RDA cataloguing and linked data

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Presented at First Colloquium on RDA in Latin America

Mexico City, Mexico, 15 November 2018

Resource Description & Access

RDA and linked data

2006: DCMI, Colima, Mexico

2007: “London meeting” with linked data communities

Committee of Principals for RDA agrees to develop linked data representation of RDA

2014: v1.0.0 of RDA Vocabularies on GitHub

2015: RDA Board strategy includes linked data communities

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RDF

Resource Description Framework (RDF)
Designed for machine-processing of metadata at global scale (Semantic Web)
- 24/7/365
- Trillions of operations per second

Everything must be dis-ambiguated
- Machines are dumb
  - A simple approach helps!

Require machine-readable identifiers

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RDF triple

Simple, single, “atomic” statement in 3 parts

subject – predicate (property) – object

This slide – has title – “RDF triple”

Subject and predicate must be identified by a URI or IRI*

Unambiguous machine identification (a thing)

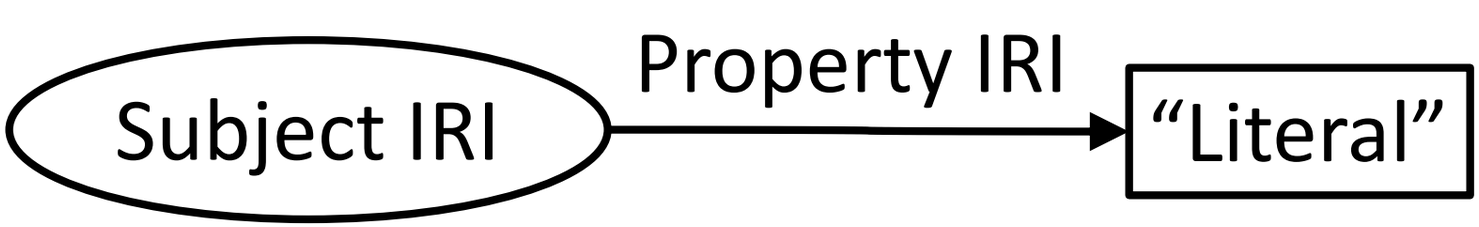
Object may be an IRI or a literal

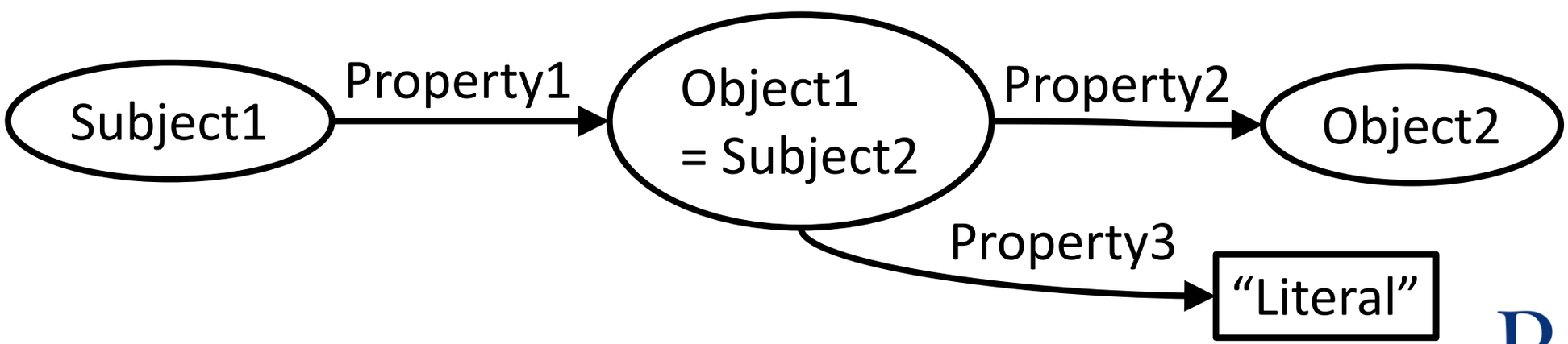
Literal: human-readable string

* Internationalized resource identifier

RDF graph

Graphical representation of one or more triples





RDA in RDF

RDA uses RDF to represent ***RDA Reference*** (entities, elements, and controlled vocabularies)

