

Marathon RDA

Gordon Dunsire

Chair, RDA Steering Committee

Presented at Bibliothèque national de France, Paris,

2 May 2016

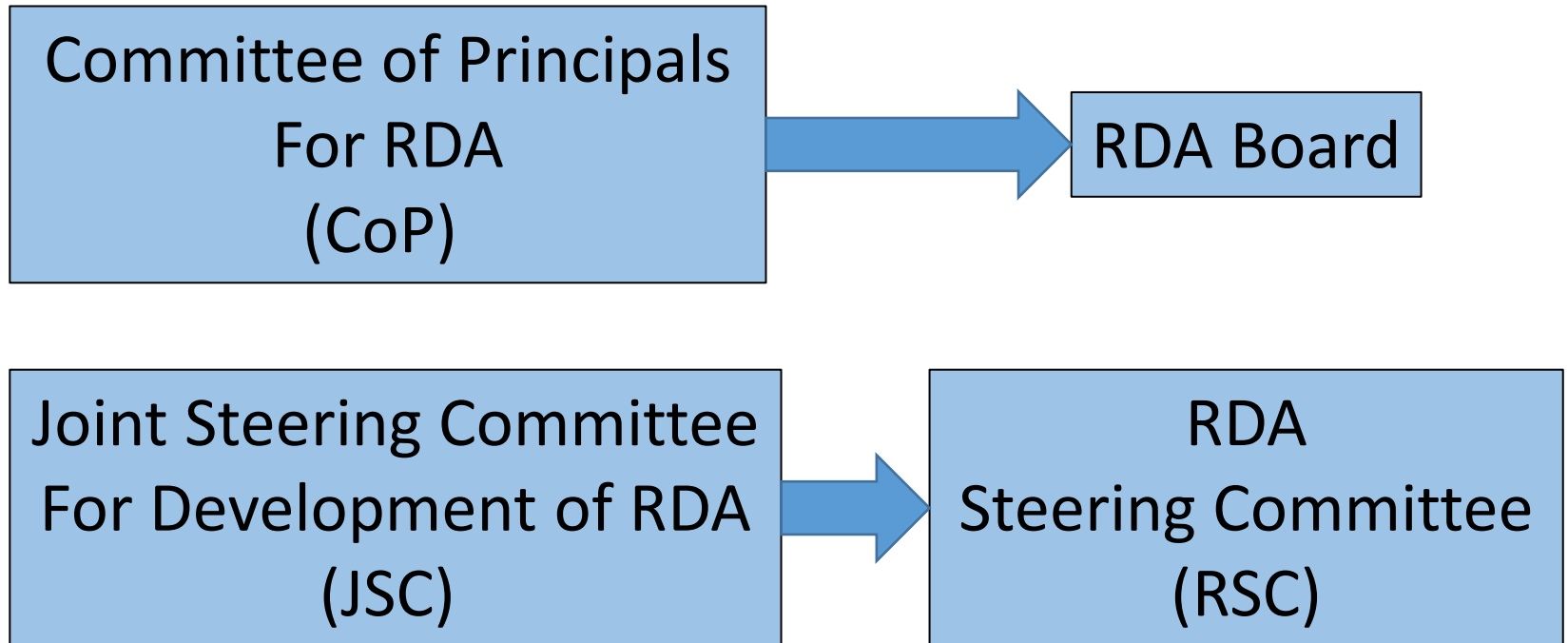
1: Evolution of RDA

RDA: resource description and access

- “RDA is a package of data elements, guidelines, and instructions for creating **library and cultural heritage** resource metadata that are well-formed according to **international** models for user-focussed **linked data** applications.”
 - *RDA Board, 2015*
 - <http://www.rda-rsc.org/node/235>

Progress on RDA governance

November 6, 2015: Change of name



<http://www.rda-rsc.org/>

RDA Steering Committee

North America

Europe

Asia

Chair of RDA Board

Latin America
& the Caribbean

Africa

Oceania

ALA Publishing

Chair

Technical Team Liaison

Secretary

Translations Team Liaison

Examples Editor

Wider Community Engagement

RDA Working Groups

Standing

Working Groups →

Technical

Translations

Aggregates

Music

← Task and Finish Working Groups

Archives

Places

Capitalization Instructions

Rare materials

Fictitious Entities

RDA/ONIX Framework

Relationship Designators

Contexts (next 2-3 years)

Governance transition

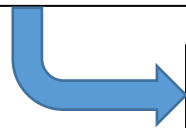
FRBR Library Reference Model

International standards (IFLA, ISSN, ...)

Toolkit review and re-organization

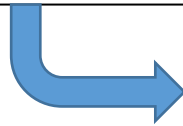
FRBR-LRM and RDA

LRM “a high-level conceptual model ... intended as a guide or basis on which to elaborate cataloguing rules”



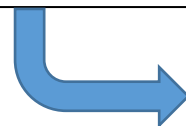
RDA guidance, instructions, elements

“operates at a greater level of generality than FRBRoo, which seeks to be comparable in terms of generality with CIDOC CRM”



