

ID.LOC.GOV

Linked Data at the  
Library of Congress  
<http://id.loc.gov>

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NDMSO, Library of Congress  
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27 June 2010  
SACO-At-Large - ALA Annual Conference  
Washington, DC

# Presentation Outline

## **Linked Data (for the Semantic Web)**

Timeline highlights

Terms

Linked Data principles

## **ID.LOC.GOV**

Goal

What's offered

ID and the Linked Data movement

Uses

Additional Uses for ID as Linked Data

## Timeline: LD & ID

### Timeline Highlights

- 2006 – Tim Berners-Lee publishes “Linked Data” article as part of the W3C's DesignIssues series
- 2006 – Barbara Tillett and Corey Harper publish article *Library of Congress controlled vocabularies and their application to the Semantic Web*
- 2009 – ID.LOC.GOV established

## Common Terms

### **Semantic Web**

Various methods and technologies designed to describe information (on the World Wide Web) so that it is machine understandable

### **RDF – Resource Description Framework**

Essentially a metadata data model, but has also been accepted as a method for the conceptual description and modelling of information resources

### **Triples**

The form RDF statements take  
Subject-predicate-object

### **Linked Data**

Data offered in such a way as to facilitate linking

# LD: Principles

## Four basic rules

- 1)** Identify things with URIs
- 2)** Use HTTP uris  
Dereference them
- 3)** Make the data available  
Not just as a bulk download,  
but as individual resources over the web
- 4)** Link the data to other data  
External links  
Internal links

ID: What is it?

**ID makes LC owned or maintained  
authorities and vocabularies  
available as Linked Data.**

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## ID: What's Offered

### Available Authorities and Vocabularies

May 2009

Library of Congress Subject Headings

May 2010

Thesaurus of Graphic Materials

Relators list for MARC

Cryptographic Hash Functions

PREMIS Preservation Events

PREMIS Preservation Level Roles

## ID: What's Offered

### SKOS

An RDF application specifically created for publishing and sharing thesauri, authority, and vocabulary data for use as Linked Data and within the Semantic Web framework.

Example:

Rice	→	skos:prefLabel
UF Paddy	→	skos:altLabel
BT Cereals	→	skos:broader
BT Plant products	→	skos:broader
NT Brown rice	→	skos:narrower
RT Rice straw	→	skos:related

## ID: What's Offered

### Getting the data

Bulk downloads of each authority and vocabulary

**Download Current Version**

---

LCSH RDF/XML (May 26 2010; 37.6 MB) Zip Compressed

Individual resources via content negotiation

XHTML/RDFa

RDF/XML

N-Triples

JSON

**Alternate Formats**

> [RDF/XML](#)

> [N-Triples](#)

> [JSON](#)



## ID: How it's used

### John Ocklerbloom, University of Pennsylvania Online Books

Used LCSH bulk download, manipulated for local needs  
Integrated with OPAC records  
Broadens user search/discovery experience

#### Medicine, Botanic

Here are entered works on a 19th century system of medicine developed by Samuel Thomson and based on the use of plant remedies.

##### Broader terms:

- [Alternative medicine](#)
- [Medicine](#)

##### Used for:

- Botanic medicine
- Thomsonianism

##### Filed under: [Medicine, Botanic](#)

- ① [A Guide to Health, Being an Exposition of the Principles of the Thomsonian System of Practice, and Their Mode of Application in the Cure of Every Form of Disease \(1846 edition\)](#), by Benjamin Colby (text and PDF with commentary at swsbn.com)
- ① [Life and Medical Discoveries of Samuel Thomson, and a History of the Thomsonian Materia Medica, As Shown in "The New Guide to Health" \(1835\), and the Literature of That Day \(1909\)](#), by John Uri Lloyd and Samuel Thomson (PDF at swsbn.com)

Items below (if any) are from related and broader terms.

##### Filed under: [Alternative medicine](#)

- ① [Natural Liberty: Rediscovering Self-Induced Abortion Methods \(Creative Commons licensed edition, c2008\)](#), by Sage-Femme Collective (Javascript-dependent Flash at scribd.com)

# ID: How it's used

## Ethan Gruber, University of Virginia

Data used in cataloging application

Indexed with Solr (Lucene)

XForms application with autosuggest feature

Data loaded locally – harvested weekly

### EADitor

0 records received from id.loc.gov.

[< Return](#)

#### Manage Controlled Vocabularies

You can use this form to scrape controlled vocabulary terms from all EAD guides in the eXist database and add the terms into the Solr vocabularies index. Eventually one will be able to create custom vocabularies and edit existing ones.

[Update LCSH](#) [Import](#) [Create/Edit](#) [Purge](#) [Optimize](#)

#### Update LCSH terms from Atom Feed

This function enables querying the Library of Congress's LCSH service at id.loc.gov to extract terms from the Atom feed that have been created or updated since the previous date this function was run. This may take several minutes.

