Core Concepts for Future Cataloguers

Natalia Garea García, Anne Welsh, Antonis Bikakis, Simon Mahony, Charlie Inskip and Mira Vogel

Linked Open Data

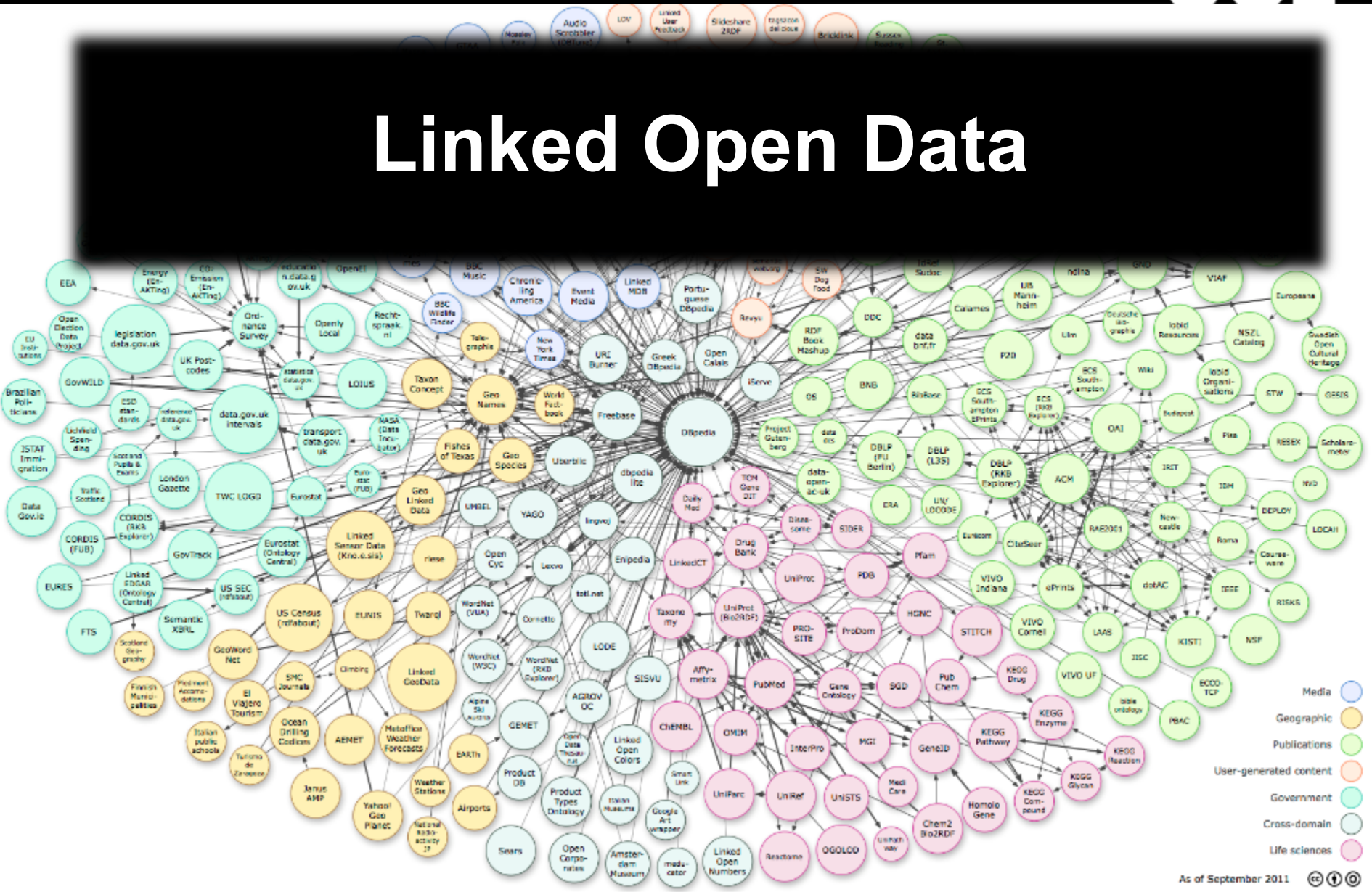
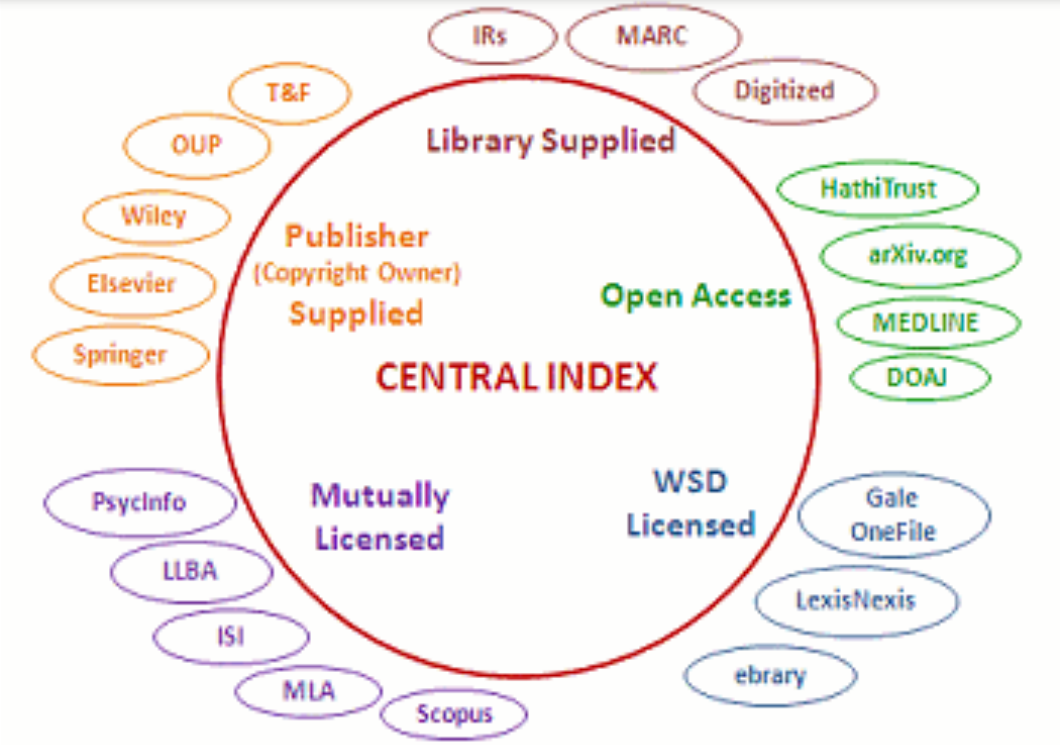


Image: Anja Jentzsch, http://en.wikipedia.org/wiki/Linked_open_data#/media/File:LOD_Cloud_Diagram_as_of_September_2011.png

Most Bibliographic Data is not Library Data



Athena Hoeppner. The Ins and Outs of Evaluating Web-Scale Discovery Services. *Computers in Libraries*, April 2012, http://www.infotoday.com/cilmag/apr12/Hoeppner-Web-Scale-Discovery-Services.shtml