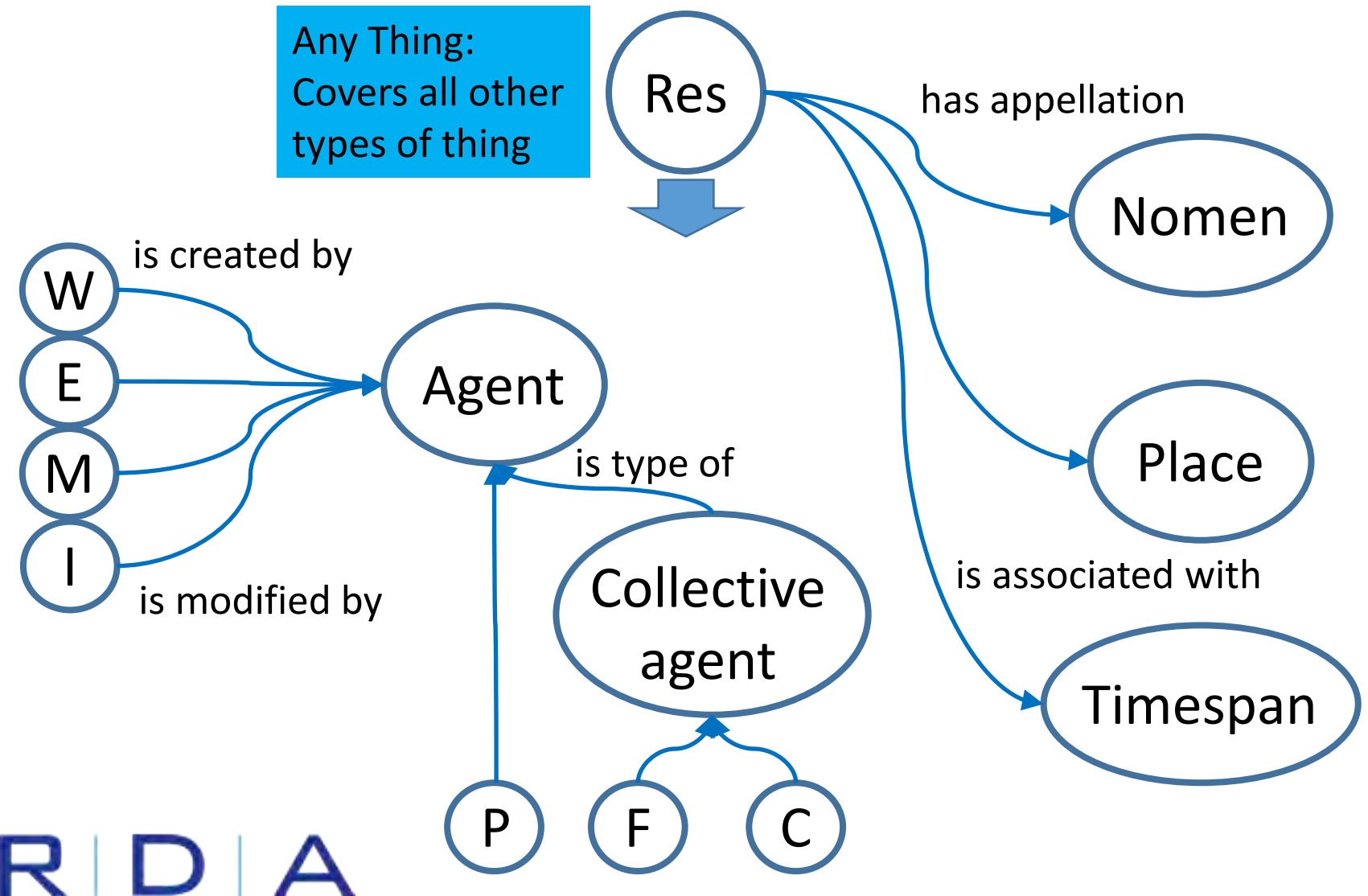
RDA cultural heritage communities

LRM “this model is developed very much with semantic web technologies in mind”

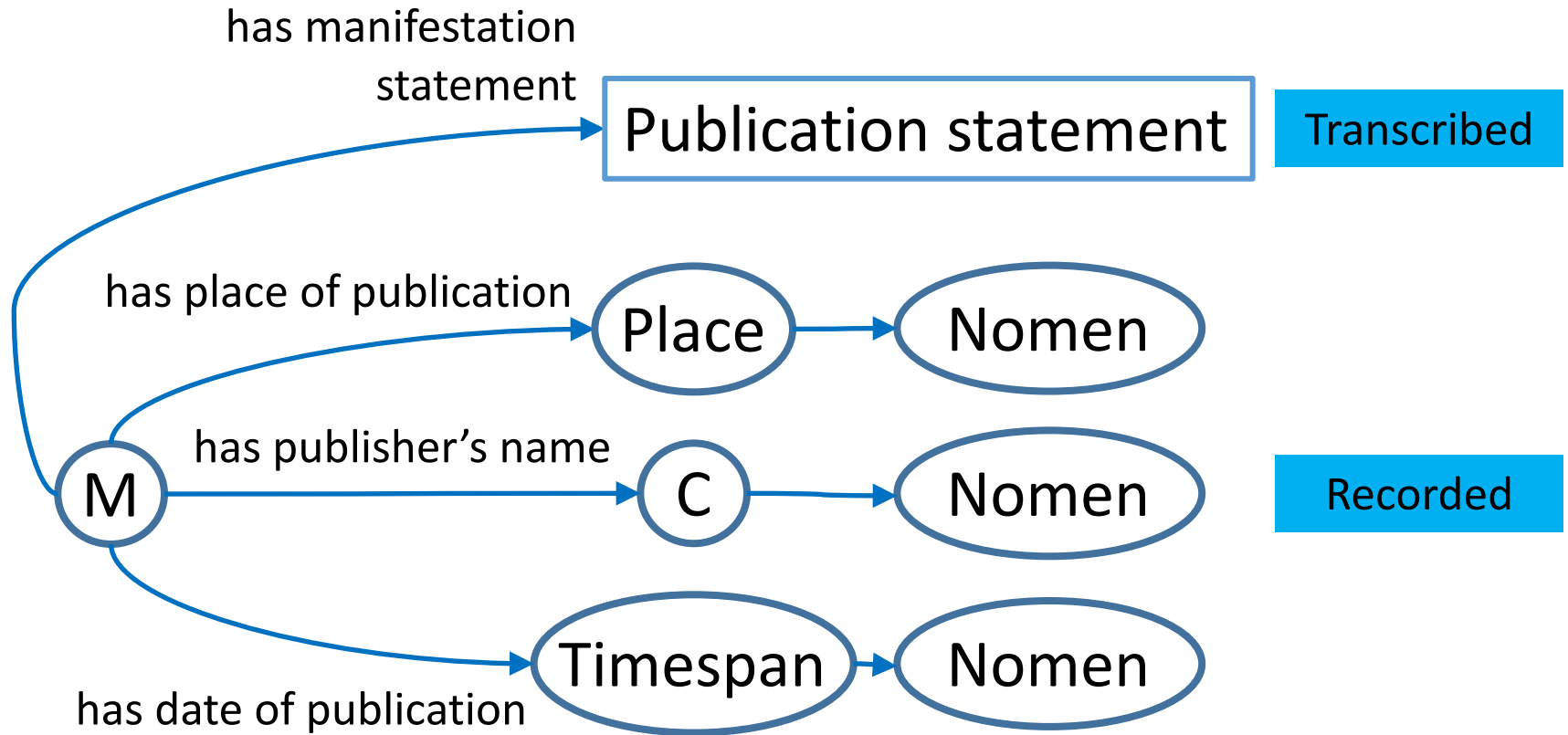


RDA linked data communities

FRBR-LRM and RDA entities



From attributes to relationships



The 4-fold path

The “4-fold path” supports catalogue cards, flat file schema, RDBMS, and linked data (RDA database implementation scenarios)

