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Enriching Library Metadata with APIs

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Enriching Library Metadata with APIs

Lucas Mak
Michigan State University Libraries



Background

- Michigan State University Libraries
 - Over 6.5 million print and electronic titles
 - 235,000 maps
 - 85,844 sound recordings and films/videos
 - Cataloging
 - Standards: MARC 21 and RDA
 - Tools: OCLC Connexion and Innovatives Sierra ILS
 - Membership in all programs under [Program for Cooperative Cataloging \(PCC\)](#)



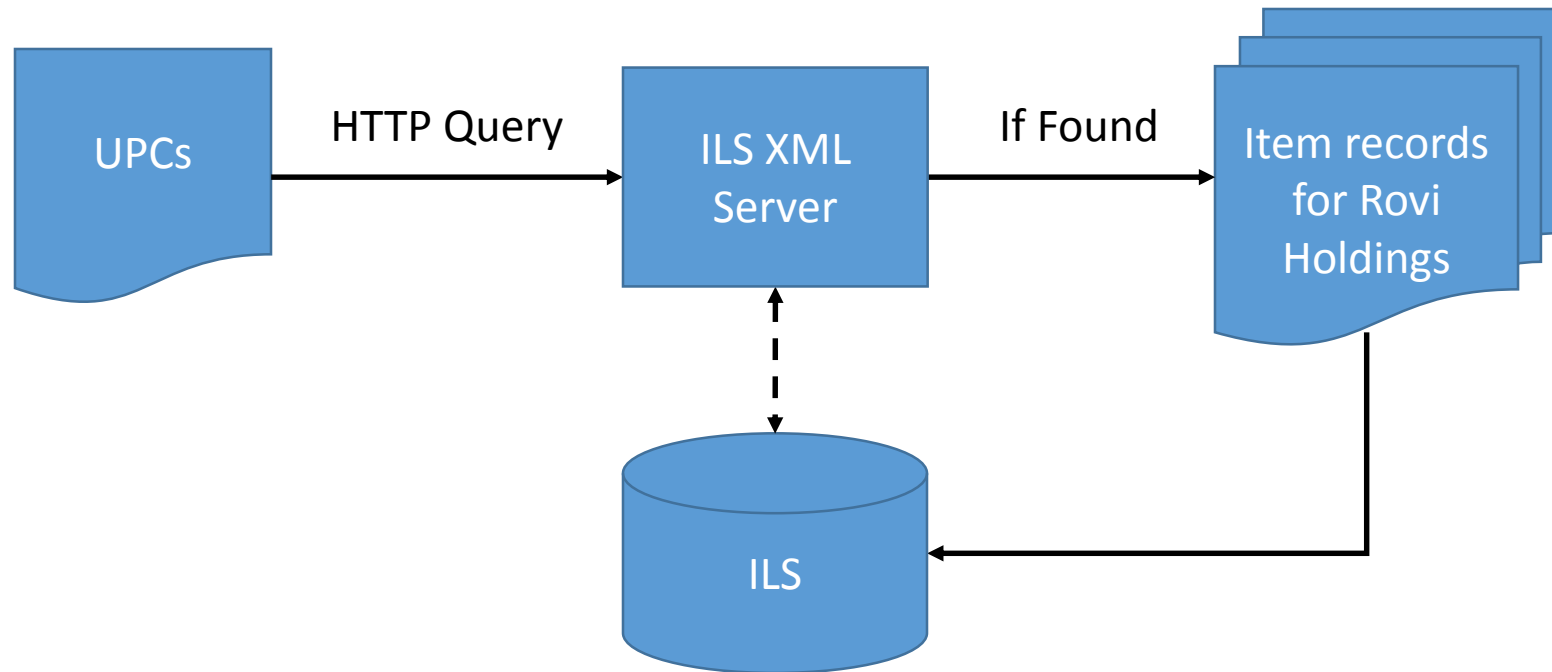
Background

- ROVI Collection

- In 2015, MSUL received a gift of about 860,000 audio-visual titles from ROVI, Inc.
 - ~ 681,000 music titles
 - ~ 163,000 video titles
 - ~ 17,000 games
- Estimated to cost USD 20-25 million and 20 years for manual cataloging
- Phased processing using scripts and APIs
- Tried to replicate traditional cataloging process
 - Add holdings → Copy Cataloging → Original Cataloging

