Linked Data for Production (LD4P)

TECHNICAL SERVICES WORKFLOW EVOLUTION THROUGH TRACER BULLETS (STANFORD PROJECTS)

Arcadia Falcone
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Nancy Lorimer

Introduction:

LD4P, ITS GOALS & ITS CONTEXT IN THE CURRENT LIBRARY TECHNICAL SERVICES PARADIGM

Linked Data for Production

o Overall focus:

Lay the groundwork for moving library technical services workflow into a linked data environment

o Subprojects within each institution:

o ontology development

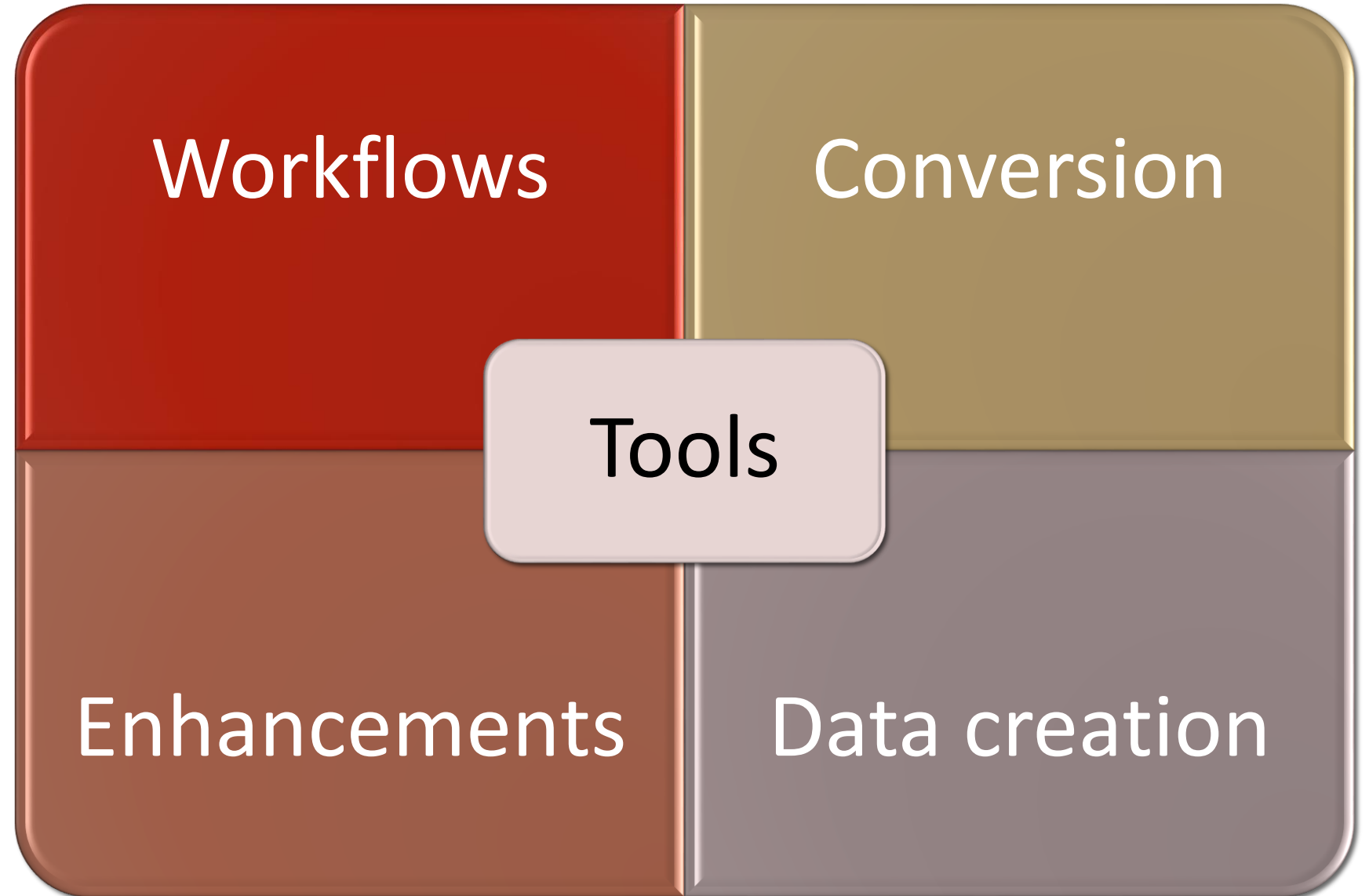o tools investigation

o workflow analysis

Stanford Projects

Performed Music Ontology (PMO)
- ◦ Extension to BIBFRAME 2.0

Workflows in Technical Services ("tracer bullets")
- ◦ MARC-based workflows (vendor-supplied cataloging, original cataloging)
- ◦ digital repository workflows (individual & bulk deposit of metadata)

Workflows:

MODELING METADATA PROCESSES FOR A HYBRID LINKED DATA ENVIRONMENT

Arcadia Falcone

Goals

◦ To understand current technical services workflows both as specific tasks and generalized processes

◦ To model the processes of parallel linked data workflows, with their relationships to each other and to current workflows

◦ To begin identifying implementation specifications for systems, tools, and training

The "tracer bullet" paradigm

◦ Lightweight, end-to-end implementation with real data
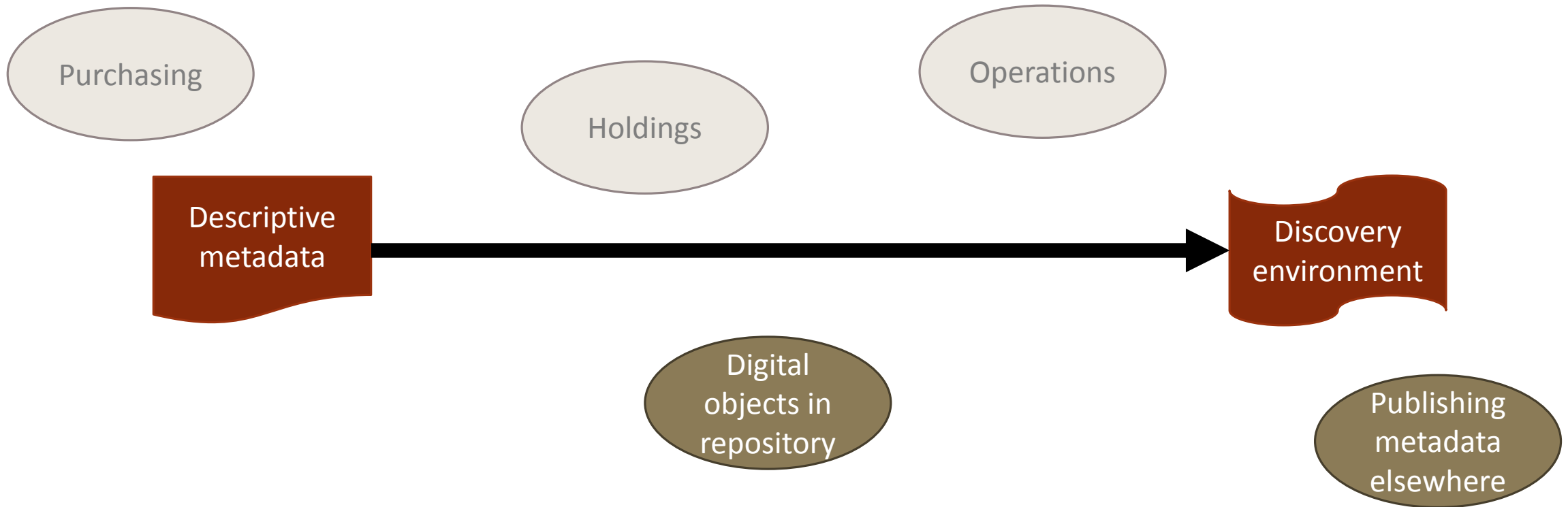
Parameters

