Library Evolution – From MARC to BIBFRAME

Learn the ins and outs of the ILS MARC records to BIBFRAME conversion in Vega Discover, followed by a working session, focusing on gathering recommendations for Discover's adaptations of BIBFRAME rules.
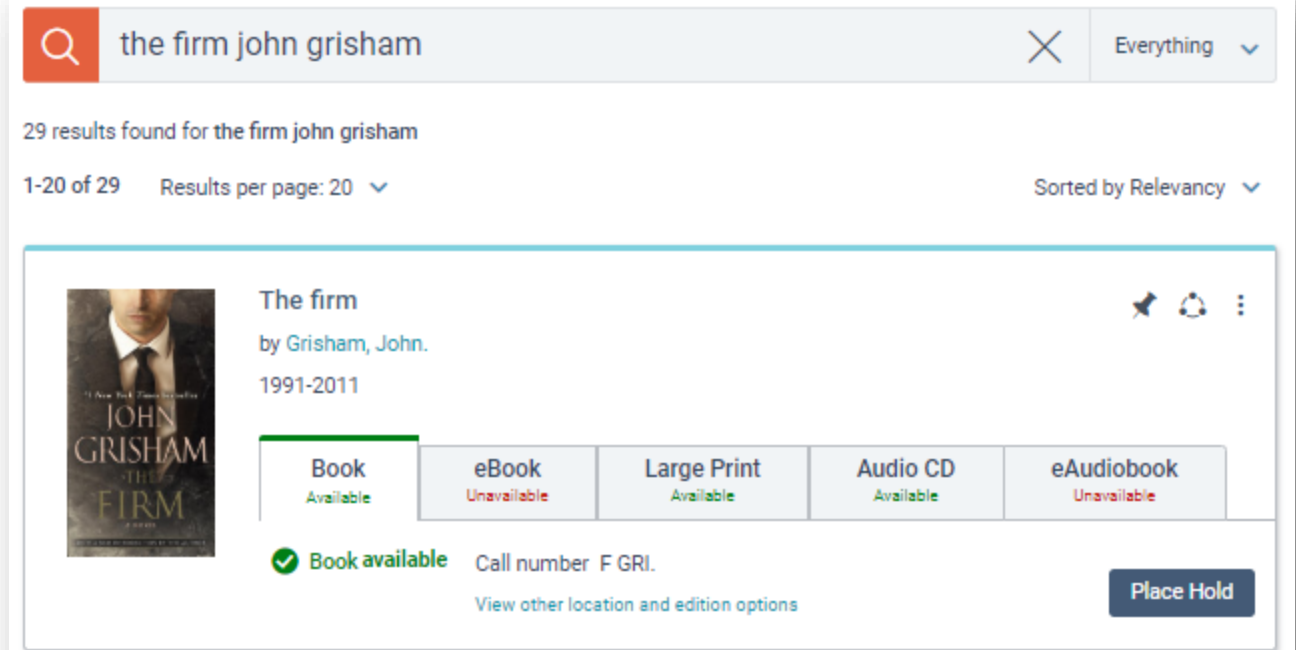
Sam Quell

Kat Cuff

MARC = Machine Readable Cataloging

State of MARC

Pros
- Widely used in the industry
- Adapted to multiple disciplines

Cons
- Not used in other industries
- Not aligned with modern software technology
- Limited extensibility

```
LDR   |||||cam a22|||||Ia 4500
001   1435467
003   PolarisTest
005   20170929135726.0
008   040511r19921991nyu          000 1 eng d
020   $a044021145X (pbk.) :$c$7.99
020   $a9780440211457 (pbk.) :$c$7.99
020   $a0785706216 (Econo-Clad)
035   $a(OCoLC)ocm55118144
035   $a(Sirsi) o55118144
035   $a(OCoLC)55118144
035   $a532935
040   $aGOM$cGOM$dOCLCQ
043   $an-us---
100 1 $aGrisham, John.
245 14 $aThe firm /$cJohn Grisham.
250   $aDell mass market edition
260   $aNew York, N.Y. :$bIsland Books,$c1992, 0b1991.
300   $a501 pages ;$c18 cm.
336   $atext$btxt$2rdacontent
337   $aunmediated$bn$2rdamedia
338   $avolume$bnc$2rdacarrier
500   $aOriginally published in hardcover: New York : Doubleday, 1991.
500   $aReissued with the same ISBN in 2003 as the Dell reissue ed.
521 8 $a680$bLexile.
526 0 $aAccelerated Reader AR$bUG$c4.6$d20.0$zQuiz: 8564.
526 0 $aReading Counts RC$bHigh School$c6.6$d20.0$zQuiz: 03942$zGuided reading level: NR.
595   $aAccelerated Reader AR$146$p10200
595   $aReading Counts RC$166$p10200
596   $a15
650 0 $aGovernment investigators$zUnited States$vFiction.
650 0 $aOrganized crime$zUnited States$vFiction.
650 0 $aMafia$vFiction.
655 7 $aLegal fiction (Literature)$2lcgft
655 7 $aDetective and mystery fiction.$2lcgft
```