Dictionary & Card Catalogue: Manual Links

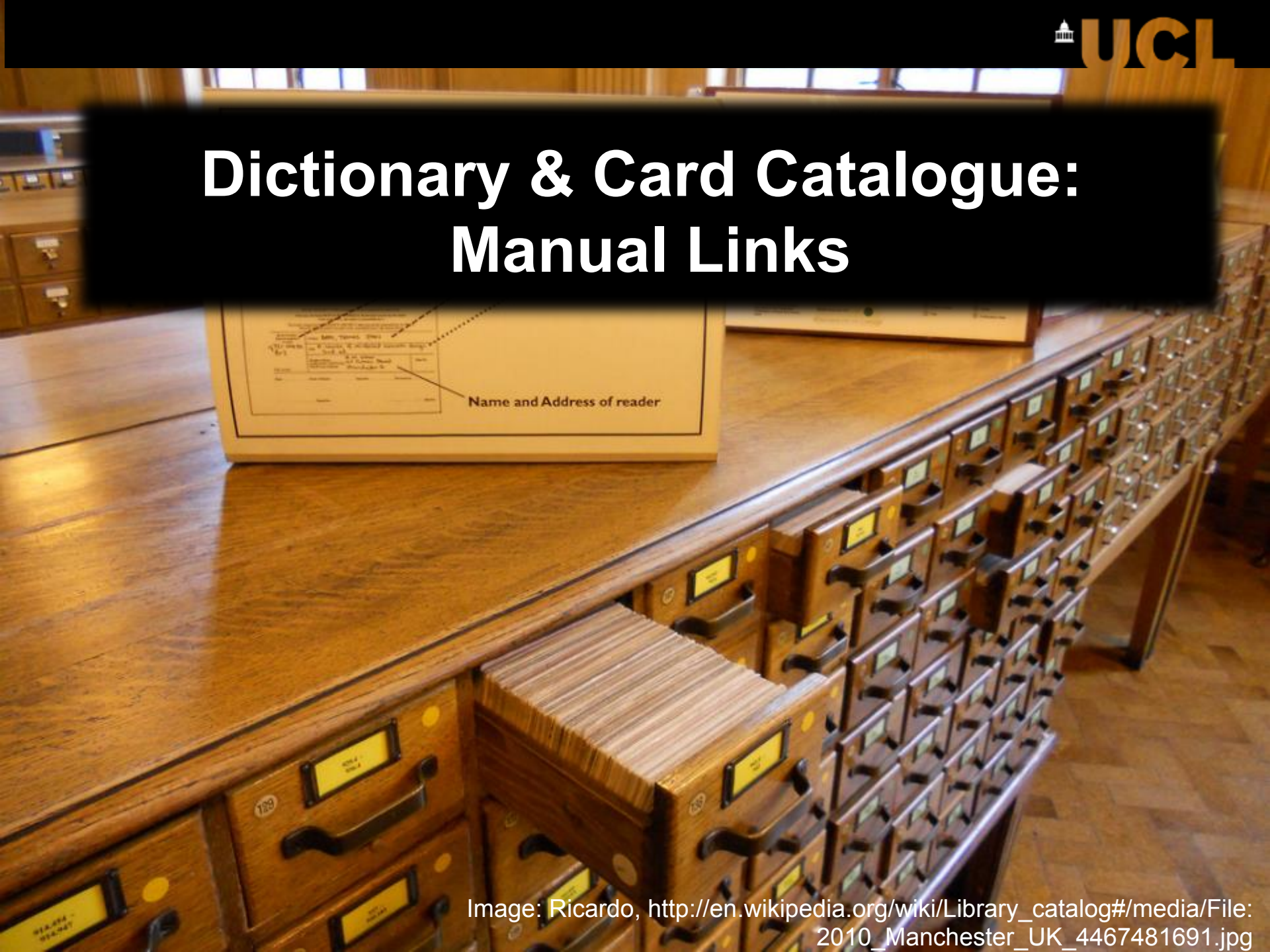


Image: Ricardo, http://en.wikipedia.org/wiki/Library_catalog#/media/File:2010_Manchester_UK_4467481691.jpg

Dictionary & Card Catalogue: Manual Links

- British Museum Cataloguing Rules (1839)
- Jewett's Rules (1853)
- Cutter's Rules (1876)
- ALA Condensed Rules for Author & Title Catalog (1883)
- LA Cataloguing Rules (1893)
- LA / ALA Catalog Rules, Author and Title (1908)
- ALA Catalog Rules, Author & Title Entries (1941, 1949)
- Library of Congress Rules (1949)

Image: Ricardo, http://en.wikipedia.org/wiki/Library_catalog#/media/File:2010_Manchester_UK_4467481691.jpg

MARC Fields: Based on Card

MARC PILOT PROJECT
INPUT WORK SHEET

I. FIXED FIELD INPUTS:

Type of	Form of	Biblio	Illus	Map	Supp No.	Conf or	Juvenile	Master
10	11	12	13	14	15	16	17	18

II. VARIABLE FIELDS:

OC168 rush 5+7=12 MARC
.C28 Cambel, Ali Bulent, 1923-
1968 Gas dynamics [by] Ali Bulent Cambel [and] Burgess H. Jennings. New York, Dover Publications [1967], c1958]

xii, 451 p. illus., ~~facsims.~~

22 cm.

/ "An unabridged republication with minor corrections of the work originally published in 1958."

a ad 19fa68 mkdj DO NOT SET unh 67-26482

3 Includes bibliographies.
2 "Solutions, prepared by T. C. ~~Pent~~ Peng": p. [405]-440.

Stamp 1. Gas dynamics.

Stamp I. Jennings, Burgess Hill, 1903- joint author.

533.2 | 3 | 67-26482

Library of Congress

Tag	Description
10	**Main Entry**
15	**Filing Title**
Statements	
20	**Title**
25	**Edition**
30	**Imprint**
40	**Collation**
Notes	
50	**Series-Add**
51	**Series-No**
60	**Notes**
Tracings	
70	**Sub**
71	**Pers Auth**
72	**Corp Auth**
73	**Uniform**
74	**Title**
75	**Series**
80	**Copy Stmt**
83	**NBN**
90	**LC Call No.**
92	**DDC No.**
94	**LC Card No.**

Image: Henriette V. Avram. (1968) *MARC Project Final Report*. Library of Congress.

MARC Fields: Based on Card

- Paris Principles (1961)
- **MARC Pilot (1966-1968)**
- *Anglo-American Cataloguing Rules (AACR)* (1967)
- ISO Standard 2709 for MARC (1973)
- ISBD(M) (International Standard Bibliographic Description (Monographs) (1974)
- AACR2 (1978)
- AACR2R (1988)
- Over fifty MARC formats develop (1968-1998)

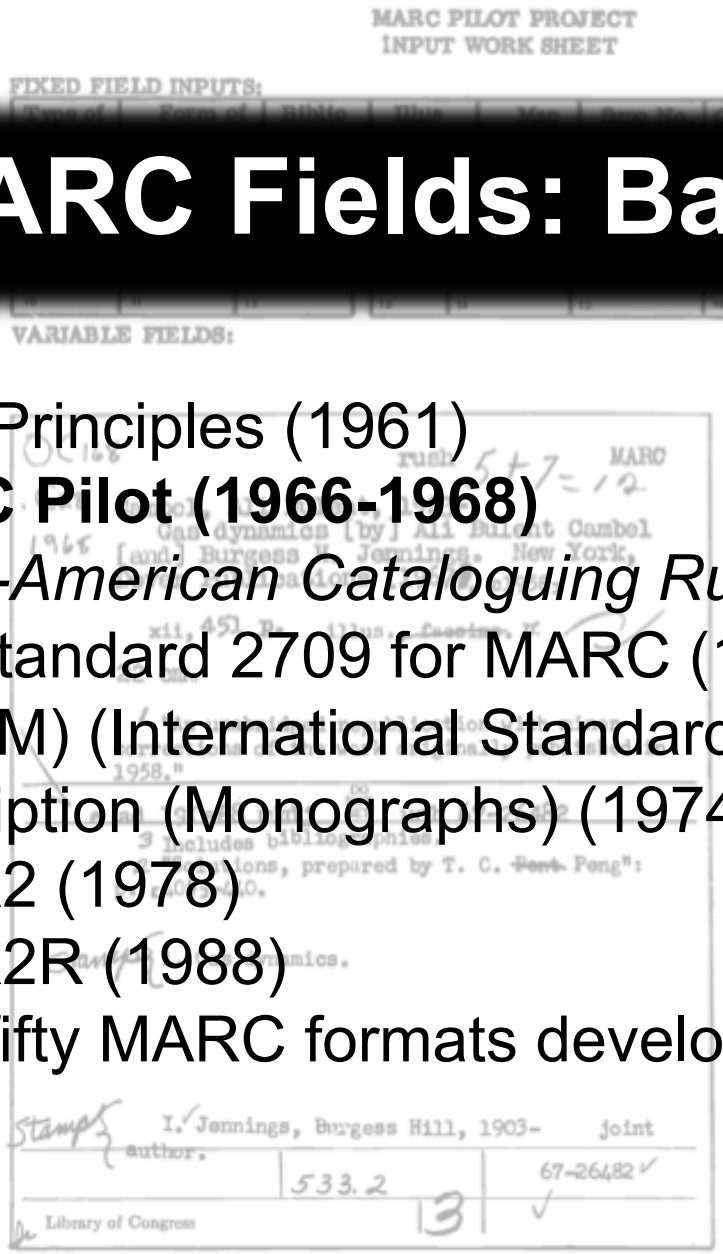


Image: Henriette V. Avram. (1968) *MARC Project Final Report*. Library of Congress.