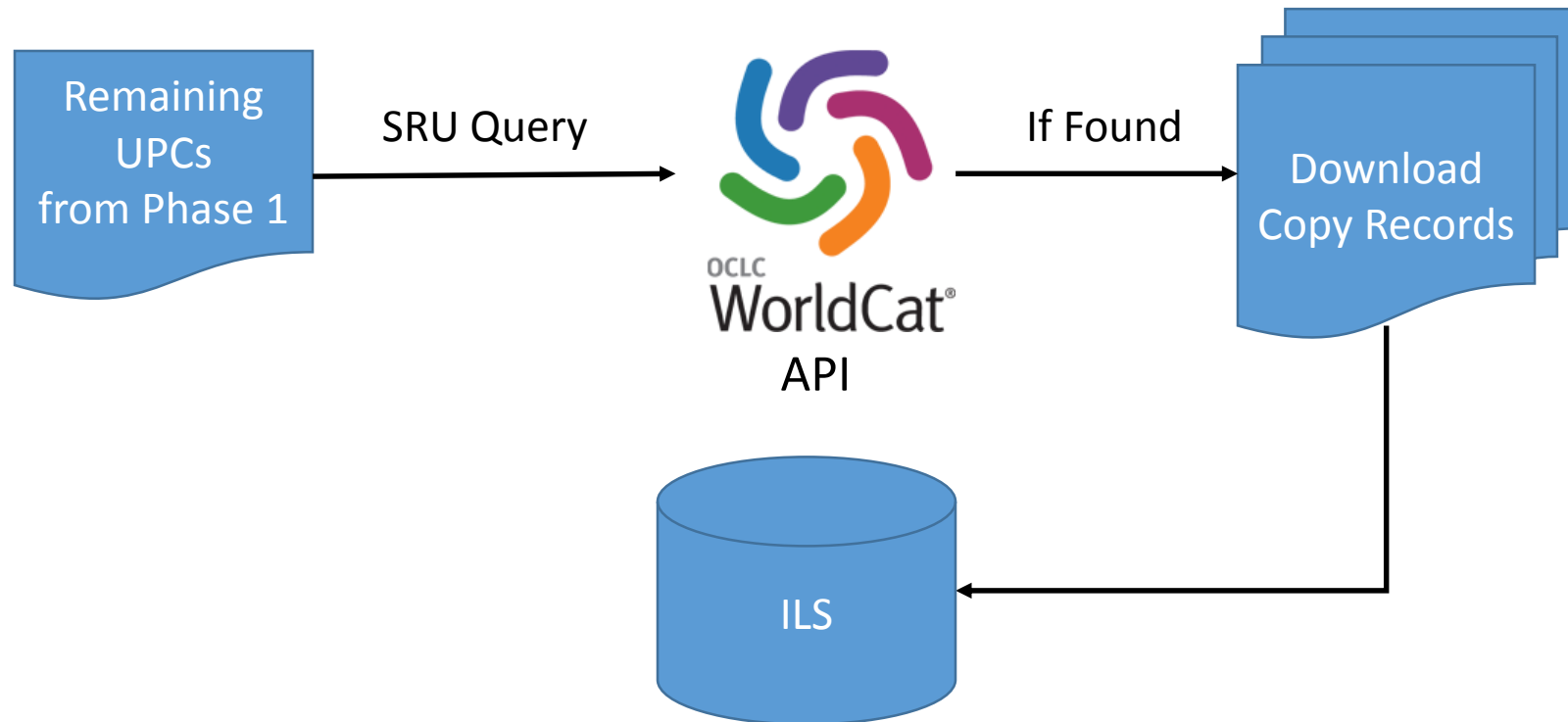
Phased Cataloging

- Phase 1 – Local Holdings Lookup



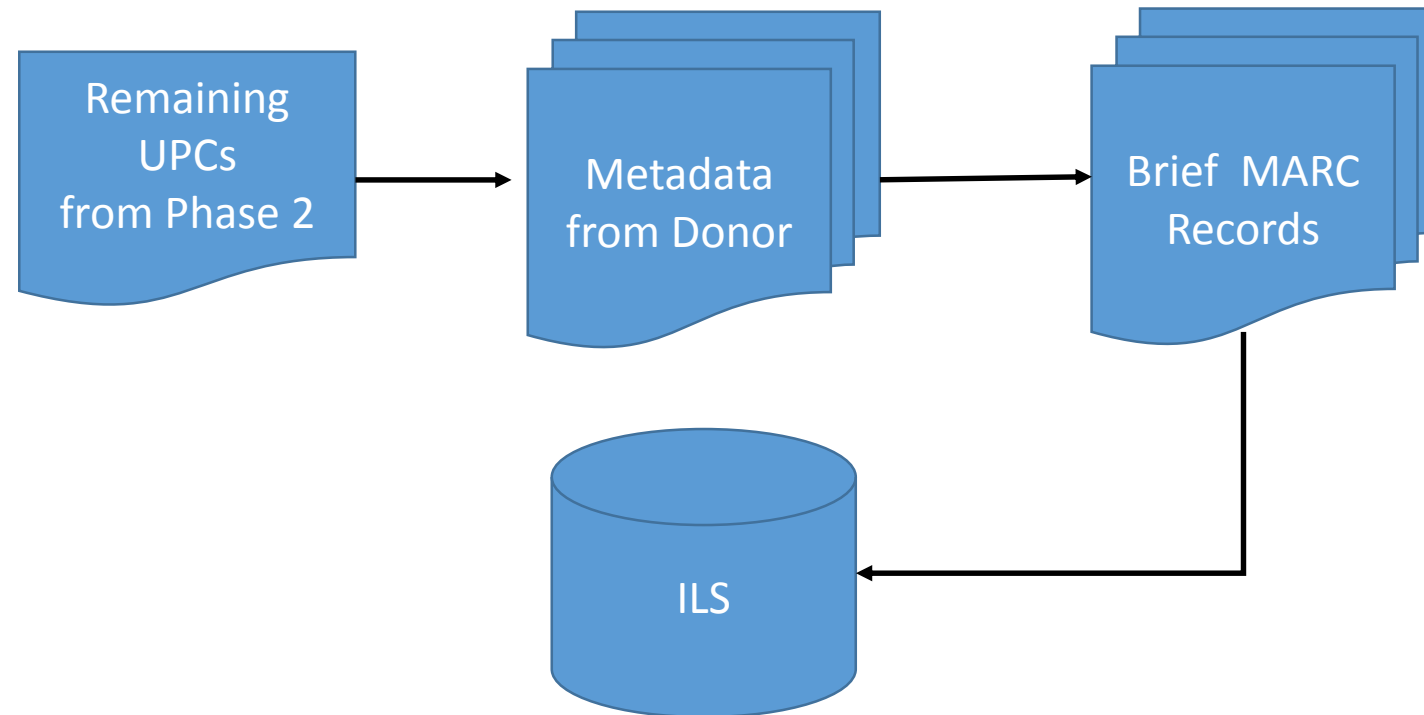
Phased Cataloging

- Phase 2 – Locating Copy Records



Phased Cataloging

- Phase 3 – Original Brief Record Generation



Problem Statements

- Issues with Phase 3 brief records
 - Content note (MARC 505)
 - May not have track list, especially classical music titles
 - Primary artist is the only entity in statement of responsibility for individual tracks
 - Other performers, track composers, lyricists, etc. are absence
 - Access points/headings (MARC 700 & 710)
 - Wrong MARC tag
 - Not in authorized form
 - No composer names in classical titles
 - “Artists” means “performers” (e.g. orchestra)

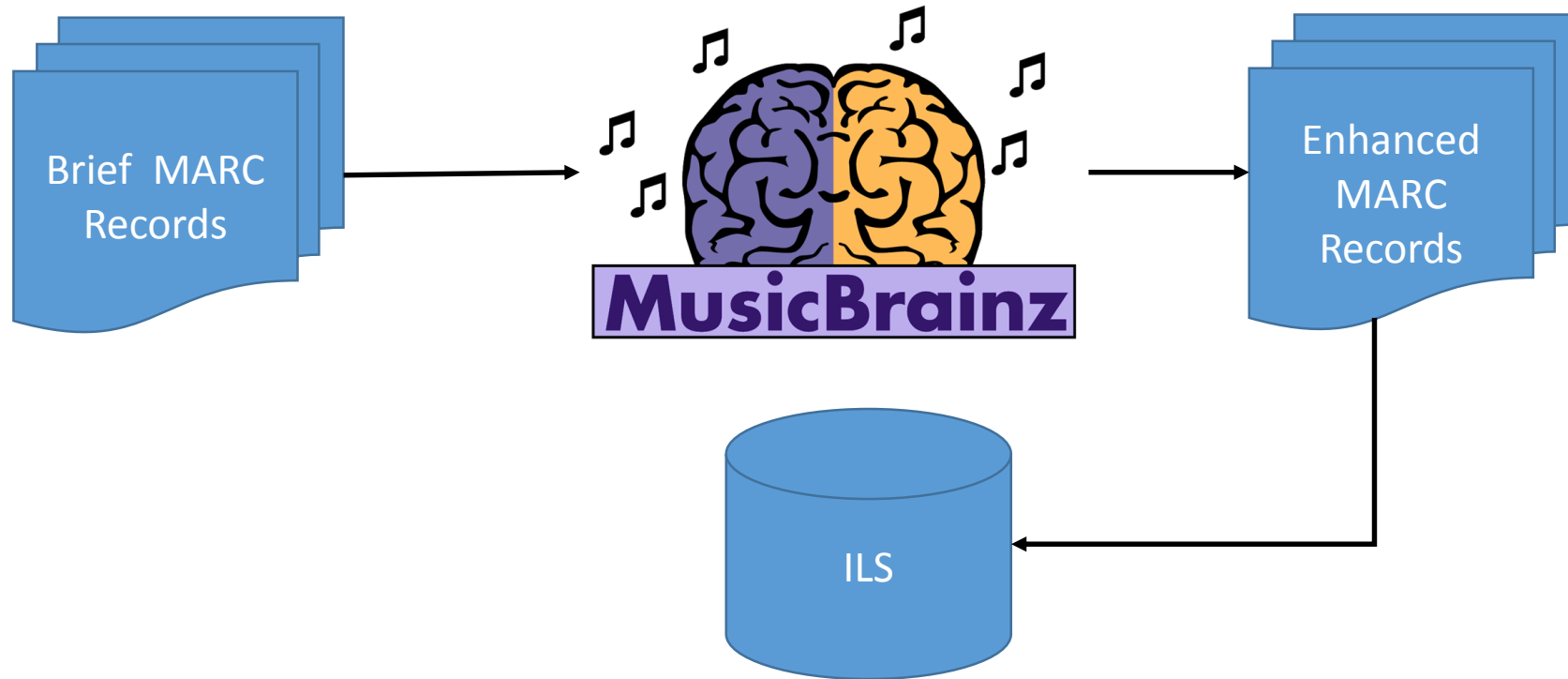
MusicBrainz

- “[A]n open music encyclopedia that collects music metadata and makes it available to the public” – [MusicBrainz.org](https://musicbrainz.org)
- Crowdsourced
- Data released under open licenses
 - Core data – [CC0](https://creativecommons.org/licenses/by/4.0/)
 - Supplementary data – Creative Commons [Attribution-NonCommercial-ShareAlike 3.0](https://creativecommons.org/licenses/by-nc-sa/3.0/)



Solution

- Phase 4 – Enhancement



MusicBrainz API

- REST-based API
 - Base URL: <https://musicbrainz.org/ws/2/>
 - Available as both [JSON](#) and [XML](#) web services
- Allows three different GET requests
 - [Lookup](#), [Search](#), [Browse](#)
- Different searchable indexes available
 - UPC barcode, ASIN, ISRC, artists, release title, track title, label, etc.