- **BIBFRAME = Bibliographic Framework**

- **Object-based, Linked data model**

- **Focuses on the relationships between objects**
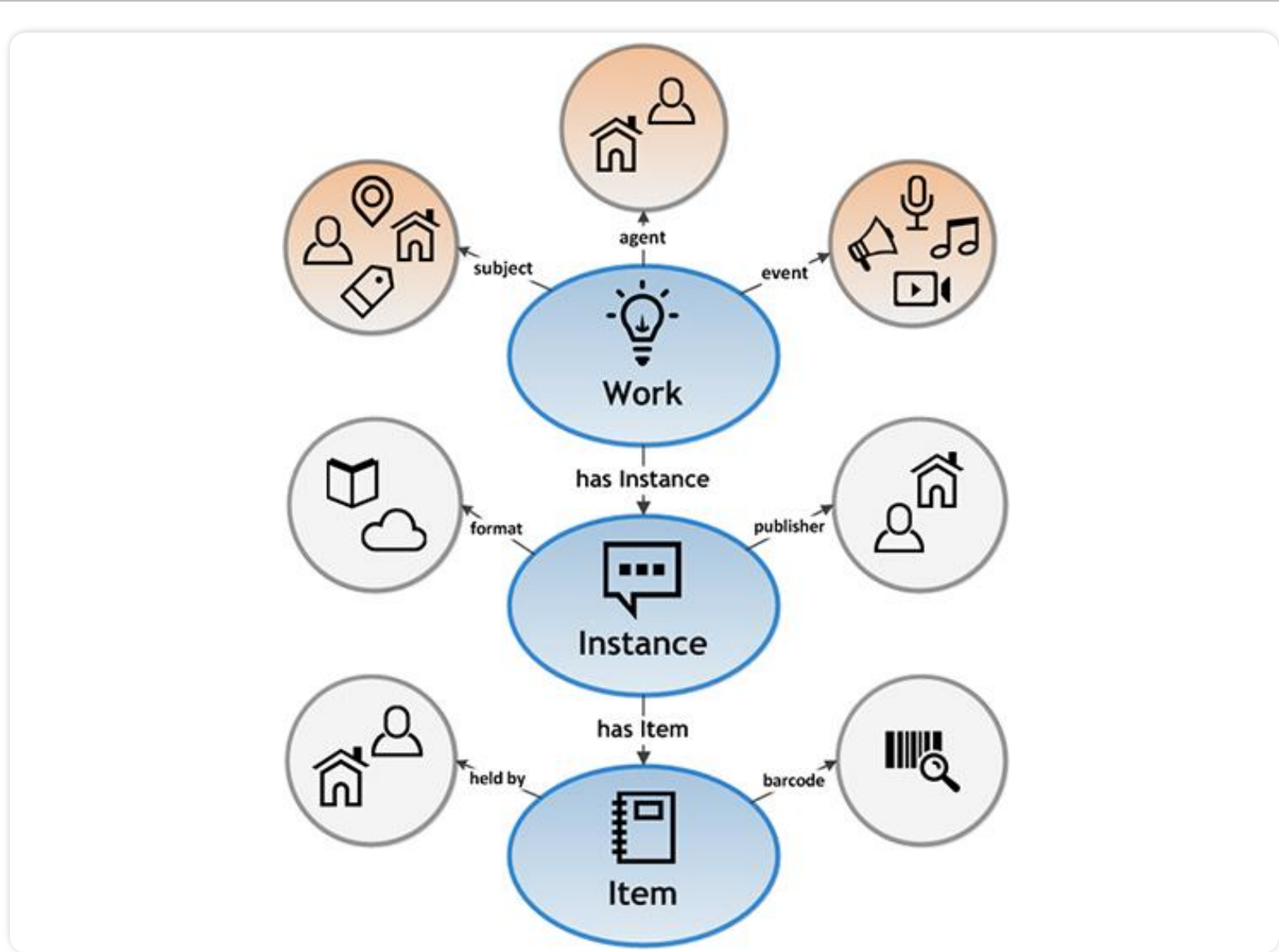
Linked Data – Standards for Sharing on the Web

Consistent Technology (e.g. RDF)

Unique Identifiers (URI)

Defined Relationships

Linked Data on the Web

Linked Data on the Web

Linked Data – Standards for Sharing on the Web

BIBFRAME is a Resource Definition Framework (RDF) based ontology.