FRBR: a New Model for Relationships

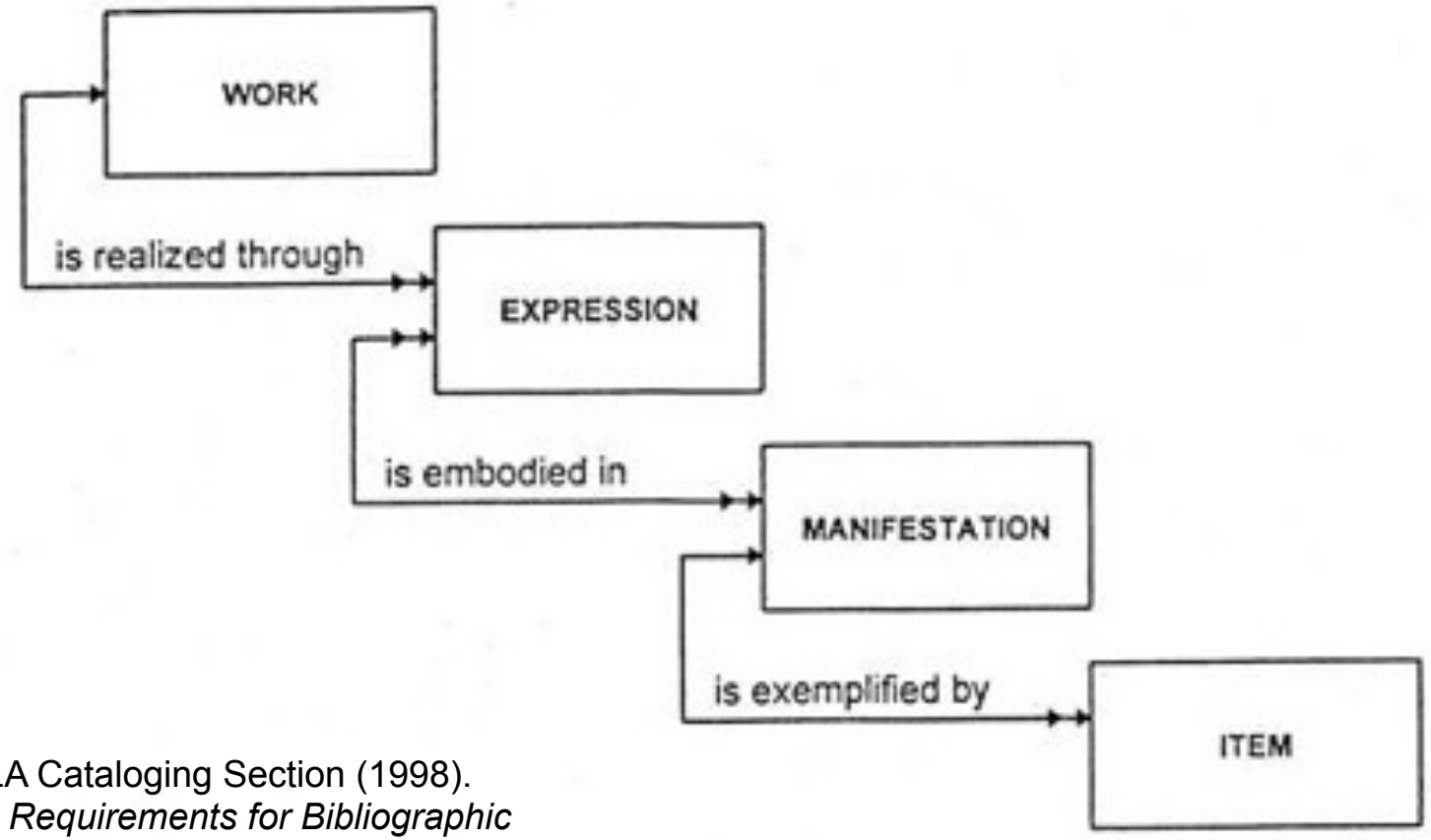


Image: IFLA Cataloging Section (1998). *Functional Requirements for Bibliographic Records, http://archive.ifla.org/VII/s13/frbr/*

MARC Structure Continues

- Harmonisation of USMARC, CANMARC and UKMARC to form MARC 21(1998-2001)
- AACR2R (1998)
- MARC 21 (2001)
- AACR2R loose-leaf (2002-2005)

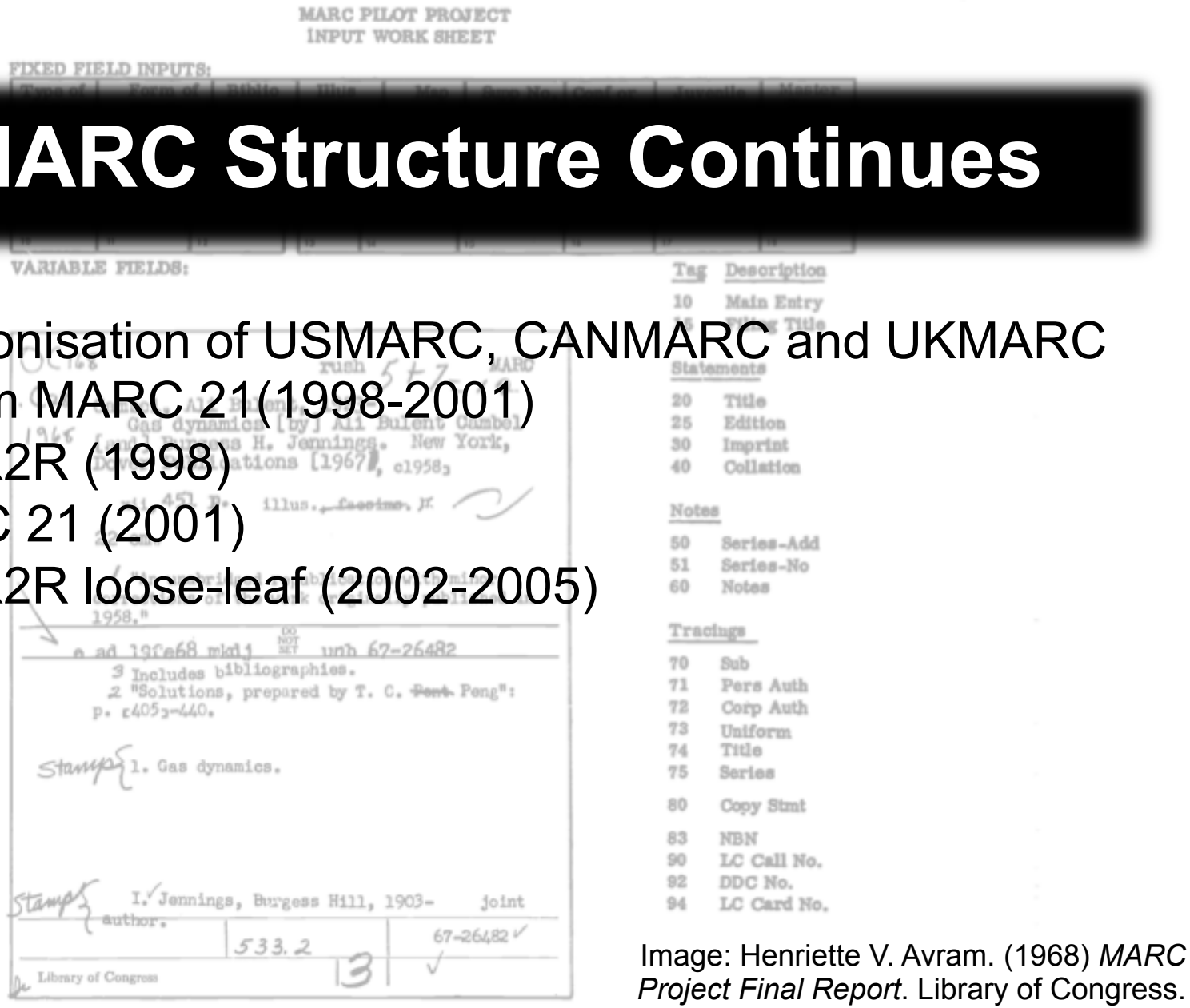


Image: Henriette V. Avram. (1968) *MARC Project Final Report*. Library of Congress.