MusicBrainz Core Data

Core Entities	Useful Data Points
Release	Release ID, UPC, ASIN, Title, Artists (main vs various artists), Date, Country, Label, Catalog number, Language, Format, Recording (i.e. track list)
Recording	Recording ID, Title, Artist credits, Duration
Artist	Artist ID, Name (direct order), Sort-name (inverted order), Type (personal vs group), ISNI, Links to external sites

MusicBrainz <—> MARC21 Mapping

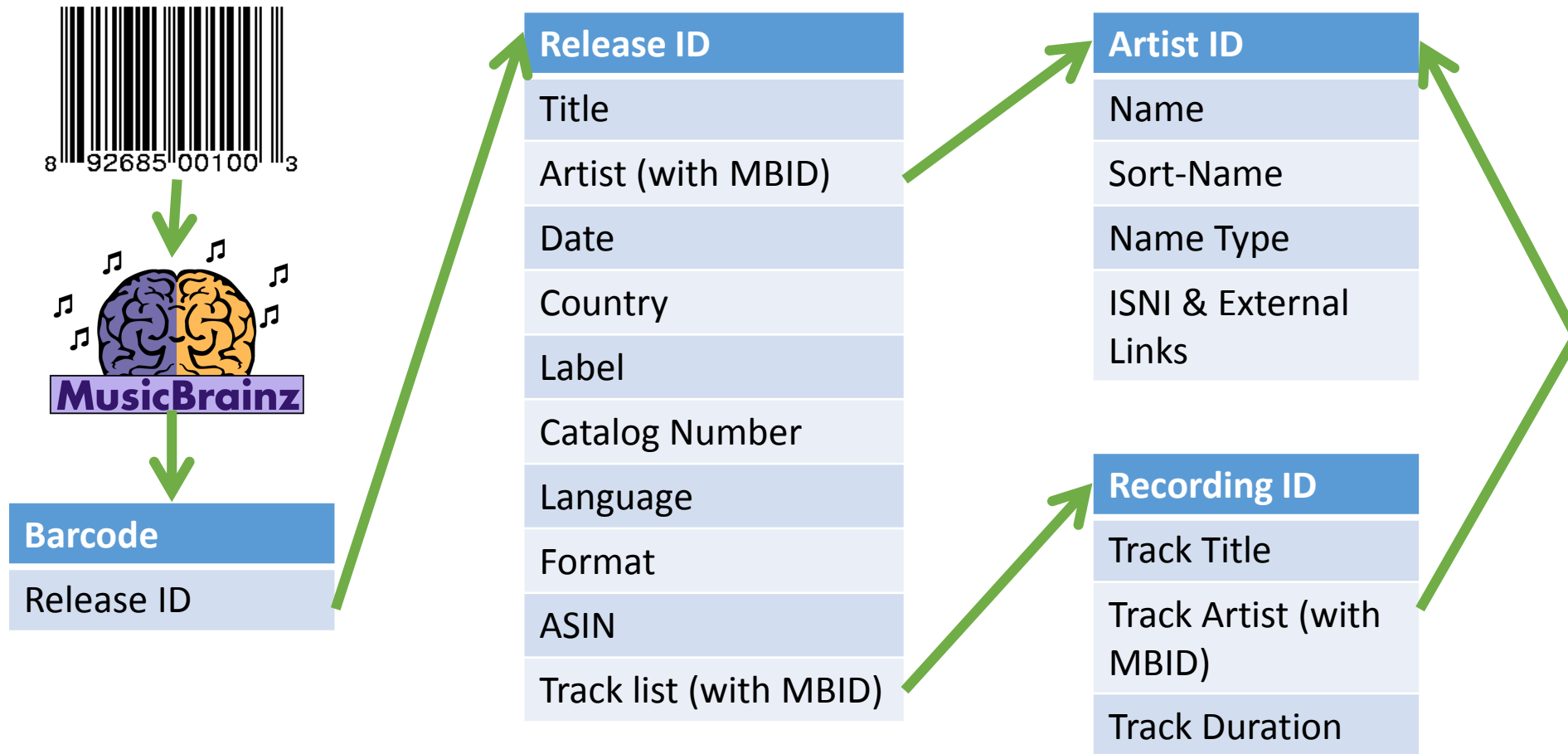
- Recording Entity

MusicBrainz	MARC21
Title	505\$a or \$t
Artist credits	505\$a or \$r
Duration	505\$a or \$g

- Artist Entity

MusicBrainz	MARC21
Name	505\$a or \$r (Recording) or 245\$c (Release)
Sort-name	7XX
Type	Personal vs Corporate name
ISNI	Authorized form of name
Links to external sites	7XX\$0 or \$1

Searching MusicBrainz API



UPC Search

- URL syntax:
[http://musicbrainz.org/ws/2/
release?query=barcode:\[UPC\]](http://musicbrainz.org/ws/2/release?query=barcode:[UPC])
- Search “Believe” by Celtic Woman (UPC: 5099967966028)
[http://musicbrainz.org/ws/2/
release?query=barcode:5099967966028](http://musicbrainz.org/ws/2/release?query=barcode:5099967966028)

```
- <metadata created="2017-06-19T12:30:41.205Z">
- <release-list count="1" offset="0">
- <release id="b900ee89-08c3-4a0a-90e7-dc35209d6ce7" ext:score="100">
  <title>Believe</title>
  <status>Official</status>
  <packaging>Jewel Case</packaging>
+ <text-representation></text-representation>
- <artist-credit>
  - <name-credit>
    - <artist id="4d483147-c871-48c4-8470-85e5a66381c5">
      <name>Celtic Woman</name>
      <sort-name>Celtic Woman</sort-name>
      - <alias-list>
        <alias sort-name="Celtic Women">Celtic Women</alias>
      </alias-list>
    </artist>
  </name-credit>
</artist-credit>
+ <release-group id="8214aa0e-2108-4cd1-9c6f-dd1d538f1017" type="Album"></release-group>
  <date>2012-01-24</date>
  <country>US</country>
+ <release-event-list></release-event-list>
  <barcode>5099967966028</barcode>
  <asin>B005RYF5HZ</asin>
```



Release Lookup

- Basic URL syntax:
[https://musicbrainz.org/ws/2/release/\[releaseID\]](https://musicbrainz.org/ws/2/release/[releaseID])
- Can request additional info linked to this release, e.g. Artist, Recordings, Labels
- Lookup release “Believe”
<https://musicbrainz.org/ws/2/release/b900ee89-08c3-4a0a-90e7-dc35209d6ce7?inc=recordings+artists+labels>

```
- <metadata>
- <release id="b900ee89-08c3-4a0a-90e7-dc35209d6ce7">
  <title>Believe</title>
  <status id="4e304316-386d-3409-af2e-78857eec5cfe">Official</status>
  <quality>normal</quality>
  <packaging id="ec27701a-4a22-37f4-bfac-6616e0f9750a">Jewel Case</packaging>
+ <text-representation></text-representation>
- <artist-credit>
  - <name-credit>
    - <artist id="4d483147-c871-48c4-8470-85e5a66381c5">
      <name>Celtic Woman</name> ← Artist name for the release
      <sort-name>Celtic Woman</sort-name>
    </artist>
    </name-credit> ← Publication date
  </artist-credit>
  <date>2012-01-24</date>
  <country>US</country> ← Country of Publication
+ <release-event-list count="1"></release-event-list>
  <barcode>5099967966028</barcode>
  <asin>B005RYF5H2</asin>
+ <cover-art-archive></cover-art-archive>
- <label-info-list count="1">
  - <label-info>
    - <label id="7b076dce-d513-44b9-b9ae-7e6e938da605">
      <name>Manhattan Records</name> ← Publisher
      <sort-name>Manhattan Records</sort-name>
      <disambiguation>1984–1987; relaunched 2001</disambiguation>
      <label-code>7365</label-code>
```

```
- <label id="7b076dce-d513-44b9-b9ae-7e6e938da605">
  <name>Manhattan Records</name>
  <sort-name>Manhattan Records</sort-name>
  <disambiguation>1984–1987; relaunched 2001</disambiguation>
  <label-code>7365</label-code>
</label>
</label-info>
</label-info-list>
- <medium-list count="1">
  - <medium>
    <position>1</position>
    <format id="9712d52a-4509-3d4b-a1a2-67c88c643e31">CD</format>
  - <track-list count="15" offset="0">
    - <track id="058cbf51-bf7c-3335-8642-0a1d03b33c91">
      <position>1</position>
      <number>1</number>
      <length>316506</length>
      - <recording id="4cd38b99-ae8f-443e-b1f4-407229890e87">
        <title>Awakening</title>
        <length>316506</length>
      </recording>
    </track>
    - <track id="15c58b23-cf8d-3127-8229-79b7795da72b">
      <position>2</position>
      <number>2</number>
      <length>215133</length>
      - <recording id="b72e2fab-292e-4ce8-802c-79e3d48c659c">
        <title>Nocturne</title>
        <length>215133</length>
      </recording>
    </track>
```

