Thoughts on the Present & Future of LOD KOS and the Getty Vocabularies in Particular

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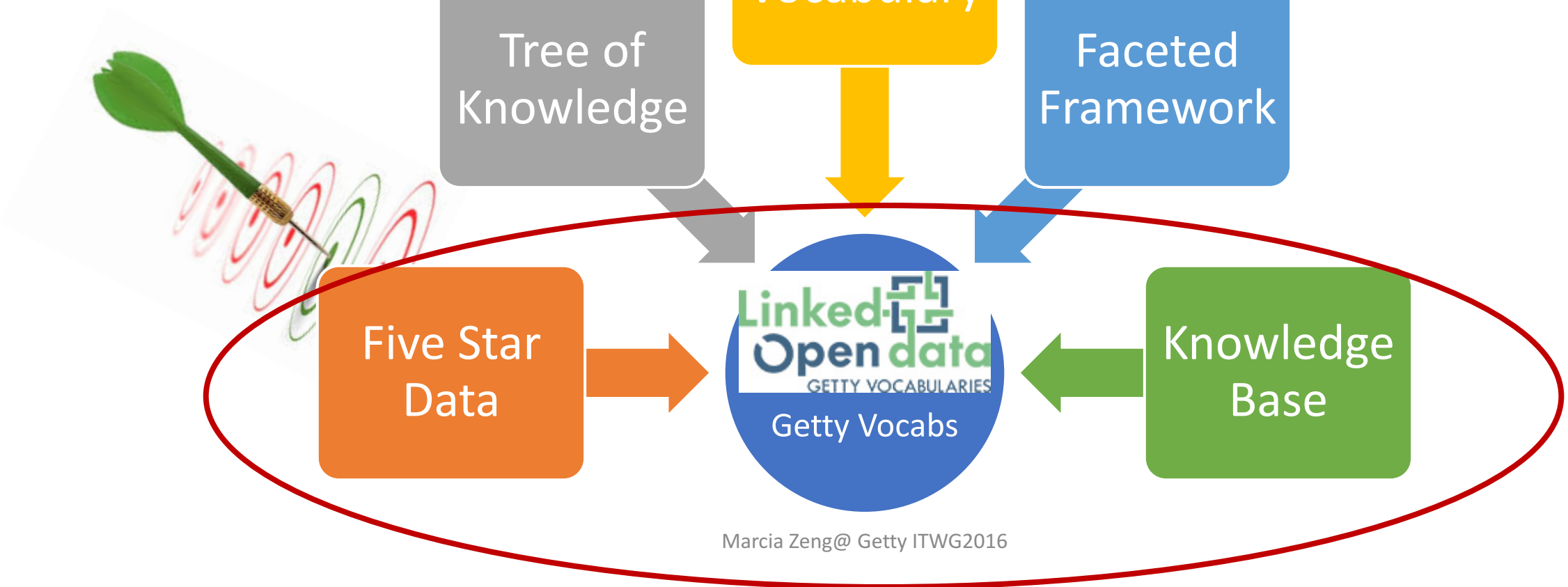
Getty ITWG 2017, L.A., 2017 Aug. 11-19

Review of Last Year's Conclusion at ITWG2016

Why does any dataset need to care about the "Getty Vocabularies"?"

What about the Getty Vocabs in today's LOD era?

If any of your needs can be met by applying the Getty vocabularies, then ride on it to reach the five-star level!



Discussion points

A. **What and how people are making KOS vocabularies**
   - In the LOD-enabled mashup culture

B. **Where should the Getty Vocabularies head to**
   - Suggestions for Actions

★★★★★ All the above, plus: **Link** your data to other people's data to provide context.

1. Getty Vocabs ←→ Others' **Metadata**

2. Getty Vocabs ←→ Other **Vocabs**

3. Getty Vocabs ←→ Other **Services**

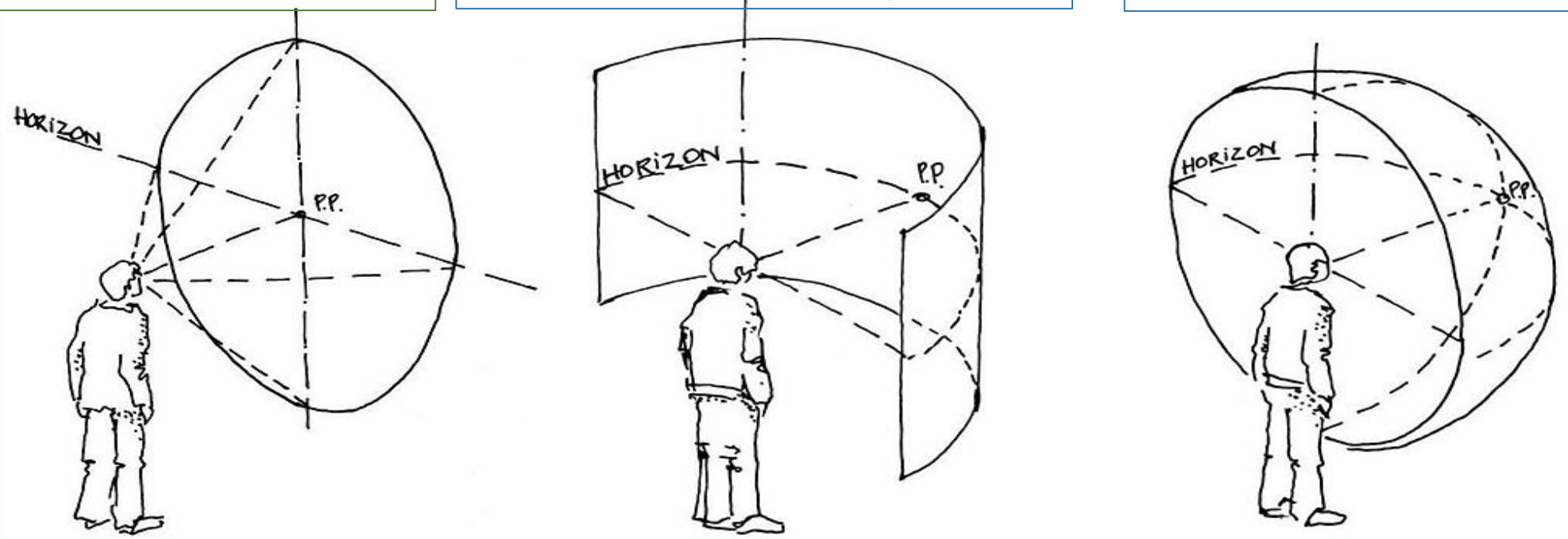


Image credit: https://commons.wikimedia.org/wiki/File:Three_perspectives.jpg

E.g., Used by MARC, LIDO, EAD, local dbs, Wikipedia, etc.

Needed Actions?

E.g., Integrated multilingual versions; Aligned with [*to* or *by*] other vocabs.

Needed Actions?

E.g., Served through APIs & SPARQL end-points; included by other services (VIAF, Finto, etc.).

Needed Actions?

Will come back with suggestions for these actions,
after taking a look at what the vocabulary producers are doing.

Discussion points

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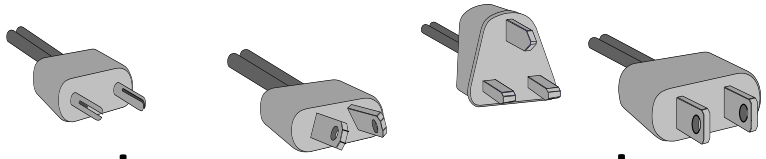


How the LOD KOS producers mashup their vocabs?

1. A unified vocab for a domain
2. A shared concept scheme from only the most used entries of multiple vocabs
3. A heterogeneous meta-vocabulary
4. Connecting KOS concepts to real things
5. Shared, unconventional mashups

1. A unified scheme for a domain TOP

TOP provides names, definitions, formal units and synonyms for more than 700 plant characteristics: plant traits and environmental associations.

www.top-thesaurus.org/annotationInfo?viz=1&trait=Frost%20tolerance

Top **A Terminological Resource for Plant Functional Diversi**

HOME | FACETED SEARCH | HIERARCHY SEARCH | INDEX SEARCH | REFERENCES

Frost tolerance

Formal name: plant frost tolerance
Local identifier: TOP768
Related Term: plant frost sensitivity
Related Term: plant frost hardiness
Definition: a feature of plant organs, whole plant (PO:whole plant), plant population (EFO:plant population) or plant species (Mayr:species) describing the ability to withstand frost
Formal Unit: unitless (ordinal)

Comment: tolerances can be derived fom species or population distribution ranges or by physiological experiments, agreed categories do not exist
Reference: Eric Garnier, Jens Kattge, Stefan Klotz, Ingolf Kühn, Ulrike Stahl

- The definition uses multiple sources of the concepts, coded with the URI from the original namespaces.
- Source: http://www.top-thesaurus.org/annotationInfo?viz=1&trait=Frost%20tolerance

www.ebi.ac.uk/ols/ontologies/efo/terms?sho

EMBL-EBI | Services | Research | Training | About us

Ontology Lookup Service

Home | Ontologies | Documentation | About | Contact Us

OLS > Experimental Factor Ontology | EFO > EFO:0005228

plant population

http://www.ebi.ac.uk/efo/EFO_0005228

A plant population is a grouping of plants consisting of individuals which share a particular characteristic such as inhabiting a particular region or area or ability to interbreed.

Tree view | Term history

experimental factor
material entity
population
plant population

Graph view | Reset tree | Show all siblings

Term info

term editor
James Malone

Term relations

Subclass of:
population

http://www.ebi.ac.uk/ols/ontologies/efo/terms?short_form=EFO_0005228

browser.planteome.org/amigo/term/PO:0000003

Planteome

Home | Search | Browse | Tools & Resources

whole plant

Term Information

Accession PO:0000003
Name whole plant
Ontology plant_anatomy
Synonyms planta entera (Spanish, exact), 植物体全体 (Japanese, exact), clonal colony (related), colony (related... more
Alternate IDs None
Definition A plant structure (PO:0005679) which is a whole organism. *Source:* POC:curators
Comment Examples include plant embryo (PO:0009009), megagametophyte (PO:0025279) and microgametophyte (PO:0025280).
Subset reference
TraitNet
Related Link to all **annotated objects** annotated to whole plant.
Link to all direct and indirect **annotations** to whole plant.
Link to all direct and indirect **annotations download** (limited to first 10,000) for whole plant.
Feedback Contact the Planteome feedback if you find mistakes or have concerns about the data you find here.
Comments, changes to terms, or requests for new ontology terms can be made at PO issue tracker on GitHub.

http://browser.planteome.org/amigo/term/PO:0000003

2. A shared concept scheme

Global Agricultural Concept Scheme (GACS)