Library of Congress creating URIs for agents, concepts, code lists and more

Relationships are defined between works, instances, items, agents, concepts and more.

MARC vs BIBFRAME Example

MARC XML
```
  <subfield code="a" >PS3557.R5355</subfield>
  <subfield code="b" >F57 1991</subfield>
 </datafield>
 <datafield tag="082" ind1="0" ind2="0" >
  <subfield code="a" >813/.54</subfield>
  <subfield code="2" >20</subfield>
 </datafield>
 <datafield tag="100" ind1="1" ind2=" " >
  <subfield code="a" >Grisham, John.</subfield>
 </datafield>
 <datafield tag="245" ind1="1" ind2="4" >
  <subfield code="a" >The firm /</subfield>
  <subfield code="c" >John Grisham.</subfield>
 </datafield>
 <datafield tag="250" ind1=" " ind2=" " >
  <subfield code="a" >1st ed.</subfield>
 </datafield>
 <datafield tag="260" ind1=" " ind2=" " >
  <subfield code="a" >New York :</subfield>
  <subfield code="b" >Doubleday,</subfield>
  <subfield code="c" >c1991.</subfield>
 </datafield>
 <datafield tag="300" ind1=" " ind2=" " >
```

BIBFRAME (RDFXML)
```
   </bf:assigner>
  </bf:ClassificationDdc>
 </bf:classification>
 <bf:contribution >
  <bf:Contribution >
   <rdf:type rdf:resource="http://id.loc.gov/ontologies/bflc/PrimaryContribution" />
   <bf:agent >
    <bf:Agent rdf:about="http://id.loc.gov/authorities/names/n88231236" >
     <rdf:type rdf:resource="http://id.loc.gov/ontologies/bibframe/Person" />
     <bflc:name00MatchKey >Grisham, John.</bflc:name00MatchKey>
     <bflc:primaryContributorName00MatchKey >Grisham, John.
     </bflc:primaryContributorName00MatchKey>
     <bflc:name00MarcKey >1001 $aGrisham, John.</bflc:name00MarcKey>
     <rdfs:label >Grisham, John.</rdfs:label>
    </bf:Agent>
   </bf:agent>
   <bf:role >
    <bf:Role rdf:about="http://id.loc.gov/vocabulary/relators/ctb" />
   </bf:role>
  </bf:Contribution>
 </bf:contribution>
 <rdfs:label >The firm</rdfs:label>
 <bf:title >
```

MARC vs BIBFRAME Example

MARC

- Pros
  - Widely used in the industry
  - Adapted to multiple disciplines

- Cons
  - Not used in other industries
  - Not aligned with modern technology
  - Limited extensibility

BIBFRAME

- Pros
  - Aligns with other industries
  - Aligns with modern technology
  - RDF natively supports to multiple disciplines
  - Unlimited extensibility

- Cons
  - Not widely adopted in the

BIBFRAME in Vega

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BIBFRAME Glossary in Vega

Agent

Entity having a role in a resource, such as a person or organization.

Topic

Concept or area of knowledge.
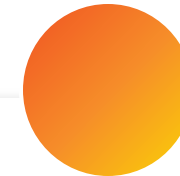
Work

Resource reflecting a conceptual essence of a cataloging resource.

https://id.loc.gov/ontologies/bibframe.html

Vega Goals for BIBFRAME and Linked Data

Today's Goal:

Focus on Patron Experiences

➢ Single search result for all books and films
➢ Person and Topic pages
➢ Showcases

Long Term Goals:

Building a Solid Linked Data Foundation

➢ Integration with materials and data beyond bibliographic items
➢ Option to transform and publish data in emerging web standards in support of library goals

BIBFRAME Based Data Model

What does this mean?

➢ Converted MARC to BF using BIBFRAME 2.0 specifications
➢ Object-oriented data model
➢ Extensions where needed for best patron e

What are the benefits?