WEMI Goes Mainstream

- AACR3 now *Resource Description and Access* (2005)
- RDA drafts for constituency review (2008)
- RDA (2010-)
- RDA U.S. National Tests Final Report (2011)
- Library of Congress *Bibliographic Frameworks Initiative* (2011)
- RDA implementation (2013-)

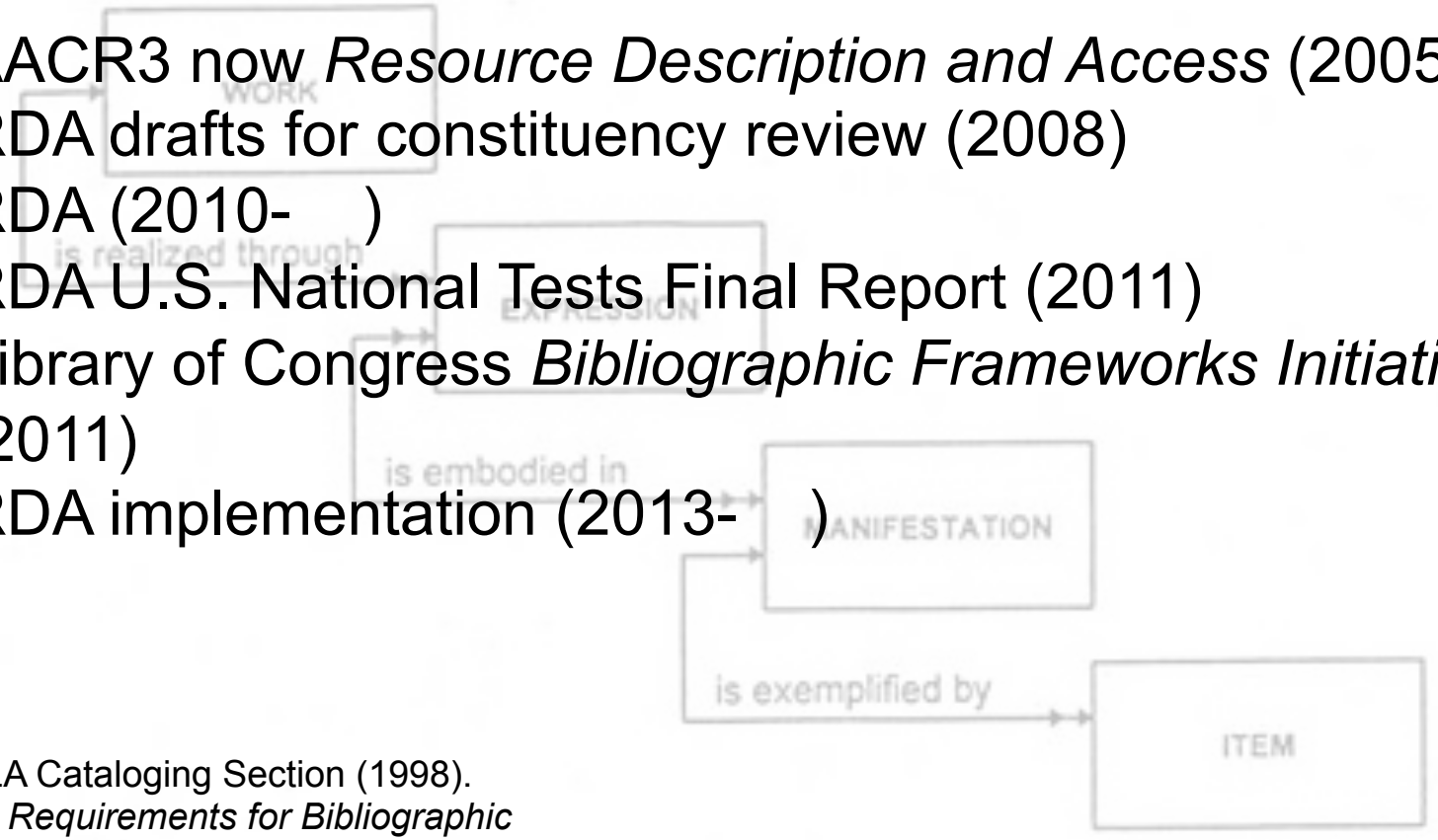


Image: IFLA Cataloging Section (1998). *Functional Requirements for Bibliographic Records, http://archive.ifla.org/VII/s13/frbr/*

WEMI Contracts to WI

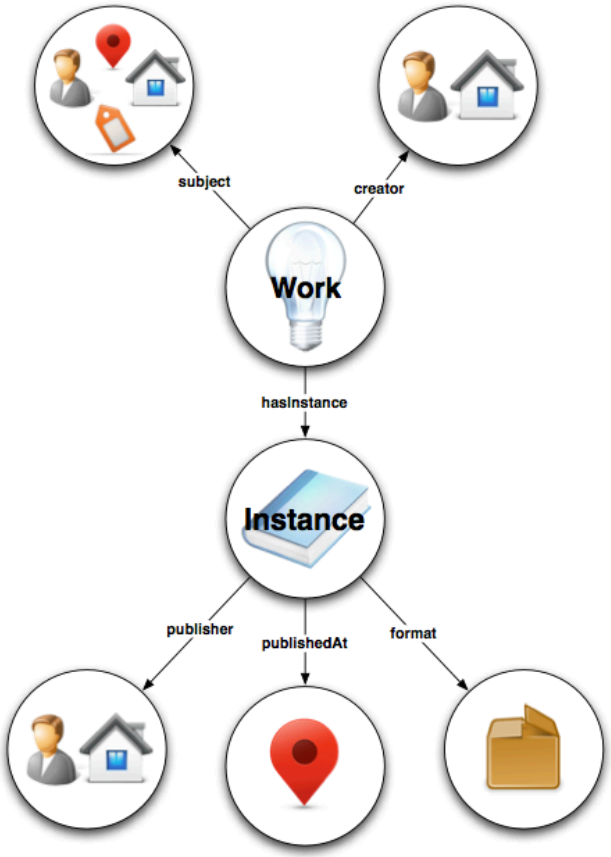
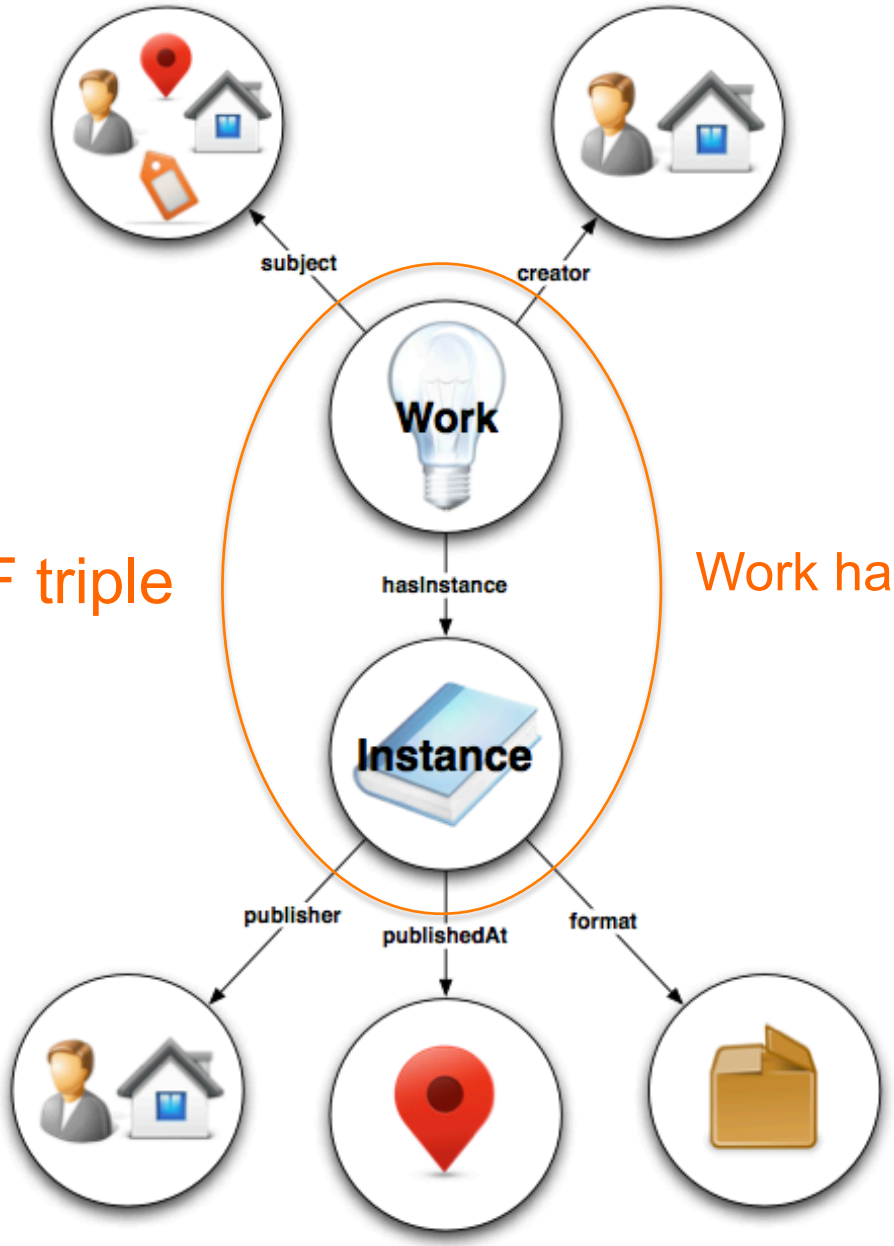


