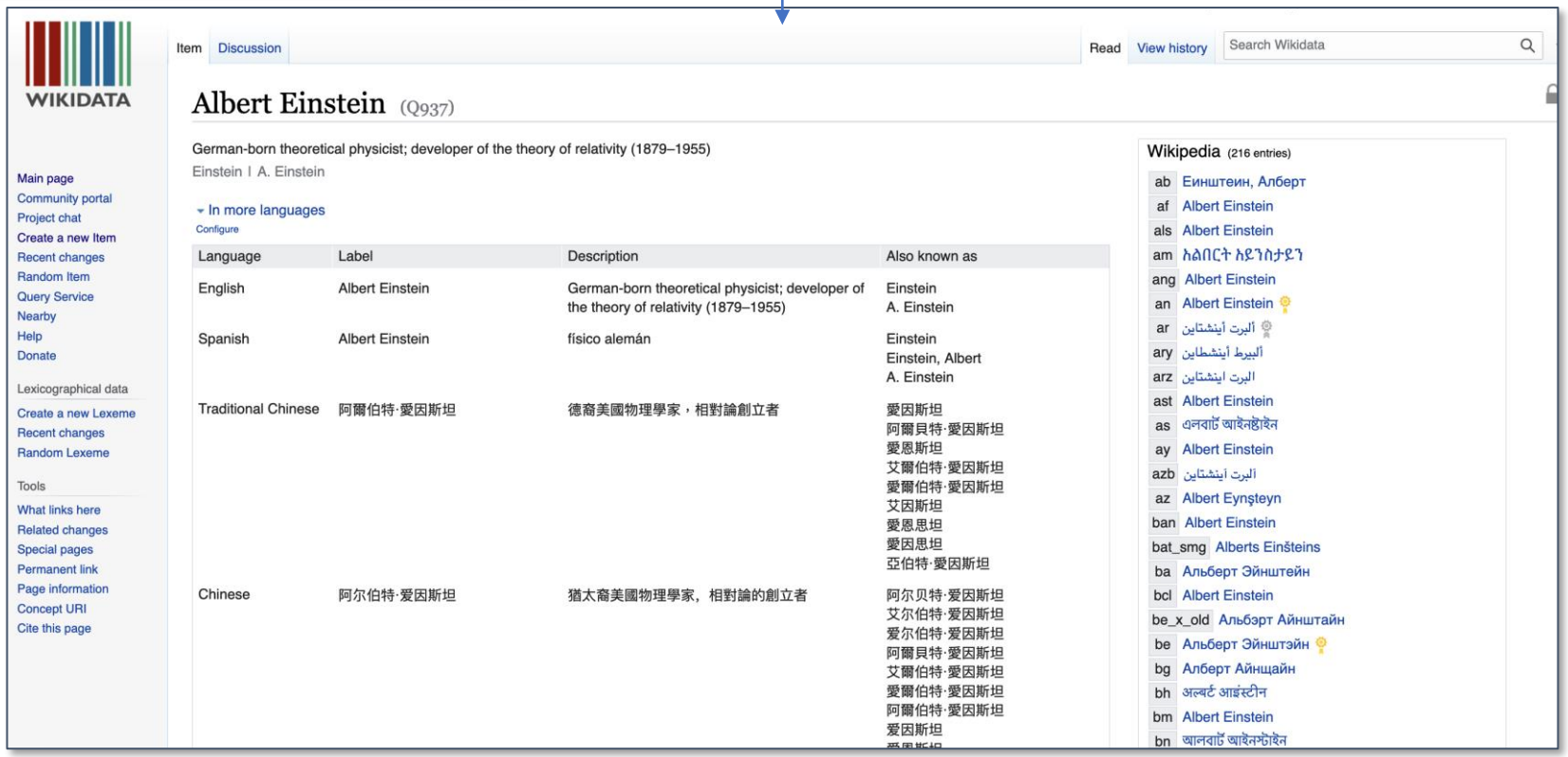
Transforming MARC to BIBFRAME resources.
each resource becomes a link that serves as a unique identifier

Example: using BIBFRAME resources to create relationships

Each resource is a link. The relationship is a link as well.