➢ Aligned with industry standards
➢ Supports key Discovery features
➢ Provides a solid foundation for future BIBFRAME

Vega Data Flow

Ingest decides what gets rolled up together

MATCH

Match & link resources, Concepts, and Persons

LINK

Link to external data

Ingest authorities & library metadata

INGEST

Add relationships

ADD

Expose context to user

EXPOSE

MARC to BIBFRAME Conversion

MARC record (instance) physical material requirements

Print

- An instance will be classified as type = "print" if LDR06 = a and LRD07 = a, b, i, m, or s
- An instance will be classified as type = "print" if the following 006/00,06 combination is true:
  - For 006/00 = a, t ("BOOKS"), c, d, i, j ("MUSIC"), s ("CONTINUING RESOURCES"), or p ("MIXED MATERIALS")
  - 006/06 = r
- An instance will be classified as type = "print" if the following 006/00,12 combination is true:
  - For 006/00 = g, k, o, or r ("VISUAL MATERIALS")
  - 006/12 = r
- An instance will be classified as type = "print" if 008/23 = r for "BOOKS" "MUSIC" "CONTINUING RESOURCES" "MIXED MATERIALS"
- An instance will be classified as type = "print" if 008/29 = r for "VISUAL MATERIALS"

Manuscript

- An instance will be classified as type = "manuscript" if LDR06 (record type) = d, f, or t

Archival

- An instance will be classified as type = "archival" if LDR08 (type of control) = a

Collection

- An instance will be classified as type = "collection" if LDR07 = c or d

https://documentation.iii.com/vega/admin/admin/MARCtoBibFrame_Book.htm

MARC to BIBFRAME Conversion

MARC record (instance) electronic material requirements

- An instance will be classified as type = "electronic" if one of the following conditions is true:
  - LDR06 (record type) = m, indicating a computer file
  - 007 (00) = c, indicating a computer file or electronic resource
- A "BOOKS" "MUSIC" "CONTINUING RESOURCES" "MIXED MATERIALS" instance will be classified as type = "electronic" if both of the following conditions are true:
  - LDR06 (record type) and LDR07 values =
    - MARC "BOOKS" have LDR06 = t or LDR06 = a AND LDR07 = a, c, d, or m
    - MARC "MUSIC" have LDR06 = c, d, i, or j
    - MARC "CONTINUING RESOURCES" have LDR06 = a AND LDR07 = b, i, or s
    - MARC "MIXED MATERIALS" have LDR06 = p
  - 008/23 = s or q, indicating "electronic"
- A "VISUAL MATERIALS" instance will be classified as type = "electronic" if both of the following conditions are true:
  - LDR06 (record type) = g, k, o, or r
  - 008/29 = s or q, indicating "electronic"
- An instance will be classified as type = "electronic" if the following 006/00,06 combination is true:
  - For 006/00 = a, t ("BOOKS"), c, d, i, j ("MUSIC"), s ("CONTINUING RESOURCES"), or p ("MIXED MATERIALS")
  - 006/06 = q or s
- An instance will be classified as type = "electronic" if the following 006/00,12 combination is true:
  - For 006/00 = g, k, o, or r ("VISUAL MATERIALS")
  - 006/12 = q or s

Notes:
- Records are processed from MARC to BIBFRAME according to tag number, so if the instance type is set by the LDR during processing, it could be overwritten based on a later tag (such as data from the 006 or 008).
- Instance type is a required field, with a default value of "print." A record's instance type is set to "print" if the record does not meet any of the requirements described below to assign a different instance type.
- Any type that is not electronic is considered physical.

https://documentation.iii.com/vega/admin/admin/MARCtoBibFrame_Book.htm

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MARC to BIBFRAME Conversion

Ebook vendor type requirements

Overdrive

037 $a Title ID $b begins with "overdrive" (case insensitive)

856 $u contains URL to record

Hoopla

037 $a Title ID $b begins with "midwest" (case insensitive)

856 $u contains URL to record

Multimedia link (physical type materials only)

- Doesn't have the 037 data that designates an Overdrive or Hoopla ebook
- Does have: 856 $u contains URL to record
- Will display text instead of $u if: $z "public note," $y "note," or $3 "link text" is present. When more than one of these subfields are present, one will be chosen in order $z, $y, $3.

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Staff Documentation

https://documentation.iii.com/vega/admin/admin/Staff_Admin_menu/Vega_Admin.htm

Search our help site...

You are here: Administration

Administration

Material Type Mapping

- Vega uses metadata-based rules to group bibliographic instance records into work-level roll ups.
- On the ILS Material Type to Work Level Roll Up Mapping page, you can select a work type of book or video to populate the format group selector with the corresponding format labels.

Material Type

| Work Type → | Book | | Video | Other |

| Format Type → | Book | eBook | Large Print | Audiobook | eAudiobook | Audio CD | DVD | Blu-ray | Streaming Media | Other |

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Roll ups: Titles

In order for editions to rollup into a work level rollup the titles must have an exact match. These are the rules for title matching that you should check your title data against:

1. 130 and 240 match only on $an**p**

2. 245 match on $abnp (when no 130/240 present in the edition)

3. mainTitle and subTitle, partNumber and partName are all used for matching if present and must exist in all editions record for them to rollup. The order of partNumber and partName subfields does not matter.