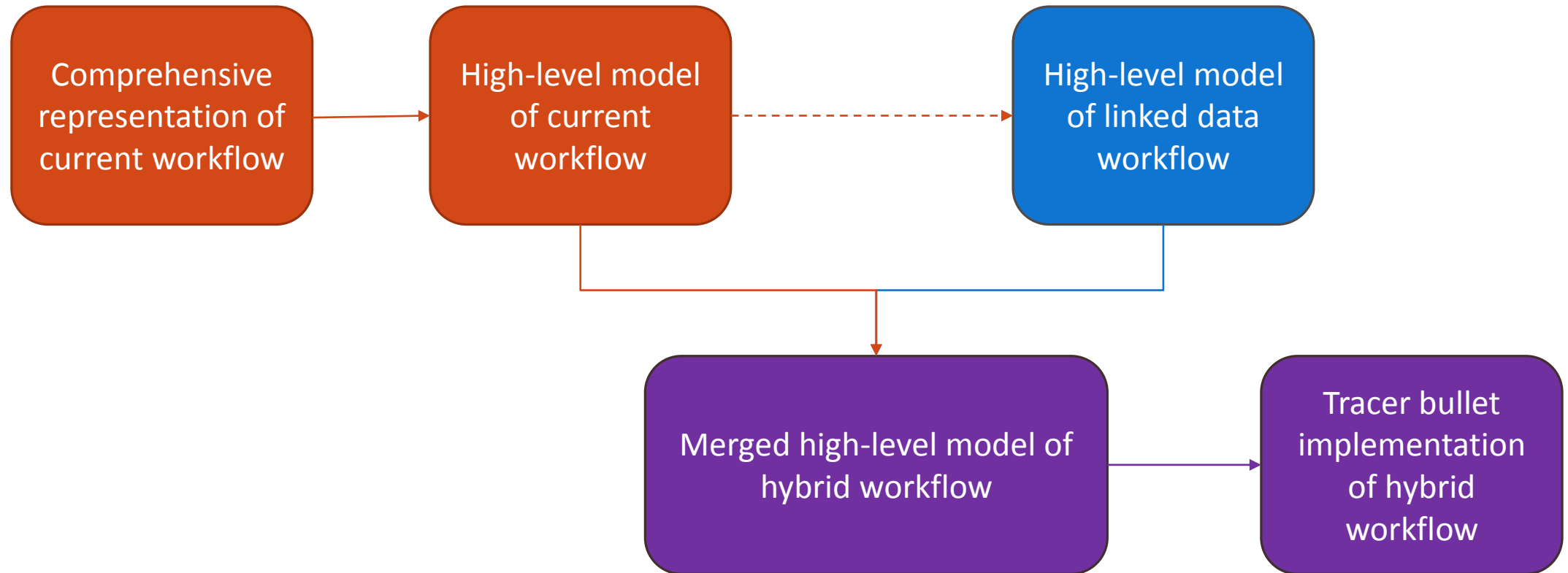◦ A hybrid environment involving MARC, MODS, BIBFRAME, and other standards will continue to exist both locally and globally
  ◦ "Hybrid production" workflows

◦ The endpoint is a discovery layer that integrates MARC, MODS, and BIBFRAME data

◦ Processes should be scalable and require no additional human intervention beyond current workflows

◦ Processes should be defined so as to be modular and tool-agnostic

Four selected workflows

1. Vendors supply MARC records that an automated process loads into our ILS
   ...and into our triplestore as linked data

2. Metadata staff create original description of resources
   ...natively in a linked data editor

3. Users create description as part of digital object self-deposit in a web-based interface
   ...that is stored as linked data

4. A bulk process transforms structured metadata for a large collection of digital objects
   ...into linked data describing objects in our digital repository

Roadmap for workflow analysis

```
┌─────────────────┐      ┌─────────────────┐      ┌─────────────────┐
│  Comprehensive  │─────▶│ High-level model│─ ─ ─▶│ High-level model│
│ representation of│      │   of current    │      │ of linked data  │
│ current workflow │      │    workflow     │      │    workflow     │
└─────────────────┘      └─────────────────┘      └─────────────────┘
```

Workflow #1: task-based model

Top-left flow (ACQ receiving):

- Order arrives
- ACQ receiver wands barcode
- ACQ receiver changes location to "IN PROCESS" — "item received"
- ACQ receiver reviews record
  - Needs work
  - OK
- ACQ supervisor reviews
  - OCLC copy
  - No copy → ACQ supervisor adds 910 routing note to record → ACQ supervisor routes to CLASS → CLASS updates record
  - ACQ supervisor overlays copy
- Adds 910 routing note to record — "left ACQ"
- Updates 916 to current date → Binding & Finishing

SYS flows:

- SYS loads vendor's full bib records
- records with order info in 9XXs → SYS autoloads vendor's provisional bib records into Symphony and generates order records from 9XXs
- ...des full ...with ...9XXs → SYS autoloads vendor's full bib records into Symphony → SYS autocreates invoices, orders, and item records in Symphony, with item location ON ORDER

Bottom-left flow:

- Other
- ACQ creates provisional bib records and order records in Symphony → Record published in SearchWorks

Right side service columns:

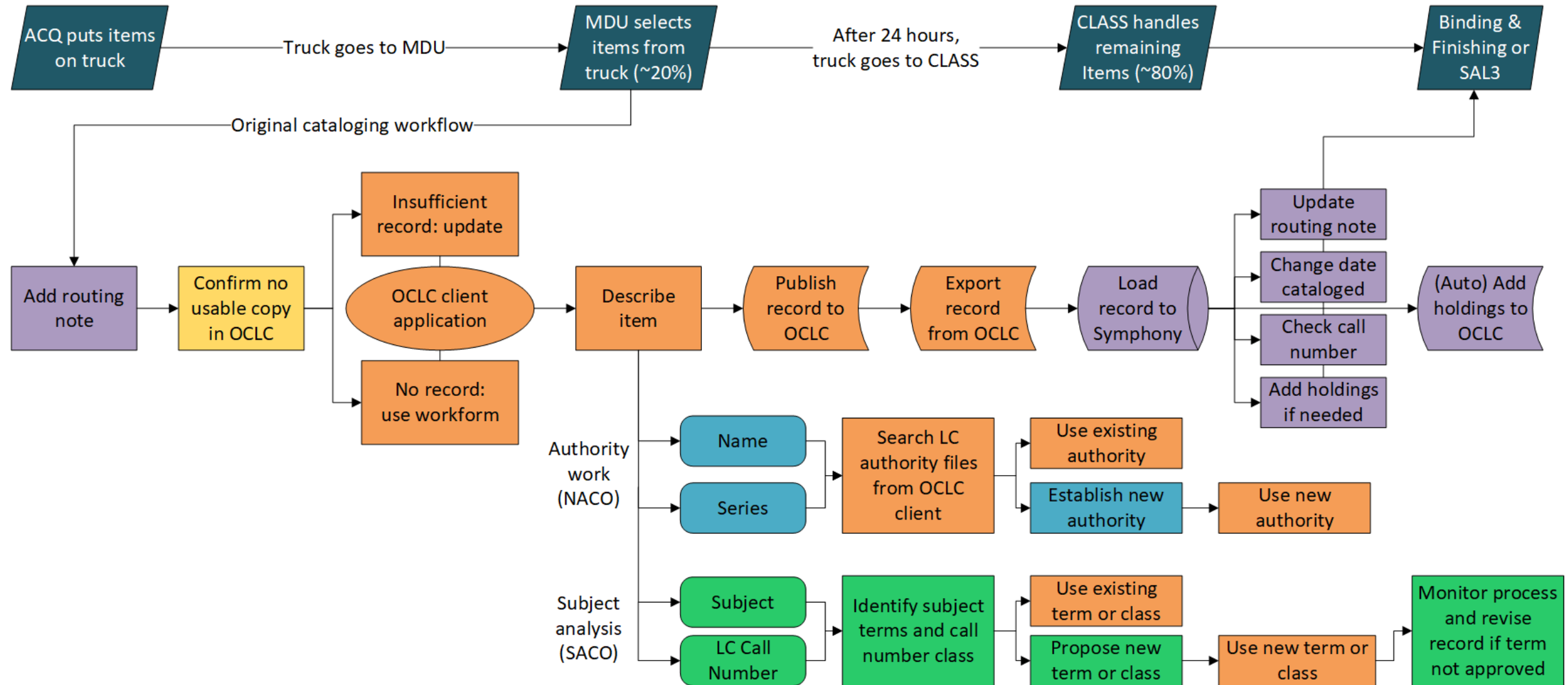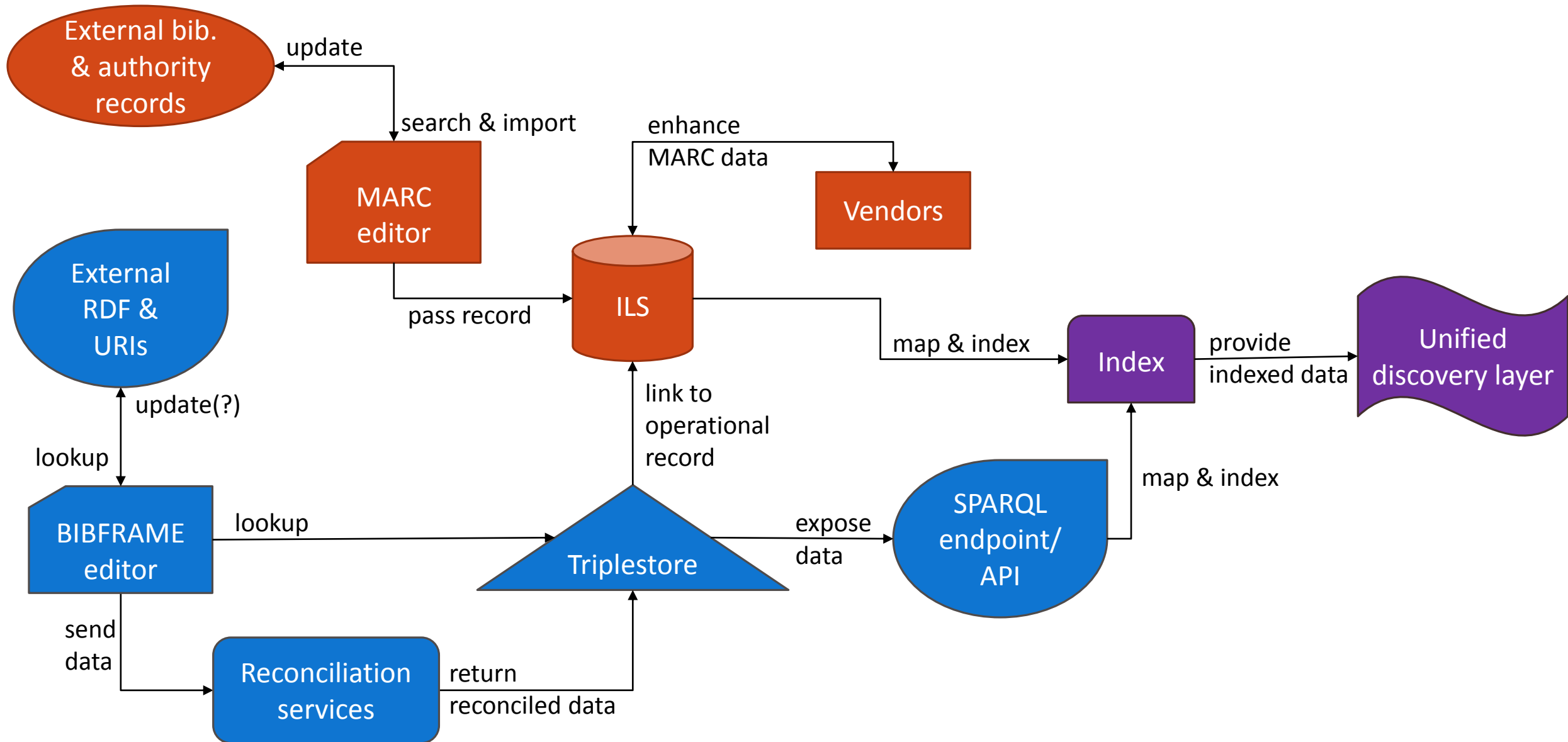| Casalini TOCs	Nielsen	Backstage	Bookplates	OCLC
SYS auto-checks for new content on Casalini site (weekly)	SYS auto-exports records from Symphony to Nielsen (Friday)	SYS auto-exports records from Symphony to Backstage (Friday)	SYS auto-identifies new fund payments in Symphony order records (Tuesday)	SYS auto-exports records from Symphony & adds 049 library code (daily Mon.-Fri.)
SYS auto-downloads TOC PDFs to SUL server	Nielsen returns records with 505, 520, 586 (Monday)	Backstage returns records with updated headings (Saturday)		OCLC adds SUL holdings
				OCLC returns master record IDs
SYS auto-inserts 856 with link to PDF	SYS auto-inserts data as 905, 920, 986 (Mon. or Tue.)	SYS auto-overlays records (Saturday)	SYS auto-inserts 979 with link to DOR (weekly)	SYS auto-inserts 079 with master record ID