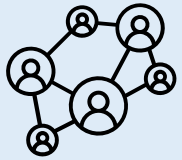



Einstein, Albert, 1879-1955
Local Identifier
http://link.dclibrary.org/resource/Rh5lkqhCBU8/
Network Identifier
http://library.link/resource/Rh5lkqhCBU8/
Alternative Identifiers
http://library.link/resource/R5unDpiqiTw
http://library.link/resource/7U2AFUylFPc
Equivalent Identifiers
https://www.wikidata.org/wiki/Q937


WIKIDATA
Item
Discussion
Read
View history
Search Wikidata
Albert Einstein (Q937)
German-born theoretical physicist; developer of the theory of relativity (1879–1955)
Einstein | A. Einstein
In more languages
Configure
Language
Label
Description
Also known as
English
Albert Einstein
German-born theoretical physicist; developer of the theory of relativity (1879–1955)
Einstein
A. Einstein
Spanish
Albert Einstein
físico alemán
Einstein
Einstein, Albert
A. Einstein
Traditional Chinese
阿爾伯特·愛因斯坦
德裔美國物理學家，相對論創立者
愛因斯坦
阿爾貝特·愛因斯坦
愛恩斯坦
艾爾伯特·愛因斯坦
愛爾伯特·愛因斯坦
艾因斯坦
愛恩思坦
愛因思坦
亞伯特·愛因斯坦
Chinese
阿尔伯特·爱因斯坦
猶太裔美國物理學家，相對論的創立者
阿尔贝特·爱因斯坦
艾尔伯特·爱因斯坦
爱尔伯特·爱因斯坦
阿爾貝特·愛因斯坦
艾爾伯特·愛因斯坦
愛爾伯特·愛因斯坦
阿爾伯特·愛因斯坦
爱因斯坦
Wikipedia (216 entries)
ab Еинштеин, Алберт
af Albert Einstein
als Albert Einstein
am አልበርት አይንስታይን
ang Albert Einstein
an Albert Einstein
ar ألبرت أينشتاين
ary ألبيرط أينشطاين
arz البرت اينشتاين
ast Albert Einstein
as এলবার্ট আইনষ্টাইন
ay Albert Einstein
azb البرت اینشتاین
az Albert Eynşteyn
ban Albert Einstein
bat_smg Alberts Einšteins
ba Альберт Эйнштейн
bcl Albert Einstein
be_x_old Альбэрт Айнштайн
be Альберт Эйнштэйн
bg Албърт Айнщайн
bh अल्बर्ट आइंस्टीन
bm Albert Einstein
bn আলবার্ট আইনস্টাইন
Main page
Community portal
Project chat
Create a new Item
Recent changes
Random Item
Query Service
Nearby
Help
Donate
Lexicographical data
Create a new Lexeme
Recent changes
Random Lexeme
Tools
What links here
Related changes
Special pages
Permanent link
Page information
Concept URI
Cite this page

BiblioGraph

Using BIBFRAME to connect, enrich and publish library resources on the Web

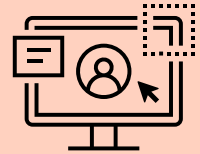


Connect

- all works by and about an author / researcher / faculty
- works within a genre,
- works about a place, etc.

Enrich

with information about the author / researcher / faculty: alternative names, date of birth, occupation, areas of study, political affiliations, etc.