Image: http://www.loc.gov/bibframe/docs/model.html



RDF triple

Work hasinstance Instance

MARC to BIBFRAME

BIBFRAME seems to be concentrating on mapping MARC fields—isn't this a new format instead of repackaging an old one?

The mapping activity is grounded on the premise that the millions of existing MARC records need to be able to be transformed into BIBFRAME resources, but BIBFRAME as a "format" is very different from MARC. This can be seen from the difficulty of the mapping. This can be seen from the difficulty of the mapping. But one factor that brings the data together is the new library cataloging rule set, Resource Description and Access (RDA). MARC has been adapted to carry RDA data, and BIBFRAME is being developed with RDA data as a prominent content type. Both MARC and BIBFRAME also accommodate data recorded by other rules but the cataloging rules give them similarity. The repackaging is not of MARC data but of cataloging content data.

http://www.loc.gov/bibframe/faqs/#q12

MARC to BIBFRAME transformation tools

There are two tools designed to help you evaluate MARC Bibliographic data in the BIFRAME model. The transformation software that powers these tools is also available for download.

1. Comparison service
   Enter the bibliographic identifer (MARC BIB field 001) of a Library of Congress MARC record to view a before and after presentation of a MARC record from the Library of Congress's database as BIBFRAME resources.
2. Transformation service
   Submit your own MARC Bibliographic records (as MARC/XML) and view them as BIBFRAME resources in Exhibit. The resulting data are also available for download.

http://bibframe.org/tools/

BIBFRAME Implementation Register

The *BIBFRAME implementation register* is established to list BIBFRAME implementations - existing, developing, and planned. It will be maintained here. Any organization implementing a BIBFRAME project or application can be listed. If an organization has multiple BIBFRAME projects it may have each listed in a separate entry. See Implementation Register Guidelines »

University College London Department of Information Studies

Application: Linked Open Bibliographic Data Project

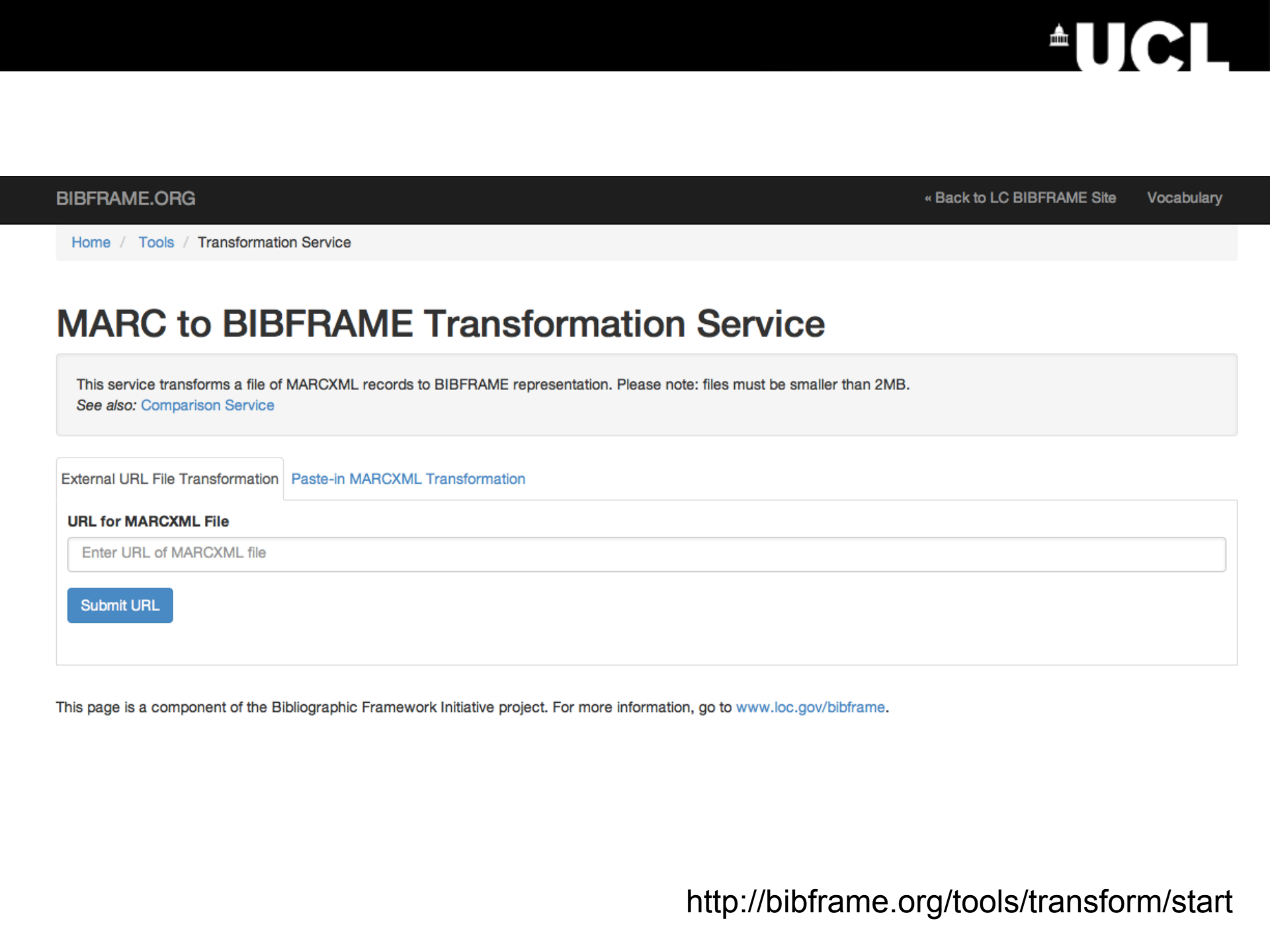
Implementation details: A team from UCL Department of Information Studies has been awarded an **Elearning Development Grant (ELDG) from UCL ELE (E-Learning Environments)** to develop a Linked Open Data bibliographic dataset based on **BIBFRAME**. BIBFRAME enables semantic-interlinking of bibliographic datasets on the Web, and improves the interaction with web users by enabling them to access, retrieve and update bibliographic records online. The aim of this project is to develop a BIBFRAME dataset as an Open Educational Resource, which will help students learn the new standard in an interactive way, and at the same time become familiar with state-of-the art web technologies. An important aspect of the project is working with students from the MA LIS programme to develop and evaluate the resource. Full details: https://www.ucl.ac.uk/dis/research/collaborativeprojects/lobd

Implementation status: Currently in Phase 1 Pilot,: creating a subset of data that will be published on the web.