Describing a related entity:

Unstructured description

Structured description

Identifier

URI

General guidance and instructions:

Simple

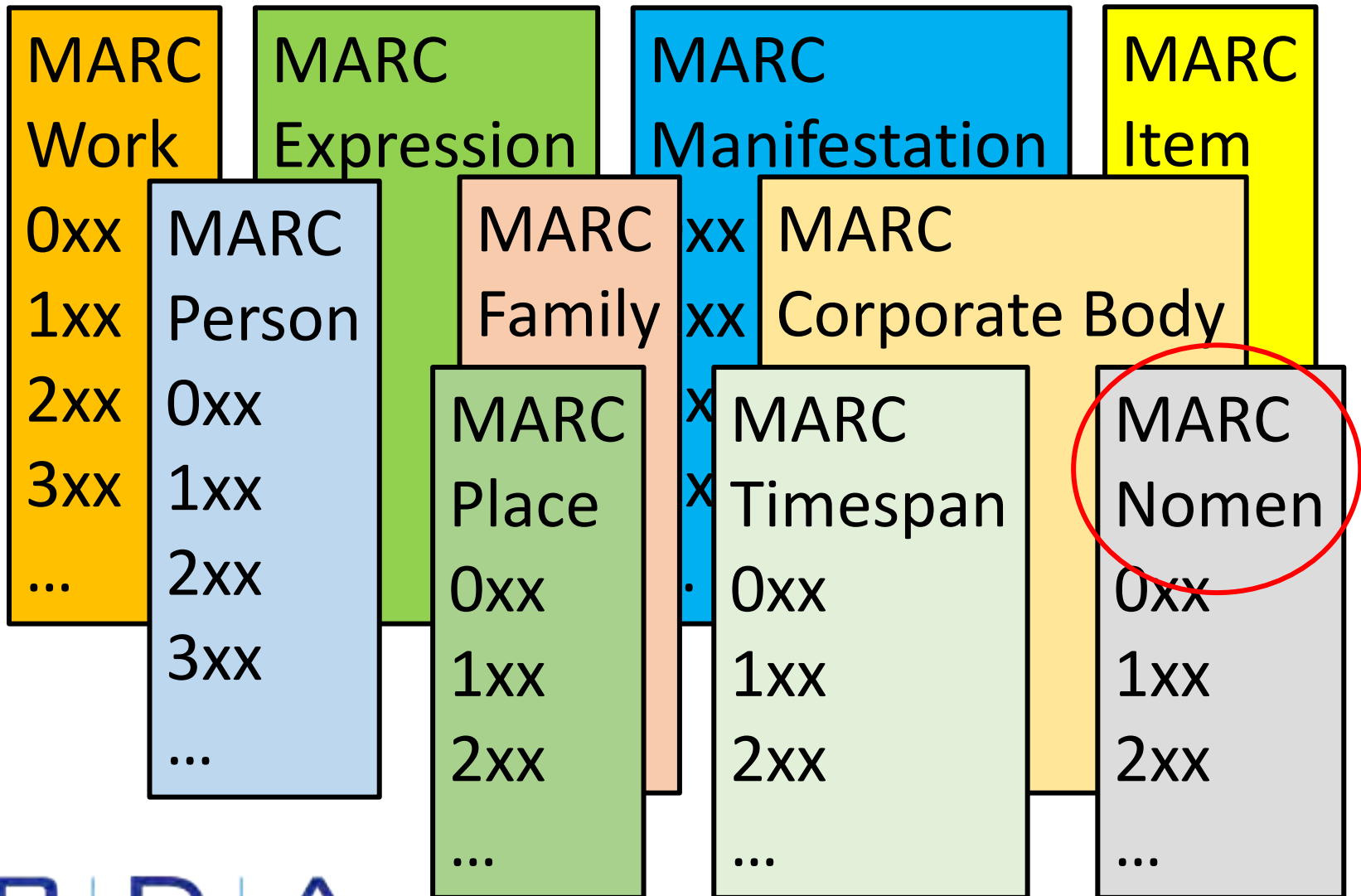
Less duplication

Easier to translate

2: RDA data in production

RDA in MARC

To ensure semantic clarity:
MARC Authority?



RDA data: r-balls

<http://rballs.info>

Download RIMMF3



R-Balls

Topics ▾

X-athons ▾

RIMMF

Home >

R-Balls

- [R-Balls \(Home\)](#)
- [Topics \(Focus of r-ball\)](#)
 - [Persons](#)
 - [Jane Austen](#)

Welcome to r-balls!

An r-ball contains linked data and Semantic Web representations of cultural heritage resources described using [RDA: resource description and access](#).

An r-ball is created and maintained using [RIMMF](#) (RDA in Many Metadata Formats). Try [RIMMF-balls for newbies](#).

R is for RIMMF/RDA/RDF/Resource/Record!

* R-balls are the primary data for a [Jane-athon](#).