- Provides data for ***RDA Toolkit*** (Glossary, element reference, navigation)
- Available from ***RDA Registry*** for external applications
  - open license: CC0 BY

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Toolkit element page

Definition and Scope
Element Reference

Prerecording
Recording
Recording an unstructured description
Recording a structured description
Recording an identifier
Recording an IRI

Related Elements

Instructions

RDA Reference

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RDA Vocabularies

RDA Reference:

entities (classes), elements (properties), and terms (concepts)

Includes translations (12+ languages)

Published via GitHub and RDA Registry

open license: CC0 BY

RDA
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RDARegistry / RDA-Vocabularies

Unwatch 23 | Star 26 | Fork 9

Code | Issues 41 | Pull requests 0 | Projects 0 | Wiki | Insights | Settings

Releases | Tags

Draft a new release

Pre-release

v3.0.11

84423c4

Release 3.0.11

Edit

GordonDunsire released this on 12 Oct

Assets 2

Source code (zip)

Source code (tar.gz)

This is a pre-release to support the 3R Project. The content is not stable, and should be used with caution.

https://github.com/RDARegistry/RDA-Vocabularies/releases

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RDA Releases

Semantic versioning

Break.Bend.Minor (n.n.n)

GitHub pre-releases used to test production infrastructure for new Toolkit

Warning: unstable!

RDA Releases

2.7.3: Original Toolkit (April 2017)

Pre-releases: 3.0.1 – 3.0.11

3 !!!: Breaks semantics of 2.7.3

Re-definition of Person entity (LRM)

3.1.0: real soon now (December 2018?)

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RDA Registry **Elements** **Values**

RDA Registry

- RDA Registry (Home)
- Elements (RDA element sets)
  - Classes
  - Agent properties
  - Expression properties
  - Item properties
  - Manifestation properties
  - Nomen properties
  - Place properties
  - Time-span properties
  - Work properties
  - RDA Entity properties
  - Meta-element properties
  - Unconstrained properties
  - RDA/ONIX Framework elements
- Values (value vocabularies)
  - RDA values
  - RDA/ONIX Framework values

CC BY

RDA Resource Description & Access

Data ▾ Tools ▾ Releases ▾

- Data (Linked data using RDA vocabularies)
  - Curie prefixes (Abbreviations for compact URIs, XML namespaces, etc.)
  - 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)
- About (More about the RDA vocabularies)
  - RDA Reference data (Data maintenance and flow)
  - Issues (Raise issues and make comments)
  - Versions (Version control)
  - Deprecation (Removal of vocabulary entries)
  - RDA/ONIX Framework (Basis of carrier and content categories)
- FAQ (Answers to frequently asked questions)
- Guide (Guide to RDA vocabularies for technical communities)

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RDA element sets

Work prope

The Work prope
relationships of t

Each property in

- has a dom
- is linked fr
  rdfs:subP
- is linked fr
  rdfs:subP

Number of ele
Namespace:
Suggested pre
Example curie
Example curie
Changelog fee

*All RDA URIs h

which is subject to change (changes will be redirected).

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)

Languages

Catalan Danish English Finnish French German Norwegian
Spanish Swedish Vietnamese

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RDA Registry Elements Values Data Tools Releases

About FAQ Guide Blog Project RDA Toolkit

Map fro

```
@prefix i
@prefix r
@prefix r
#
# Map fro
# 23 Sept
#
rdau:P600
rdau:P600
rdau:P600
rdau:P600
rdau:P600
rdau:P600
```

The map consists of mappings that can be combined with the Map from unconstrained ISBD properties to unconstrained RDA properties to entail property equivalence in OWL.