AGROVOC
32,000 concepts,
1.2M labels

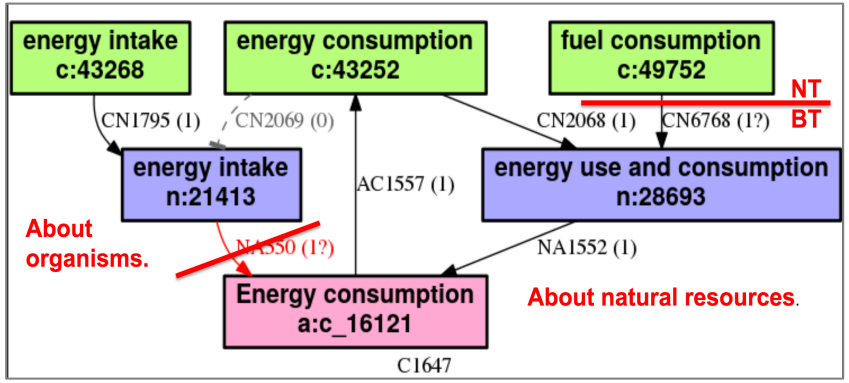
CAB Thesaurus
140,000 concepts,
1.4M labels

NAL Thesaurus
53,000 concepts,
200k labels

1. Take [only] the 10,000 most-used concepts from each, by 2014/10.

2. Automatically map them to each other, by 2015/03.

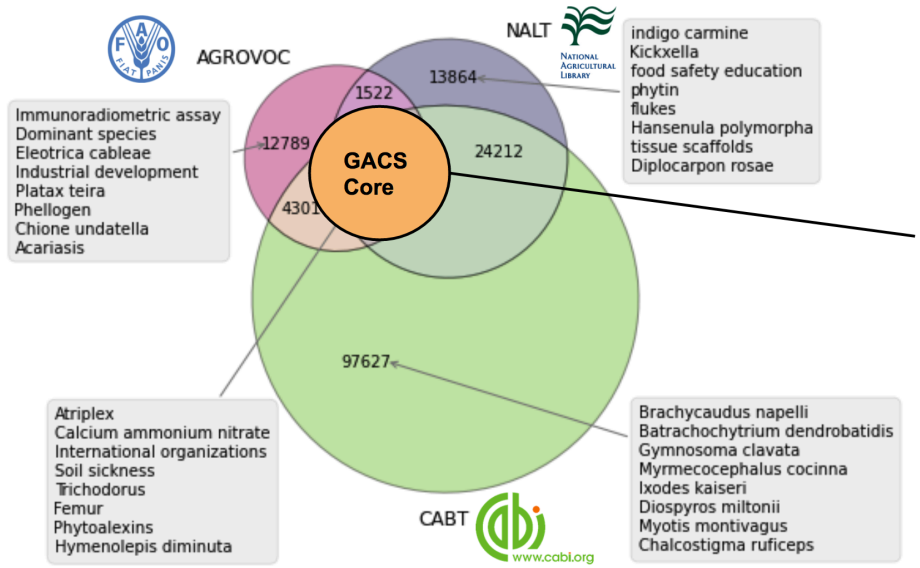
3. Verify mappings one by one, by 2015/10.



4. GACS Beta. 2016/05.

GACS – Global Agricultural Concept Scheme

May 2016



GACS Core Beta 3.1
- **15,000+ concepts**
- **350,000+ labels in 29 languages**

Source: Compiled based on Baker, Thomas et al. 2016.

GACS (Global Agricultural Concept Scheme)

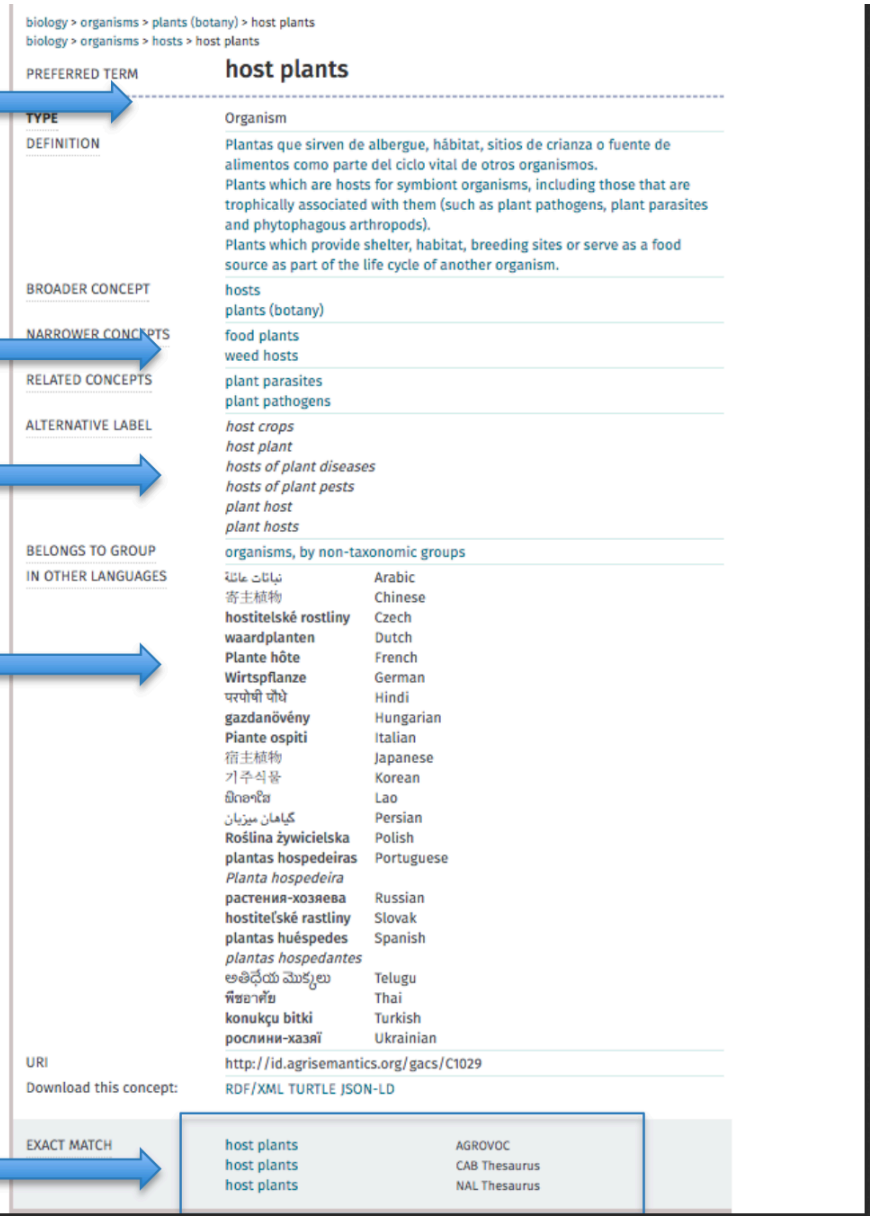
GACS concept

Broader, narrower, and related concepts

Alternative labels

Translated in up to 25 languages

Mapped to source thesauri



biology > organisms > plants (botany) > host plants
biology > organisms > hosts > host plants

PREFERRED TERM: **host plants**

TYPE: Organism

DEFINITION: Plantas que sirven de albergue, hábitat, sitios de crianza o fuente de alimentos como parte del ciclo vital de otros organismos.
Plants which are hosts for symbiont organisms, including those that are trophically associated with them (such as plant pathogens, plant parasites and phytophagous arthropods).
Plants which provide shelter, habitat, breeding sites or serve as a food source as part of the life cycle of another organism.

BROADER CONCEPT: hosts; plants (botany)

NARROWER CONCEPTS: food plants; weed hosts

RELATED CONCEPTS: plant parasites; plant pathogens

ALTERNATIVE LABEL: *host crops*; *host plant*; *hosts of plant diseases*; *hosts of plant pests*; *plant host*; *plant hosts*

BELONGS TO GROUP: organisms, by non-taxonomic groups

IN OTHER LANGUAGES:

نباتات عائلة	Arabic
寄主植物	Chinese
hostitelské rostliny	Czech
waardplanten	Dutch
Plante hôte	French
Wirtspflanze	German
परपोषी पौधे	Hindi
gazdanövény	Hungarian
Piante ospiti	Italian
宿主植物	Japanese
기주식물	Korean
ພືດອາໄສ	Lao
گیاهان میزبان	Persian
Roślina żywicielska	Polish
plantas hospedeiras	Portuguese
Planta hospedeira	
растения-хозяева	Russian
hostiteľské rastliny	Slovak
plantas huéspedes	Spanish
plantas hospedantes	
అతిధేయ మొక్కలు	Telugu
พืชอาศัย	Thai
konukçu bitki	Turkish
рослини-хазяї	Ukrainian

URI: http://id.agrisemantics.org/gacs/C1029

Download this concept: RDF/XML TURTLE JSON-LD

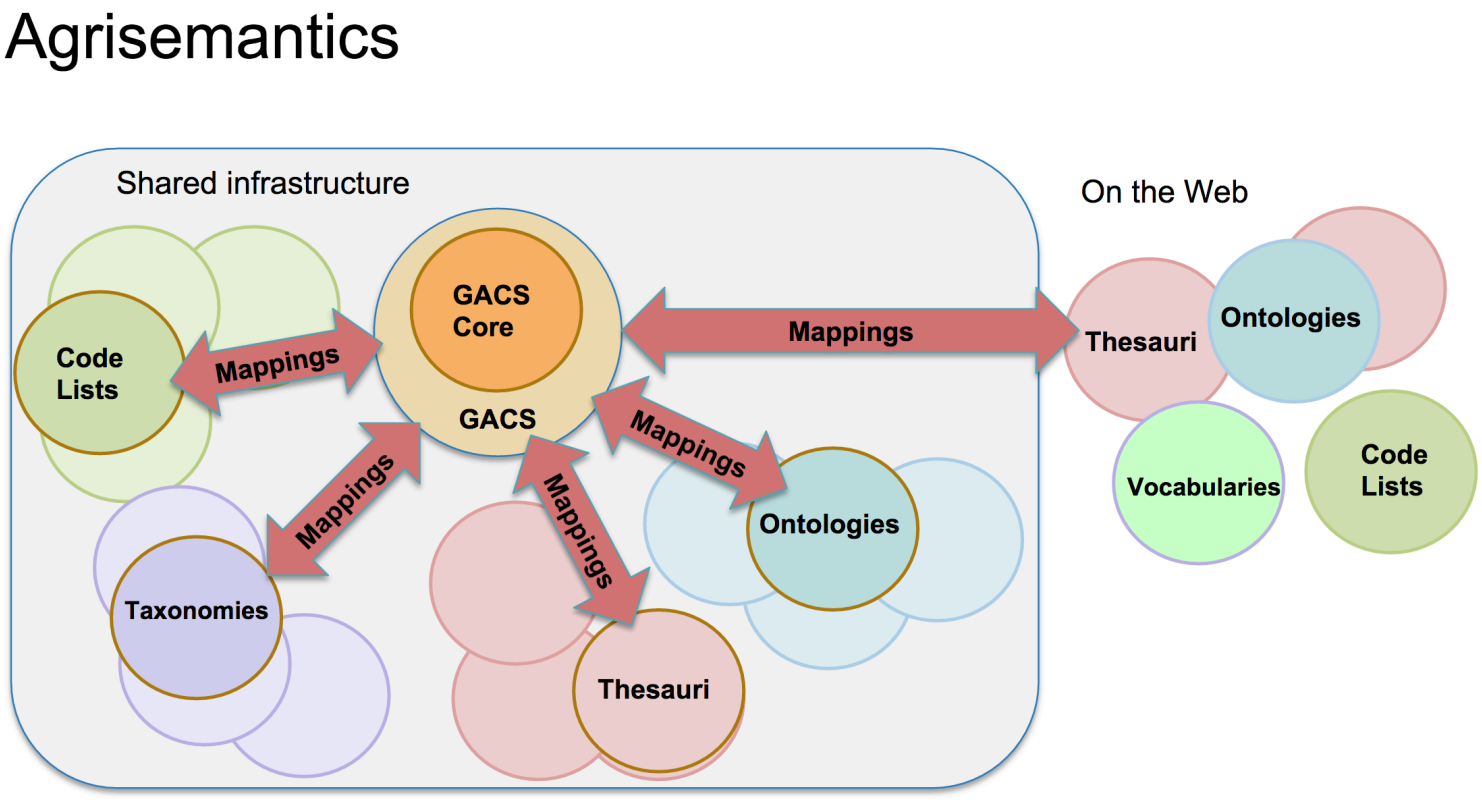
EXACT MATCH:

host plants	AGROVOC
host plants	CAB Thesaurus
host plants	NAL Thesaurus

GACS (Global Agricultural Concept Scheme) for Agrisemantics*

- GACS is seen as the first step towards improving the coherence and interoperability of agricultural data.
- GACS as a hub linking user-oriented thesauri with semantically more precise domain ontologies.
- Domain ontologies link to datasets about food and agriculture, in order to make that data more interoperable and reusable.