R | D | A

- [The Master of Ballantrae](#)
- [Manifestations](#)
 - [RDA Toolkit examples](#)

RIMMF relationship tree (R-Tree)

Relationship tree for: "Taylor, Arlene G., 1941- The organization of information"

Relationship	Heading	
Work	Taylor, Arlene G., 1941- The organization of information	<input type="checkbox"/>
In series	Library and information science text series	<input type="checkbox"/>
Author	Taylor, Arlene G., 1941-	<input type="checkbox"/>
Expression of work	Taylor, Arlene G., 1941- The organization of information. Text	<input type="checkbox"/>
Manifestation of expression	The organization of information. Second edition. Libraries Unlimited, a member of the Greenwood Publishing Group. 2004. Volume	<input type="checkbox"/>

+ - Remove entity coloring De-dupe Close selected Export ... Dig

File Edit View Options Help

Element Label	Text	RDA R...	AAP
Manifestation			
RIMMF identifier °	rdaex00002601	no rule	
Composite key °	The organization of information. Second edition. Libraries Unlimited, a member of the Greenwood Publishing Group. 2004. Volume		
Title		2.3	
Title proper	The organization of information	2.3.2	<input checked="" type="checkbox"/>
Statement of responsibility		2.4	
Statement of responsibility relating to title proper	Arlene G. Taylor	2.4.2	
Edition statement		2.5	
Designation of edition	Second edition	2.5.2	<input checked="" type="checkbox"/>
Publication statement	Westport, Connecticut : Libraries Unlimited, a member of the Greenwood Publishing Group, 2004.	2.8	

WEMI Links

W

E

R-Tree

RIMMF Search & Retrieve Tool

Help

Search Source

- [BIB] Any
- [BIB] Name
- [BIB] Title
- [BIB] Lccn
- [BIB] Isbn
- [NAF] Name
- [NAF] Title
- [NAF] N/T
- [NAF] Lccn
- [SAF] Subject
- [ID] NAF
- [ID] SAF

Terms: 2013942535 Search 1 1 s

<< 1 record retrieved: [BIB] Lccn No hits: RIMMF EI >>

Bibliographic information organization in the semantic web / Mirna V
Publication: Oxford : Chandos Pub., 2013.

View Marc

Import

RIMMF import from
Library of Congress
MARC21 catalogue

```
000 01808cam a2200337 a 4500
001 17771945
005 20140625114746.0
008 130611s2013 enka b 001 0 eng d
906 $a 7 $b cbc $c copycat $d 2 $e ncip $f 20 $g y-gencatlg
925 0 $a acquire $b 2 shelf copies $x policy default
955 $a pc22 2013-06-11 $b xk04 2014-05-30 z-processor $i xk04 2014-06-25
to BCCD
010 $a 2013942535
016 7 $a 016495654 $2 UK
020 $a 9781843347316 (pbk.)
020 $a 1843347318 (pbk.)
035 $a (OCoLC)ocn842877062
040 $a BTCTA $b eng $c BTCTA $d UKMGB $d BDX $d CDX $d YDXCP $d STF $d
OCLCF $d MYNLM $d DCU $d CGU $d YNK $d DLC
042 $a lccopycat
050 00 $a Z699.35.M28 $b W55 2013
082 04 $a 025.3/16 $2 23
100 1 $a Willer, Mirna.
245 10 $a Bibliographic information organization in the semantic web / $c
Mirna Willer and Gordon Dunsire.
```

MARC21 record

RIMMF FRBRizes MARC21 record to RDA data set

RDA Record set for: "Bibliographic information organization in the semantic we..."

Relationship	Heading	
Manifestation	Bibliographic information organization in the semantic web. Chandos Pub. 2013. Volume	<input checked="" type="checkbox"/>
Expression manifested *	Willer, Mirna. Bibliographic information organization in the semantic web. Text	<input checked="" type="checkbox"/>
Contributor	Dunsire, Gordon	<input checked="" type="checkbox"/>
Work expressed *	Willer, Mirna. Bibliographic information organization in the semantic web	<input checked="" type="checkbox"/>
Author	Willer, Mirna	<input checked="" type="checkbox"/>

Remove entity coloring De-dupe Import ... Dig

Checked items provisionally added to EI: press 'Import' to publish them. Unchecked items are all

RDA data

“RDA is a package of data elements, guidelines, and instructions for creating library and cultural heritage resource metadata that are well-formed according to international models for user-focussed linked data applications.”

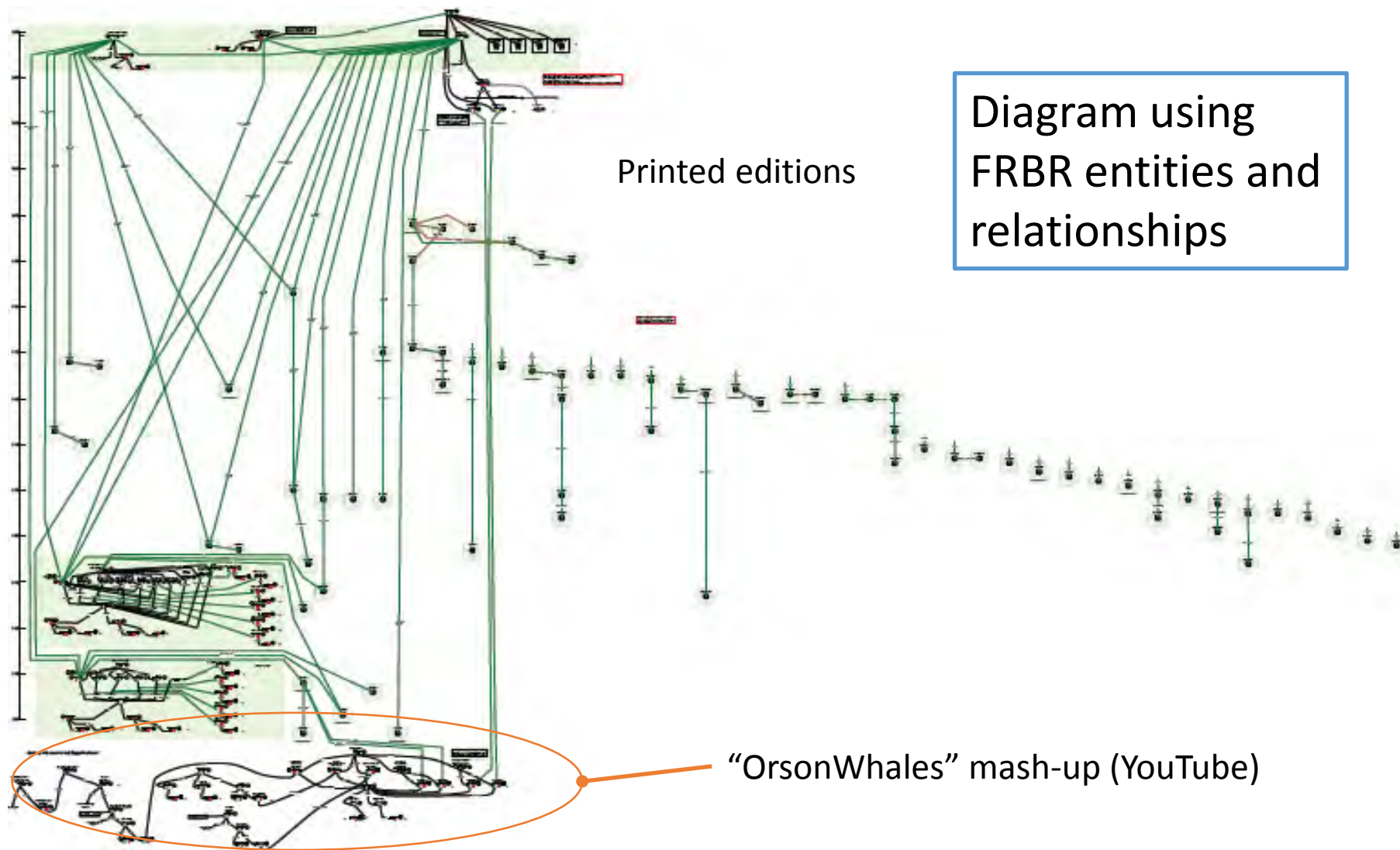
RDA Toolkit provides the user-focussed elements, guidelines, and instructions.