Contact: Anne Welsh (Project Coordinator), a.welsh@ucl.ac.uk

Added to Register: April 28, 2015

http://www.loc.gov/bibframe/implementation/register.html



http://bibframe.org/tools/transform/start

Rules on the web : from theory to applications. 8th International ...

◀ 1 of 2 ▶

Request this Item

Print Record

Save Record

Email Record

Cite Record

Find It! LC

Permalink:

http://lccn.loc.gov/2014945231

XML Formats:

MARCXML Record

Full Record | MARC Tags

Main title Rules on the web : from theory to applications. 8th International Symposium, RuleML 2014, Co-Located With The 21st European Conference on Artificial Intelligence, ECAI 2014, Prague, Czech Republic, August 18-20, 2014. Proceedings / [edited by] Antonis Bikakis, Paul Fodor, Dumitru Roman.

Edition 1st edition.

Published/Produced New York : Springer, 2014.

Projected pub date
1408

Description
pages cm

ISBN
9783319098692 (soft cover : alk. paper)
3319098691 (soft cover : alk. paper)

Series
Lecture notes in computer science ; 8620

LCCN
2014945231

Type of material
Book

Content type
text

Rules on the web : from theory to applications. 8th International ...

◀ 1 of 2 ▶

Request this Item

Print Record

Save Record

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Cite Record

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Permalink:

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XML Formats:

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Rules on the web : from theory to applications. 8th International ...

◀ 1 of 2 ▶

Full Record | MARC Tags

BOOK

Request this Item

Print Record

Save Record

Email Record

Cite Record

Find It! LC

Permalink:

http://lccn.loc.gov/2014945231

XML Formats:

MARCXML Record

Print Record

Save Recor

Email Reco

Cite Record

Find It! LC

Permalink:

http://lccn.loc.g

XML Format

MARCXML Re

Open Link in New Window
Open Link in New Tab

Save Linked File to "Downloads"
Save Linked File As...
Add Link to Bookmarks...
Add Link to Reading List

Copy Link

Save Zotero Snapshot from Current Page
Zotero Preferences...

Add to Reading List

2014945231

Type of material
Book

Content type
text

UCL

MARC to BIBFRAME Transformation Service

This service transforms a file of MARCXML records to BIBFRAME representation. Please note: files must be smaller than 2MB.
See also: Comparison Service

External URL File Transformation | Paste-in MARCXML Transformation

URL for MARCXML File

http://lccn.loc.gov/2014945231/marcxml

Submit URL

Downloads

- MARC/XML
- BIBFRAME RDF/XML
- BIBFRAME N3...New!
- Exhibit JSON

Refresh/Regenerate/Update RDF/XML and Exhibit presentation
Last generated on:
Thu, 11 Jun 2015 13:03

Search

Creators

2 (missing this field)

Subjects

2 (missing this field)

Carrier type

1 (missing this field)

2 Work

sorted by: labels; then by... • grouped as sorted

1. **Lecture notes in computer science ; 8620**

2.

In Series	**Lecture notes in computer science ; 8620**
Annotation(s)	
Instance(s)	**Rules on the web :from theory to applications. 8th International Symposium, RuleML 2014, Co-Located With The 21st European Conference on Artificial Intelligence, ECAI 2014, Prague, Czech Republic, August 18-20, 2014. Proceedings (soft cover : alk. paper)**
Publisher	
Edition	*1st edition.*

UCL

MARCXML

```
- <datafield tag="040" ind1=" " ind2=" ">
    <subfield code="a">DLC</subfield>
    <subfield code="b">eng</subfield>
    <subfield code="e">rda</subfield>
    <subfield code="c">DLC</subfield>
  </datafield>
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  </datafield>
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  - <subfield code="b">
      from theory to applications. 8th International Symposium, RuleML 2014, Co-Located With The 21st European Conference on Artificial Intelligence, E
      18-20, 2014. Proceedings /
    </subfield>
  - <subfield code="c">
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  </datafield>
- <datafield tag="336" ind1=" " ind2=" ">
    <subfield code="a">text</subfield>
    <subfield code="2">rdacontent</subfield>
```

UCL

RDF


```
- <rdf:RDF>
  - <bf:Work rdf:about="http://bibframe.org/resources/BwV1433934592/18215984">
      <rdf:type rdf:resource="http://bibframe.org/vocab/Text"/>
    - <bf:authorizedAccessPoint>
        Rules on the web :from theory to applications. 8th International Symposium, RuleML 2014, Co-Located With The 21st European Conferenc
        Republic, August 18-20, 2014. Proceedings
      </bf:authorizedAccessPoint>
      <bf:workTitle rdf:resource="http://bibframe.org/resources/BwV1433934592/18215984title5"/>
      <bf:contentCategory rdf:resource="http://id.loc.gov/vocabulary/contentTypes/txt"/>
      <bf:language rdf:resource="http://id.loc.gov/vocabulary/languages/eng"/>
      <bf:series rdf:resource="http://bibframe.org/resources/BwV1433934592/18215984work8"/>
      <bf:derivedFrom rdf:resource="http://bibframe.org/resources/BwV1433934592/18215984.marcxml.xml"/>
    - <bf:authorizedAccessPoint xml:lang="x-bf-hash">
        rulesonthewebfromtheorytoapplications8thinternationalsymposiumruleml2014colocatedwiththe21steuropeanconferenceonartificialintelliger
      </bf:authorizedAccessPoint>
    </bf:Work>
  - <bf:Work rdf:about="http://bibframe.org/resources/BwV1433934592/18215984work8">
      <bf:title>Lecture notes in computer science ; 8620</bf:title>
      <bf:authorizedAccessPoint>Lecture notes in computer science ; 8620</bf:authorizedAccessPoint>
    </bf:Work>
  - <bf:Instance rdf:about="http://bibframe.org/resources/BwV1433934592/18215984instance12">
    - <bf:title>
        Rules on the web :from theory to applications. 8th International Symposium, RuleML 2014, Co-Located With The 21st European Conferenc
        Republic, August 18-20, 2014. Proceedings (soft cover : alk. paper)
      </bf:title>
      <bf:isbn10 rdf:resource="http://isbn.example.org/3319098691"/>
      <bf:isbn13 rdf:resource="http://isbn.example.org/9783319098692"/>
      <rdf:type rdf:resource="http://bibframe.org/vocab/Monograph"/>
      <bf:instanceTitle rdf:resource="http://bibframe.org/resources/BwV1433934592/18215984title18"/>
    - <bf:publication>
```

UCL

Fuseki Query

Dataset: /dataset

SPARQL Query

```
SELECT ?Title ?Responsibility_Statement ?Publication_Details
WHERE {
<http://bibframe.org/resources/NZol1416070804/18215984instance11>
<http://bibframe.org/vocab/titleStatement> ?Title.
<http://bibframe.org/resources/NZol1416070804/18215984instance11>
<http://bibframe.org/vocab/responsibilityStatement>
?Responsibility_Statement.
<http://bibframe.org/resources/NZol1416070804/18215984instance11>
<http://bibframe.org/vocab/providerStatement> ?Publication_Details.
}
```

Output: XML

If XML output, add XSLT style sheet (blank for none): xml-to-html

Force the accept header to `text/plain` regardless.

Get Results

SPARQL Update

Perform update

File upload

File: Browse... No files selected.