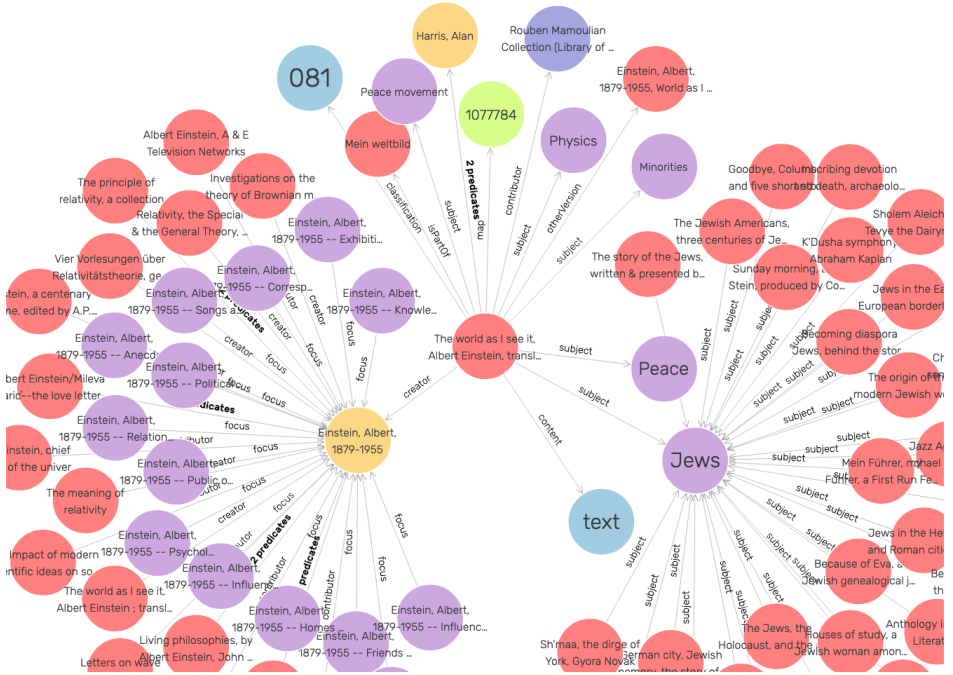
Publish

anywhere on the World Wide Web:

- Learning Management System,
- IR,
- department website,
- And many more

Connect

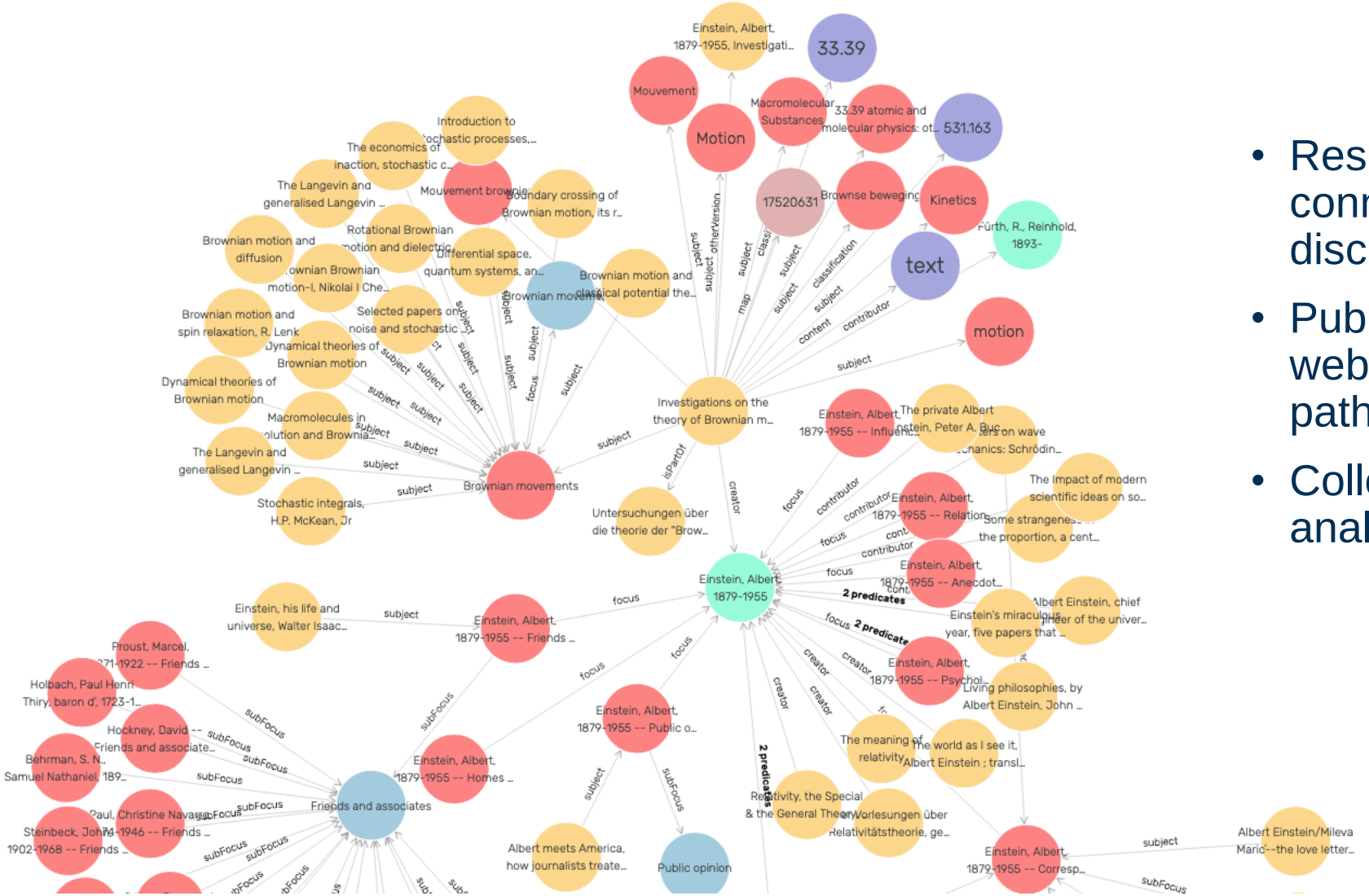
catalogs to other catalogs and data sources within an ever-expanding graph



transform

Resources are connected in an ever-expanding graph on the Web of connected catalogs and authoritative data sources.