Track duration

Track Title

Track duration

Track Title

Recording Lookup

- Basic URL syntax:
[https://musicbrainz.org/ws/2/recording/\[recordingID\]](https://musicbrainz.org/ws/2/recording/[recordingID])
- Can request additional info linked to this recording, e.g. track artist, artist's role, related work, work artist
- Lookup track "She moved thru' the fair"
<https://musicbrainz.org/ws/2/recording/60af59e7-8588-414e-a490-efbf45c2d2f5?inc=artist-credits+artist-rels+work-rels+work-level-rels>

```
- <metadata>
- <recording id="60af59e7-8588-414e-a490-efbf45c2d2f5">
  <title>She Moved Thru' the Fair</title>
  <length>210920</length>
  - <artist-credit>
    - <name-credit>
      - <artist id="4d483147-c871-48c4-8470-85e5a66381c5">
        <name>Celtic Woman</name> ← Track artist
        <sort-name>Celtic Woman</sort-name>
      </artist>
    </name-credit>
  </artist-credit>
  - <relation-list target-type="artist">
    - <relation type-id="3b6616c5-88ba-4341-b4ee-81ce1e6d7ebb" type="performing orchestra">
      <target>14a1f3b9-785f-484e-a83a-39f84ea175e7</target>
      <direction>backward</direction>
      - <artist id="14a1f3b9-785f-484e-a83a-39f84ea175e7">
        <name>The Irish Film Orchestra</name> ← Additional track artist
        <sort-name>Irish Film Orchestra, The</sort-name>
      </artist>
    </relation>
    - <relation type-id="0fdb3c6-7700-4a31-ae54-b53f06ae1cfa" type="vocal">
      <target>31387701-0172-4fb6-be45-3ff7cc18d959</target>
      <direction>backward</direction>
      - <attribute-list>
        <attribute>lead vocals</attribute> ← Role of track artist
      </attribute-list>
      - <artist id="31387701-0172-4fb6-be45-3ff7cc18d959">
        <name>Méav Ní Mhaolchatha</name> ← Additional track artist
        <sort-name>Mhaolchatha, Méav Ní</sort-name>
```

```

- <relation-list target-type="work">
  - <relation type="performance" type-id="a3005666-a872-32c3-ad06-98af558e99b0">
    <target>c27b554d-ec41-39c4-bcf8-d1da61731e8d</target>
    - <work id="c27b554d-ec41-39c4-bcf8-d1da61731e8d">
      <title>She Moved Through the Fair</title>
      - <relation-list target-type="artist">
        - <relation type-id="3e48faba-ec01-47fd-8e89-30e81161661c" type="lyricist">
          <target>8a2b0dca-358d-4f3f-895e-aecc0b15c085</target>
          <direction>backward</direction>
          - <artist id="8a2b0dca-358d-4f3f-895e-aecc0b15c085">
            <name>Padraic Colum</name>
            <sort-name>Colum, Padraic</sort-name>
          </artist>
        </relation>
        - <relation type="composer" type-id="d59d99ea-23d4-4a80-b066-edca32ee158f">
          <target>9be7f096-97ec-4615-8957-8d40b5dcbc41</target>
          <direction>backward</direction>
          - <artist id="9be7f096-97ec-4615-8957-8d40b5dcbc41">
            <name>[traditional]</name>
            <sort-name>[traditional]</sort-name>
            <disambiguation>Special Purpose Artist</disambiguation>
          </artist>
        </relation>
      </relation-list>
    </work>
  </relation>
</relation-list>

```

Role of work artist

Work artist

Role of work artist

Work artist

Artist Lookup

- Basic URL syntax:
[https://musicbrainz.org/ws/2/artist/\[artistID\]](https://musicbrainz.org/ws/2/artist/[artistID])
- Can request additional info linked to this artist, e.g. external sites about this artist
- Lookup artist “Celtic Woman”
<https://musicbrainz.org/ws/2/artist/4d483147-c871-48c4-8470-85e5a66381c5?inc=url-rels>

```
- <metadata>
- <artist type-id="e431f5f6-b5d2-343d-8b36-72607ffb74b" id="4d483147-c871-48c4-8470-85e5a66381c5" type="Group">
  <name>Celtic Woman</name>
  <sort-name>Celtic Woman</sort-name>
  <country>IE</country>
  + <area id="390b05d4-11ec-3bce-a343-703a366b34a5"></area>
- <life-span>
  <begin>2004</begin>
  </life-span>
- <relation-list target-type="url">
  - <relation type="official homepage" type-id="fe33d22f-c3b0-4d68-bd53-a856badf2b15">
    <target id="79fe9613-7c8e-440e-80de-2a261b0dcde9">http://celticwoman.com/</target>
  </relation>
  - <relation type="lyrics" type-id="e4d73442-3762-45a8-905c-401da65544ed">
    - <target id="55aa96ef-2c71-4fbb-bad5-2362e7294542">
      http://muzikum.eu/en/122-6342/celtic-woman/lyrics.html
    </target>
  </relation>
  - <relation type="wikipedia" type-id="29651736-fa6d-48e4-aadc-a557c6add1cb">
    <target id="05ef04d9-b9b2-4f93-b871-321aa48f63b9">https://en.wikipedia.org/wiki/Celtic_Woman</target>
  </relation>
  - <relation type="myspace" type-id="bac47923-ecde-4b59-822e-d08f0cd10156">
    <target id="33f113b3-2766-4957-8321-bcc80a6f4e3f">https://myspace.com/celticwoman121</target>
  </relation>
  - <relation type="social network" type-id="99429741-f3f6-484b-84f8-23af51991770">
    <target id="3bacbaa5-1358-4162-8d1c-6e60e57cc0a4">https://twitter.com/Celtic_Woman</target>
  </relation>
  - <relation type="discogs" type-id="04a5b104-a4c2-4bac-99a1-7b837c37d9e4">
    <target id="218cf301-2c11-4747-8486-0c895378eb28">https://www.discogs.com/artist/978511</target>
  </relation>
```

Name type

Link to Wikipedia entry

Authorized Name Lookup

Celtic Woman (Musical group)

From [Library of Congress Name Authority File](#)

Details

Visualization

Celtic Woman (Musical group)

URI(s)

> <http://id.loc.gov/authorities/names/no2005111555>

Instance Of

- > [MADS/RDF CorporateName](#)
- > [MADS/RDF Authority](#)
- > [SKOS Concept](#)

Scheme Membership(s)

> [Library of Congress Name Authority File](#)

Collection Membership(s)

- > [Names Collection - Authorized Headings](#)
- > [LC Names Collection - General Collection](#)