(ITEM)

Workflow #1: process-based model

Workflow #2: task-based model

Workflow #2: process-based model

MARC TO BIBFRAME

EXPERIMENTS IN DATA ENHANCEMENT AND CONVERSION

Josh Greben

Nancy Lorimer

Ckey to Bibframe2 Conversion

Ckey for conversion:

```
123
```

Base URI for local namespace:

```
http://ld4p.stanford.edu/
```

Do conversion

Main menu

Ckey to Bibframe2 Conversion

Do another conversion

MarcXML for ckey 123

```
<?xml version="1.0" encoding="UTF-8"?>
<marcxml:collection xmlns:marcxml="http://www.loc.gov/MARC21/slim">
  <marcxml:record>
    <marcxml:leader>00924ccm a2200265   4500</marcxml:leader>
    <marcxml:controlfield tag="001">123</marcxml:controlfield>
    <marcxml:controlfield tag="003">SIRSI</marcxml:controlfield>
    <marcxml:controlfield tag="005">19900820141050.0</marcxml:controlfield>
    <marcxml:controlfield tag="008">731212|||||||||fr            ||| | fre </marcxml:controlfield>
    <marcxml:datafield tag="035" ind1=" " ind2=" ">
      <marcxml:subfield code="a">(OCoLC-M)123010268</marcxml:subfield>
    </marcxml:datafield>
```

```
    </marcxml:datafield>
  </marcxml:record>
</marcxml:collection>
```