Date of last update: 2010-06-23T14:15:55.754-04:00

[Update Terms](#)

EADitor ©2010 Ethan Gruber. [License](#).

## ID: How it's used

### National Library Sweden

Unreleased/published Linked Data component of catalog  
Links to LCSH

## Swedish subject heading: "Smörgåsbord"

Broader terms

[Buffémat](#)

[Matlagning Sverige](#)

Related terms

[Smårätter](#)

LCSH:

[Buffets \(Cookery\)](#)

misc.

[text/rdf+n3](#)

[application/rdf+xml](#)

[OpenLink RDF browser](#)

<http://id.loc.gov/authorities/sh85017647>

# ID: How it's used

## RAMEAU

Part of MACS (Multi-lingual Access to Subjects) project  
Determined skos:closeMatch resources between RAMEAU and LCSH  
Both RAMEAU and LCSH cross linked

### Concept information

<b>URI</b>	http://stitch.cs.vu.nl/vocabularies/rameau/ark:/12148/cb11932889r	
<b>prefLabel</b>	x-notation	FRBNF119328898
	fr	Oiseaux

### Mappings (simple SKOS statements)

Mapping Relation	Concept
closeMatch	<a href="http://id.loc.gov/authorities/sh85014310#concept">http://id.loc.gov/authorities/sh85014310#concept</a>

### Mappings (OAEI cells)

Concept as left hand side

URI	Link to details	prefLabel	Mapping Relation
<a href="http://id.loc.gov/authorities/sh85014310#concept">http://id.loc.gov/authorities/sh85014310#concept</a>	<a href="#">details</a>	http://id.loc.gov/authorities/sh85014310#concept	http://www.w3.org/2004/02/skos/core#closeMatch
<a href="http://id.loc.gov/authorities/sh85014310#concept">http://id.loc.gov/authorities/sh85014310#concept</a>	<a href="#">details</a>	http://id.loc.gov/authorities/sh85014310#concept	http://www.w3.org/2004/02/skos/core#closeMatch

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#### Similar concepts from other vocabularies

> <http://stitch.cs.vu.nl/vocabularies/rameau/ark:/12148/cb11932889r> ↗

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## ID: Possible Use

```
<rdf:Description rdf:about="http://www.3windmills.com/catalog/snk0201">
  <dc:creator>Goffen, Rona, 1944-</dc:creator>
  <dcterms:title>Renaissance Rivals Michelangelo, Leonardo, Raphael, Titian</dcterms:title>
  <dcterms:publisher>Yale University Press</dcterms:publisher>
  <dcterms:issued>November 1, 2002</dcterms:issued>
  <dcterms:extent>304 pages</dcterms:extent>
  <dcterms:format>9.8 x 7.1 x 1.2 inches</dcterms:format>

  <!-- subjects -->
  <dc:subject>Michelangelo Buonarroti, 1475-1564</dc:subject>
  <dc:subject>Renaissance -- History</dc:subject>
  <dc:subject>Art, Renaissance -- Italy</dc:subject>
  <dc:subject>Competition (Psychology)</dc:subject>
</rdf:Description>
```

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  <dcterms:format>9.8 x 7.1 x 1.2 inches</dcterms:format>
</rdf:Description>

<!-- subjects -->
<dc:subject>Michelangelo Buonarroti, 1475-1564</dc:subject>
<dc:subject rdf:resource="http://id.loc.gov/authorities/sh85112806#concept"/> <!-- was Renaissance - History (a UF) -->
<dc:subject rdf:resource="http://id.loc.gov/authorities/sh85007865#concept"/> <!-- was Art, Renaissance-Italy -->
<dc:subject rdf:resource="http://id.loc.gov/authorities/sh85029344#concept"/> <!-- was Competition (Psychology) -->
</rdf:Description>
```

## ID: Possible Use

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  <dc:creator>Goffen, Rona, 1944-</dc:creator>  
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  <dcterms:publisher>Yale University Press</dcterms:publisher>  
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  <dcterms:publisher>Yale University Press</dcterms:publisher>
```

```
<rdf:Description rdf:about="http://www.3windmills.com/catalog/snk0201">  
  <dc:creator rdf:resource="http://id/names/GoffenRona"/>  
  <dcterms:title>Renaissance Rivals Michelangelo, Leonardo, Raphael, Titian</dcterms:title>  
  <dcterms:publisher>Yale University Press</dcterms:publisher>  
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```

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taly -->  
ology) -->

```
</rd  
<!-- subjects -->  
<dc:subject rdf:resource="http://id/names/BuonarrotiMichelangelo"/>  
<dc:subject rdf:resource="http://id.loc.gov/authorities/sh85112806#concept"/>  
<dc:subject rdf:resource="http://id.loc.gov/authorities/sh85007865#concept"/>  
<dc:subject rdf:resource="http://id.loc.gov/authorities/sh85029344#concept"/>  
</rdf:Description>
```

# ID – Thank You

**Thank you.**

**Questions? Comments?**

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