RDA Registry provides the infrastructure for well-formed, linked, RDA data applications. Open Metadata Registry (OMR) provides linked data representation of RDA elements.

Linked data and RDF

- Resource Description Framework (RDF)
 - RDA based on Dublin Core Abstract Model (DCAM)
- Designed for machine-processing of metadata at global scale (Semantic Web)
 - 24/7/365
 - Trillions of operations per second
 - The cloud
- Connecting the crowd
 - The universe of human discourse

Complexity of relationships: Moby Dick



RDA in RDF

- RDA controlled terminologies represented as RDF value vocabularies
 - Example: RDA carrier type vocabulary
- Entities, attributes, and relationships represented as RDF element sets
 - Entities represented in RDF as classes
 - Attributes and relationships represented in RDF as properties (“predicates”)
 - Example: RDA manifestation properties

RDA Registry: rdaregistry.info

RDA Registry

Elements ▾

Values ▾

Data ▾

Tools ▾

About ▾

FAQ

Guide

Project

RDA Toolkit

RDA Registry

- [RDA Registry](#) (Home)
- [Elements](#) (RDA element sets)
 - [Classes](#)
 - [Work properties](#)
 - [Expression properties](#)
 - [Manifestation properties](#)
 - [Item properties](#)
 - [Agent properties](#)
 - [Unconstrained properties](#)
 - [Meta-element properties](#)
 - [RDA/ONIX Framework elements](#)
- [Values](#) (value vocabularies)
 - [RDA values](#)
 - [RDA/ONIX Framework values](#)
- [Data](#) (Linked data using RDA vocabularies)
 - [Examples](#) (Single resource)
 - [R-Balls](#) (Multiple resources)
 - [Datasets](#) (Multiple resources)
- [Tools](#)
 - [Maps](#) (RDF maps between RDA vocabularies and other namespaces)
 - [Alignments](#) (Alignment tables for RDA vocabularies and other namespaces)
 - [Profiles](#) (Application profiles using RDA vocabularies)
 - [RIMMF](#) (RDA data editor)

Welcome to the RDA Registry!

The RDA Registry contains linked data and Semantic Web representations of the elements and relationship designators approved by the [Joint Steering Committee on Development of RDA \(JSC\)](#).

RDA Reference

- Elements, attributes, relationships
- Values
- Other Glossary terms
- Translations and partial translations

- [JSC: Gordon Dunsire](#)
- [MMA: Diane Hillmann](#)
- [OMR technical issues: Jon Phipps](#)
- [ALA Digital Reference: James Hennelly](#)

If you discover a problem with the representations of the RDA vocabularies, or have a question, or even wish to engage in a philosophical or practical discussion, please [raise an issue!](#)

RDA element sets

Manifestation properties

The Manifestation properties element set consists of properties representing the attributes and relationships of the RDA Manifestation entity. Each property in the element set has a domain of the class representing this entity.

Number of elements:	254
Namespace:	http://rdaregistry.info/Elements/m/
Suggested prefix:	rdam
Example curie (canonical)*:	rdam:P30001
Example curie (lexical)*:	rdam:carrierType
Changelog feed:	Atom RDF

*All RDA URIs have both an immutable canonical form and a "readable", lexical form, which is subject to change (changes will be redirected).

Formal or canonical URI is "opaque"
- not intended for human readability

Lexical URI is intended for human readability
in different languages

Except HTML for humans

Downloads

- [HTML \(Open Metadata Registry\)](#)
- [Turtle \(text/turtle\)](#)
- [Notation 3 \(text/rdf+n3\)](#)
- [N-Triples \(text/rdf+nt\)](#)
- [RDF/XML \(application/rdf+xml\)](#)
- [RDFa](#)
- [Microdata \(text/microdata+html\)](#)
- [JSON-LD \(application/json | application/json+ld\)](#) (see the [Readme](#))
- [RDF/JSON \(application/rdf+json\)](#)

RDF linked data serializations

Multilingual linked data

RDF as global language

Vocabulary: RDA Content Type
Concepts: text

Detail Properties History

Detail

Preferred Label: text

Language: English

URI: <http://rdaregistry.info/termList/RDAContentType/1020> (RDF)

Top Concept?:

Status: Published

Properties

ToolkitLabel	text
ToolkitLabel	texte
ToolkitLabel	Text
ToolkitLabel	texto
ToolkitLabel	文本
ToolkitDefinition	Content expressed through a form of notation for language intended to be perceived visually.
ToolkitDefinition	Contenu exprimé au moyen d'une forme de notation du langage destinée à être perçue visuellement.
ToolkitDefinition	Inhalt, der durch eine Notationsform für Sprache ausgedrückt wird und für die visuelle Wahrnehmung konzipiert ist.
ToolkitDefinition	Contenido expresado mediante una forma de notación de lenguaje pensado para ser percibido visualmente.
ToolkitDefinition	以视觉感知的语言符号形式表达的内容。

French
German
Spanish
Chinese
...