*Agrisemantics is an emerging community network of semantic assets relevant to agriculture and food security.



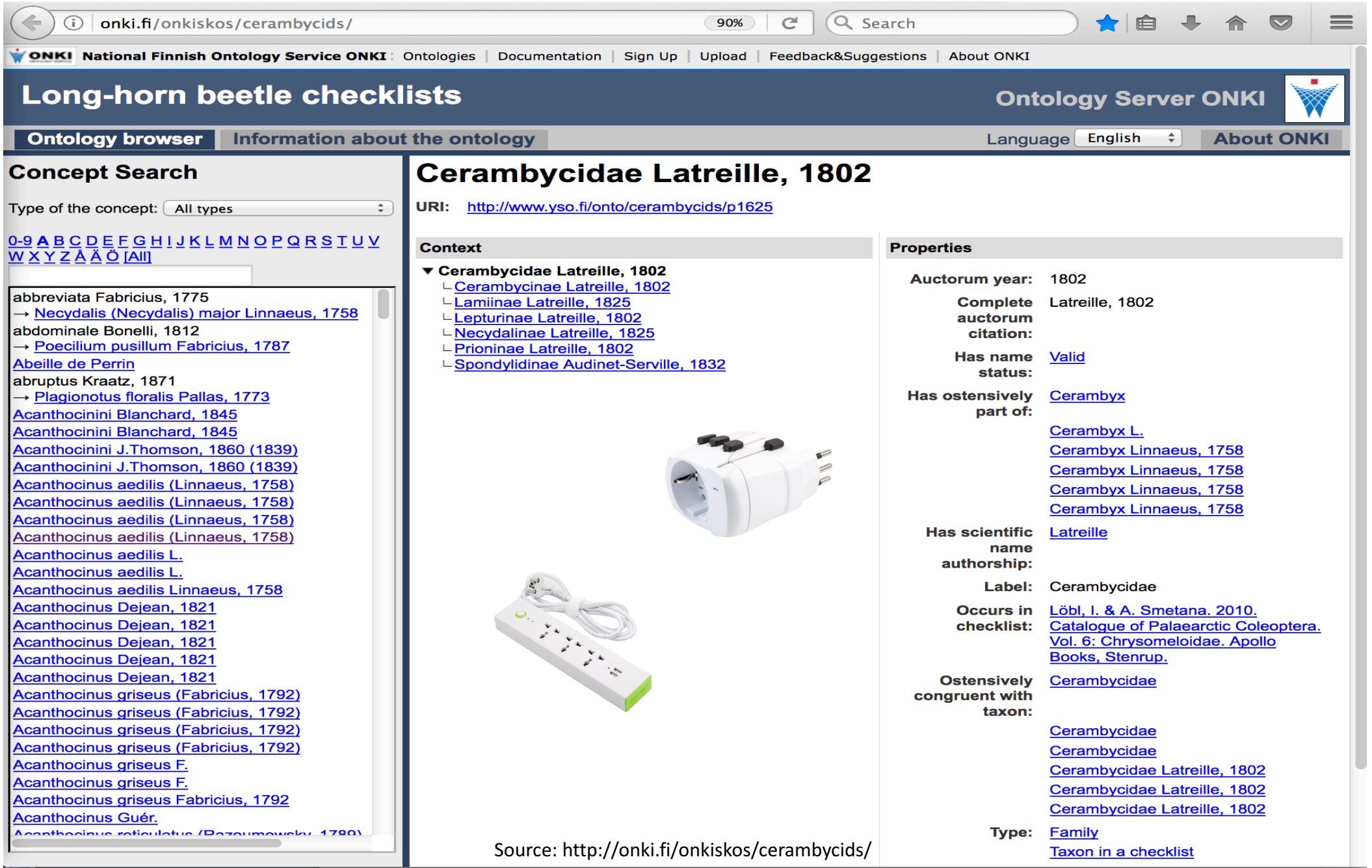
Source: Baker, Thomas et al. 2016.

3. A *heterogeneous* meta-vocabulary

TaxMeOn

Encompasses:
(1) the different conceptions of a taxon,
(2) the temporal order of the changes, and
(3) the references to scientific publications whose results justify these changes.

Allows multilingual, multi-opinions … in a unified view.



Source: http://onki.fi/onkiskos/cerambycids/

4. Enriching the KOS-at-hand and connecting to real things

skos:Concept ⬅➡ Real-World Things

- **People are People and Places are Places**
  - in order to describe something accurately they need to be labeled as those specific types of Things
- *foaf:focus* allows FAST Controlled Vocabulary terms (skos:Concept) to be connected to URIs that identify real-world entities

O'Neill, Ed & Jeff Mixter. 2013.

SEARCH FAST

Keywords | Kennedy, John F. (John Fitzgerald), 1917-1963 | Search

FAST TERMS

Search results for: **"Kennedy, John F. (John Fitzgerald), 1917-1963"**

Limit Results by: All

Displaying **1 to 2** of **2**

<< Previous Next >>

1 Jump

Heading	Facet	Uses
Kennedy, John F. (John Fitzgerald), 1917-1963	person	12258
Kennedy, John F. (John Fitzgerald), 1917-1963 (Spirit)	person	1

TERM DETAILS

Kennedy, John F. (John Fitzgerald), 1917-1963 Find in WorldCat

USED FOR:

Gannaidi, 1917-1963
JFK (John Fitzgerald Kennedy), 1917-1963
Kan-nai-ti, 1917-1963
Kanadī, Jūn Fītz Jīrāld, 1917-1963
Kanīdī, Jūn F., 1917-1963
K'enedi, 1917-1963
Kenedi, Dzhon F., 1917-1963
Kenedi, Džon Fricdžerald, 1917-1963
Ḳenedi, G'on F., 1917-1963
Kenedijs, Džons F., 1917-1963
Kennedi, Dzhon Fit͡sdzherald, 1917-1963
Kennedy, Jack, 1917-1963
Kennedy, John Fitzgerald, 1917-1963
Kennedy, Ken, 1917-1963

USAGE:

LC (2016) Subject Usage: 1,486
WC (2016) Subject Usage: 12,258

RECORD ID:

fst00035588

SOURCES AND OTHER LINKS:

Kennedy, John F. (John Fitzgerald), 1917-1963--(DLC)n 79055297
John F. Kennedy--(uri)http://en.wikipedia.org/wiki/John_F._Kennedy
Kennedy, John F. (John Fitzgerald), 1917-1963--(uri)https://viaf.org/viaf/68910251

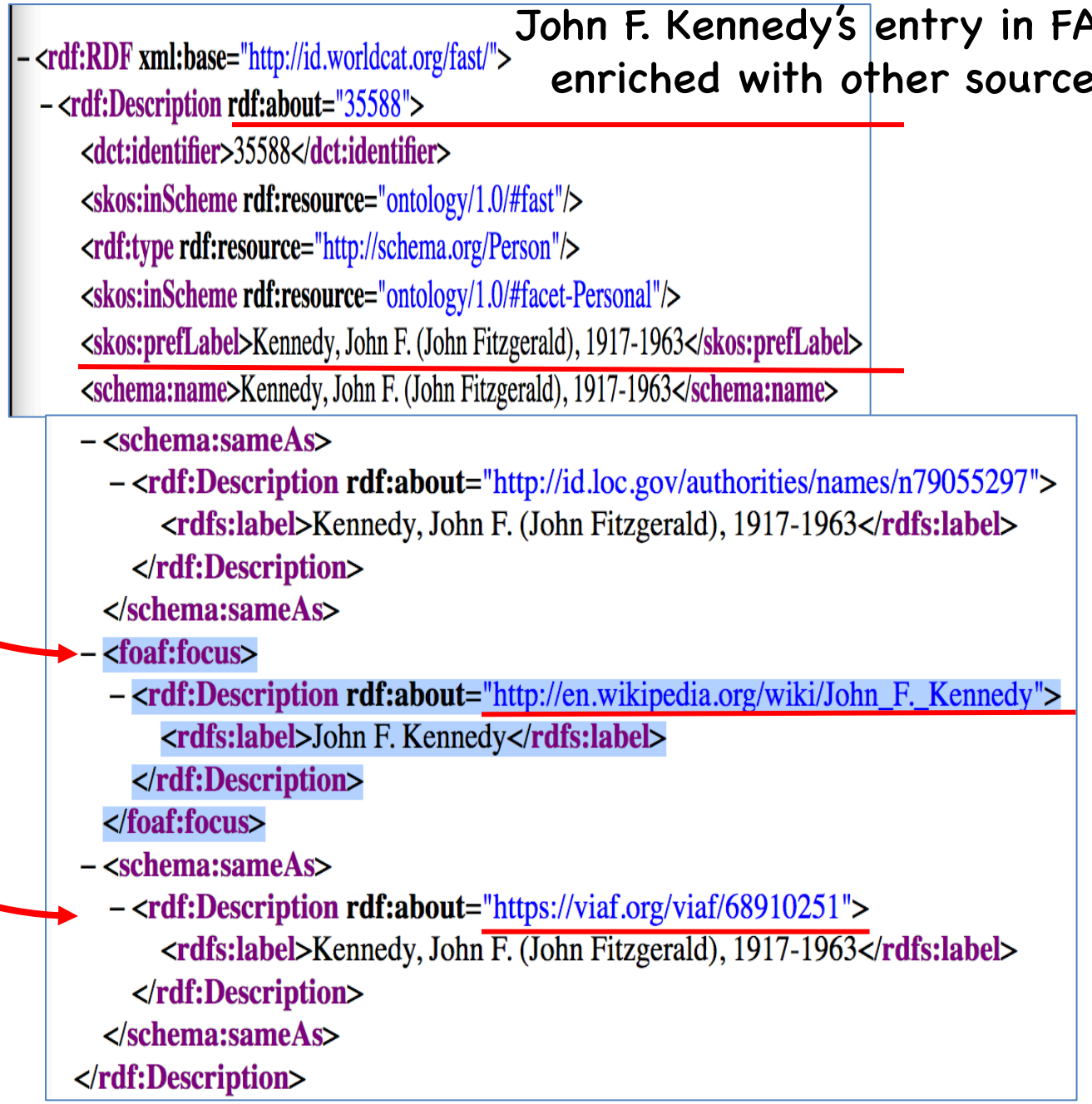
LINKS TO FULL RECORD:

Permanent Link http://id.worldcat.org/fast/35588
MARC-21 record http://id.worldcat.org/fast/35588/marc21.xml
RDF record http://id.worldcat.org/fast/35588/rdf.xml

Source: extracted screenshots (2017-07-12)
From http://fast.oclc.org/searchfast/

John F. Kennedy's entry in FAST is enriched with other sources.