This allows libraries to take advantage of linked data in multiple ways

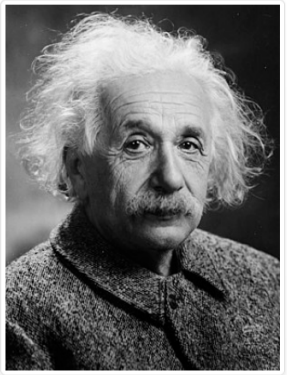


- Resource enrichment and connections for serendipitous discovery
- Publish resources to websites and create new pathways to information
- Collection development and analysis

Enrich

Library Knowledge Graph - University of Melbourne Library

Einstein, Albert, 1879-1955 *German-born theoretical physicist; developer of the theory of relativity (1879–1955)*



Albert Einstein Head

Albert Einstein

German-born theoretical physicist; developer of the theory of relativity (1879–1955)

Name:	Albert Einstein
AKA:	Einstein, A. Einstein
Born:	March 13, 1879 in Ulm
Died:	April 17, 1955 in Princeton
Cause of death:	Natural causes (Abdominal aortic aneurysm)
Remains:	National Museum of Health and Medicine
Occupation(s):	Physicist
Citizenship:	German Empire
Gender:	Male
Politics:	German Democratic Party
Religion:	Pantheism

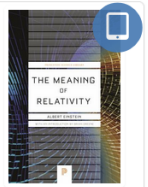
Learn more about Albert Einstein at

Wikipedia

LCNAF, ORCID, WikiData, etc.

88 Items by Albert Einstein at the University of Melbourne Library

Die Grundlagen der Einsteinschen Gravitationstheorie, von Erwin Freundlich : mit



The meaning of relativity : including the relativistic theory of the non-

The genesis of general relativity : the promise of mathematics, Volume 4.

The Meaning of relativity, Albert Einstein, (electronic resource)

Sidelights on Relativity, Albert Einstein, (electronic resource)

Geometrie und Erfahrung : erweiterte Fassung des Festvortrages

Relativity : the special & the general theory; a popular exposition.

192 Items about Albert Einstein at the University of Melbourne Library

EBSCO

Publish collections to the Web

European Parliament
EP Library

European Parliament Library / LibGuides / Citizens' Policies / Selected Online Reading on Artificial Intelligence and Law / Home

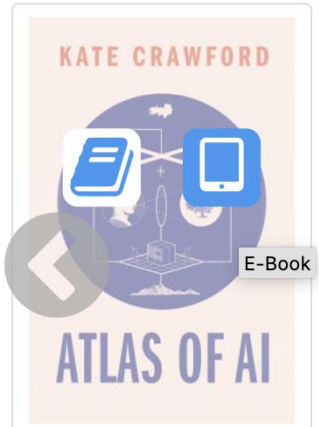
Selected Online Reading on Artificial Intelligence and Law

Search this Guide | Search

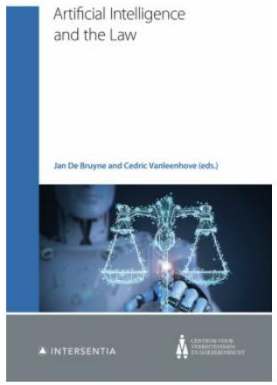
Find a list of selected books, electronic books and articles, online databases, newswires and training sessions to enhance your knowledge from home.