Multilingual data

E -- viklun00000055.txt -- Lagerlöf, Selma, 1858-1940. Anna Svärd. Text. German

File Edit View Options Help

Element Label	Text	RDA Rule	AAP
Expression			
RIMMF identifier °	viklun00000055	no rule	
Authorized access point °	Lagerlöf, Selma, 1858-1940. Anna Svärd. Text. German	6.27.3	
Variant access point °	Lagerlöf, Selma, 1858-1940. Anna, das Mädchen aus Dalarna. Text. German	6.27.4.5	
Variant access point °	Anna, das Mädchen aus Dalarna. Text. German	6.27.4.5	
Source consulted	Anna, das Mädchen aus Dalarna, 1929	5.8	
Date of expression	1929	6.10+	<input type="checkbox"/>
Content type	Text	6.9	<input checked="" type="checkbox"/>
Language of expression	German	6.11	<input checked="" type="checkbox"/>
Other distinguishing characteristic of the expression	Klaiber-Gottschau	6.12	<input type="checkbox"/>
Work expressed	Lagerlöf, Selma, 1858-1940. Anna Svärd <viklun00000017>	7.6+	<input checked="" type="checkbox"/>
Manifestation of expression	Anna, das Mädchen aus Dalarna : Roman. 1929. Volume <viklun00000054>	17.9+	
Translator ✕	Klaiber-Gottschau, Pauline, 1855-1944 <viklun00000063>	20.2+	

WEMI Links

W Swedish work German translation English catalogue R-Tree

Polylingual data

E -- viklun00000055.txt -- Lagerlöf, Selma, 1858-1940. Anna Svärd. Texte. Allemand

File Edit View Options Help

Element Label	Text	RDA Rule	AAP
Expression			
Identifiant de RIMMF	viklun00000055	no rule	
Point d'accès autorisé	Lagerlöf, Selma, 1858-1940. Anna Svärd. Texte. Allemand	6.27.3	
Variante de point d'accès	Lagerlöf, Selma, 1858-1940. Anna, das Mädchen aus Dalarna. Text. German	6.27.4.5	
Variante de point d'accès	Anna, das Mädchen aus Dalarna. Text. German	6.27.4.5	
Source consultée	Anna, das Mädchen aus Dalarna, 1929	5.8	
Date de l'expression	1929	6.10+	<input type="checkbox"/>
Type de contenu	texte	6.9	<input checked="" type="checkbox"/>
Langue de l'expression	allemand	6.11	<input checked="" type="checkbox"/>
Autre caractéristique distinctive de l'expression	Klaiber-Gottschau	6.12	<input type="checkbox"/>
Œuvre exprimée	Lagerlöf, Selma, 1858-1940. Anna Svärd <viklun00000017>	17.6+	<input checked="" type="checkbox"/>
Manifestation d'une expression	Anna, das Mädchen aus Dalarna : Roman. 1929. Volume <viklun00000054>	17.9+	
Traducteur	Klaiber-Gottschau, Pauline, 1855-1944 <viklun00000063>	20.2+	

French cataloguer

WEMI Links

R-Tree

Æ

RDA Registry

#	CURIE	Label	Definition	SubpropertyOf	Unconstrained
#	 rdam:P30020	"is contained in (manifestation)"	Relates a manifestation to a larger manifestation of which the manifestation is a discrete component.	rdam:P30213 "has whole-part manifestation relationship with"	rdau:P60101 "is contained in"

Lexical Alias: <http://rdaregistry.info/Elements/m/containedInManifestation.en>

Domain: [rdac:C10007](#) "Manifestation"

Range: [rdac:C10007](#) "Manifestation"

inverseOf: [rdam:P30033](#) "is container of (manifestation)"

SubProperties: [rdam:P30019](#) "is facsimile contained in"
[rdam:P30025](#) "is inserted in"
[rdam:P30101](#) "is special issue of"

Unconstrained linked data

RDA Registry

Remove FRBR model to “dumb-down” semantics to common level of granularity



“resources” and “agents”

RDA element sets

Unconstrained properties

The Unconstrained properties element set consists of properties representing the attributes and relationships of all of the RDA entities. Each property in the element set has semantics which are independent of the FRBR model and has no specified domain or range.

The Unconstrained properties are intended for use in applications that do not require the FRBR semantics.

Number of elements:	850
Namespace:	http://rdaregistry.info/Elements/u/
Suggested prefix:	rdau
Example curie (canonical)*:	rdau:P60001
Example curie (lexical)*:	rdau:respondentOf
Changelog feed:	Atom RDF

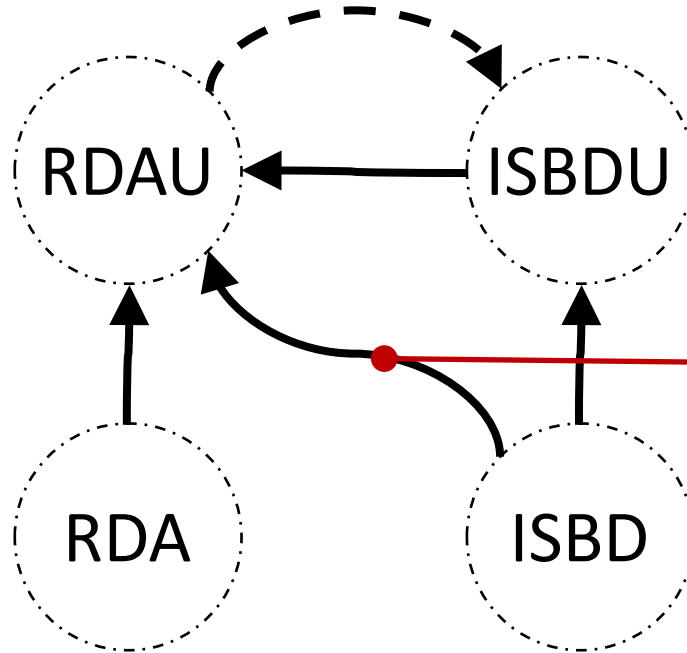
*All RDA URIs have both an immutable canonical form and a "readable", lexical form, which is subject to change (changes will be redirected).