- The **DBpedia** identifiers allow FAST terms to include detailed information that is usually excluded in authority records
- The enrichment allows FAST terms to take advantage of all of the various string values included in **VIAF** without having to manually include the values in the RDF triples for the specific term.
- The **GeoNames** data is used to power MapFAST, which is a Google Maps mash-up.



Source: extracted screenshots (2017-07-12) at http://experimental.worldcat.org/fast/35588/rdf.xml

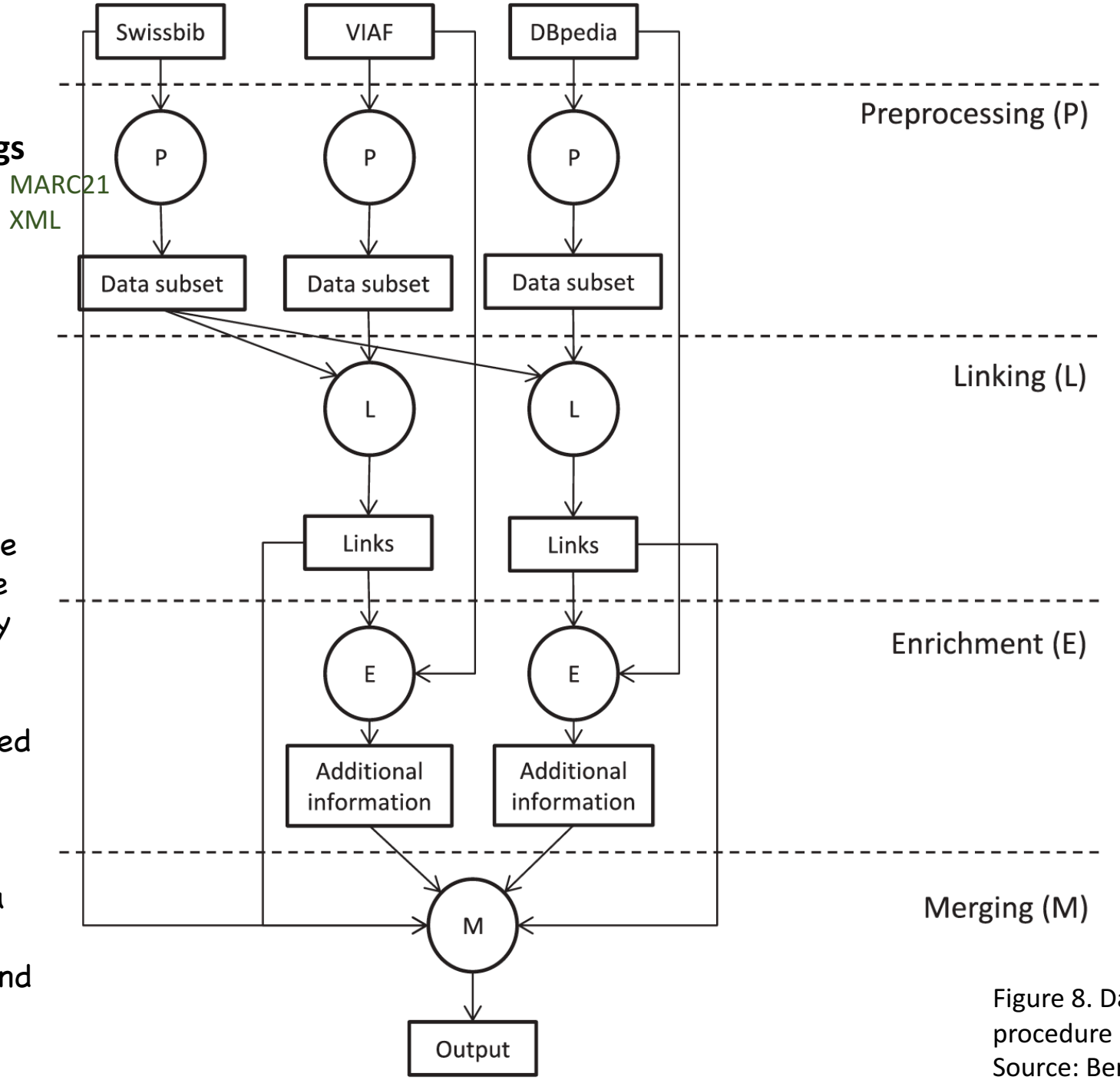
(cont.) 4. Enriching the KOS-at-hand and connecting to real things

Swissbib

Swissbib, a provider for bibliographic data in Switzerland
http://linked.swissbib.ch

A main obstacle was the amount of data and the necessity of day-to-day (partial) updates.

The team have developed procedures for extracting and shaping the data into a more suitable form, e.g., data are reduced to the necessary properties and blocked.



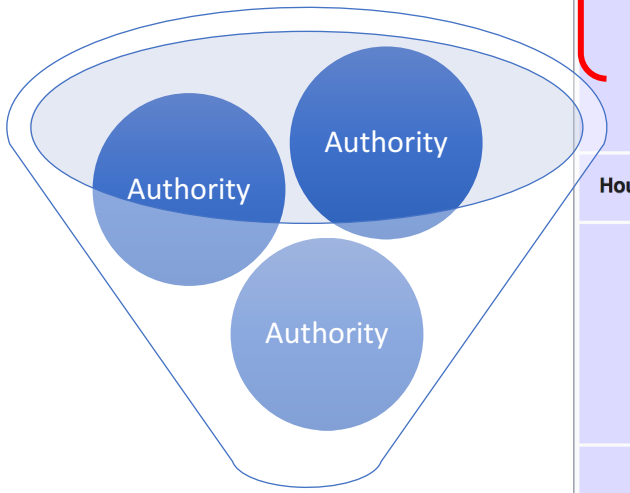
- 30,773 links to DBpedia
- 20,714 links to VIAF
- high precision values
- generated in reasonable expenditures of time

Figure 8. Data flow diagram of the interlinking procedure in the Weissbib project
Source: Bensmann et al. (2017), p.8

5. Shared, unconventional mashups

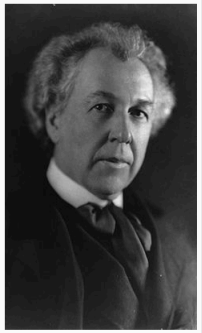
https://en.wikipedia.org/wiki/Frank_Lloyd_Wright

a. Wikipedia Authority Control



Wikipedia

V·T·E	Frank Lloyd Wright	[hide]
Private houses	Adams, M. · Adams, W. & J. · Adelman · Affleck · Allen–Lambe · Alsop · Arnold · Bach · Bachman–Wilson · Baird · Baker · Balch · Baldwin · Barton · Beachy · Becker · Blair · Bogk · Boulter · Boynton · Bradley · Brandes · Broad Margin · Buehler · Bulbulian · Charnley · Cheney · Christie · Cooke · Coonley · Copeland · Crimson Beech · Dana–Thomas · Davidson · Davis · DeRhodes · Dobkins · Ennis · Fabyan · Fallingwater · Fawcett · Forest · Foster · Fountainhead · Freeman · Friedman · Furbeck · Gale, L. · Gale, T. · Gale, W. · Gilmore · Gillin · Glasner · Goetsch–Winckler · Gordon · Grant · Graycliff · Gridley · Hanna–Honeycomb · Hardy · Haynes · Heath · Heller · Henderson · Heurtley · Hickox · Hills · Hoffman · Hollyhock · Jacobs I · Jacobs II · Johnson · Jones · Kalil · Kentuck Knob · Keys · Kraus · Lamberson · Lamp · Laurent · Levin · Lewis · Lewis, L. · Manson · Marden · Martin · May · McBean · McCarthy · Millard · Miller · Millard, G. · Moore · Mosher · Mossberg · Neils · Palmer · Pappas · Parker · Pauson · Penfield · Peterson Cottage · Pope–Leighey · Rayward · Rebhuhn · Reisley · Richardson · Roberts · Robie · Roloson · Rosenbaum · Rudin · Samara · Sander · Schaberg · Schwartz · Serlin · Shavin · Smith, G. W. · Smith, M. · Smith, R. · Sondem · Spencer · Staley · Stockman · Storer · Stromquist · Sturges · Sullivan · Sunday · Sutton · Sweeton · Thaxton · Thomas · Tomek · Tonkens · Tracy · Trier · Turkel · Wall · Walser · Walter · Westcott · Westhope · Weltzheimer · Willey · Williams · Willits · Wingspread · Winslow · Woolley · Wright, D. & G. · Wright, D. & J. · Wright, R. · Wynant · Yamamura · Young · Zeigler · Zimmerman	
Housing systems	American System-Built Homes · Erdman Prefab Houses · Fireproof House for $5000 · Galesburg Country Homes · Ravine Bluffs Development · Suntop Homes · Usonia Homes	
Other	Anderton Court Shops · Annunciation Greek Orthodox Church · Arizona Biltmore Hotel · Auldbrass Plantation · Coonley School Playhouse · Banff National Park Pavilion · Beth Sholom Synagogue · Child of the Sun · Community Christian Church · Como Orchard Summer Colony · E-Z Polish Factory · Eddie's House · Fasbender Medical Clinic · German Warehouse · Guggenheim Museum · Hoffman Auto Showroom · Horse Show Fountain · Humphreys Theater · Imperial Hotel · Jiyu Gakuen Girls' School · Johnson Wax Headquarters · Kundert Medical Clinic · Larkin Administration Building · Lawrence Memorial Library · Lindholm Service Station · Marin County Civic Center · Midway Gardens · Roberts Stable · Rookery Building · Park Inn Hotel · Pettit Chapel · Pilgrim Congregational Church · Price Tower · Frank L. Smith Bank · Teater Studio · Unitarian Society Meeting House · Unity Chapel · Unity Temple · Morris Gift Shop · Waller Apartments	
Posthumous	Blue Sky Mausoleum · Gammage Memorial Auditorium · King Kamehameha Golf Course Clubhouse · Massaro House · Monona Terrace Community and Convention Center · Sharp Family Tourism and Education Center	
Unbuilt	Broadacre City · Crystal Heights · Gordon Strong Automobile Objective · The Illinois · Plan for Greater Baghdad · Point Park Civic Center	
Personal homes	Frank Lloyd Wright Home and Studio · Taliesin · Taliesin West	
Related	Works · Taliesin Associated Architects · *Wasmuth Portfolio* · Wright Building Conservancy · Wright–Prairie School of Architecture Historic District	
People	Olgivanna Lloyd Wright (3rd wife) · Jenkin Lloyd Jones (uncle) · Lloyd Wright (son) · John Lloyd Wright (son) · Maginel Wright Enright (sister) · Eric Lloyd Wright (grandson) · Anne Baxter (granddaughter) · Richard Bock (associate) · Walter Burley Griffin (associate) · Marion Griffin (associate) · Jaroslav Josef Polívka (associate) · Mamah Borthwick (client and lover)	
Popular culture	*The Last Wright: Frank Lloyd Wright and the Park Inn Hotel* · *Shining Brow* · *Loving Frank* · "So Long, Frank Lloyd Wright" · *Work Song: Three Views of Frank Lloyd Wright* · *The Women* · *The Wright 3*	
	Commons · Wikinews · Wikiquote	
Authority control	WorldCat Identities · VIAF: 27148716 · LCCN: n79032932 · ISNI: 0000 0001 2100 0710 · GND: 11863531X · SELIBR: 222406 · SUDOC: 028638115 · BNF: cb12388569w (data) · ULAN: 500020307 · NLA: 36571140 · NDL: 00461480 · NKC: jn20000605667 · BNE: XX1141709 · KulturNav: id · RKD: 85705 · IATH: w6n87864	