4. Non-filing characters specified by the incoming 130/240/245 title tag are ignored (the number of leading characters to ignore is indicated by the value in the second indicator for the 240 and 245, and by the value in the first indicator for the 130)

5. mainTitle string matching criteria:
   1. Title match is case-insensitive and ignores trailing commas, semicolons, periods, and colons, and leading and trailing spaces
   2. Trailing text in parentheses of mainTitle is ignored (e.g., "The Elephant (the movie)" matches "The elephant")

6. subTitle string matching criteria: The following punctuation is ignored: .,;[] as well as leading and trailing spaces.
   1. Subtitles of "a novel" or "a thriller" (case insensitive exact match, ignoring leading and trailing spaces and trailing punctuation) are ignored.
   2. Any text found within [] brackets and the brackets themselves are ignored.

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Roll ups: Authors

- In order for editions to rollup into a work level rollup the authors must have an exact match. These are the rules for author name matching that you should check your title data against:

1. Authors metadata used for matching is $ae of 100, 110, 111, 700, 710, and 711 tags.

2. Author string matches are case-insensitive and ignore trailing spaces, commas, semicolons, and periods

- **Authors that do not meet the criteria for Primary Author (1xx/7xx has $e that is not aut, author, edt, editor) which can cause the title to rollup with an identical title that has no author**.

Roll ups: Publishers

- Vega BibFrame selects publisher data for rollup matching based on the following rules:

- All 260$b and 264 (2nd indicator must be 1) $b are considered for matching. If there are multiple publishers found all must match exactly across all editions for a rollup to occur.
- Author fields are ignored for moving image (video) materials

- Vega BibFrame matches all selected publishers based on the following rules:

- Publisher data matching is case insensitive and ignores trailing punctuation ;:.,/, and leading and trailing white spaces.
- The list of publishers is sorted alphabetically, and then strings are concatenated using "|" as delimiter before matching is applied

- **Missing or Generic Publisher Data which can cause the title to rollup with an identical title that has no publisher or generic publisher data.**

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Roll ups: Language

- Vega matches the language of editions for work level rollups so that works presented in different languages do not rollup. Vega determines the language of an edition by checking each of the language fields below in the order given. If Vega finds a language value in any of the fields it uses the value it found and will not check the other field values from the rest of the list:

1. 008 language code
   1. invalid/unusable codes are 'und', 'mul', 'zxx', '|||', '###'
2. 041 $a (if 041 is repeated, all languages in the editon must match for a rollup to occur)
3. 130/240 $l (Vega attempts to interpret the text in this field and map it to a language code)
4. If none of the above are present Vega assumes the language of the material matches the default language of Vega Discover set in the Localization settings of the Vega Staff Admin.
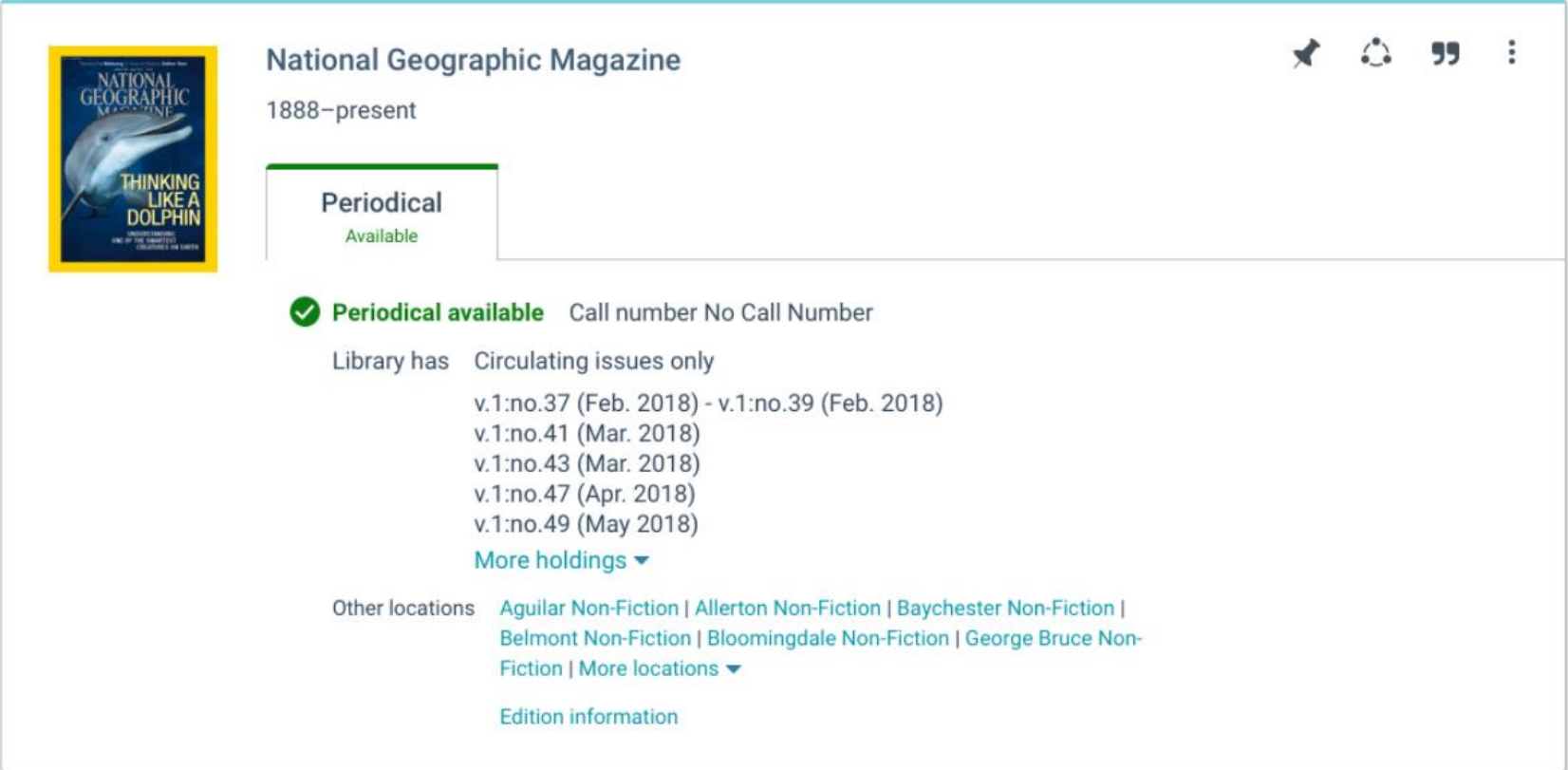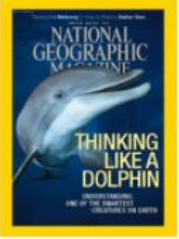
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Extensions for Patron Experience