- Home
  - Books on the topic
  - Overview
  - Aspects of Artificial Intelligence
  - Access to sources
- E-books
- E-articles
- Databases and Newsletters
- Online training
- EPRS publications
- Related guides

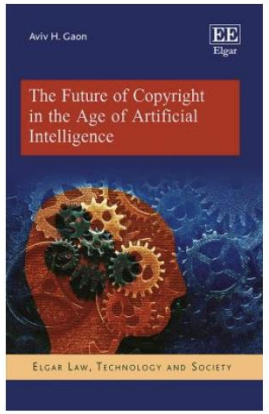
Search in EP Library Catalogue



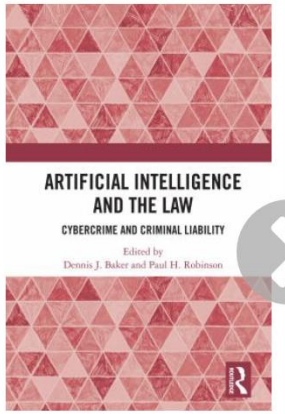
Atlas of AI



Artificial Intelligence and the Law



The Future of Copyright in the Age of Artificial Intelligence



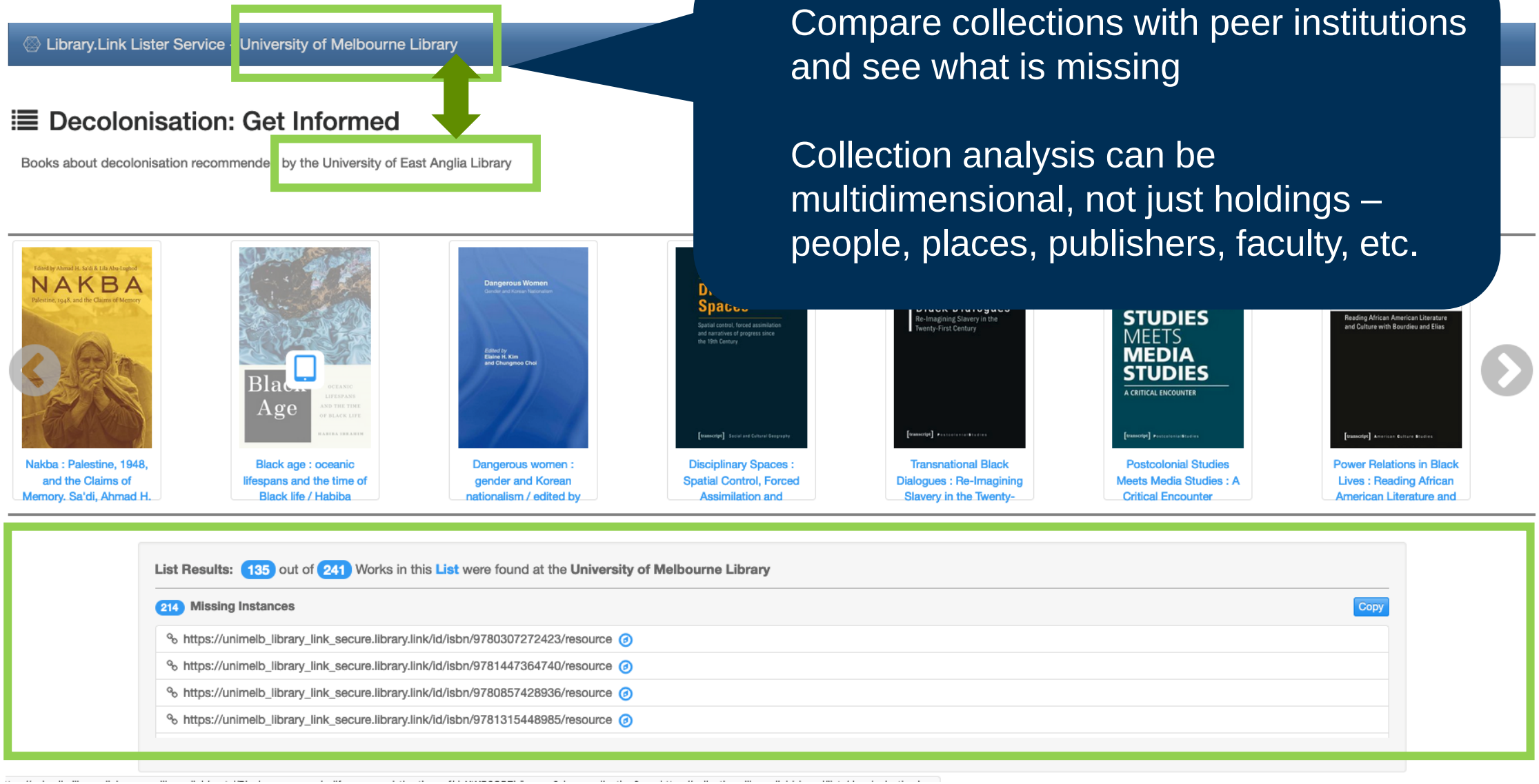
Artificial Intelligence and the Law: Cybercrime and Criminal Liability

Overview

The Library has prepared compilations of selected reading material and information sources on specific topics. These compilations bring together books, e-books, e-articles, databases, e-journals, newswires and other useful resources selected by Library colleagues

EBSCO

Collection analysis



Compare collections with peer institutions and see what is missing

Collection analysis can be multidimensional, not just holdings – people, places, publishers, faculty, etc.