Bibframe2 for ckey 123

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:bf="http://id.loc.gov/on
tologies/bibframe/" xmlns:bflc="http://id.loc.gov/ontologies/bflc/" xmlns:madsrdf="http://www.loc.gov/mads/rdf/v1#">
  <bf:Work rdf:about="http://ld4p.stanford.edu/123#Work">
    <bf:adminMetadata>
      <bf:AdminMetadata>
        <bf:generationProcess>
          <bf:GenerationProcess>
            <rdfs:label>DLC marc2bibframe2 v1.4.0-SNAPSHOT: 2017-10-16T21:05:21Z</rdfs:label>
          </bf:GenerationProcess>
```
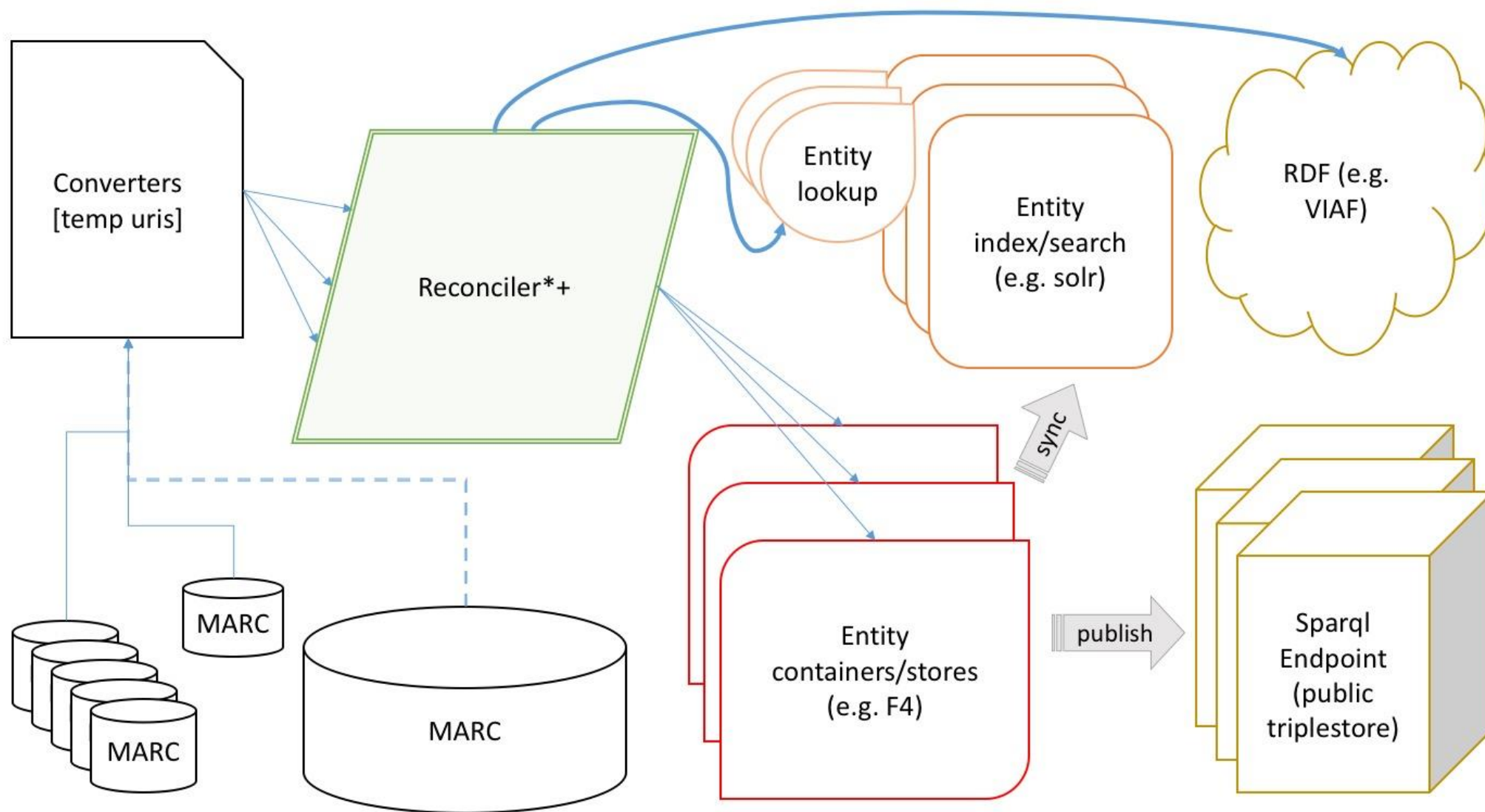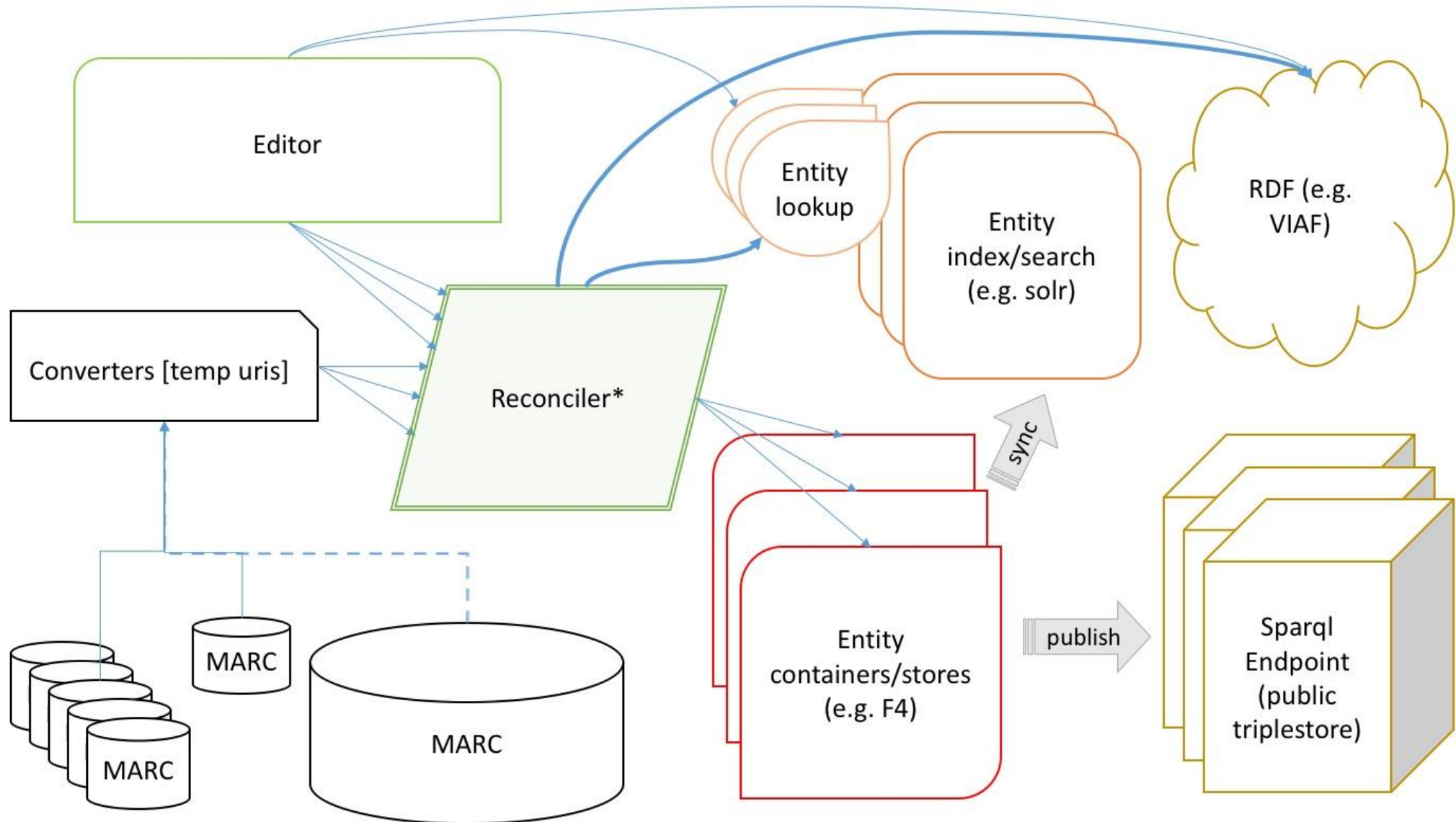
Bulk Conversion with URIs or Fingerprints

Authority Lookups

.mrc → #MARCXML → BIBFRAME → ModBibFrame →
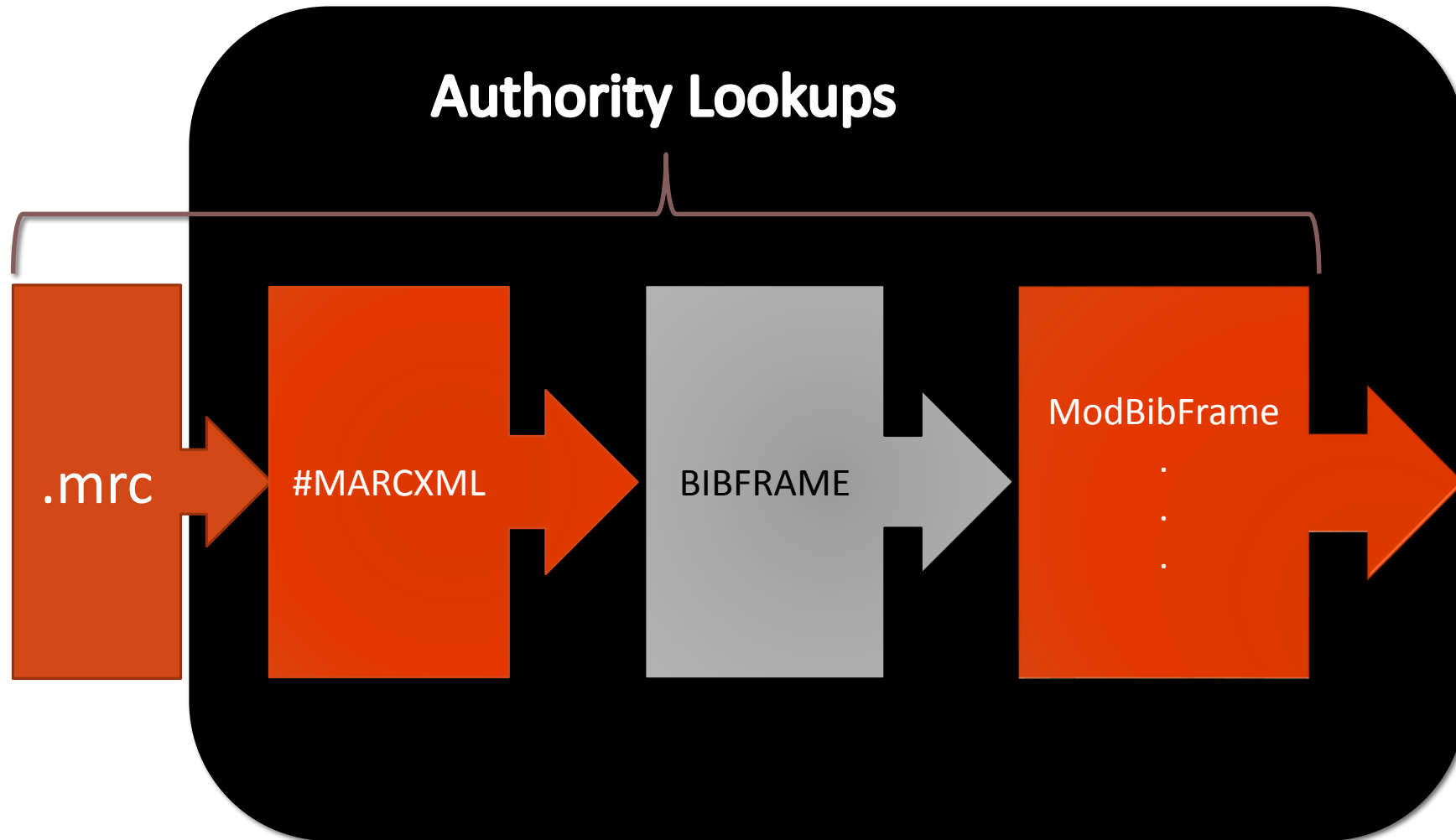
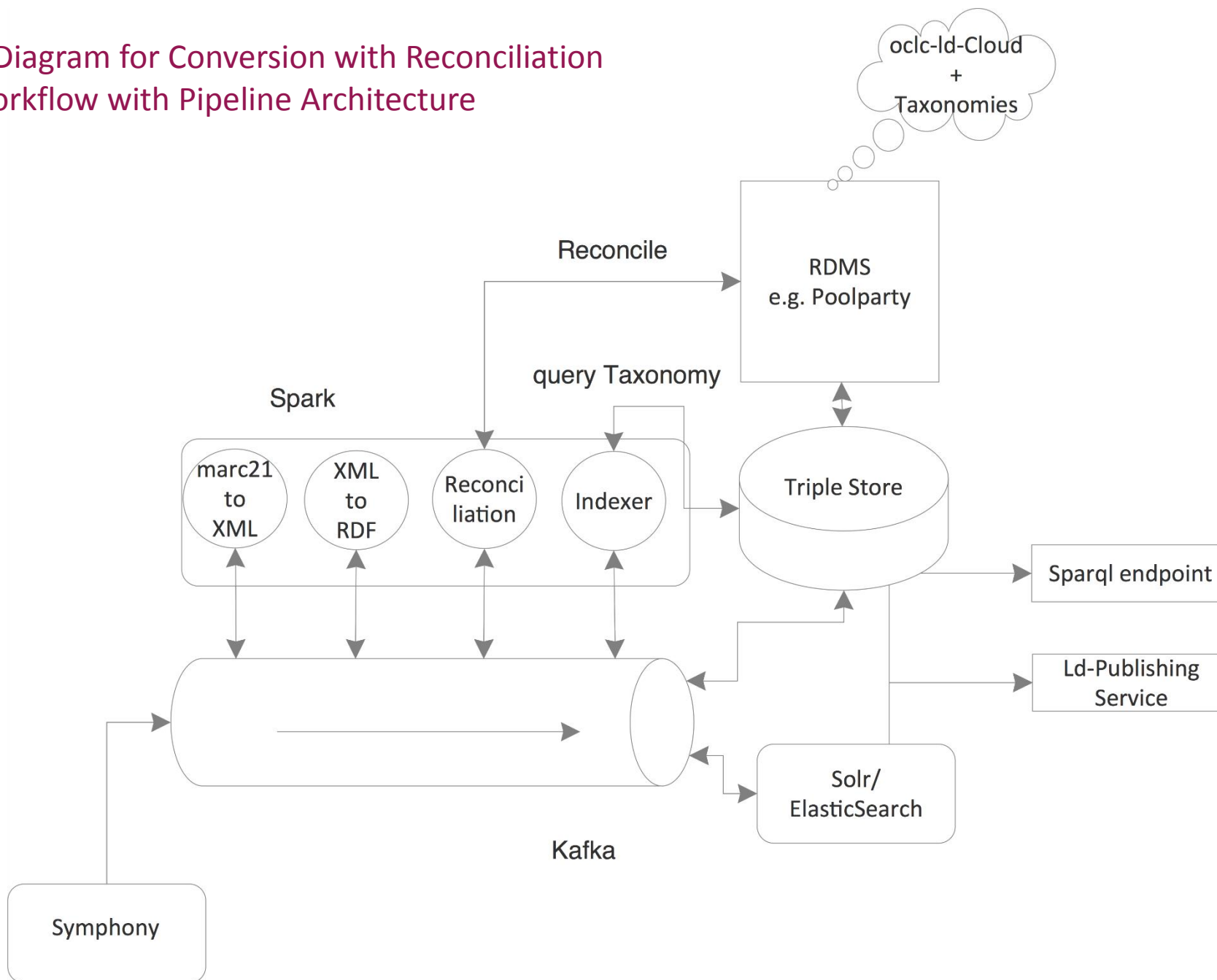# LD4L BIBFRAME Converter Pipeline
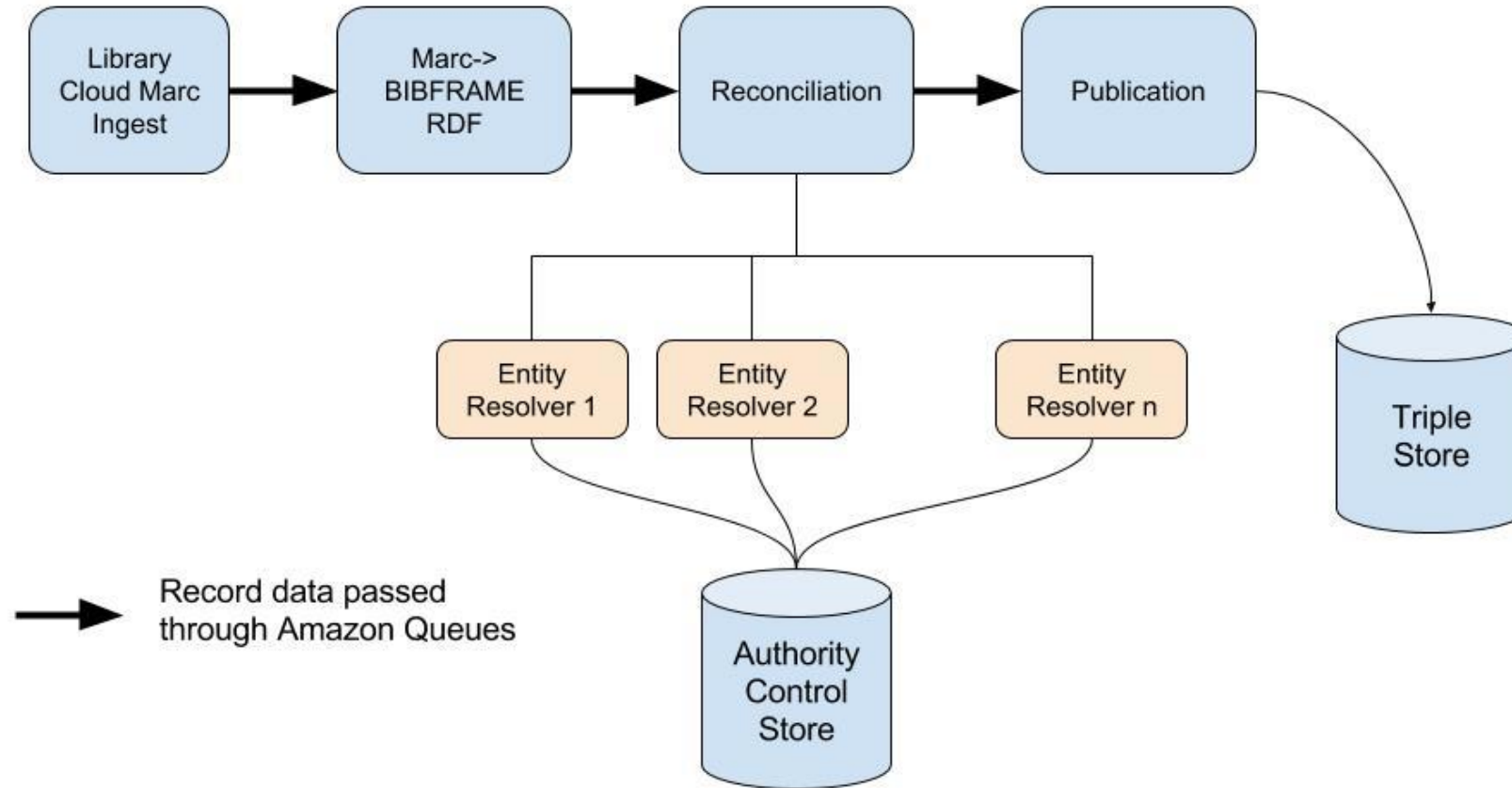
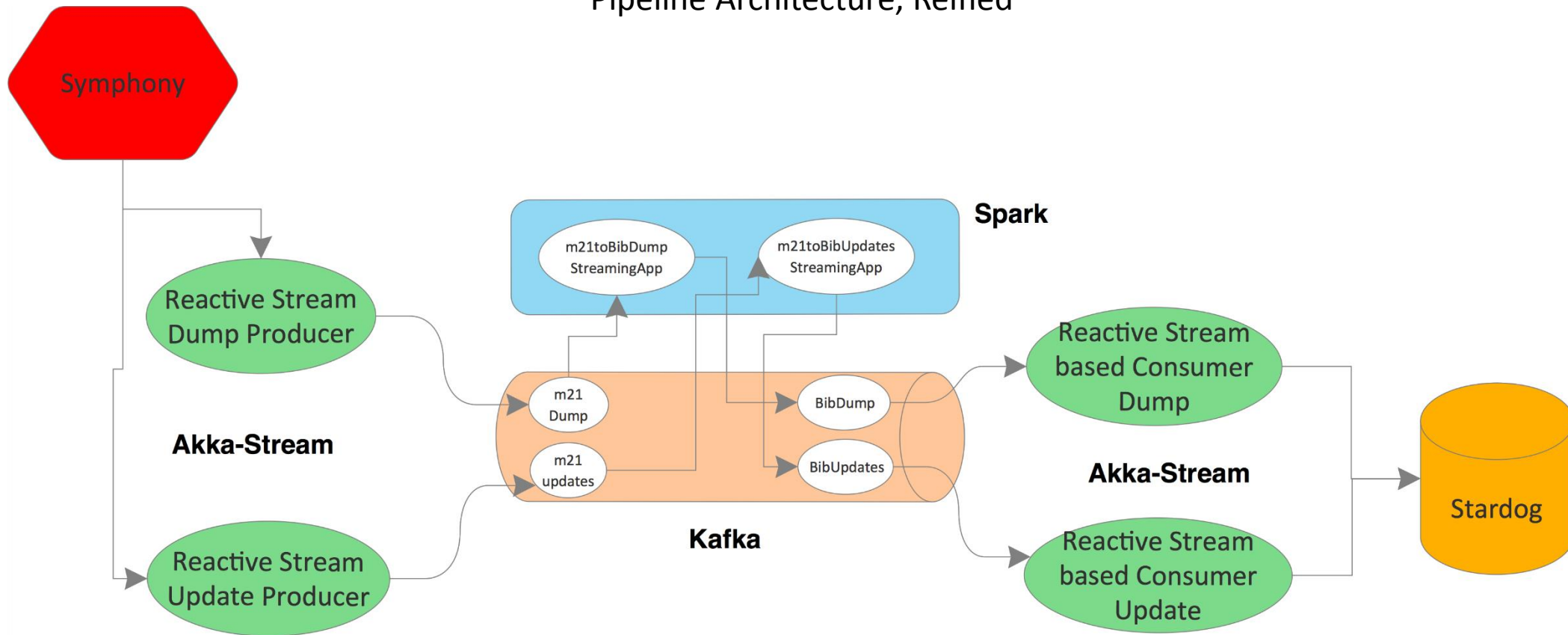# Component Straw-man for Conversion with Reconciliation Workflow

Component Straw-man for Conversion + Editor + Reconciliation Workflow

Component Diagram for Conversion with Reconciliation Workflow with Pipeline Architecture

Component Diagram for Conversion Workflow with Pipeline Architecture, Reified

-Reactive Stream based microservices build with **akka Stream** ensure a fast ingestion or digestion by performing an optimal use of the resources of the machines in term of concurent. They implement the Reactive stream protocol that is based on a push and pull model (asynchronous non blocking and back-pressure)

BIBFRAME 2 to Solr Mapping

Solr Index Field	Description	LC MARC>BF2 Mapping Spec	Bibframe2
id ✅	ckey		derived from BF2:instance identifier?
all_search	all searchable text		value of all the labels associated with ..
collection ✅	constant: "bf2"		-
Title fields			
title_245a_search ✅	245a	mainTitle (I)	BF2:mainTitle?
title_245_search ✅	245abfgknps	approx: rdfs:label (I); does not include $b approx: mainTitle (I) + subtitle (I) + originDate (W) + partNumber (I) + partName (I); both $f and $g map to originDate; $k not mapped	
title_245a_display ✅	short title, without trailing punctuation \,/;: ??	mainTitle (I)	

BIBFRAME 2 SPARQL Queries

Gets the "main title" of an instance; title_245a_search