Additional Information

> <http://id.loc.gov/rwo/agents/no2005111555>

```
<relation type="wikipedia" type-id="29651736-fa6d-48e4-aadc-a557c6add1cb">  
  <target id="05ef04d9-b9b2-4f93-b871-321aa48f63b9">https://en.wikipedia.org/wiki/Celtic_Woman</target>  
</relation>
```



Item Discussion

Celtic Woman (Q824088)

all-female Irish musical ensemble

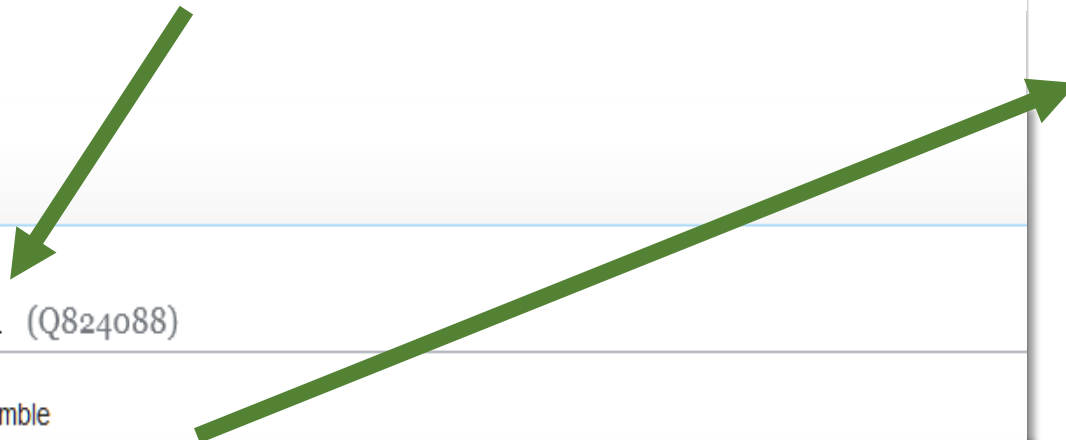
Library of Congress authority ID

no2005111555

edit

1 reference

+ add value



Artist Lookup

- Lookup lyricist “Padraic Colum”

<https://musicbrainz.org/ws/2/artist/8a2b0dca-358d-4f3f-895e-aecc0b15c085?inc=url-rels>

```
- <metadata>
- <artist type-id="b6e035f4-3ce9-331c-97df-83397230b0df" type="Person" id="8a2b0dca-358d-4f3f-895e-aecc0b15c085">
  <name>Padraic Colum</name>
  <sort-name>Colum, Padraic</sort-name>
- <isni-list>
  <isni>0000000108983281</isni>
</isni-list>
  <gender id="36d3d30a-839d-3eda-8cb3-29be4384e4a9">Male</gender>
  <country>IE</country>
+ <area id="390b05d4-11ec-3bce-a343-703a366b34a5"></area>
+ <begin-area id="29f88a09-cf4c-4ffb-bd3e-a90d68173ed7"></begin-area>
+ <end-area id="88772016-5866-496a-8de7-4340e922d663"></end-area>
- <life-span>
  <begin>1881-12-08</begin>
  <end>1972-01-11</end>
  <ended>true</ended>
</life-span>
- <relation-list target-type="url">
  - <relation type-id="e8571dcc-35d4-4e91-a577-a3382fd84460" type="VIAF">
    <target id="ae77f443-195e-4b65-a20e-1f2081a450bf">http://viaf.org/viaf/49223588</target>
  </relation>
  - <relation type="wikipedia" type-id="29651736-fa6d-48e4-aadc-a557c6add1cb">
    <target id="998f5005-6113-4174-bc86-0bcccc6850163">https://en.wikipedia.org/wiki/Padraic_Colum</target>
  </relation>
  - <relation type-id="689870a4-a1e4-4912-b17f-7b2664215698" type="wikidata">
    <target id="617461b2-8f6f-43d7-85a8-824a5fb8c548">https://www.wikidata.org/wiki/Q429440</target>
  </relation>
</relation-list>
</artist>
</metadata>
```

← ISNI

↑ Name type

↓ Link to VIAF entry

↑ Link to Wikidata entry

Authorized Name Lookup

```
<relation type-id="e8571dcc-35d4-4e91-a577-a3382fd84460" type="VIAF">  
  <target id="ae77f443-195e-4b65-a20e-1f2081a450bf">http://viaf.org/viaf/49223588</target>  
</relation>
```

Colum, Padraic, 1881-1972

Colum, Padraic

Padraic Colum Irish writer

1881-1972 קולום, פדריק

VIAF ID: 49223588 (Personal)

Permalink: <http://viaf.org/viaf/49223588>

ISNI: [0000 0001 0898 3281](http://www.isni.org/0000-0001-0898-3281)



```
<mx:datafield tag="024" ind2=" " ind1="7">  
  <mx:subfield code="a">http://viaf.org/viaf/49223588</mx:subfield>  
  <mx:subfield code="2">uri</mx:subfield>  
</mx:datafield>  
<mx:datafield tag="040" ind2=" " ind1=" ">  
  <mx:subfield code="a">VIAF</mx:subfield>  
  <mx:subfield code="c">VIAF</mx:subfield>  
</mx:datafield>  
<mx:datafield tag="700" ind2=" " ind1="1">  
  <mx:subfield code="a">Colum, Padraic,</mx:subfield>  
  <mx:subfield code="d">1881-1972</mx:subfield>  
  <mx:subfield code="0">(LC)n 50031180</mx:subfield>  
</mx:datafield>
```

<http://viaf.org/viaf/49223588/marc21.xml>

Library of Congress/NACO

LC-n50031180

Inserting URI

- Tried to capture URIs from ISNI, VIAF, and LCNAF
 - MARC 7XX \$0 (Authority record control number or standard number)
 - LCNAF
 - MARC 7XX \$1 (Real World Object URI)
 - ISNI, VIAF
- MusicBrainz artist profiles do not have all three types
 - Does not have LCNAF URIs
 - Use one URI to find the other two URIs
 - Dedupped URIs after all tracings were done

URI Tracing

- VIAF → ISNI & LCNAF



```
<relation type="VIAF" type-id="e8571dcc-35d4-4e91-a577-a3382fd84460">  
  <target id="ae77f443-195e-4b65-a20e-1f2081a450bf">http://viaf.org/viaf/49223588</target>  
</relation>
```



<https://viaf.org/viaf/49223588/rdf.xml>

```
<schema:alternateName>Padraic Collum</schema:alternateName>  
<schema:alternateName>Pádraig Colum</schema:alternateName>  
<schema:sameAs rdf:resource="http://id.loc.gov/authorities/names/n50031180"/> ← LCNAF  
<schema:familyName>Colum</schema:familyName>  
<schema:sameAs rdf:resource="http://dbpedia.org/resource/Padraic_Colum"/>  
<schema:sameAs rdf:resource="http://alpha.bn.org.pl/record=a1672611x"/>  
<schema:familyName>コラム</schema:familyName>  
<schema:sameAs rdf:resource="http://isni.org/isni/0000000108983281"/> ← ISNI
```

*VI
AF*

URI Tracing

- ISNI → VIAF & LCNAF

```
<name>Padraic Colum</name>  
<sort-name>Colum, Padraic</sort-name>  
<isni-list>  
  <isni>0000000108983281</isni>  
</isni-list>
```



<http://www.isni.org/isni/0000000108983281.rdf.xml>

```
<dcterms:source>  
  http://musicbrainz.org/artist/8a2b0dca-358d-4f3f-895e-aecc0b15c085  
</dcterms:source>  
<dcterms:source>http://www.worldcat.org/oclc/26951259</dcterms:source>  
<dcterms:source>http://viaf.org/viaf/49223588</dcterms:source>  
<dcterms:source>http://id.ndl.go.jp/auth/ndlna/00512615</dcterms:source>  
<dcterms:source>http://id.loc.gov/authorities/names/n50031180</dcterms:source>  
<dcterms:source>http://www.idref.fr/026795949</dcterms:source>  
<dcterms:source>https://www.wikidata.org/wiki/Q429440</dcterms:source>  
<dcterms:source>http://catalogue.bnf.fr/ark:/12148/cb11897406d</dcterms:source>  
<dcterms:source>http://catalogue.bnf.fr/ark:/12148/11897406</dcterms:source>
```