EBSCO

Challenge:
the legacy library system is ‘closed’

Open Source
Library Services Platform

Open data becomes native to FOLIO and weaves libraries immediately into the World Wide Web

What is FOLIO?

folio

Service providers

ILS functionality & ERM | **Interoperability** | **Extensibility & innovation**

Circulation, acquisition, cataloging, OPAC, ERM

APIs / integrations

Apps
OSS or proprietary

collaboration of libraries, developers and vendors

EBSCO

Community & collaboration the Open Library Foundation

The Open Library Foundation ensures the availability, accessibility and sustainability of open source and open access projects for and by libraries.


GBV
ZBW Leibniz-Informationszentrum Wirtschaft Leibniz Information Centre for Economics
HeBIS
China Academic Library and Information System (CALIS)
CALIS
Universität Bremen
UNIVERSITÄT LEIPZIG
TRINITY COLLEGE CAMBRIDGE
DUT DURBAN UNIVERSITY OF TECHNOLOGY
MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND
Caltech Library
CORNELL UNIVERSITY
FOUNDED BY EZRA CORNELL
THE UNIVERSITY OF CHICAGO
1890
UNIVERSITY OF MASSACHUSETTS
AMHERST 1863
TEXAS A&M UNIVERSITY
LEHIGH UNIVERSITY
DUKE UNIVERSITY LIBRARIES
COLLEGE OF THE Holy Cross
University of Colorado Boulder
WENTWORTH INSTITUTE OF TECHNOLOGY
SIMMONS UNIVERSITY BOSTON MASSACHUSETTS 1899
AUBURN UNIVERSITY
THE UNIVERSITY OF ALABAMA
WARNER UNIVERSITY
Amherst College
Missouri State UNIVERSITY
WASHINGTON & JEFFERSON COLLEGE
HAMPSHIRE COLLEGE
MOUNT HOLYOKE
Smith College

Library of Congress Launches Effort to Transform Collections Management and Access

Release Date: 21 Sep 2022

EBSCO will tailor FOLIO, a community-developed open-source library services solution, to provide a library service platform that meets the Library's IT requirements and the needs of the Library's users.

"This is a milestone in our journey to implement a user-centered approach to connecting more people to the Library's collections," said Librarian of Congress Carla Hayden. "We are grateful for Congress' generous investment in this next-generation system that is essential to the Library's digital-forward strategy, which harnesses technology to bridge geographical divides, expand our reach and enhance our services."

The platform will replace several legacy IT systems and provide Library staff with new, more efficient tools and workflows to manage continuously growing physical and digital collections at scale. It will offer researchers a streamlined discovery experience and new ways to access high quality metadata. It also will enable the use of BIBFRAME, a new bibliographic description standard being developed by the Library and partner organizations that uses a linked data model to make bibliographic information more useful both within and outside the library community.

https://newsroom.loc.gov/news/library-of-congress-launches-effort-to-transform-collections-management-and-access/s/c432d3c2-780b-4bfe-9123-bbb6c25631bc

FOLIO & BIBFRAME

What functionality will FOLIO provide?

- Linked data editing functionality for FOLIO that gives users the ability to create and manage BIBFRAME resources and relationships
- Automated authority management that syncs authorities with bibliographic MARC records
- Automated enrichment services for authority and entity management that use third-party authoritative data sources such as LCSH, LCNAF, ORCID, WikiData, etc.
- Networked BIBFRAME data sharing between libraries and consortia
- Each FOLIO catalog becomes a graph that is connected to other graphs

Decentralizing Knowledge

“OSS …represents a pool of knowledge,
which is accessible and usable by all companies
and individuals worldwide,
and is therefore a public good in its purest form.”

European Commission’s DG CONNECT study (2021) on OSS

How do we accelerate research and help users gain new insights?

Make catalogs portable and visible on the Web

Create new pathways to enriched and connected resources

Redefine bibliographic description with FOLIO

Thank you

Tamir Borensztajn

tamirb@ebsco.com

EBSCO