Example: Contributor
Relates a resource to an agent contributing to a resource.

Beyond RDA data: ISBD

[Linked data cloud, not RDF graph]

Unconstrained
(No entity
Specified)



Work
Expression
Manifestation
Item

Resource

Map from ISBD properties to unconstrained RDA properties

```
@prefix isbd: <http://iflstandards.info/ns/isbd/elements/> .
@prefix rda: <http://rdaregistry.info/Elements/u/> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
#
# Map from ISBD properties to unconstrained RDA properties
# 23 September 2015
#
isbd:P1001 rdfs:subPropertyOf rda:P60049 .
isbd:P1002 rdfs:subPropertyOf rda:P60049 .
isbd:P1004 rdfs:subPropertyOf rda:P60515 .
isbd:P1024 rdfs:subPropertyOf rda:P60539 .
isbd:P1025 rdfs:subPropertyOf rda:P60249 .
isbd:P1034 rdfs:subPropertyOf rda:P60521 .
isbd:P1041 rdfs:subPropertyOf rda:P60101 .
isbd:P1047 rdfs:subPropertyOf rda:P60565 .
isbd:P1054 rdfs:subPropertyOf rda:P60550 .
isbd:P1055 rdfs:subPropertyOf rda:P60557 .
isbd:P1060 rdfs:subPropertyOf rda:P60558 .
isbd:P1063 rdfs:subPropertyOf rda:P60513 .
```

```
isbd:P1001 rdfs:subPropertyOf rda:P60049 .
isbd:P1002 rdfs:subPropertyOf rda:P60049 .
isbd:P1004 rdfs:subPropertyOf rda:P60515 .
isbd:P1024 rdfs:subPropertyOf rda:P60539 .
```

Multi-schema linked data

Many local dialects

RDA Registry

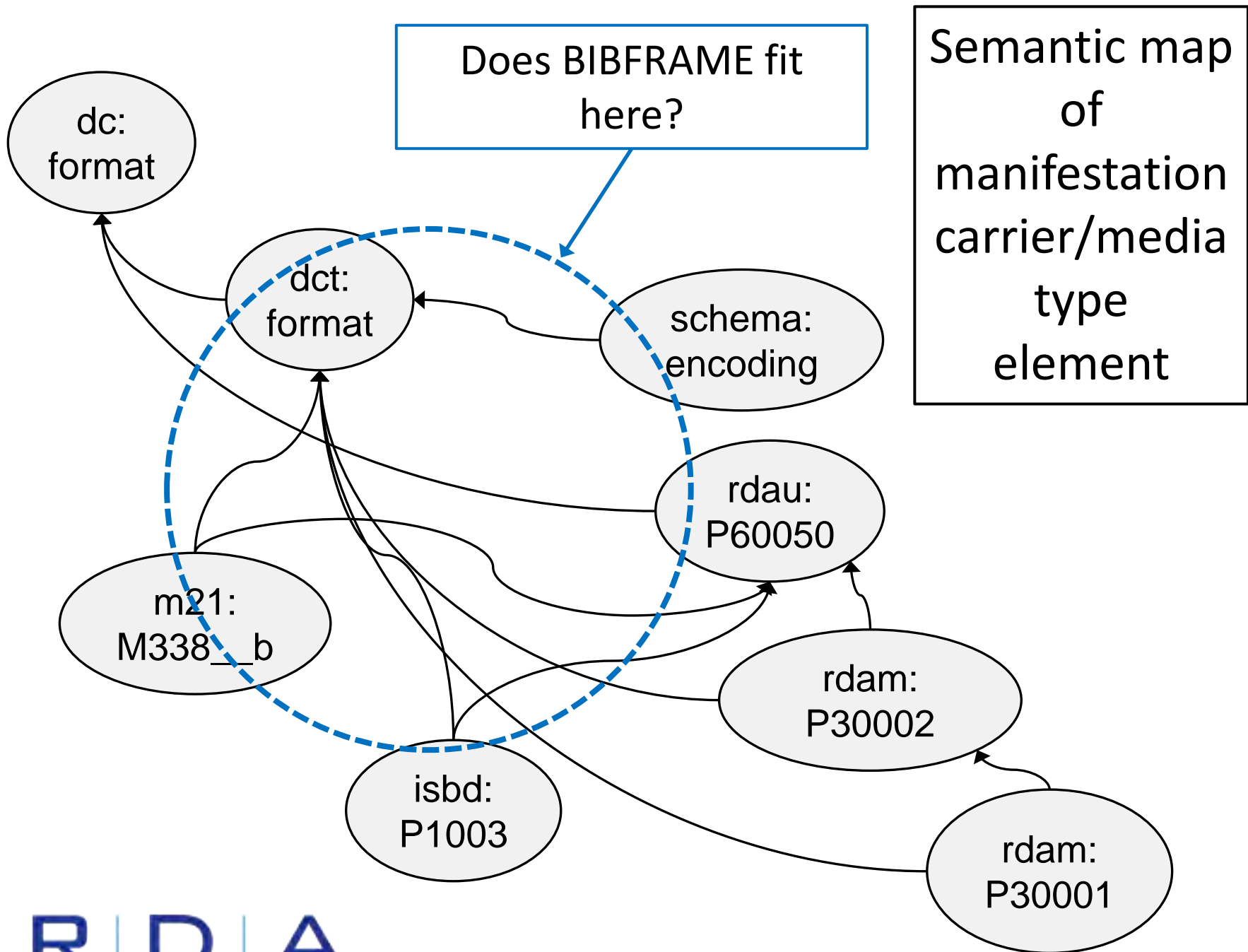
RDA maps

- [Deprecated RDA vocabularies](#)
- [ISBD and RDA](#)
- [ISBD and RDA/ONIX Framework](#)
- [Lexical URIs in English](#)
- [MARC Relator Codes](#)
- [RDA and RDA/ONIX Framework](#)
- [Unconstrained properties](#)

Linking RDA to:
ISBD
MARC21
RDA/ONIX Framework
...

