Panel 2: Bibframe implementation
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Libris in brief

– Libris is the centralized Swedish union catalogue.

– System developed and maintained by National Library of Sweden.

– Data is collaboratively edited by the more than 500 participating Libraries in the Libris cooperation. Bibliographic records are created once and other libraries only need to register a holding.

– Records export to local library systems.

– Includes National Bibliography and authority file.

Libris XL an LD infrastructure

- In June 2018, XL went into production, replacing the old MARC21 system with one based on Linked Data and building upon Bibframe.
    - Core system Postgres DB/ES Index
    - Pipelines for data Import/Export
    - Conversion MARC21>RDF>MARC21
    - Virtuoso SPARQL
    - Cataloging Interface (Vue.js)

id.kb.se our linked data service

- Vocabulary definitions including rdfs and owl mappings to BF2 and other RDF vocabularies (DC, Schema.org, SKOS, MADS, etc.)

- Countries, Languages, Relators

- Subject headings, Genre form

- Other cataloging lists derived from MARC / RDA

KBV – application vocabulary

- "KBV" is our application vocabulary. It's a bit like "BFLC", but is an umbrella of equivalences and sub-terms-of to BIBFRAME and more.
- Our goal is to use our RDF vocabulary mappings to enable a richer I/O system.

Vocabulary Maps (BF → DCT / Schema.org)

```
prefix : <http://id.loc.gov/ontologies/bibframe/>

</work/a> a :Print ;
    :carrier lccarrier:nc ;
    :instanceOf </abstract/a> ;
    :identifiedBy [ a :Isbn ;
                    rdf:value "12-3456-789-0" ] ;
    :provisionActivity [ a :Publication ;
            :agent </org/a> ;
            :date "2017" ] .

</abstract/a> a :Text ;
    :content :Text ;
    :title [ :mainTitle "A" ] ;
    :contribution [ :agent </person/a> ;
                    :role lcrel:ill ] .
```

```
prefix : <http://purl.org/dc/terms/>

</work/a> a :BibliographicResource ;
    :format bf:Print ;
    :isFormatOf <f/abstract/a> ;
    :identifier "12-3456-789-0" ;
    :issued "2017" ;
    :publisher <f/org/a> .

</abstract/a> a :BibliographicResource ;
    :contributor </person/a> ;
    :title "A" .
```

```
prefix : <http://schema.org/>

</work/a> a :Book,
        :Product ;
    :exampleOfWork <f/abstract/a> ;
    :isbn "12-3456-789-0" ;
    :datePublished "2017" ;
    :publisher <f/org/a> .

</abstract/a> a :Book ;
    :illustrator </person/a> ;
    :name "A" .
```

Linking "things"

- Linking relations to entities within the system.
- Linking to things outside of Libris XL (wikidata, LC)
  - Links as means of further exploration
  - Links used as local data aggregation/cache
- Presenting patterns of recognizable properties
  - Chips (title, label, prefLabel, code)
  - Cards (title + responsibilityStatement + identifier etc.)

INSTANCE

B PRINTED, INSTANCE • MONOGRAPH, UNMEDIATED, VOLUME   sb4jgd3432q4p9q

The card catalog • books, cards, and literary treasures

Identifier	ISBN 9781452145402 • (hardcover), ISBN 1452145407 • (hardcover)
Instance of	English
Creative responsib...	The Library of Congress ; foreword by Carla Hayden ; [text written by Peter Devereaux]
Publication	United States • San Fransisco • Chronicle Books • 2017 • [2017]
Copyright	©2017

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INSTANCE   ADMIN METADATA

INSTANCE OF	❯ Text: English
INSTANCE TYPE	Printed
IDENTIFIER	❯ ISBN: 9781452145402 • (hardcover)
	❯ ISBN: 1452145407 • (hardcover)
MODE OF ISSUANCE	Monograph
MEDIA TYPE	(unmediated)
CARRIER TYPE	(volume)
TITLE RESOURCE	❯ Title entity: The card catalog • books, cards, and literary treasures
CREATIVE RESPONSIBILITY STATEMENT	The Library of Congress ; foreword by Carla Hayden ; [text written by Peter Devereaux]
PUBLICATION	❯ PrimaryPublication: United States • San Fransisco • Chronicle Books • 2017 • [2017]
COPYRIGHT	❯ Copyright: ©2017
INDIRECTLY IDENTIFIED BY	❯ ISBN: 9781452158587

Work entity in Libris XL

- According to Bibframe Model (Work/Expression in FRBR)

- Clustering algorithm to analyze possibility of extracting and linking the work entity from several records of existing Instances. Reducing duplicated data and enabling reuse.

- Normalizing properties on Work entity (language codes, subjects, genreForm, classification)

Particular challenges

- Conversion back to MARC21: Two paradigms at the same time.
- Linking ambiguous strings and logical parts to entities: 40+ years of changing cataloging rules and practices makes the data quite inconsistent.
- Handle different "worldviews" in LD.
- Data exchange!

Follow the development

github.com/libris/librisxl (XL Core system)

github.com/libris/definitions (Vocabulary & scheme definitions)

github.com/libris/lxlviewer (Cataloging interface)

github.com/libris/xl-docs (System documentation)