Graph: default

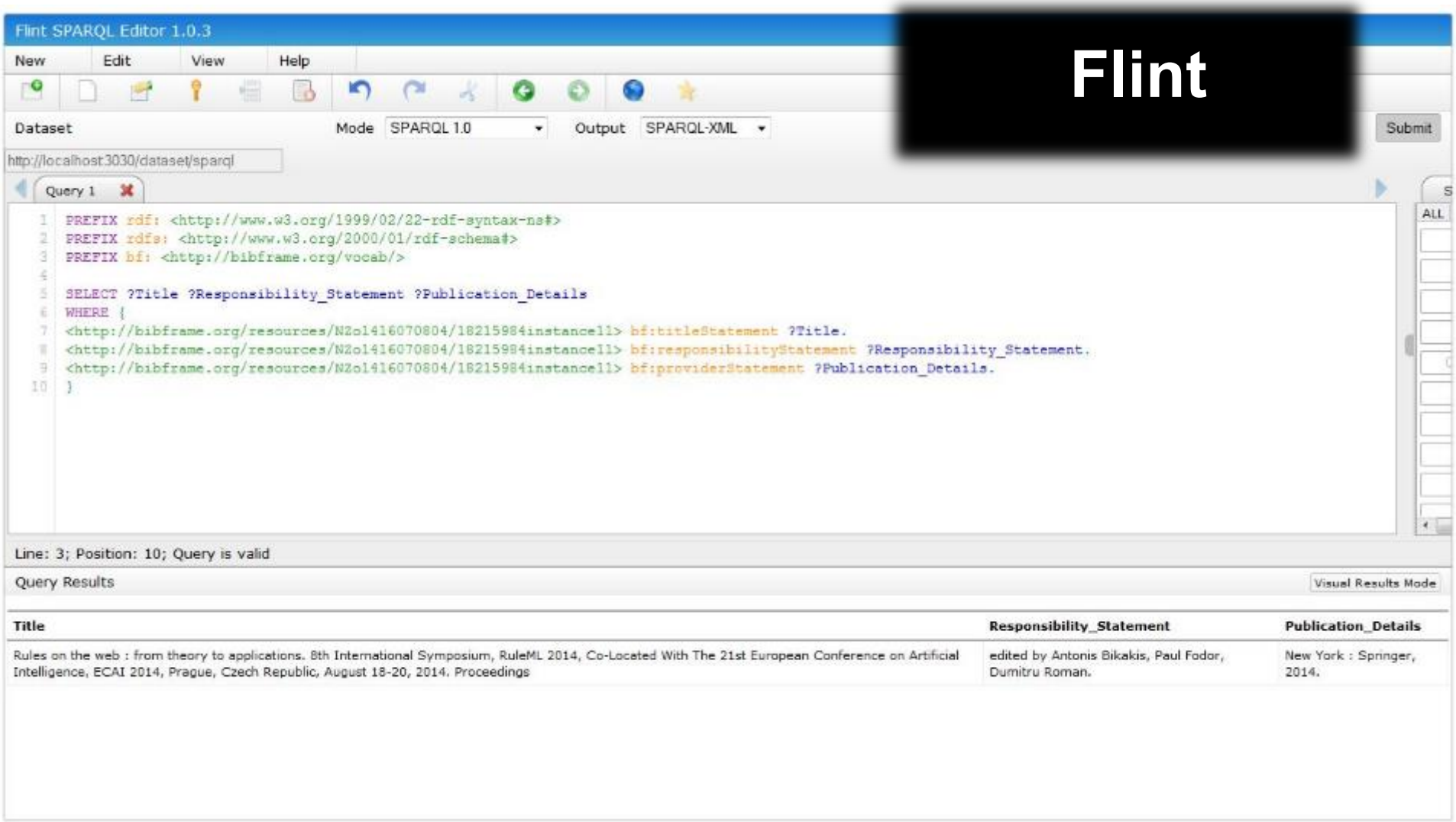
Upload

Fuseki

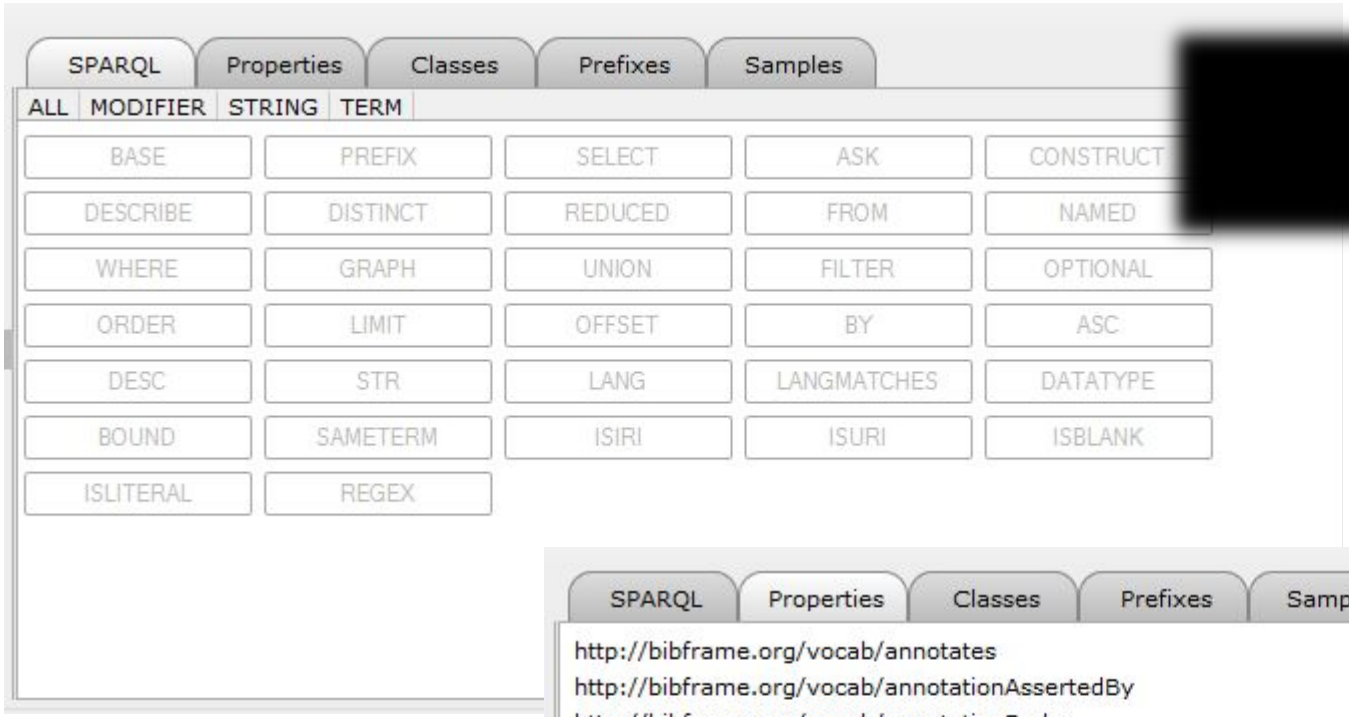
SPARQLer Query Results

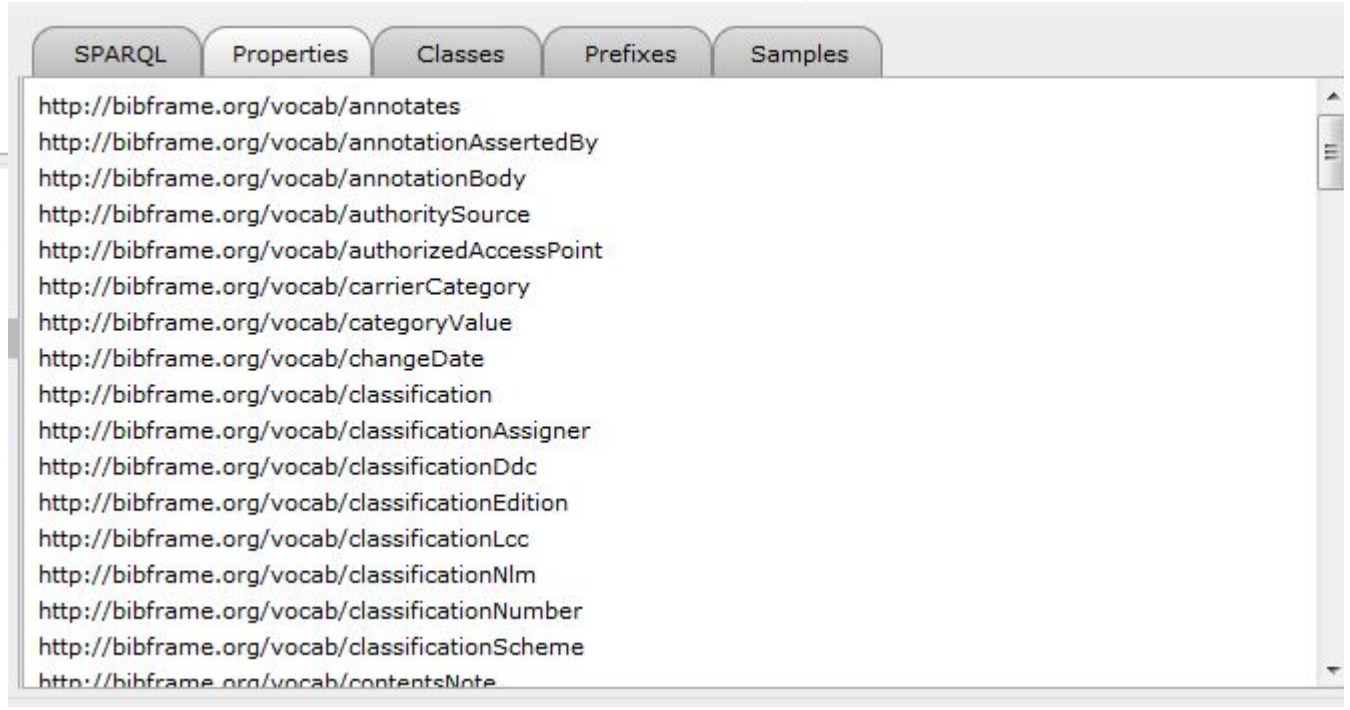
Title	Responsibility_Statement	Publication_Details
"Rules on the web : from theory to applications. 8th International Symposium, RuleML 2014, Co-Located With The 21st European Conference on Artificial Intelligence, ECAI 2014, Prague, Czech Republic, August 18-20, 2014. Proceedings"	"edited by Antonis Bikakis, Paul Fodor, Dumitru Roman."	"New York : Springer, 2014."

Flint


Flint SPARQL Editor 1.0.3
New
Edit
View
Help
Dataset
Mode
SPARQL 1.0
Output
SPARQL-XML
Submit
http://localhost:3030/dataset/sparql
Query 1
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX bf: <http://bibframe.org/vocab/>
SELECT ?Title ?Responsibility_Statement ?Publication_Details
WHERE {
<http://bibframe.org/resources/NZol1416070804/18215984instance11> bf:titleStatement ?Title.
<http://bibframe.org/resources/NZol1416070804/18215984instance11> bf:responsibilityStatement ?Responsibility_Statement.
<http://bibframe.org/resources/NZol1416070804/18215984instance11> bf:providerStatement ?Publication_Details.
}
ALL
Line: 3; Position: 10; Query is valid
Query Results
Visual Results Mode
Title
Responsibility_Statement
Publication_Details
Rules on the web : from theory to applications. 8th International Symposium, RuleML 2014, Co-Located With The 21st European Conference on Artificial Intelligence, ECAI 2014, Prague, Czech Republic, August 18-20, 2014. Proceedings
edited by Antonis Bikakis, Paul Fodor, Dumitru Roman.
New York : Springer, 2014.

Flint


SPARQL
Properties
Classes
Prefixes
Samples
ALL
MODIFIER
STRING
TERM
BASE
PREFIX
SELECT
ASK
CONSTRUCT
DESCRIBE
DISTINCT
REDUCED
FROM
NAMED
WHERE
GRAPH
UNION
FILTER
OPTIONAL
ORDER
LIMIT
OFFSET
BY
ASC
DESC
STR
LANG
LANGMATCHES
DATATYPE
BOUND
SAMETERM
ISIRI
ISURI
ISBLANK
ISLITERAL
REGEX


SPARQL
Properties
Classes
Prefixes
Samples
http://bibframe.org/vocab/annotates
http://bibframe.org/vocab/annotationAssertedBy
http://bibframe.org/vocab/annotationBody
http://bibframe.org/vocab/authoritySource
http://bibframe.org/vocab/authorizedAccessPoint
http://bibframe.org/vocab/carrierCategory
http://bibframe.org/vocab/categoryValue
http://bibframe.org/vocab/changeDate
http://bibframe.org/vocab/classification
http://bibframe.org/vocab/classificationAssigner
http://bibframe.org/vocab/classificationDdc
http://bibframe.org/vocab/classificationEdition
http://bibframe.org/vocab/classificationLcc
http://bibframe.org/vocab/classificationNlm
http://bibframe.org/vocab/classificationNumber
http://bibframe.org/vocab/classificationScheme

Flint

SPARQL | Properties | Classes | Prefixes | Samples

http://bibframe.org/vocab/Agent
http://bibframe.org/vocab/Annotation
http://bibframe.org/vocab/Category
http://bibframe.org/vocab/Classification
http://bibframe.org/vocab/Electronic
http://bibframe.org/vocab/HeldItem
http://bibframe.org/vocab/Identifier
http://bibframe.org/vocab/Instance