This section contains maps to and from RDA element sets and value vocabularies. We use the term "map" to refer to a set of mappings. We use the term "mapping" to refer to a single relationship between two classes, properties, or concepts taken from different element sets and value vocabularies.

Some maps are based on [alignments](#).



3: Synthesis and general discussion

The (metadata) Grail

Item
describes
itself

Interpreted by
professional
intermediaries

Master
Catalogue
Record

Using arcane
rules and
processes



Title page, cover, introduction, etc.
(by author, publisher, etc.)

Universal Bibliographic Control

Agreed at
international level
with global scope



Top-down,
one size
fits all



One
record
structure

One
content
rules

One
encoding
format



Digital world

All content
on one
carrier

Global is the
connected
local

Web is the
fundamental
structure

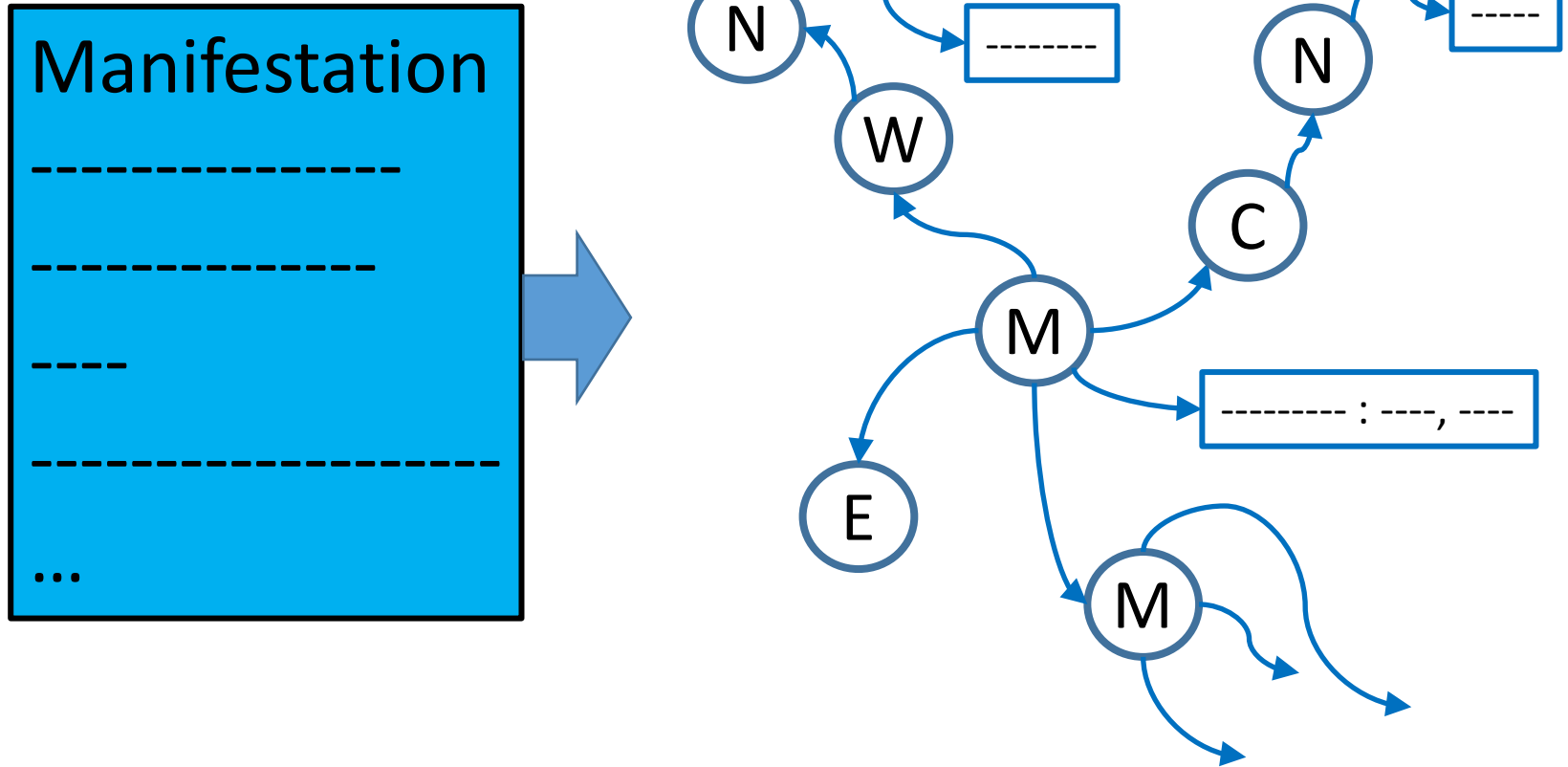
Control structures crumble

Open World Assumption

The absence of data is not data about absence

Always something more to say!
The “record” is never complete

From record to statement cluster



Anyone can say Anything about Any thing

There is no test of truth; only inconsistency

Provenance is important!
Who said that?
What “rules” were used?

Provenance required for each statement
[triple + 1 = quad store]

Who says?

Publisher metadata:

Electronic copyright deposit

=> 80% of British Library intake

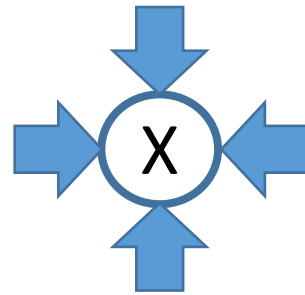
The Crowd:

Social media

Reviews, etc.

The Expert Crowd:

Crowd-sourcing



Professionals:

Recording and

relationships

Paraprofessionals:

Transcription

(smart phone apps)

Machines:

Indexing

Inferencing

Linked data vs Semantic Web

Dumb?

Linked data:
RDBMS
Closed world
Blank nodes
Minimal semantics
Local

*Easy to develop with
local infrastructure*

Smart!

Semantic Web:
RDF
Open world
All nodes identified
Embedded semantics
Global

*Hard to develop with
global infrastructure*

Thank you!

- rsccchair@rdatoolkit.org
- <http://www.rda-rsc.org/> [RDA Steering Committee]
- <http://www.rdaregistry.info/>
- <http://metadataregistry.org/>
- <http://www.marcofquality.com/wiki/rimmf3/>