← VIAF

← LCNAF



URI Tracing

- Wikipedia/Wikidata → ISNI, VIAF & LCNAF



```
<relation type-id="29651736-fa6d-48e4-aadc-a557c6add1cb" type="wikipedia">  
  <target id="998f5005-6113-4174-bc86-0bccc6850163">https://en.wikipedia.org/wiki/Padraic_Colum</target>  
</relation>
```



http://dbpedia.org/data/Padraic_Colum



```
<owl:sameAs rdf:resource="http://zitgist.com/music/artist/8a2b0dca-358d-4f3f-895e-aecc0b15c085"/>  
<owl:sameAs rdf:resource="http://www.wikidata.org/entity/Q429440"/>  
<owl:sameAs rdf:resource="http://yago-knowledge.org/resource/Padraic_Colum"/>
```

Wikidata



<https://www.wikidata.org/wiki/Special:EntityData/Q429440.rdf>



```
<wdtn:P214 rdf:resource="http://viaf.org/viaf/49223588"/>  
<wdt:P213>0000 0001 0898 3281</wdt:P213>  
<wdt:P434>8a2b0dca-358d-4f3f-895e-aecc0b15c085</wdt:P434>  
<wdtn:P434 rdf:resource="http://musicbrainz.org/8a2b0dca-358d-4f3f-895e-aecc0b15c085/artist"/>  
<wdt:P244>n50031180</wdt:P244>  
<wdtn:P244 rdf:resource="http://id.loc.gov/authorities/names/n50031180"/>
```

VIAF

ISNI

LCNAF

Issue #1

- No hits for UPC in MusicBrainz
 - Missing info in MusicBrainz
 - Different versions captured in MusicBrainz, e.g. UK vs US release
 - Solution:
 - Search artist name directly in MusicBrainz

Artist Search

- Basic URL syntax:
[http://musicbrainz.org/ws/2/artist/?query=artist:\[artist name\]](http://musicbrainz.org/ws/2/artist/?query=artist:[artist name])
- Search musical group
“Icarus”
<http://musicbrainz.org/ws/2/artist/?query=artist:“Icarus”>
- If multiple hits, lookup releases by each artist

Multiple hits

```
- <artist-list count="50" offset="0">
- <artist id="d28511c4-4223-4b47-8ecb-ad21b4af9765" type="Group" ext:score="100">
  <name>Icarus</name>
  <sort-name>Icarus</sort-name>
  <disambiguation>hard trance, released All Systems Go</disambiguation>
- <life-span>
  <ended>>false</ended>
</life-span>
</artist>
- <artist id="5f9aa483-e70d-45a5-a8d7-980300893534" type="Group" ext:score="100">
  <name>Icarus</name>
  <sort-name>Icarus</sort-name>
  <country>SV</country>
- <area id="f2fa4bfb-97aa-3db4-8d49-cc64969ce1a7">
  <name>El Salvador</name>
  <sort-name>El Salvador</sort-name>
</area>
  <disambiguation>El Salvador power metal band</disambiguation>
- <life-span>
  <begin>1999</begin>
  <ended>>false</ended>
</life-span>
</artist>
- <artist id="9c11d602-3858-4b53-9302-a60f894c228f" type="Group" ext:score="100">
  <name>Icarus</name>
  <sort-name>Icarus</sort-name>
  <country>ES</country>
- <area id="471c46a7-afc5-31c4-923c-d0444f5053a4">
  <name>Spain</name>
```

Release Group Search

- Basic URL syntax:

[https://musicbrainz.org/ws/2/release-group?artist=\[artist MBID\]](https://musicbrainz.org/ws/2/release-group?artist=[artist MBID])

```
<metadata>
- <release-group-list count="1">
- <release-group type-id="6d0c5bf6-7a33-3420-a519-44fc63eedebf" type="EP" id="81764b05-de59-46e5-af14-be92b9ad7522">
  <title>Busca y Encontrarás</title>
  <first-release-date>2006-12</first-release-date>
  <primary-type id="6d0c5bf6-7a33-3420-a519-44fc63eedebf">EP</primary-type>
</release-group>
</release-group-list>
</metadata>
```

Release group title

- Search release group by “Icarus (El Salvador)” <https://musicbrainz.org/ws/2/release-group?artist=5f9aa483-e70d-45a5-a8d7-980300893534>
- Check if any release-group matches album title from brief record
 - If found, go through the artist lookup process mentioned previously to capture authorized form and URIs

Issue #2

- Both artist and UPC not found in MusicBrainz
 - Search artist name in VIAF directly
 - Use album title to verify identity

Searching in VIAF

- Basic URL syntax:
[http://www.viaf.org/viaf/search?query=\[artist name\]&recordSchema=http://viaf.org/VIAFCluster&httpAccept=application/rdf+xml](http://www.viaf.org/viaf/search?query=[artist name]&recordSchema=http://viaf.org/VIAFCluster&httpAccept=application/rdf+xml)
- Request format: VIAF Cluster in RDFXML
- Search musical group “Huracanes del Norte”
<http://www.viaf.org/viaf/search?query=%22Huracanes%20del%20Norte%22&recordSchema=http://viaf.org/VIAFCluster&httpAccept=application/rdf+xml>
- Verify if any <ns2:title> matches album title from brief record



```
<ns2:titles>
  <ns2:work>
    <ns2:sources>
      <ns2:s>LC</ns2:s>
      <ns2:sid>LC|n 94097787</ns2:sid>
    </ns2:sources>
    <ns2:title>#</ns2:title>
  </ns2:work>
  <ns2:work>
    <ns2:sources>
      <ns2:s>LC</ns2:s>
      <ns2:sid>LC|n 94097787</ns2:sid>
    </ns2:sources>
    <ns2:title>15 exitos</ns2:title>
  </ns2:work>
  <ns2:work>
    <ns2:sources>
      <ns2:s>LC</ns2:s>
      <ns2:sid>LC|n 94097787</ns2:sid>
    </ns2:sources>
    <ns2:title>20 narco-corridos</ns2:title>
  </ns2:work>
  <ns2:work>
    <ns2:sources>
      <ns2:s>LC</ns2:s>
      <ns2:sid>LC|n 94097787</ns2:sid>
    </ns2:sources>
    <ns2:title>30 nortenas perronas</ns2:title>
  </ns2:work>
</ns2:titles>
```


Associated
Work Titles




Issue #3

- Mixed identities in a single VIAF/ISNI cluster

Jonathan Richman and the Modern lovers  

The Modern Lovers 

Modern Lovers (Musical group) 

The Modern Lovers americká

Modern Lovers (popgruppe)


VIAF ID: 130299997 (Corporate)


Permalink: <http://viaf.org/viaf/130299997>










ABBA (musikkgruppe) 






Abba (Nigeria)  


אבה (ניגריה) 






ABBA (Musikgruppe)   

Abba.    

