

Mapping RDA to BIBFRAME:

Logistical and Technical Issues

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Introduction: RDA

- RDA (Resource Description and Access) is a package of data elements, guidelines, and instructions for creating metadata.
- The RDA Steering Committee (RSC) is responsible for maintaining the standard.
- Part of the RSC's current action plan to develop RDA as a “current and dynamic standard” includes completing a mapping from RDA to BIBFRAME.

Maps and Alignments

- The RDA Registry contains both maps and alignments.
- Maps are groups of mappings, which are RDF triples representing the semantic relationship between two different elements or vocabulary values.
- Alignments are CSV files that contain general relationships. These may ignore the precise semantics embedded in the maps.

Maps and Alignments

Maps for use with RDA vocabularies

Dublin Core Terms
Map from RDA properties to Dublin Core Terms
IFLA LRM
Map from RDA classes to IFLA LRM
Map from RDA properties to IFLA LRM
ISBD
Map from ISBD properties to unconstrained properties derived from RDA
Map from unconstrained ISBD properties to unconstrained properties derived from RDA
Map from unconstrained properties derived from RDA to unconstrained ISBD properties
Lexical URIs in English
Map from canonical to lexical URIs in the RDA properties element sets
MARC 21 formats
Map from RDA properties to MARC 21 Authority encodings
Map from RDA properties to MARC 21 Bibliographic encodings

Alignments for use with RDA vocabularies

Dublin Core Terms
Alignment from RDA elements to Dublin Core Terms
IFLA LRM
Alignment from RDA elements to IFLA LRM
Alignment from RDA entities to IFLA LRM
ISBD
Alignment of the ISBD: International Standard Bibliographic Description element set with RDA: Resource Description and Access element set
Alignment from ISBD content forms to RDA/ONIX Framework
Alignment from ISBD content form compounds to RDA/ONIX Framework
Alignment from ISBD media types to RDA/ONIX Framework
Lexical URIs in English
Alignment from canonical to lexical URIs in the RDA element sets
Alignment from canonical to lexical URIs in the Unconstrained properties element set
MARC 21 formats
Alignment from RDA elements to MARC 21 Authority encodings
Alignment from RDA elements to MARC 21 Bibliographic encodings

Maps and Alignments

Here is an example of an alignment of RDA classes to LRM classes.

RDA entity	alignment	LRM entity
Agent	equivalent	Agent
Collective Agent	equivalent	Collective Agent
Corporate Body	broader	Collective Agent
Expression	equivalent	Expression
Family	broader	Collective Agent
Item	equivalent	Item
Manifestation	equivalent	Manifestation
Nomen	equivalent	Nomen
Person	equivalent	Person
Place	equivalent	Place
RDA Entity	broader	Res
Timespan	equivalent	Time-span
Work	equivalent	Work

Maps and Alignments

Here is the same relationship as a map

```
@prefix rdac: <http://rdaregistry.info/Elements/c/> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix lrmer: <http://iflastandards.info/ns/lrm/lrmer/> .
#
# Map from RDA entities to IFLA Library Reference Model (entity-relationship
# July 2021
#
rdac:C10001 rdfs:subClassOf lrmer:E2 .
rdac:C10002 rdfs:subClassOf lrmer:E6 .
rdac:C10003 rdfs:subClassOf lrmer:E5 .
rdac:C10004 rdfs:subClassOf lrmer:E7 .
rdac:C10005 rdfs:subClassOf lrmer:E8 .
rdac:C10006 rdfs:subClassOf lrmer:E3 .
rdac:C10007 rdfs:subClassOf lrmer:E4 .
rdac:C10008 rdfs:subClassOf lrmer:E8 .
rdac:C10009 rdfs:subClassOf lrmer:E10 .
rdac:C10010 rdfs:subClassOf lrmer:E11 .
rdac:C10011 rdfs:subClassOf lrmer:E8 .
rdac:C10012 rdfs:subClassOf lrmer:E9 .
rdac:C10013 rdfs:subClassOf lrmer:E1 .
```

Maps and Alignments

- All alignments and maps in the Registry are maintained by the RSC's Technical Working Group.
- Maintenance of the RDA to MARC21 maps and alignments is particularly complex and so these are also maintained by a separate RDA/MARC21 Alignment Task Force.
- All maps and alignments go in one direction, from RDA to the external standard.

RDA and BIBFRAME

- RDA has a limited number of classes, but a large number of properties used to describe these classes.
 - For example, there are over 1,100 properties alone that can be used with the “agent” class.
 - An agent can be described in many different roles (editor, author, book designer, etc.)
 - Each of these roles can be paired with a subclass of agent (person, collective agent, family, corporate body)

RDA and BIBFRAME

- BIBFRAME does not have nearly as many properties as RDA.
- It also keeps its hierarchies relatively simple, with a limited number of subclasses and subproperties.
- However, BIBFRAME uses nested data and chains of classes and properties.
- One RDA property might map to a large chain of BIBFRAME classes and properties.