For example:

```
# from this map:
rdau:P60050 rdfs:subPropertyOf isbdu:P1003 .
# from map of unconstrained ISBD to unconstrained RDA:
isbdu:P1003 rdfs:subPropertyOf rdau:P60050 .
# entails:
rdau:P60050 owl:equivalentProperty isbdu:P1003 .
```

The map is given in a terse triple language (ttl) serialization.

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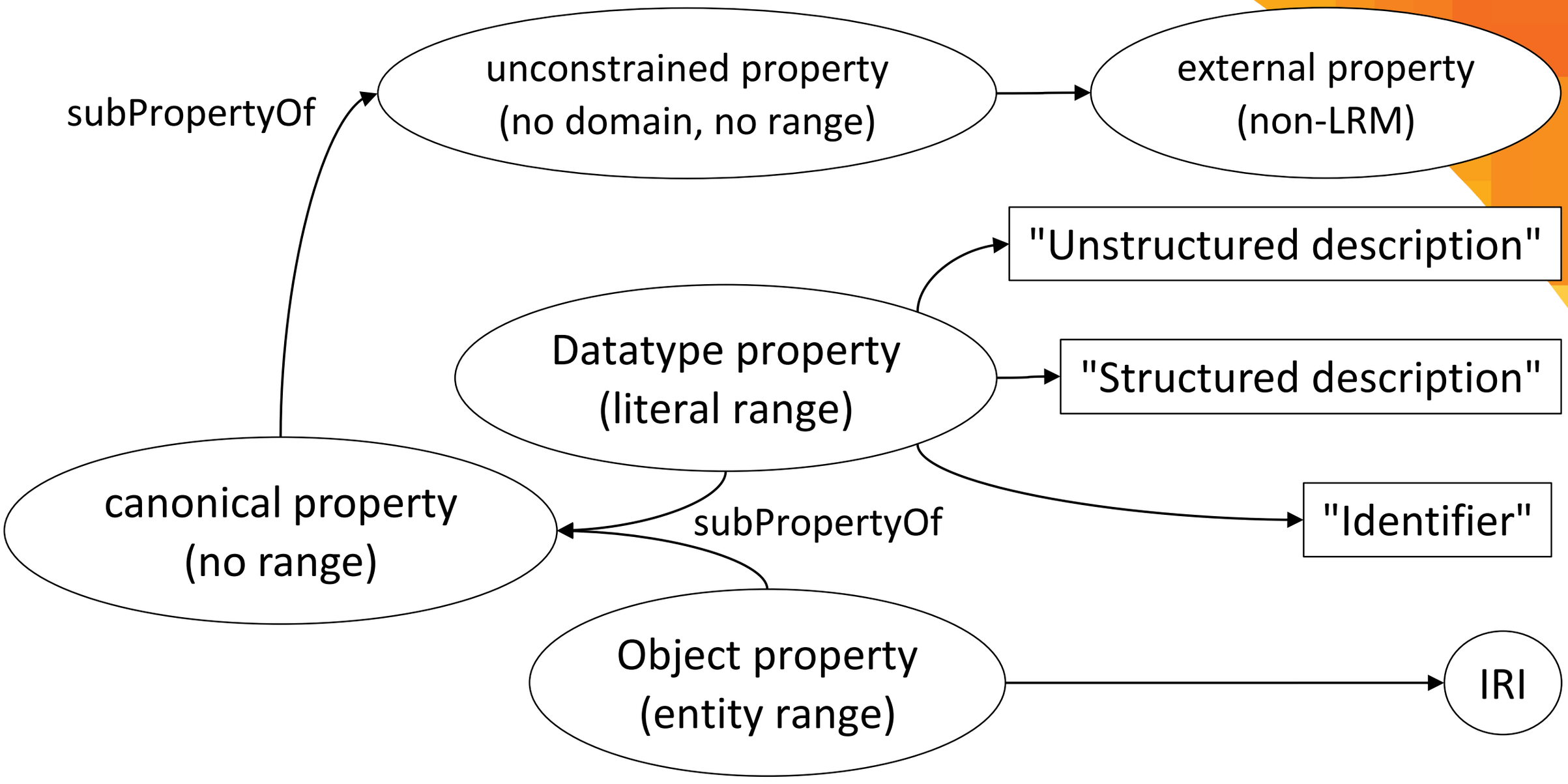
Property domain & range