http://bibframe.org/vocab/Language
http://bibframe.o
http://bibframe.o
http://bibframe.o
http://bibframe.o
http://bibframe.o
http://bibframe.o
http://bibframe.o
http://bibframe.o

SPARQL | Properties | Classes | Prefixes | Samples

bf
rdf

SPARQL | Properties | Classes | Prefixes | Samples

Sample BIBFRAME Query 2

Select title, responsibility statement, publication details, dimensions, ISBN and notes of an instance of a work, which title starts with the word "Practical".

```
SELECT ?Title ?Responsibility_Statement ?Publication_Details ?Dimensions ?ISBN
WHERE {
        ?URI <http://bibframe.org/vocab/titleStatement> ?Title.
        ?URI <http://bibframe.org/vocab/responsibilityStatement> ?Responsibilit
        ?URI <http://bibframe.org/vocab/providerStatement> ?Publication_Details
        ?URI <http://bibframe.org/vocab/dimensions> ?Dimensions.
        ?URI <http://bibframe.org/vocab/isbn13> ?ISBN.
        ?URI <http://bibframe.org/vocab/note> ?Notes.
FILTER REGEX (?Title, "^Practical")
}
```

Issues Using the Tool

- Working with individual records not batches
- Reliant on having MARCXML data
- LOC is not providing a hosting service, so URIs are not stable; it's necessary to publish on own webserver
- Tools go down frequently, too many users
- Using LOC MARCXML means U.S. publications
  - Editing still required
  - For our purposes, would creating from scratch be better?

What do cataloguers NEED to know NOW?

- The future for library cataloguing is Linked Data
- Plans are in place at the Library of Congress for a move to BIBFRAME, which will replace MARC
- BIBFRAME is not envisaged as an entry tool, but as an exchange format in the background with an entry screen
  - So we don't have to be linked data (RDF) experts
  - But MARC was envisaged in the same way …
    - … so *some* understanding of RDF may be wise
- There's a basic transformation tool from MARCXML to BIBFRAME but systems would do this in a batch

Some Caveats

- Other RDF schemes for bibliographic data exist
  - e.g. British National Bibliography
  - OCLC and BIBFRAME have a mapping
  - The JSC for RDA is looking at linked data too
- BIBFRAME's WI model is a contraction of RDA's WEMI
  - Not all the benefits of WEMI are present
  - In theory, it's easier to convert batches of MARC to WI than to WEMI
    - But watch out for developments from JSC for RDA
- Some vendors already have linked data products
  - Not all bibliographic data is library data

Core Concepts for Future Cataloguers

- At this stage, it's still all about the conceptual models
  - As cataloguers, we are good at those
- Explore RDF at least enough to understand what a triple is, and why it matters
  - http://www.w3.org/TR/rdf-primer/
- Familiarise yourself with the BIBFRAME model
  - http://www.loc.gov/bibframe/docs/model.html
- Keep up with the JSC for RDA
  - http://www.rda-jsc.org/
  - Meeting in Edinburgh in November
- Relax. It took from 2005 until 2013 until we had to implement RDA