We have extended our data model to cover essential metadata for the patron discovery experience that is not present in BIBFRAME today (e.g. holdings data).
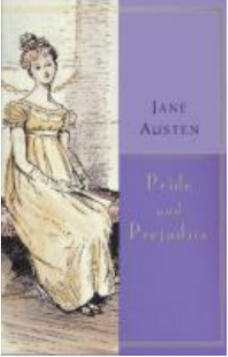
Vega Benefit: Roll Ups

Pride and prejudice

by Austen, Jane, 1775-1817.

1989-2019

Book	eBook	Large Print	eAudiobook	Audiobook
Available	Check Availability	Available	Check Availability	Available

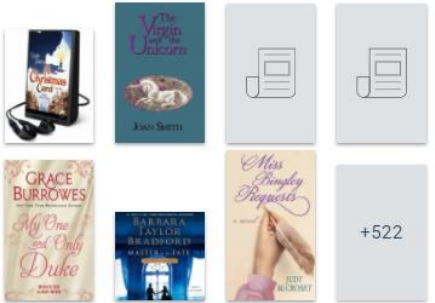✓ **Book available**   Call number FIC AUSTEN, Harry Bennett Lower Level

Other locations   Harry Bennett | Main Library | South End | Weed

Edition information

Place Hold

Extensions for Patron Experience

Pride and prejudice
by Austen, Jane, 1775-1817.

1989-2019

For Later

Book	eBook	Large Print	eAudiobook	Audiobook
Available	Check Availability	Available	Check Availability	Available

✔ **Book available**   Call number FIC AUSTEN, Harry Bennett Lower Level

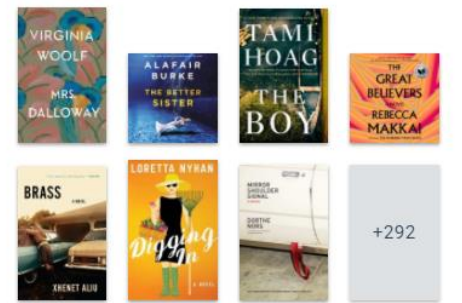Other locations   Harry Bennett | Main Library | South End | Weed

Edition information

Place Hold

Vega BibFrame selects the title metadata used for matching work level rollups in the following MARC data fields order:

1. Uniform Title 130 matching on $anp
2. Uniform Title 240 matching on $anp
3. Title 245 matching on $abnp

Roll-up	Title				
Work	Text			Audio	
Format	Hardcover	Large Print	Kindle	Paperback	Audio CD	Playaway
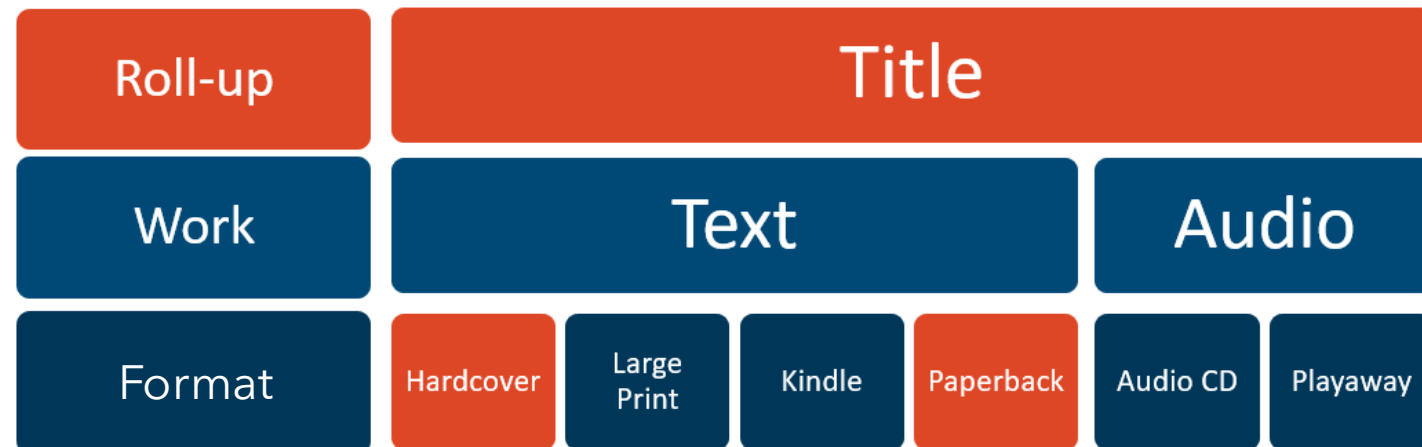
Vega Benefit: Person and Topic Pages

Vega Benefit: Showcases for Roll-Ups

Vega Benefit: Showcases for People and Topics

Austen, Jane, 1775-1817.

For Later

Jane Austen's life is striking for the contrast between the great works she wrote in secret and the outward appearance of being quite dull and ordinary. Austen was born in the small English town of Steventon in Hampshire, and educated at home by her clergyman father. She was deeply devoted to her family. For a short time, the Austens lived in the resort city of Bath, but when her father died, they returned to Steventon, where Austen lived until her death at the age of 41.

Austen was drawn to literature early, she began writing novels that satirized both the writers and the manners (...read more)
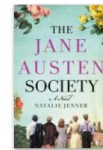
Resources

See all 150 resources >

Miss austen A novel.
Hornby, Gill

Pride and prejudice
2016-2020
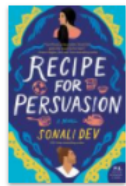
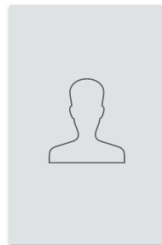Recipe for persuasion :
a novel

Emma
2020
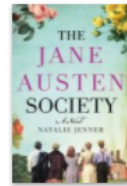
The Jane Austen
Society

The clergyman's wife :
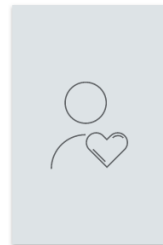a Pride & prejudice
novel

Related People

See all 458 related people >

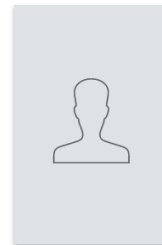Darcy, Fitzwilliam (Fictitious character)
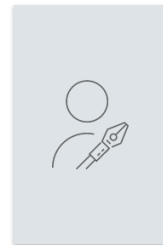
6 Related resources

Kellgren, Katherine

Narrator

88 Related resources

Bennet, Elizabeth (Fictitious character)

6 Related resources

Wadey, Maggie
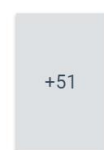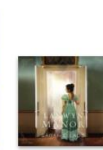
Screenwriter

3 Related resources

Did you know you can change the display name?

Use the Translations file!

https://documentation.iii.com/vega/admin/admin/Staff_Admin_menu/Manage_Translations.htm

Topics

See all 433 topics >

+271

England--Social life and customs--19th century--... >

+51

Young women--England--Fiction >

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Discussion

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Where do we go from here?