ABBA (Musical group)     


ABBA (musikgrupp) 


ABBA (mūzikas grupa) 

ABBA (Groupe musical)  

VIAF ID: 121006183 (Corporate)

Permalink: <http://viaf.org/viaf/121006183>

na) 

k) 

Geographic)

<http://viaf.org/viaf/132672797>

Issue #4

- Trace to the wrong VIAF/ISNI cluster

Artist information

Sort name: Jones, Etta

Type: Person

Gender: Female

Born: 1928-11-25


Died: 2001-10-16 (aged 72)

Area:  United States


External links

 AllMusic





 Discogs

 en: Etta Jones

 Q463113

 VIAF: 32183599

Jones, Etta    

Jones, Etta, 1928-2001    

E. Rodney Jones prolifique disc jockey de R&B américain 

Etta Jones American jazz singer 

E. Rodney Jones 

VIAF ID: 32183599 (Personal)

Permalink: <http://viaf.org/viaf/32183599>

ISNI: 0000 0004 5672 3566

Name: Etta Jones (American jazz singer)
Etta Jones (Amerikaans jazzmuzikante (1928-2001))
Etta Jones (amerikansk musikal)
Etta Jones (amerikansk musiker)
Etta Jones (cantante statunitense)
Etta Jones (chanteuse de jazz)
Etta Jones (US-amerikanische Jazzsängerin)
Jones, Etta
Етта Джонс (американська джазова співачка)
艾塔·瓊斯

Dates: 1928-2001

ISNI: 0000 0000 5513 9238

Name: E. Rodney Jones
Jones, Etta

Dates: 1928-2001

Creation class: cre
Musical sound recording

Creation role: author
performer



Issue #5

- Multiple VIAF/ISNI clusters for the same identity

```
<marc:datafield tag="700" ind1="1" ind2=" " >
  <marc:subfield code="a">Potter, Chris,</marc:subfield>
  <marc:subfield code="d">1971-</marc:subfield>
  <marc:subfield code="e">performer.</marc:subfield>
  <marc:subfield code="0">http://id.loc.gov/authorities/names/n96079045</marc:subfield>
  <marc:subfield code="1">http://isni.org/isni/0000000444562267</marc:subfield>
  <marc:subfield code="1">http://isni.org/isni/0000000448830847</marc:subfield>
  <marc:subfield code="1">http://viaf.org/viaf/25782841</marc:subfield>
</marc:datafield>
```

ISNI: 0000 0004 4883 0847

Name: Chris Potter (American musician)
Chris Potter (Amerikaans componist)
Chris Potter (sassofonista, clarinettista e compositore statunitense)
Chris Potter (US-amerikanischer Jazz-Saxophonist und Komponist)
Potter, Chris
Potter, Joseph Christopher
Крис Поттер
کریس پاتر
クリス・ポッター

Dates: 1971-

Creation class: Language material
Musical sound recording
Notated music
Projected medium

Creation role: composer
performer



ISNI: 0000 0004 4456 2267

Name: Potter, Chris

Dates: 1971-...

instruments: Woodwinds - Saxophone

Creation class: Musical sound recording
Projected medium

Creation role: performer



Issue #5

```
<marc:datafield tag="700" ind1="1" ind2=" " >
  <marc:subfield code="a">Fitzgerald, Ella,</marc:subfield>
  <marc:subfield code="e">performer.</marc:subfield>
  <marc:subfield code="0">http://id.loc.gov/authorities/names/n83021406</marc:subfield>
  <marc:subfield code="1">http://isni.org/isni/0000000108548546</marc:subfield>
  <marc:subfield code="1">http://isni.org/isni/0000000369283611</marc:subfield>
  <marc:subfield code="1">http://viaf.org/viaf/56145971594032332849</marc:subfield>
  <marc:subfield code="1">http://viaf.org/viaf/6148211</marc:subfield>
</marc:datafield>
```

Fitzgerald, Ella (1917-1996) 🇵🇱
Fitzgerald, Ella, 1918- 🇯🇵
VIAF ID: 6148211 (Personal)
Permalink: <http://viaf.org/viaf/6148211>



Fitzgerald, Ella, 1917-1996 🇸🇪 🇸🇩 🇳🇱 🇩🇪 🇵🇪 🇪🇸 🇫🇷
Fitzgerald, Ella 🇺🇸 🇧 🇺🇸 🇩🇰 🇨🇦 🇪🇺 🇮🇹 🇳🇴 🇩🇰
Fitzgerald, Ella, 1918-1996. 🇮🇹 🇸🇪 🇵🇱 🇧🇷
Fitzgerald, Henry. 🇮🇹 🇺🇸
Fitzgerald, E. 🇮🇹
Ella Fitzgerald American jazz singer 🇮🇹
Fitzgerald, Ella (American singer, 1917-1996) 🇺🇸
VIAF ID: 56145971594032332849 (Personal)
Permalink: <http://viaf.org/viaf/56145971594032332849>

Issue #6



Image from Wikimedia Commons

Artist information

Type: Group

Founded: 1986 (32 years ago)

Founded in: Herne, Nordrhein-Westfalen, Germany

Area: Germany

External links

VI AF: [134096567](http://viaf.org/viaf/134096567)

Rage (Musikgruppe : Heme)
VIAF ID: 134096567 (Corporate)
Permalink: <http://viaf.org/viaf/134096567>

Preferred Forms

110 2 _ [ta Rage tg Musikgruppe : Herne](#)

- LCNAF URI not available in any VIAF clusters
 - LC URI is MSUL's preferred URI for \$0
 - Some identities have VIAF cluster(s) but none of them contain LCNAF URI
 - Capture the VIAF URI? But how about the text string?
 - No LC authorized form
 - Take whatever form available? Non-English qualifier?
 - Default to English qualifier "(Musical group)"? Potential conflict

Rage (Musical group)
The Rage

Rage (Musikgruppe : Liverpool)

The Rage


Rage (Groupe musical)
VIAF ID: 142989874 (Corporate)
Permalink: <http://viaf.org/viaf/142989874>

Issue #7


- Differences in data modeling
 - What is an entity/identity?
 - MusicBrainz vs LCNAF vs Authorities files from other national libraries







Issue #7

- [Personal name] and his orchestra/band
 - Per RDA 8.1.2, the orchestra part is not a “named” corporate body
 - e.g. Johnny Hodges and his orchestra

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[About Us](#) [Products](#) [Search](#)

 **Johnny Hodges and His Orchestra**
~ Group

Johnny Hodges and his orchestra      

VIAF ID: 142086268 (Corporate)
Permalink: <http://viaf.org/viaf/142086268>

Hodges, Johnny, 1906-1970      

Hodges, Johnny     

Hodges, Johnny, 1907-1970  

Johnny Hodges American alto saxophonist 


VIAF ID: 71578250 (Personal)
Permalink: <http://viaf.org/viaf/71578250>

Johnny Hodges Orchestra 


VIAF ID: 268522329 (Corporate)
Permalink: <http://viaf.org/viaf/268522329>







Issue #7



- [Personal name] and [Musical Group]
 - e.g. Graham Parker and the Rumour



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[About Us](#) [Products](#)



 **Graham Parker & The Rumour**
~ Group


Parker, Graham, 1950-....      

Graham Parker British singer  

Parker, Graham  

VIAF ID: 71578975 (Personal)
Permalink: <http://viaf.org/viaf/71578975>

Graham Parker and the Rumour  

Graham Parker and the Rumour (Musikgruppe) 

VIAF ID: 164405352 (Corporate)
Permalink: <http://viaf.org/viaf/164405352>

Rumour (Musical group)  

Latest Rumour (Groupe musical)  

The Rumour (Musikgruppe) 

Latest Rumour (Musical group) 

VIAF ID: 142043880 (Corporate)
Permalink: <http://viaf.org/viaf/142043880>

Issue #8

- Non-roman script data without transliteration
 - Track titles for MARC 505 content note

```
<metadata>
- <release id="9f58f8c5-eef9-409d-8473-10ea89dbfd98">
  <title>超時空要塞マクロス 飯島真理SONGメモリー ミンメイSINGS FOR YOU</title>
  <status id="4e304316-386d-3409-af2e-78857eec5cfe">Official</status>
  <quality>normal</quality>
- <text-representation>
  <language>jpn</language>
  <script>Jpan</script>
</text-representation>
  <date>1986-10-21</date>
  <country>JP</country>
+ <release-event-list count="1"></release-event-list>
  <barcode>4988002103607</barcode>
  <asin>B00005GVBD</asin>
+ <cover-art-archive></cover-art-archive>
- <medium-list count="1">
  - <medium>
    <position>1</position>
    <format id="9712d52a-4509-3d4b-a1a2-67c88c643e31">CD</format>
  - <track-list count="14" offset="0">
    - <track id="696b80cf-c396-3b10-a766-889440acb518">
      <position>1</position>
      <number>1</number>
      <title>私の彼はパイロット PARTI</title>
      <length>72000</length>
    - <recording id="259e6d8e-47fd-4e55-9a3f-114a4d2e21bc">
      <title>私の彼はパイロット</title>
      <length>71000</length>
    </recording>
```