```
PREFIX bf: <http://id.loc.gov/ontologies/bibframe/>
SELECT ?o
WHERE {
  <http://ld4p-test.stanford.edu/6832810#Instance> bf:title ?t .
  ?t bf:mainTitle ?o .
  FILTER NOT EXISTS {
      ?t rdfs:subClassOf* bf:VariantTitle.
    }
}


select  distinct ?s ?title ?titleType ?titleLabel
Where {
    ?s a bf:Instance .
    ?s bf:title ?title .
    ?title a ?titleType .
    ?title bf:mainTitle ?titleLabel .
    Filter Not Exists {
      ?titleType rdfs:subClassOf* bf:VariantTitle.
    }
}
```

Conversion Questions

o URIs—where do you get them?

o are there other enhancements you can do?

o granularity of conversion

o adding local field conversions to a more generic converter

- converter maintenance

o compatibility with other conversions and original metadata creation

Getting URIs

o BACKSTAGE LIBRARY WORKS
  o Providing LC-NAR, VIAF, ISNI URIs for a few years now in authority records
  o Recently began adding selected URIs directly in bib records

o SHARE-Virtual Discovery Environment
  o Has taken converted our entire bib file
  o Can convert MARC to BIBFRAME, and soon MODS to BIBFRAME
  o Has ability to reconcile at basic and enhanced levels

DATA CREATION

REQUIREMENTS & TOOLS

Josh Greben
Nancy Lorimer

The Bibframe Editor…

Needs prefabricated triples (i.e. profiles) and a way to apply them to your work

Needs a place to temporarily remember the data
- Memory store
- Loopback API Server (a la loopback.io)

Needs a way to fetch changes made to profiles
- Profile-edit server with http file endpoint
- Trigger file download

Needs a way to do lookups to id.loc.gov and other sources
- Cross-domain Scripting

Needs a way and a place to permanently store the triples data
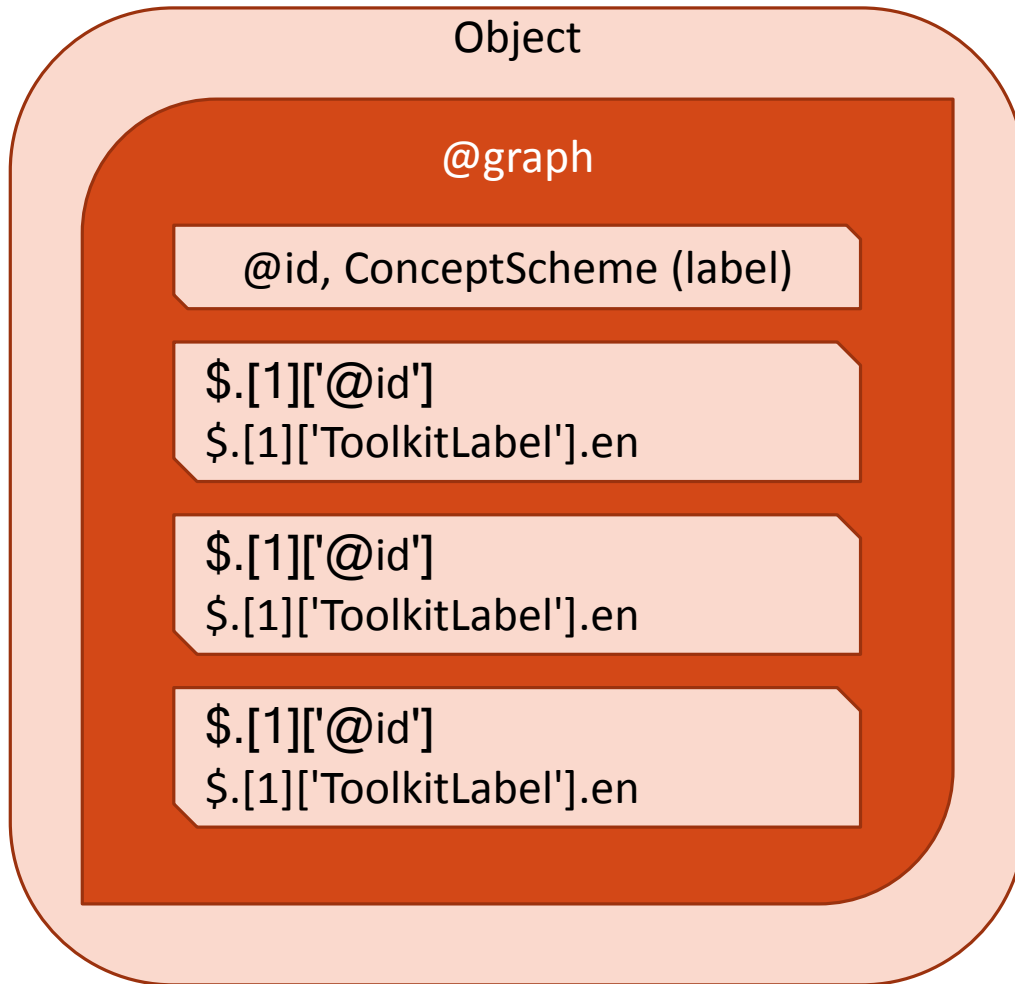- Reformat JSON to suit needs of posting to triplestore

Needs a way to handle Reconciliation…

Lookups: LOC Suggest API

http://id.loc.gov/authorities/performanceMediums/suggest/?ensemble

[["Appalachian dulcimer","Baltic psaltery","Baroque lute","English guitar","English horn","Hardanger fiddle","Irish harp","Jew's harp","MIDI controller","Native American flute"],["1 result","1 result","1 result","1 result","1 result","1 result","1 result","1 result","1 result","1 result"],["http://id.loc.gov/authorities/performanceMediums/mp2013015022","http://id.loc.gov/authorities/performanceMediums/mp2013015373","http://id.loc.gov/authorities/performanceMediums/mp2013015059","http://id.loc.gov/authorities/performanceMediums/mp2013015250","http://id.loc.gov/authorities/performanceMediums/mp2013015251","http://id.loc.gov/authorities/performanceMediums/mp2013015321","http://id.loc.gov/authorities/performanceMediums/mp2013015356","http://id.loc.gov/authorities/performanceMediums/mp2013015360","http://id.loc.gov/authorities/performanceMediums/mp2013015474","http://id.loc.gov/authorities/performanceMediums/mp2013015495"]]

Lookups: rdaregistry.info & id.loc.gov getting ID and English label

Object

> **@graph**
>
> @id, ConceptScheme (label)
>
> $.[1]['@id']
> $.[1]['ToolkitLabel'].en
>
> $.[1]['@id']
> $.[1]['ToolkitLabel'].en
>
> $.[1]['@id']
> $.[1]['ToolkitLabel'].en

http://rdaregistry.info/termList/RDAproductionMethod.jsonld

Object

> @id, schema (URI)
>
> ($.[1]['@id']).split(",")[0]
> If
> ($.[1]['@id']).split(",")[0]
> If
> ($.[1]['http://www.loc.gov/mads/rdf/v1#authoritativeLabel'][0]['@language'] == "en")
> {$.[1]['http://www.loc.gov/mads/rdf/v1#authoritativeLabel'][0]['@value']}

http://id.loc.gov/authorities/performanceMediums.json

RDF to TripleStore (BFE Produced)