Categories: Frank Lloyd Wright | 1867 births | 1959 deaths | American furniture designers | American Christian pacifists | American Unitarians | Architectural theoreticians

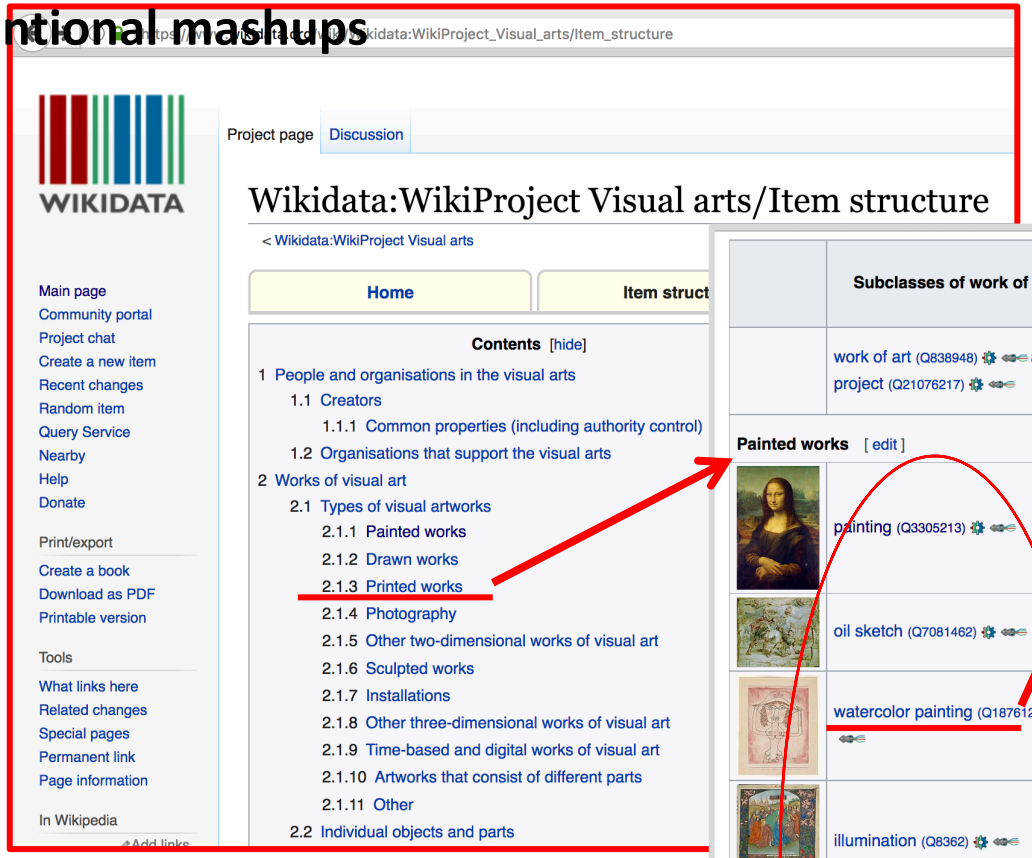
(cont.) 5. Shared, unconventional mashups

b. Wikidata – as an Authority base/ Knowledge Base

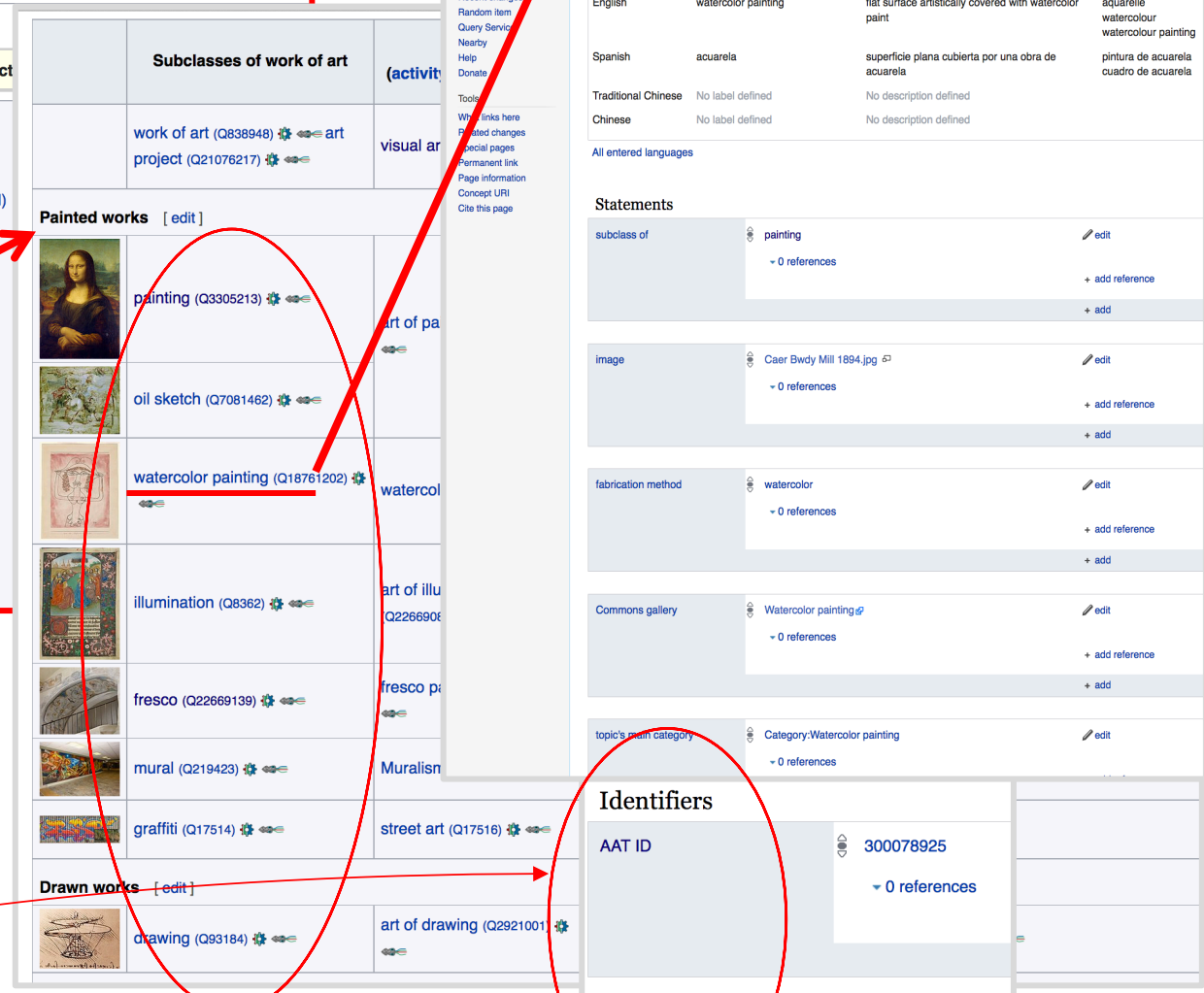
Wikidata entries

Mapped to other Vocab IDs

Linked to examples



https://www.wikidata.org/wiki/Wikidata:WikiProject_Visual_arts/Item_structure



https://www.wikidata.org/wiki/Wikidata:WikiProject_Visual_arts/Item_structure#Painted_works

https://www.wikidata.org/wiki/Q18761202

b. (cont.) Wikidata – as an Authority base/ Knowledge Base

WIKIDATA

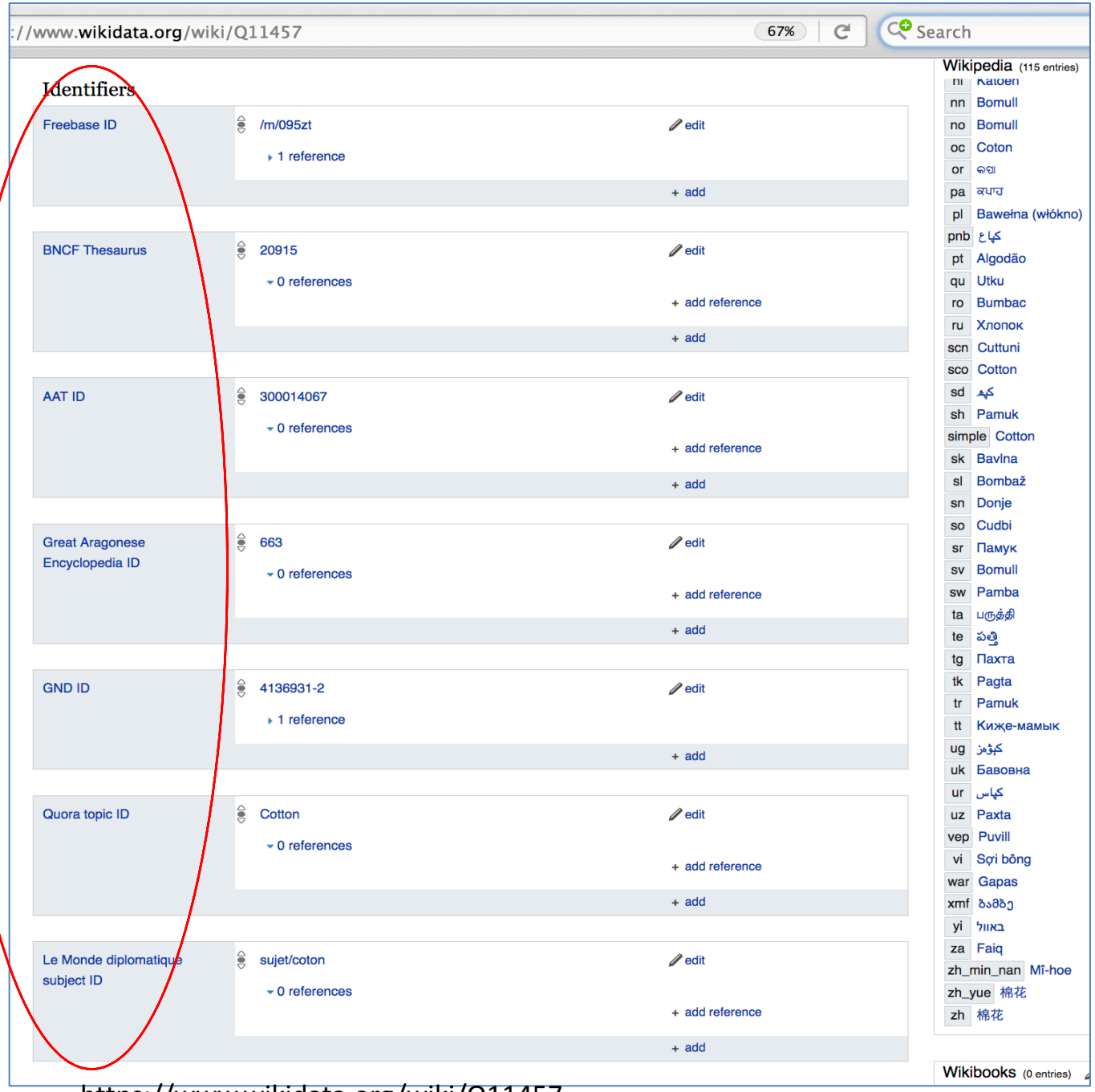
Defined and controlled

Wikidata entries

Mapped to other Vocab IDs

Linked to examples

"cotton"



https://www.wikidata.org/wiki/Q11457

Project page | Discussion | Read | Edit | View history | Search Wikidata

Wikidata:WikiProject Fashion/Taxonomy/Europeana Fashion Vocabulary

< Wikidata:WikiProject Fashion | Taxonomy

Wikidata items with Europeana Fashion Vocabulary ID (P3832).