Outcome

- Around 70% success rate

Track list →

Contents Mazurkas, op. 50: No. 13. Moderato / Martin Roscoe Szymanowski ; piano, Martin Roscoe ; producer, Gary Cole (02:05) -- Mazurkas, op. 50: No. 15. Allegretto / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (04:31) -- Etudes, op. 33: No. 1. Presto / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:02) -- Etudes, op. 33: No. 2. Andantino / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:06) -- Etudes, op. 33: No. 3. Vivace / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:34) -- Etudes, op. 33: No. 4. Presto / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:04) -- Etudes, op. 33: No. 5. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:56) -- Etudes, op. 33: No. 6. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:35) -- Etudes, op. 33: No. 7. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:50) -- Etudes, op. 33: No. 8. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (02:51) -- Etudes, op. 33: No. 9. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:60) -- Etudes, op. 33: No. 10. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:01) -- Etudes, op. 33: No. 11. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:22) -- Etudes, op. 33: No. 12. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (02:44) -- Etudes, op. 33: No. 13. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:12) -- Etudes, op. 33: No. 14. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (01:17) -- Etudes, op. 33: No. 15. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (04:53) -- Four Etudes, op. 33: No. 16. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (03:17) -- Preludes, op. 33: No. 17. Andante / Martin Roscoe ; piano, Martin Roscoe ; producer, Gary Cole (04:46) -- Piano Sonata in C minor, op. 8: Allegro moderato / Martin Roscoe ; composer, Karol Szymanowski ; piano, Martin Roscoe ; producer, Gary Cole (08:40) -- Piano Sonata in C minor, op. 8: Adagio / Martin Roscoe ; composer, Karol Szymanowski ; piano, Martin Roscoe ; producer, Gary Cole (06:08) -- Piano Sonata in C minor, op. 8: Tempo di minuetto / Martin Roscoe ; composer, Karol Szymanowski ; piano, Martin Roscoe ; producer, Gary Cole (04:07) -- Piano Sonata in C minor, op. 8: Finale / Martin Roscoe ; composer, Karol Szymanowski ; piano, Martin Roscoe ; producer, Gary Cole (10:47)

Subject [Piano music.](#)

Additional Author [Szymanowski, Karol, 1882-1937](#)

[Roscoe, Martin.](#)

Title **Karol Szymanowski : Piano Works, Vol. 3 / Martin Roscoe.**
Publisher [Place of publication not identified] : Naxos, 2000.
Citation No citation available. See [Citation Help](#).

LOCATION

CALL #

[MSU ROVI MUSIC COLLECTION](#)

2C5 C0067120 Music CD ([Browse nearby](#))

Description 1 audio disc (1 hr., 8 min., 14 sec.) : digital ; 4 3/4 in.

Format performed music

audio

audio disc

Description plastic metal

Digital Format audio file CD audio

Series [Rovi Media Collection. Music.](#)

Note Sound recording.

Subject [Piano music.](#)

Additional Author [Roscoe, Martin, performer.](#)

Publisher Numbers 553867 Naxos

← **Composer added**

Outcome

Title	Ace Ventura : When Nature Calls
Publisher	United States : MCA, 1995.
Citation	No citation available. See Citation Help .
LOCATION	CALL #
MSU ROVI MUSIC COLLECTION	1A8 C0000425 Music CD (Browse nearby)
Description	1 audio disc (47 min., 16 sec.) : digital performed music
Format	audio audio disc
Description	plastic metal
Digital Format	audio file CD audio
Series	Rovi Media Collection. Music.
Note	Sound recording.
Contents	Spirits in the Material World / Pato Banton, Sting -- Secret Agent Man / Blues Traveler -- Don't Change / Goo Goo Dolls -- Burnin' Rubber / Mr. Mirainga -- Boll Weevil / The Presidents of the United States of America -- Blur the Technicolor / White Zombie -- Watusi Rodeo / The Reverend Horton Heat -- Here Comes the Night / Native -- Jungle Groove / Montell Jordan -- Ife / Angélique Kidjo -- My Pet / Matthew Sweet -- It's Alright / Blessid Union of Souls -- Ace in Africa / Robert Folk.
Genre	Stage & Screen

Contents Spirits in the Material World / Pato Banton with Sting ; composer, Sting ; lyricist, Sting ; keyboard, Garry Hughes ; guitar, Dominic Miller ; additional, Sally Bradshaw ; programming, Garry Hughes ; performer, Sting ; producer, Stoker, Trevor Horn, Michael Railton ; engineer, Tim Weidner ; mix, Tim Weidner (05:41) -- Secret Agent Man / Blues Traveler ; composer, P.F. Sloan, Steve Barri ; writer, P.F. Sloan, Steve Barri ; producer, Steve Thompson, Michael Barbiero (02:16) -- Don't Change / Goo Goo Dolls ; composer, Garry Gary Beers, Kirk Pengilly, Tim Farriss, Andrew Farriss, Michael Hutchence, Jon Farriss ; lyricist, Garry Gary Beers, Kirk Pengilly, Tim Farriss, Andrew Farriss, Michael Hutchence, Jon Farriss ; writer, Garry Gary Beers, Kirk Pengilly, Tim Farriss, Andrew Farriss, Michael Hutchence, Jon Farriss ; assistant, Chris Roberts ; engineer, Chad Munsey ; mix, Chad Munsey ; producer, Jerry Finn, Goo Goo Dolls (04:41) -- Burnin' Rubber / Mr. Mirainga ; producer, Jim Goodwin, Mr. Mirainga (03:18) -- Boll Weevil / The Presidents of the United States of America ; writer, The Presidents of the United States of America, Chris Ballew ; drums, Jason Finn ; bass, Chris Ballew ; guitar, Dave Dederer ; vocal, Jason Finn, Chris Ballew, Dave Dederer ; producer, Conrad Uno, Chris Ballew, Dave Dederer ; recording, Barrett Jones (03:17) -- Blur the Technicolor / White Zombie ; lyricist, Rob Zombie ; composer, White Zombie ; producer, Terry Date, White Zombie (04:09) -- Watusi Rodeo / Reverend Horton Heat ; writer, Jeff Walls, Murray Attaway, Coral Kordecki ; producer, Thom Panunzio (03:35) -- Here Comes the Night / Native ; composer, Bert Russell Berns ; lyricist, Bert Russell Berns ; guest, Katrina Leskanich ; producer, Calvin Hayes, Mike Nocito ; mix, Bob Clearmountain (03:28) -- Jungle Groove / Montell Jordan ; producer, Montell Jordan, Anthony "Shep" Crawford (05:13) -- Ifé / Angélique Kidjo ; executive, Jumbo Vanrenen ; engineer, Christophe Dupouy, Christian Lachenal ; mix, Christophe Dupouy ; programming, Lester Mendez, Jean Hébrail ; producer, Jean Hébrail (04:23) -- My Pet / Matthew Sweet ; producer, Brendan O'Brien ; engineer, Russ Fowler (03:47) -- It's Alright / Blessid Union of Souls ; producer, C. P. Roth, Emosia (05:54) -- Ace in Africa / Robert Folk ; guitar, Michael Thompson ; producer, Robert Folk, Danny Bramson ; mix, Tommy Vicari ; recording, Tommy Vicari (03:40)

Useful Resources

- List of APIs used
 - [MusicBrainz](#)
 - [DBpedia](#)
 - [Wikidata](#)
 - [VIAF](#)
 - ISNI
 - [Library of Congress Linked Data Service](#)
- MARC [discussion paper](#) on using \$0 & \$1 for URIs

Questions?

Lucas Mak
Michigan State University Libraries
makw@msu.edu