Creating value-driven features on a strong linked data foundation built with future use cases in mind

What problems are you trying to solve with BIBFRAME?	What does BIBFRAME mean to you?	What are you doing with BIBFRAME today?	Providing librarian tools for interacting with linked data

Discussion Take-aways

E

D

C

B

A

RESOURCES

BIBFRAME. ORG
https://bibframe.org

LoC Initiative
https://www.loc.gov /bibframe/

Conversion
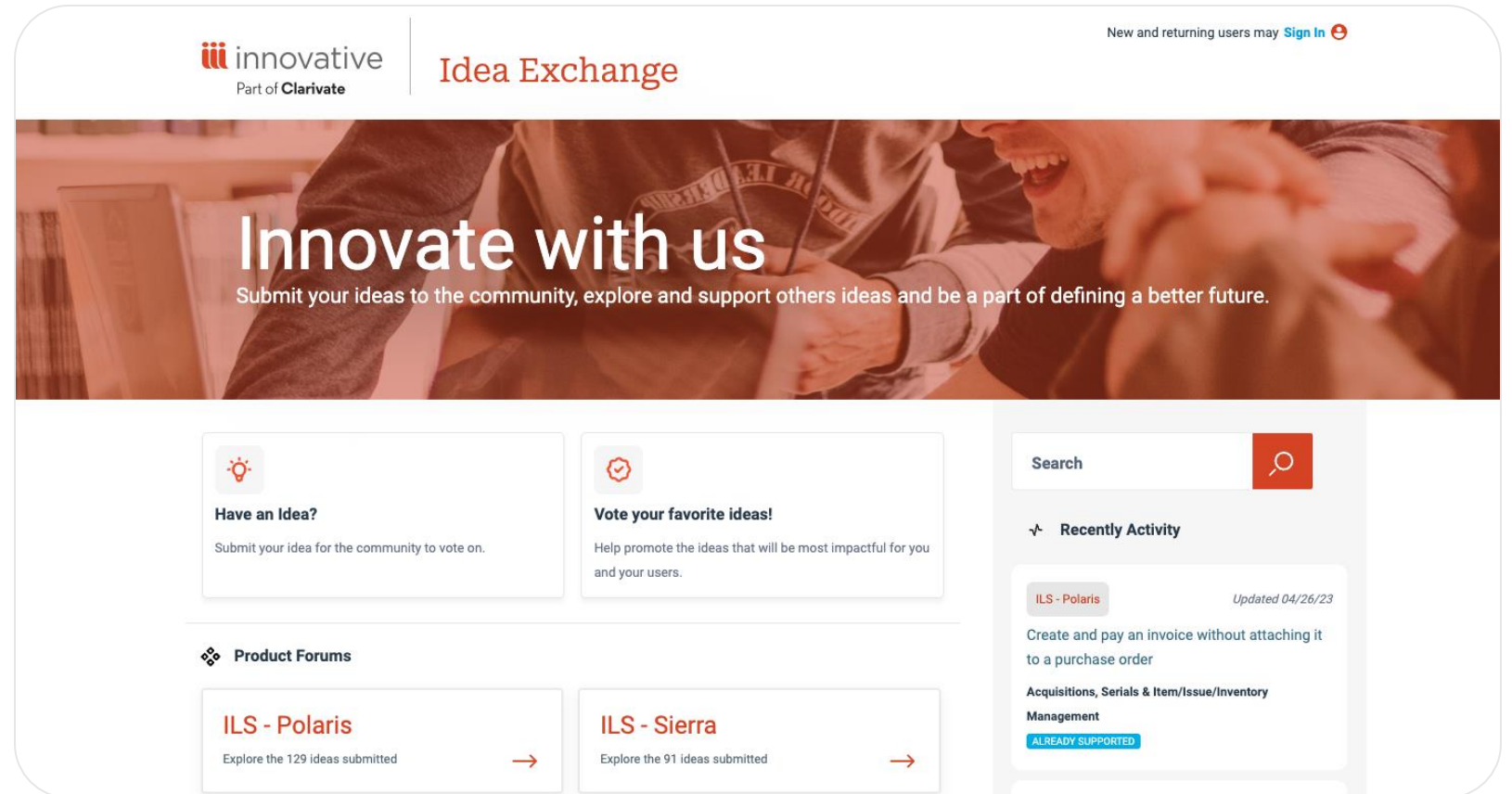https://documentati on.iii.com/vega/adm in/admin/MARCtoBi bFrame.htm

Roll up Troubleshooting
on Supportal

Enhancements

If I Ran the Zoo:
How an Idea Becomes a Product
Saturday, 9:00 am

IUG Enhancements Forum
Saturday, 10:30 am

THANK YOU

Questions?