- The thesaurus is based on and expands the Getty Art&Architecture vocabulary (discussed above). Blog post about the thesaurus.
- Browse the thesaurus (search under "object type") on the Europeana fashion site.
- Europeana Fashion Thesaurus V1 [PDF]
- Download at http://skos.europeana.eu/api/collections/europeana:fashion.html

This list is periodically updated by a bot. Manual changes to the list will be removed on the next update! Manually update list

WQS | PetScan | YASGUI | Find images | Query: `SELECT ?item WHERE { ?item wdt:P3832 ?europeanafashionvocabid. }`

image	label	item	instance of	subclass of	Europeana Fashion Vocabulary ID	AAT ID	Encyclopædia Britannica Online ID
	abarka	Q2743044		sandal	10515		
	academic dress	Q1349227		professional wear	10111	300265060	
	acetate	Q212527		chemical compound functional group ligand	10601		
	acrylic fiber	Q2259977		synthetic fiber	10679	300386559	art/acrylic-painting
	advertising	Q37038		information product	10326	300054347 300193993 300213187 300252554	

https://www.wikidata.org/wiki/Wikidata:WikiProject_Fashion/Taxonomy/Europeana_Fashion_Vocabulary

Another example:
Europeana Fashion Vocabulary

http://skos.europeana.eu/api/collections/europeana:fashion.html

OpenSKOS: Simple Knowledge Organization System Repository

Europeana Fashion Vocabulary

Institution:
Europeana Foundation

Description:
A multi-lingual vocabulary that comprises:

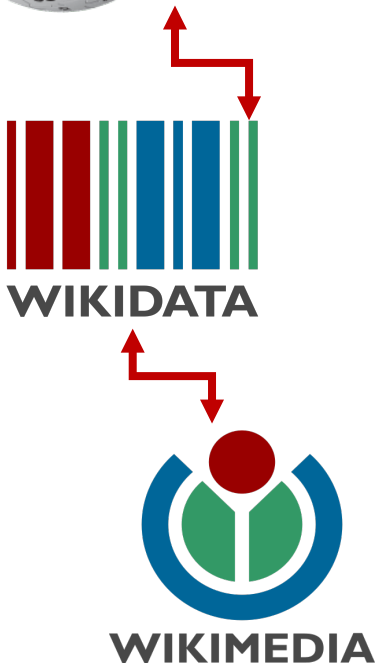
Types of garments, shoes, and accessories.
Materials used in garments, shoes and accessories.
Genres of clothing (e.g. mourning dress, uniform, etc.).
Techniques used in creating fashion products.

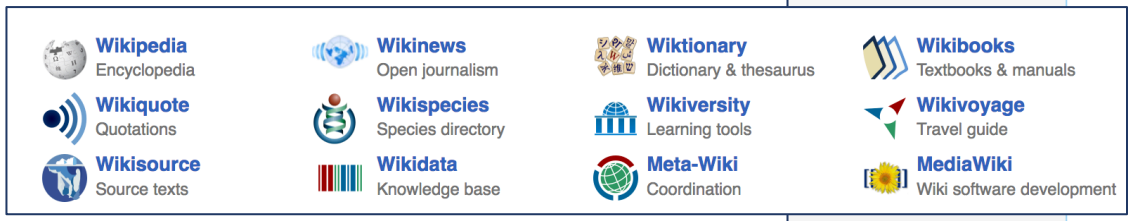
ConceptSchemes

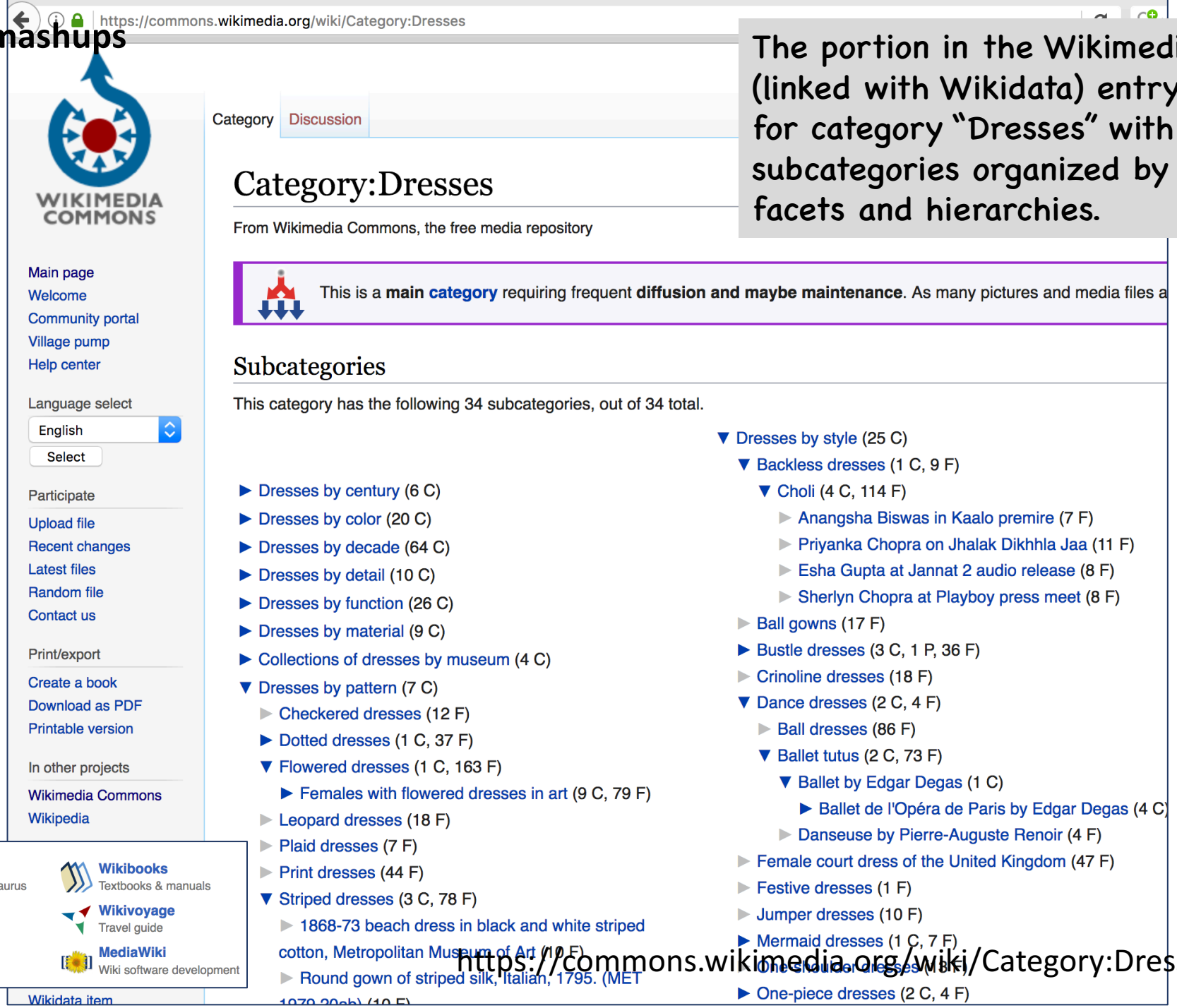
- http://thesaurus.europeanafashion.eu/thesaurus/Materials
- http://thesaurus.europeanafashion.eu/thesaurus/Technique
- http://thesaurus.europeanafashion.eu/thesaurus/Subject
- http://thesaurus.europeanafashion.eu/thesaurus/Type

(cont.) 5. Shared, unconventional mashups

c. Wikimedia --
Organizing using KOS







The portion in the Wikimedia (linked with Wikidata) entry for category "Dresses" with subcategories organized by facets and hierarchies.

https://commons.wikimedia.org/wiki/Category:Dresses

c. (cont.) Wikimedia -- Organizing using KOS (from another overlapping group)

WIKIMEDIA COMMONS

Main page
Welcome
Community portal
Village pump
Help center

Language select
English
Select

Participate
Upload file
Recent changes
Latest files
Random file
Contact us

Print/export
Create a book
Download as PDF
Printable version

In other projects
Wikimedia Commons
Wikipedia

Tools
What links here
Related changes
Special pages
Permanent link
Page information
Wikidata item
RSS feed

Category:Clothing by function

Good picture

From Wikimedia Commons, the free media repository

This meta category should only contain other categories. Files should subcategory or in the parent category.

Subcategories

This category has the following 22 subcategories, out of 22 total.