```
{
    "created": "2017-07-28T15:30:57.000Z",
    "id": 4,
    "modified": "2017-07-28T15:30:57.000Z",
    "name": "HAr1501255857",
    "profile": "http://localhost:8000/bf/static/profiles/bibframe/BIBFRAME 2.0 Serial.json",
    "rdf": [
        {}, {}, {}
    ],
    "url": "https://ld4p-loc-bfe-dev.stanford.edu/verso/api/bfs/HAr1501255857"
}
```

RDF to TripleStore (JSON-LD)

```
{
  "@context": {
    "created": "2017-07-28T15:30:57.000Z",
    "id": 4,
    "modified": "2017-07-28T15:30:57.000Z",
    "name": "HAr1501255857",
    "profile": "http://localhost:8000/bf/static/profiles/bibframe/BIBFRAME 2.0 Serial.json",
    "url": "https://ld4p-loc-bfe-dev.stanford.edu/verso/api/bfs/HAr1501255857"
  },
  "@graph": [
    {}, {}, {}
  ]
}
```

LIBRARY OF
CONGRESS

PMO Sound Recording

Cancel   **Save**   **Delete**

Profile		
Performance	☰	Change Resource
BIBFRAME Work (RDA Work Elements)	☰	Change Resource
BIBFRAME Work (RDA Expression Elements)	☰	Change Resource
BIBFRAME Instance (RDA Manifestation)	☰	Change Resource
BIBFRAME Item (RDA Item)	☰	Change Resource
Performance name	☰	Change Resource

+ Add Resource Template   **⬇ Verbose Export**   **⬇ Brief Export**

ID   profile:PMO:Work

Resource URI   http://id.loc.gov/ontologies/bibframe/W

Resource Label   BIBFRAME Work (RDA Work Elements)

Contact

Guiding statement for the use of this resource

▶   Lookup   🗑 Delete Lookup   ☰ Change Property

▶   Creator of Work (RDA 19.2)   🗑 Delete Creator of Work (RDA 19.2)   ☰ Change Property

▶   Title Information (Title Information (RDA 6.14.2, RDA 6.14.3)   ☰ Change Property

▶   🗑 Delete Title Information (Title Information (RDA 6.14.2, RDA 6.14.3)

     Form of Work (RDA 6.3)   🗑 Delete Form of Work (RDA 6.3)   ☰ Change Property

▶   Date of Work (RDA 6.4)   🗑 Delete Date of Work (RDA 6.4)   ☰ Change Property

▶   Place of Origin of the Work (RDA 6.5)   🗑 Delete Place of Origin of the Work (RDA 6.5)   ☰ Change Property

▶   Other Distinguishing Characteristics of the Work (RDA 6.6)   ☰ Change Property

▶   Numerical Designation of a Musical Work (RDA 6.16)   🗑 Delete Other Distinguishing Characteristics of the Work (RDA 6.6)

▶   🗑 Delete Numerical Designation of a Musical Work (RDA 6.16)   ☰ Change Property

     Medium of Performance   🗑 Delete Medium of Performance   ☰ Change Property

▶   Opus number statement (RDA 6.16.1.3.2)   ☰ Change Property

▶   Thematic catalog statement   🗑 Delete Opus number statement (RDA 6.16.1.3.2)

▶   Key and mode (RDA 6.17)   🗑 Delete Thematic catalog statement   ☰ Change Property

▶   Music mode   🗑 Delete Key and mode (RDA 6.17)   ☰ Change Property

▶   Pitch center   ☰ Change Property 🗑 Delete Music mode   ☰ Change Property

▶   Nature of the Content (RDA 7.2)   ☰ Change Property 🗑 Delete Pitch center

▶   (Geographic) Coverage of the Content (RDA 7.3)   ☰ Change Property 🗑 Delete Nature of the Content (RDA 7.2)

▶   (Temporal) Coverage of the Content (RDA 7.3)   🗑 Delete (Geographic) Coverage of the Content (RDA 7.3)

▶   🗑 Delete (Temporal) Coverage of the Content (RDA 7.3)   ☰ Change Property

     Intended Audience (RDA 7.7)   🗑 Delete Intended Audience (RDA 7.7)   ☰ Change Property

▶   Other Person, Family, or Corporate Body Associated With a Work (RDA 19.3)   ☰ Change Property

▶   🗑 Delete Other Person, Family, or Corporate Body Associated With a Work (RDA 19.3)

     Subject of the Work (RDA Chapter 23)   ☰ Change Property

BIBFRAME Instance (RDA Manifestation)

Instance of

Title Information (RDA 2.3)
Instance Title

Statement of Responsibility Relating to Title Proper (RDA 2.4.2)
Statement of Responsibility Relating to Title Proper (RDA 2.4.2) +

Edition Statement (RDA 2.5)
Edition Statement (RDA 2.5) +

Publication, Distribution, Manufacture Statements (RDA 2.8-2.10)
Publication Activity   Distribution Activity   Manufacture Activity

Copyright Date (RDA 2.11)
Copyright Date (RDA 2.11) +

Series Statement (RDA 2.12)
Series Statement (RDA 2.12) +

Mode of Issuance (RDA 2.13)
Mode of issuance

Issue, Distributor Number(s) (RDA 2.15)
Sound recording issue number   Music Distributor number

Media type (RDA 3.2)
Media type

Carrier (RDA 3.3)
Carrier type

Extent (RDA 3.4)
Extent

Dimensions (RDA 3.5)
Dimensions (RDA 3.5) +

Base Material (RDA 3.6), Applied Material (RDA 3.7)
Base material (RDA 3.6)   Applied material (RDA 3.7)

Type of Recording (RDA 3.16.2)
Type of recording (RDA 3.16.2)

Playing Speed (RDA 3.16.4)
Playing speed (RDA 3.16.4)

Recording Medium (RDA 3.16.3)
Recording medium (RDA 3.16.3)

Disc characteristics (Groove, cutting) (RDA 3.16.5-3.16.6)
Groove characteristics (RDA 3.16.5)   Disc Cutting Technique

Tape configuration (RDA 3.16.7)
Tape configuration (RDA 3.16.7)

Configuration of Playback Channels (RDA 3.16.8)
Configuration of Playback Channels (RDA 3.16.8)

Special Playback Characteristic (RDA 3.16.9)
Special Playback Characteristic (RDA 3.16.9)

File type, encoding format, file size, bitrate (RDA 3.19)
File type (RDA 3.19.2)   Encoding format (RDA 3.19.3)   File size (RDA 3.19.4)   Encoded bitrate (RDA 3.19.7)

BIBFRAME Instance (RDA M

Media type ✕

Media type (RDA 3.2)

Media type (RDA 3.2)

RDA-Media-Types

- audio
- computer
- microform
- microscopic
- other
- projected
- stereographic
- unmediated
- unspecified
- video

Cancel Save changes

Title Information

Statement of Responsibility Relating to T

Edition Statement

Publication, Distribution, Manufacture Statements (RDA 2.8-2.10) — Publication — Manufacture Activity

Copyright Date (RDA 2.11) — Copyright D

Series Statement (RDA 2.12) — Series State

Mode of Issuance (RDA 2.13) — Mode of iss

Issue, Distributor Number(s) (RDA 2.15) — Sound recording issue number | Music Distributor number

Media type (RDA 3.2) — Media type

Carrier (RDA 3.3) — Carrier type

Extent (RDA 3.4) — Extent

Dimensions (RDA 3.5) — Dimensions (RDA 3.5)

Base Material (RDA 3.6), Applied Material (RDA 3.7) — Base material (RDA 3.6) | Applied material (RDA 3.7)

Type of Recording, Recording Medium, Playing Speed (RDA 3.16.2-3.16.4) — Type of recording (RDA 3.16.2) | Recording medium (RDA 3.16.3) | Playing speed (RDA 3.16.4)

BioPortal/BiblioPortal

- repository of biomedical ontologies

- provides
  - ontology summaries & histories
  - viewing statistics
  - ontology details—classes & properties in hierarchies
  - mapping ability

- new "slice" called BiblioPortal
  - are working to make it a more independent portal

Entry Type

☑ **Ontology** (9)
☐ Ontology View (0)
☐ CIMI Model (0)
☐ NLM Value Set (0)

Uploaded in the Last

▼

Category

☐ All Organisms (0)
☐ Anatomy (0)
☐ Animal Development (0)
☐ Animal Gross Anatomy (0
☐ Arabidopsis (0)
☐ Biological Process (0)
☐ Biomedical Resources (0) ▼

Group

☑ **BIBLIO** (9)