Property domain specifies the expected entity (class) of a triple subject

Property range specifies the expected entity (class) of a triple object

No domain or range = no expectations

Recording methods



Maps to related linked data

ISBD and RDA

- Map from ISBD properties to unconstrained RDA properties
- Map from unconstrained ISBD properties to unconstrained RDA properties
- Map from unconstrained RDA properties to unconstrained ISBD properties

ISBD and RDA/ONIX Framework

- Map from ISBD content forms to RDA/ONIX Framework
- Map from ISBD media types to RDA/ONIX Framework

MARC Relator Codes

- Map from RDA properties to MARC Code List for Relators
- Map from MARC Code List for Relators to RDA properties

New!: Dublin Core Terms

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RDA maps

Map from RDA properties to MARC Code List for Relators

```
@prefix mrc: <http://id.loc.gov/vocabulary/relators/>.
@prefix rdau: <http://rdaregistry.info/Elements/u/>.
@prefix skos: <http://www.w3.org/2004/02/skos/core#>.
#
# This is a map from RDA relationship elements and designators to MARC relat
# 10 January 2017
#
rdau:P60045 skos:closeMatch mrc:rsp .
rdau:P60060 skos:closeMatch mrc:dgg .
rdau:P60061 skos:closeMatch mrc:his .
rdau:P60061 skos:broadMatch mrc:sht .
rdau:P60062 skos:closeMatch mrc:prn .
rdau:P60065 skos:closeMatch mrc:cou .
rdau:P60066 skos:closeMatch mrc:col .
rdau:P60067 skos:closeMatch mrc:cor .
rdau:P60068 skos:closeMatch mrc:dpt .
rdau:P60084 skos:closeMatch mrc:fmd .
```

Audio disc (performed music) from Complete examples – bibliographic records

```
@prefix ex: <http://example.com/> .
@prefix rdaa: <http://rdaregistry.info/Elements/a/> .
@prefix rdabm: <http://rdaregistry.info/termList/RDAbaseMaterial/> .
@prefix rdaco: <http://rdaregistry.info/termList/RDAContentType/> .
@prefix rdact: <http://rdaregistry.info/termList/RDACarrierType/> .
@prefix rdae: <http://rdaregistry.info/Elements/e/> .
@prefix rdaef: <http://rdaregistry.info/termList/encFormat/> .
@prefix rdaft:
@prefix rdam:
@prefix rdami:
@prefix rdamt:
@prefix rdarm:
@prefix rdatr:
@prefix rdau:
@prefix rdaw:
@prefix rdfs:
@prefix skos:
#
# Example: Aud
# 11 May 2016
#
ex:A1
  rdaa:P50103
  rdaa:P50117
ex:E1
  rdae:P20001 rdaco:1011 ;
  rdae:P20006 "English"@en ;
  rdae:P20025 ex:A1 ;
```

```
ex:W12
  rdaw:P10002 "Amos, Tori. Me and a gun" .
ex:W13
  rdaw:P10002 "Amos, Tori. Little earthquakes (Song)" .
rdabm:1014 skos:prefLabel "plastic"@en .
rdaco:1011 skos:prefLabel "performed music"@en .
rdact:1004 skos:prefLabel "audio disc"@en .
rdact:1013 skos:prefLabel "computer disc"@en .
rdami:1001 skos:prefLabel "single unit"@en .
rdamt:1001 skos:prefLabel "audio"@en .
rdamt:1003 skos:prefLabel "computer"@en .
```

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Conclusion

RDA provides a complete package for linked data applications

- RDF elements
- Content instructions
- Maps to related standards
- Extension mechanism for local applications

Muchas gracias!

RDA Registry
http://www.rdaregistry.info/

RDA Vocabularies
https://github.com/RDARegistry/RDA-Vocabularies

RDA Steering Committee
http://www.rda-rsc.org/

RDA Toolkit:
https://www.rdatoolkit.org/

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