- ▶ Dresses by function (26 C)
- ▶ Headgear by function (8 C)

C

- ▶ Ceremonial clothing (22 C, 54 F)
- ▶ Clothing with sponsor (8 F)
- ▶ Cooking clothing (4 C, 6 F)

E

- ▶ Evening gloves (83 F)

F

- ▶ Fetish clothing (7 C, 56 F)
- ▶ Footwear by function (3 C)

H

- ▶ Hospital gowns (66 F)

I

- ▶ Inside-out clothing (2 C, 25 F)

- ▶ Maternity clothing (3 C, 8
- ▶ Military clothing (9 C, 7 F

N

- ▶ Nightclothes (7 C, 15 F)

P

- ▶ Protective clothing (39 C,
- ▶ Protective gear (2 C, 16 F

R

- ▶ Religious clothing (11 C,

S

- ▶ Sports clothing (35 C, 1 F
- ▶ Stage clothing (5 C, 151
- ▶ Sympatex (2 F)

W

- ▶ Waterproof clothing (3 C,
- ▶ Windproof clothing (1 C,
- ▶ Work clothing (12 C, 68 F

- ▼ Ceremonial clothing (22 C, 54 F)
  - ▶ Methods of wearing orders, decorations and medals (10 C, 88 F)
  - ▶ Ceremonial clothing by country (22 C)
  - ▶ Academic dress (19 C, 1 P, 232 F)
  - ▼ Ceremonial clothing in art (10 C, 8 F)
    - ▶ Academic dresses in art (2 C, 18 F)
    - ▶ Bands (neckwear) in art (3 C, 131 F)
    - ▶ Cappa magna in art (4 C, 41 F)
    - ▶ Ceremonial mantles in art (5 C, 4 F)
    - ▼ Ceremonial robes in art (13 C, 11 F)
      - ▶ Portraits in ceremonial robes (10 C)
      - ▶ Ceremonial robes of chivalric orders in art (1 C)
      - ▶ Portraits in ceremonial costumes (5 C, 1 F)
      - ▶ Portraits of men in ecclesiastical costumes (8 C, 10 F)
      - ▶ Coronation robes of peeresses in art (1 C, 1 F)
      - ▶ Coronation robes of peers in art (2 C, 1 F)
      - ▶ Doges with fur (2 C, 2 F)
      - ▶ Doges of Venice with lynx (1 C, 32 F)
      - ▶ Medici Grand ducal robes in art (1 C, 6 F)
      - ▶ Parliamentary robes of peers in art (1 C, 2 F)
      - ▶ Portraits of Louis XV of France in Coronation Robes (4 C, 4 F)
      - ▶ State robes of British royalty (5 C, 8 F)
      - ▶ State robes of French royalty (3 C, 3 F)
    - ▶ Ecclesiastical bobbin lace in art (2 C, 79 F)
    - ▶ Ermine (clothing) in art (77 C, 1 P, 5363 F)
    - ▶ Insignia of orders in art (5 C, 2 F)
    - ▶ Portraits in ceremonial costumes (5 C, 1 F)
    - ▶ Royal mantles in art (2 C, 2 F)
  - ▶ Court uniforms and dress (4 C, 21 F)

Category:Academic dresses in art

Good pictures

From Wikimedia Commons, the free media repository

Subcategories

This category has the following 2 subcategories, out of 2 total.

J

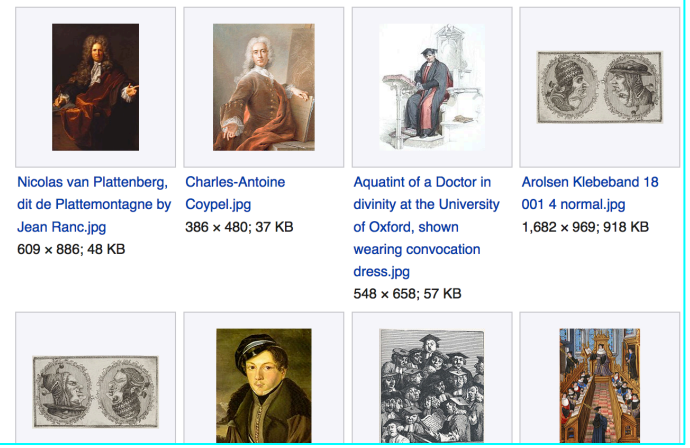
- ▶ James Smithson as an Oxford Student (Roberts) (7 F)

S

- ▶ The Surrey Scholar (4 F)

Media in category "Academic dresses in art"

The following 18 files are in this category, out of 18 total.



Nicolas van Plattenberg, dit de Plattemontagne by Jean Ranc.jpg
609 × 886; 48 KB

Charles-Antoine Coypel.jpg
386 × 480; 37 KB

Aquatint of a Doctor in divinity at the University of Oxford, shown wearing convocation dress.jpg
548 × 658; 57 KB

Arolsen Klebeband 18 001 4 normal.jpg
1,682 × 969; 918 KB

Summary -- Vocabulary Development End-products

No significant change:

- From conceptual and structural points of view, the newly generated vocabularies, derived from the existing ones, took similar approaches used prior to the 21st century.
  - making microthesauri and satellite vocabularies,
  - creating a super structure,
  - direct mapping or employing a switching system,
  - crowd-sourcing, and post-control, etc.

Observable changes:

- The new functions and differences observed in current approaches are the results of applying semantic technologies.
  - Each *thing* is named with an URI + a domain name prefix (maintaining the original semantics and linguistic decisions while being reusable).
  - Machine-understandable, machine-processable data.
  - Benefit from semantic technologies and the available open tools.
- Communities grow quickly, spread widely, involving many contributors;
- The number of projects and vocabs increased dramatically;
- Reuse and connect, not in silos;
- No hero ‘master’;
- Vocabularies and Vocabulary Services are together.

Discussion points

A. **What and how people are making KOS vocabularies**
   - **In the LOD-enabled mashup culture**

B. **Where should the Getty Vocabularies head to**
   - Suggestions for Actions

★★★★★ All the above, plus: **Link** your data to other people's data to provide context.

1. Getty Vocabs ←→ Others' **Metadata**

2. Getty Vocabs ←→ Other **Vocabs**

3. Getty Vocabs ←→ Other **Services**

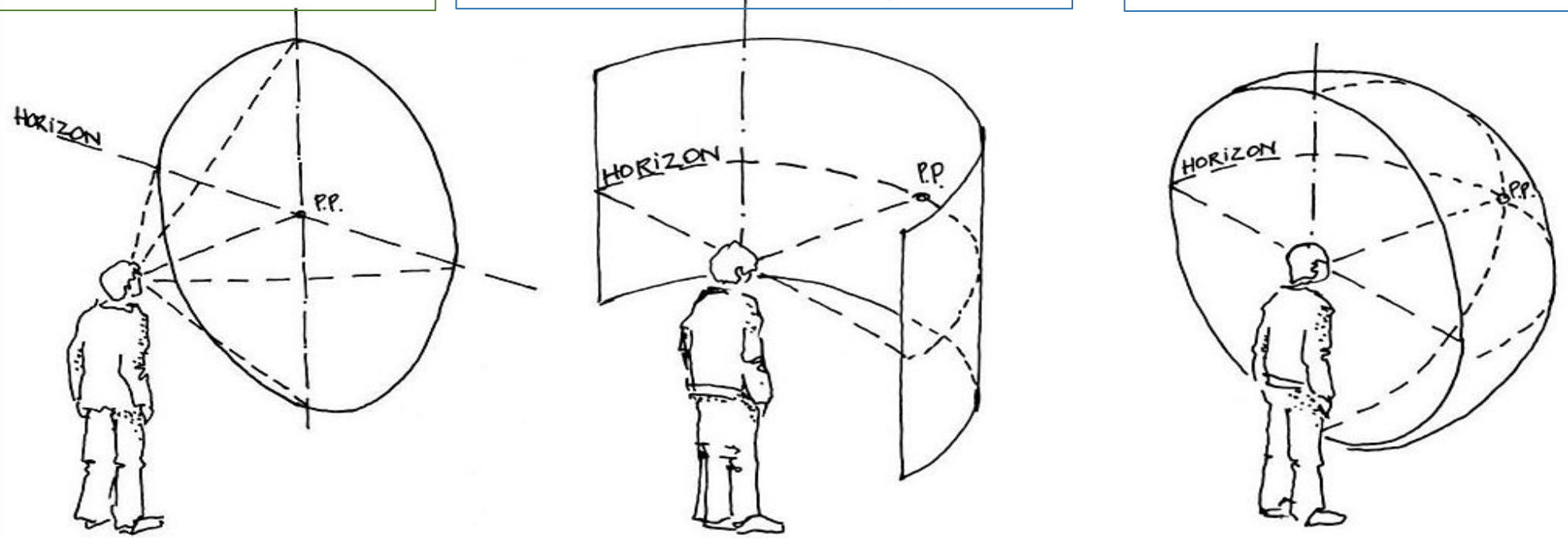


Image credit: https://commons.wikimedia.org/wiki/File:Three_perspectives.jpg

E.g., Used by MARC, LIDO, EAD, local dbs, Wikipedia, etc.

Needed Actions?

E.g., Integrated multilingual versions; Aligned with [*to* or *by*] other vocabs.

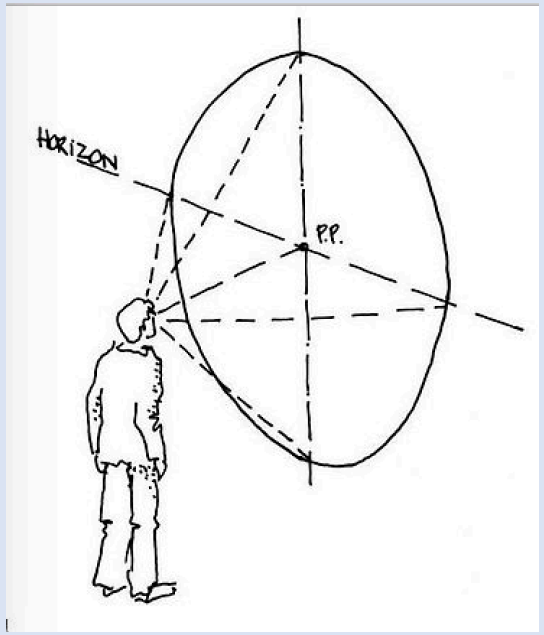
Needed Actions?

E.g., Served through APIs & SPARQL end-points; included by other services (VIAF, Finto, etc.).

Needed Actions?

Needed Actions

1. Getty Vocabs ←→ Others' Metadata



E.g., Used by MARC, LIDO, EAD, local dbs, Wikipedia, Wikidata, etc.

1.1. For non-tech users

- **Promote use, reach out to more users**
  - Education and training materials, events, free webinars
  - Social media
  - Successful stories (link from GRI website.) (See BioPortal example)

Add usage data about each vocabulary, like BioPortal does:

BioPortal

Login Tools Support

Medical Subject Headings

Summary Classes Properties Notes Mappings Widgets

Details

ACRONYM	MESH
VISIBILITY	Public
BIOPORTAL PURL	http://purl.bioontology.org/ontology/MESH
DESCRIPTION	Medical Subject Headings (MeSH);National Library of Medicine; 2011
STATUS	Alpha
FORMAT	UMLS
CONTACT	NLM Customer Service, custserv@nlm.nih.gov
HOME PAGE	http://www.nlm.nih.gov/mesh/meshhome.html
PUBLICATIONS PAGE	http://www.nlm.nih.gov/mesh/meshhome.html
DOCUMENTATION PAGE	http://www.nlm.nih.gov/mesh/meshhome.html
CATEGORIES	Health
GROUPS	Unified Medical Language System
LICENSE INFORMATION	This ontology is made available via the UMLS. Users of all UMLS ontologies must abide by the terms of the UMLS license, available at https://uts.nlm.nih.gov/license.html

Metrics

NUMBER OF CLASSES:	265414
NUMBER OF INDIVIDUALS:	0
NUMBER OF PROPERTIES:	
MAXIMUM DEPTH:	15
MAXIMUM NUMBER OF CHILDREN:	
AVERAGE NUMBER OF CHILDREN:	
CLASSES WITH A SINGLE CHILD:	3244
CLASSES WITH MORE THAN 25 CHILDREN:	145
CLASSES WITH NO DEFINITION:	237287