☐ BIS (3)
☐ CGIAR (1)

---

projects 1 | **classes** 188

BIBFRAME 2.0 (BIBFRAME)

Initiated by the Library of Congress, BIBFRAME provides a foundation for the future of bibliographic description, both on the web, and in the broader networked world

Uploaded: 6/8/17

---

classes 780

schema.org (SCHEMA)

A collection of schemas that webmasters can use to markup HTML pages in ways recognized by major search providers, and that can also be used for structured data interoperability (e.g

Uploaded: 5/19/17

---

classes 11

Dublin Core (DC)

The Dublin Core Schema is a small set of vocabulary terms that can be used to describe several kinds of resources

Uploaded: 2/17/17

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classes 85

CIDOC Conceptual Reference Model (CIDOC-CRM)

The CIDOC Conceptual Reference Model (CRM) provides definitions and a formal structure for describing the implicit and explicit concepts and relationships used in cultural heritage documentation

Uploaded: 8/31/17

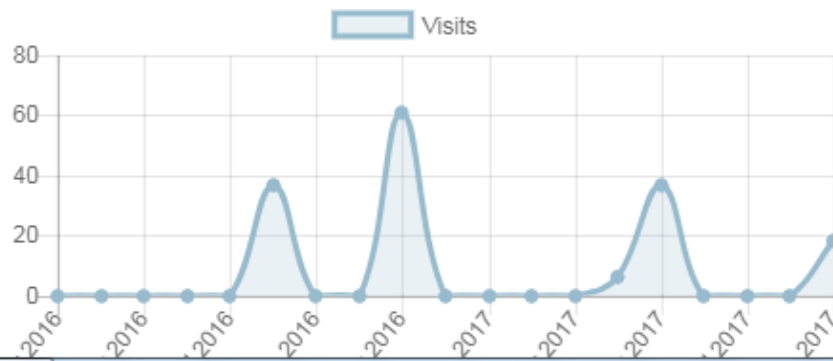**classes** 25

Web Annotation Ontology (OA)

Details

ACRONYM	BIBFRAME
VISIBILITY	Public
BIOPORTAL PURL	http://purl.bioontology.org/ontology/BIBFRAME
DESCRIPTION	Initiated by the Library of Congress, BIBFRAME provides a foundation for the future of bibliographic description, both on the web, and in the broader networked world. In addition to being a replacement for MARC, BIBFRAME serves as a general model for expressing and connecting bibliographic data. A major focus of the initiative will be to determine a transition path for the MARC 21 formats while preserving a robust data exchange that has supported resource sharing and cataloging cost savings in recent decades.
STATUS	Production
FORMAT	OWL
CONTACT	John Graybeal, jgraybeal@stanford.edu
HOME PAGE	https://www.loc.gov/bibframe/
PUBLICATIONS PAGE	
DOCUMENTATION PAGE	https://www.loc.gov/bibframe/docs/index.html
CATEGORIES	Other, Upper Level Ontology
GROUPS	Bibliographic Materials Group

Metrics ⓘ

NUMBER OF CLASSES:	188
NUMBER OF INDIVIDUALS:	0
NUMBER OF PROPERTIES:	195
MAXIMUM DEPTH:	2
MAXIMUM NUMBER OF CHILDREN:	75
AVERAGE NUMBER OF CHILDREN:	9
CLASSES WITH A SINGLE CHILD:	3
CLASSES WITH MORE THAN 25 CHILDREN:	2
CLASSES WITH NO DEFINITION:	2

Visits   Download as CSV

Reviews   Add your review

BIBFRAME 2.0

Administrative metadata
Applied material
Arrangement of material
Aspect ratio
Assigner
Associated agent
Award note
Base material
Book format
Capture of content
Carrier type
Cartographic ascension and declination
Cartographic coordinates
Cartographic data
Cartographic equinox
Cartographic G ring area excluded
Cartographic outer G ring area covered
Cartographic projection
Classification
Classification designation
Classification item number
Classification number
Classification number span end
Classification scheme edition
Classification table identification
Classification table sequence number
Code
Color content

Property Details

Labels

Book format

Definitions

Result of folding a printed sheet to form a gathering of leaves.

ID

http://id.loc.gov/ontologies/bibframe/bookFormat

CEDAR

CEDAR = The Center for Expanded Data Annotation and Retrieval

Mission: CEDAR will develop information technologies that make authoring complete metadata much more manageable, and that facilitate using the metadata in further research.

Elements:
- Interfaces and tools built and tested specifically for metadata creation
- Consistency in terminology
- Machine learning
- Editing capabilities
- Training and outreach
- Building on past work and leveraging ongoing collaborations

Find a property in BioPortal or **Enter Property URI**

Search in BioPortal
Affiliation

10 results for the query 'Affiliation'. Click on a property below to select it

PROPERTY	DEFINITION	TYPE	SOURCE	ID
affiliation	An organization that this person is affiliated with. For example, a school/university, a club, or a team.	Annotation Property	SCHEMA	affiliation
affiliation	-	Datatype Property	CANCO	affiliation
affiliation	-	Annotation Property	DCAT	affiliation
Affiliation Ended	The date an individual ceased to be affiliated	Datatype Property	MADS-RDF	affiliationEnd

CEDAR entry form

BF templates for RDA book cataloging

RDA Book Work
- Work title
  - Work title
  - Main title
  - Title part
  - Title part number
- Content type
- Genre/Form
- Subject (LCSH)
- Identifier
  - Identifier type
  - Identifier value
- **Contributor(s)**
  - Agent
  - Role
  - Identifier
- Origin date

RDA Book Instance
- Title Proper information
- Statement of responsibility (RDA 2.4)
- Parallel Title Information
- Transliterated title information
- Variant Title Information
- Edition statement (RDA 2.5)
- Publication statement
- Publication date
- Publication Information
- Copyright date
- Series statement
- Numbering within series
- Media type
- Carrier type
- Identifier
- Mode of issuance

LC Editor vs CEDAR: Similarities

o   ability to do custom labelling that "hides" the ontology terms

o   ability to do lookups to value vocabularies

o   default values

o   ability to repeat "fields"

o   can use multiple ontologies

o   primary output in JSON-LD

o   neither deals well at the moment with multiple properties for the same class

o   **the profile/template provides the primary definition of the application profile**

LC Editor vs CEDAR: Differences

LC

- properties & classes entered manually by profile creator

- individual elements are reusable, using the same profile; when the element changes in one place, it changes in every profile it is used in

- look ups restricted to full vocabularies (e.g. all LCGFT)

- no validation or extended application profile ability (e.g. date type) beyond basic profile

CEDAR

- properties and classes added through lookup & directly linked to ontology

- individual elements are reusable, but must be duplicated in each template; when the element changes in one place, it does not change in other places

- look ups can be restricted to individual children of a class or to hand-picked values

- validation of entries including text, date (provides xsd:date), URIs, numbers

Moving forward…

- Internal
  - working to complete workflow analysis
  - making current tracer bullets more robust & integrating SHARE-VDE & BSLW
  - further enhancement of CEDAR templates

- SHARE-VDE
  - more conversion (MODS to BF and MARC to BF extensions)
  - reconciliation of URIs
  - data enhancements
  - exploring potential for sharing data

- Broader Community
  - work with the PCC to host a linked data sandbox for community experimentation
  - filling out application profiles to include relationships from RDA Registry
  - working with the community to make BF a more community-based ontology