RDA and BIBFRAME

editor person

Definition and Scope

A person who contributes to an expression by amending content created by other agents in order to meet standards for publication or other use.

Content includes notated movement, notated music, tactile notated movement, tactile notated music, tactile text, and text.

Element Reference

IRI

<http://rdaregistry.info/Elements/e/P20338>

Domain

Expression →

Range

Person →

Property:	role
URI:	http://id.loc.gov/ontologies/bibframe/role 
Label:	Contributor role
Definition:	Function provided by a contributor, e.g., author, illustrator, etc.
Used with:	Contribution
Expected Value:	Role

```
:bf:Work >
  <bf:contribution >
    <bf:Contribution >
      <bf:agent >
        <bf:Person >
          <rdfs:label >Corbellari, Alain</rdfs:label>
        </bf:Person>
      </bf:agent>
      <bf:role >
        <bf:Role rdf:about="http://id.loc.gov/vocabulary/relators/edt" >
          <rdfs:label >Editor</rdfs:label>
        </bf:Role>
      </bf:role>
    </bf:Contribution>
  </bf:contribution>
</bf:Work>
```

Syntax issues and entity collision

- RDA distinguishes between certain classes that BIBFRAME does not, and includes separate properties for each of these classes.
 - One example is the so-called “WEMI” classes (work, expression, manifestation, item)

Syntax issues and entity collision

- RDA has separate property elements for “identifier for work” and “identifier for manifestation”
- BIBFRAME has a single property (identifiedBy) and a single class (Identifier) for the two RDA elements
- Any mapping from RDA to BIBFRAME must clarify the proper BF use for the RDA element “identifier for work” and distinguish how it is used differently in BIBFRAME than “identifier for manifestation.”

rdaw:P10002 **“has identifier for work”**

rdam:P30004 **“has identifier for manifestation”**

Class:	Identifier
URI:	http://id.loc.gov/ontologies/bibframe/Identifier 
Label:	Identifier
Definition:	Token or name that is associated with a resource, such as a URI or an ISBN

Syntax issues and entity collision

- One possible solution to this involves OWL property chains.
- OWL (Web Ontology Language) is a Semantic web language used to represent complex ideas about concepts.
- The OWL property PropertyChainAxiom can be used to list the properties used to build a subproperty chain of a given property.
 - RDA already uses the OWL PropertyChainAxiom for its “shortcut” elements

Syntax issues and entity collision

- Instead of a direct relationship between RDA's "identifier for work" and BIBFRAME's "Identifier," the RDA element could be related to an OWL property chain that represents a chain of BIBFRAME classes and properties.

rdaw:P10002 **"has identifier for work"**

owl:PropertyChainAxiom
(bf:Work; bf:identifiedBy; bf:Identifier)

rdam:P30004 **"has identifier for manifestation"**

owl:PropertyChainAxiom
(bf:Instance; bf:identifiedBy; bf:Identifier)

RDA recording methods

- RDA elements can be recorded in four different ways
 - Unstructured description
 - Structured description
 - Identifier
 - IRI
- In the RDA to MARC21 maps, different recording methods are mapped in different ways.

editor person

- MARC 21 Bibliographic

MARC 21 Bibliographic 500 ** \$a [unstructured description]
MARC 21 Bibliographic 720 1* \$a [unstructured description]
MARC 21 Bibliographic 700 0* \$a, b, c, d, g, q, u [structured description]
MARC 21 Bibliographic 700 1* \$a, b, c, d, g, q, u [structured description]
MARC 21 Bibliographic 700 0* \$0 [identifier]
MARC 21 Bibliographic 700 1* \$0 [identifier]
MARC 21 Bibliographic 720 1* \$0 [identifier]
MARC 21 Bibliographic 700 0* \$1 [IRI]
MARC 21 Bibliographic 700 1* \$1 [IRI]
MARC 21 Bibliographic 720 1* \$1 [IRI]

RDA recording methods

- If mapping an RDA element to BIBFRAME using multiple recording methods was desired, it might also be accomplished using OWL property chains.

Future plans

- The RSC entered a formal protocol with SHARE-VDE in 2025.
- The RSC Technical Working Group has been in communication with members of the SHARE-VDE group to collaborate on a map between RDA and BIBFRAME.
- The current RSC action plan involves completing this mapping by the end of 2027.

Future plans

- Both RDA and BIBFRAME are evolving standards
 - How to keep an RDA-to-BIBFRAME map up-to-date?
 - The protocols for RDA-to-MARC21 maps might offer some guidance.

Thanks!

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Questions?

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