Visits

Download as CSV

Reviews

Add your review

REVIEW BY STESCHU ON 12/14/2012

Usability
Coverage
Quality
Formality
Correctness
Documentation

MeSH is not an ontology. It has never claimed to be one. Its concepts are not classes in the sense of OWL. Its hierarchical links are not subclass relations. If you interpret them as such you get strange inferences such as "Every thumb is a hand". This would do injustice to MeSH , which is a great resource, which fulfils it goals without subscribing to OWL semantics.

bioportal.bioontology.org/ontologies/MESH 67%

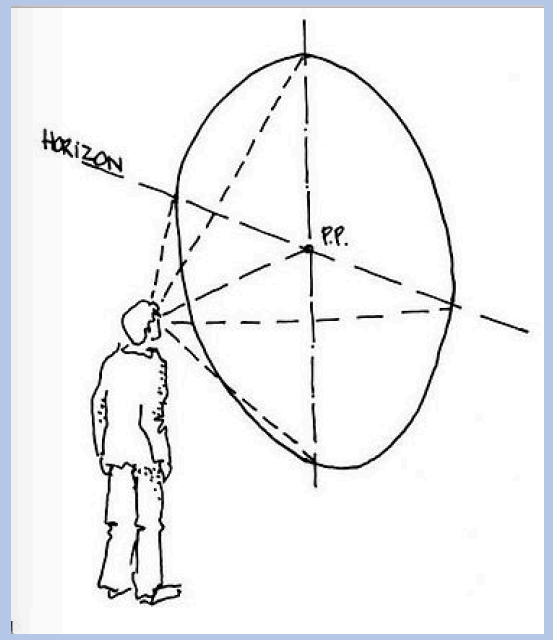
Projects Using This Ontology

Create new project

PROJECT	DESCRIPTION	PEOPLE	INSTITUTION
ARRS GoldMiner	ARRS GoldMiner is a biomedical image search engine.	C. Kahn	American Roentgen Ray Society
Biomedical Semantic QA	Biomedical Semantic QA	mmfalrod@gmail.com	ULisboa
Cell line ontology	Ontologies provide a common platform of controlled vocabulary...	Usha Mahadevan	Molecular Connections Pvt. Ltd.
DisGeNET-RDF	RDF version of the DisGeNET database, which is a database that...	Laura I. Furlong (lfurlong@imim.es), Núria Queralt-Rosinach (nqueralt@imim.es)	GRIB-IMIM-UPF
eagle-i	The eagle-i project is building a searchable network of...	Melissa Haendel, Carlo Torniai	Consortium
Epidemic Marketplace	The Epidemic Marketplace is a data integration platform where...		Fundacao da Faculdade de Ciencias da Universidade de Lisboa
Kino	Kino is an integrated suite of tools that enables scientists to...	Amit Sheth, Ajith Ranabahu, Maryam Panahiazar	Ohio Center of Excellence in Knowledge-enabled Computing (Kno.e.sis)
Lexigram	Lexigram builds simple, scalable medical entity and context...	Paul Alexander (paul@lexigram.io)	
Neuronal Morphologies and Species Metadata Classification System	This is species taxonomy for the data curated in...	spolavar@gmu.edu	George Mason University
Plant Ontology	The Plant Ontology is a controlled vocabulary (ontology) that...		Oregon State University
PubChem	Chemical biology resource providing biological activities of small molecules and substances.		NCBI
Semantic Indexing of French Biomedical Data Resources	The SIFR project proposes to investigate the scientific and...	Clement Jonquet (jonquet@lirmm.fr)	University of Montpellier - LIRMM

http://bioportal.bioontology.org/ontologies/MESH

1. Getty Vocabs ←→ Others' Metadata

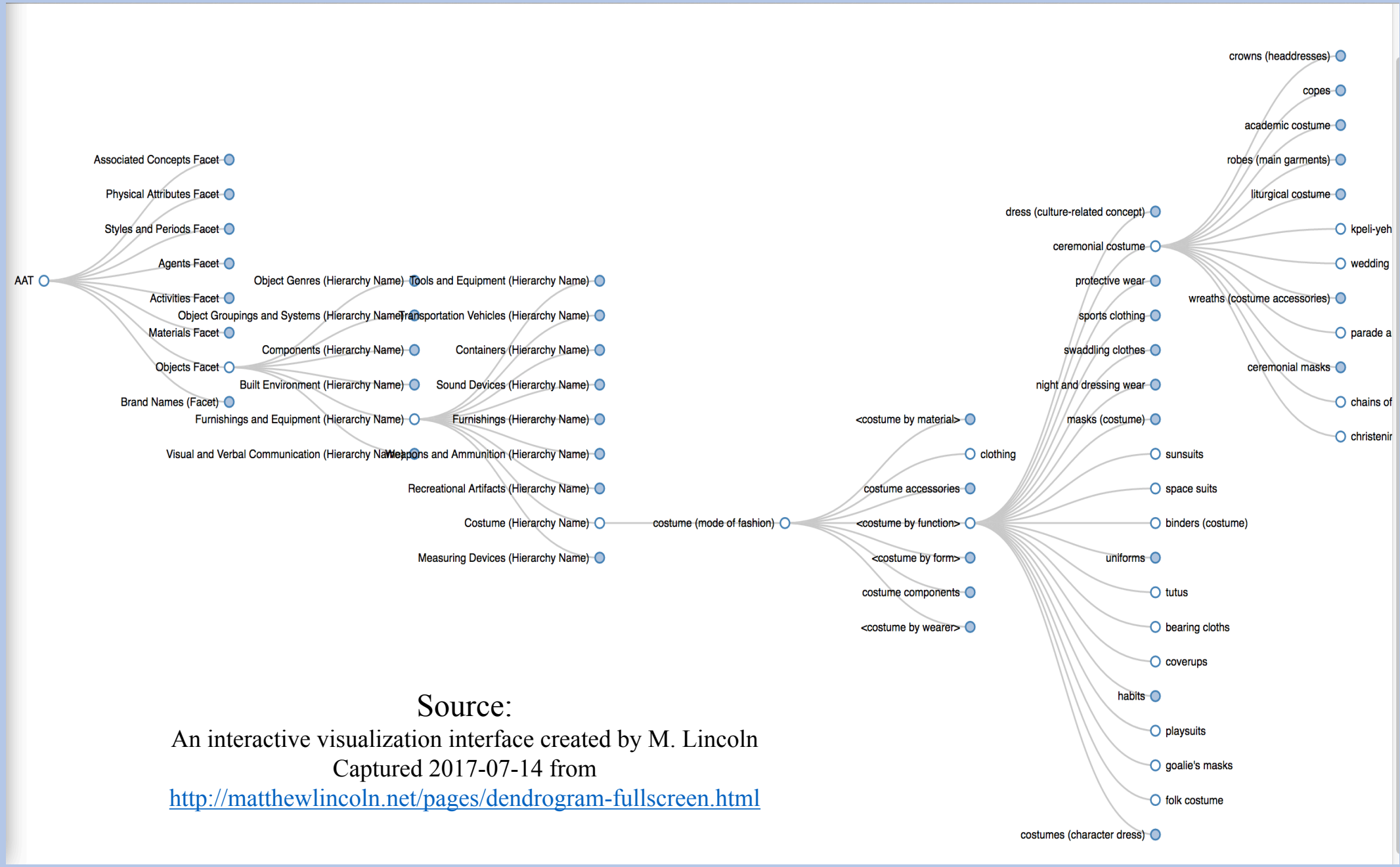


E.g., Used by MARC, LIDO, EAD, local dbs, Wikipedia, Wikidata, etc.

Needed Actions

1.1. For non-tech users

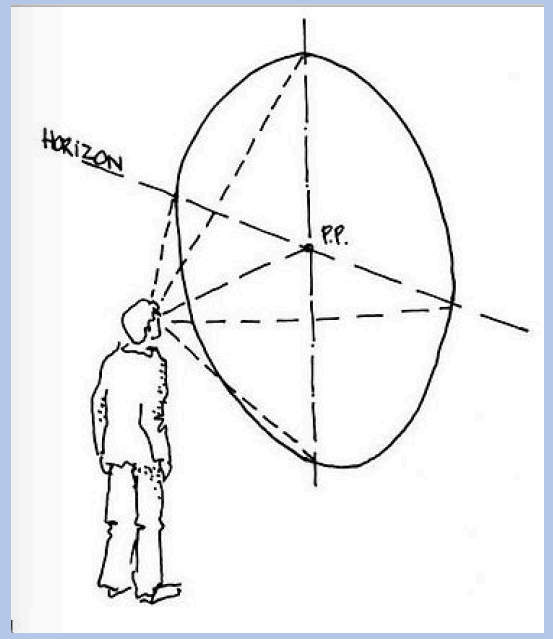
- **Promote use, reach out to more users**
  - Education and training materials, events, free webinars
  - Social media
  - Successful stories (link from GRI website.) (See BioPortal example)
- **Better user-friendly interfaces**
  - Update the Web interface of Getty vocabularies
    - Synonym rings at backend, auto suggesting
    - Ranked results, not alphabetical order
    - Visual hierarchical displays (e.g., by Matthew Lincoln)



Source:

An interactive visualization interface created by M. Lincoln
Captured 2017-07-14 from
http://matthewlincoln.net/pages/dendrogram-fullscreen.html

1. Getty Vocabs ←→ Others' Metadata



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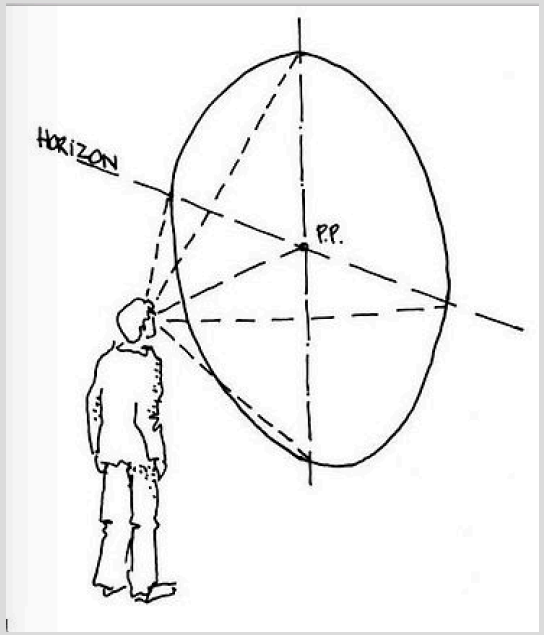
    - Synonym rings at backend, auto suggesting
    - Ranked results, not alphabetical order
    - Visual hierarchical displays (e.g., by Matthew Lincoln)
- **Guidelines & examples for high-level use (in written document)**
  - Focused user communities:
    - MARC users, RDA, BibFrame
    - Archives (EAD or other)
    - Museum models (selected)
    - IIIF …
  - Coordinate with national level efforts
    - Canada, China, …
    - EU projects. (Check videos of the LC hosted international event https://www.loc.gov/preservation/outreach/symposia/heritagedata.html)

Needed Actions

1. Getty Vocabs ←→ Others' Metadata



1.2 For tech users

- **New and innovative service ideas & tools.**

- **Successful stories (websites and codes.)**
  - **E.g., MOMA (example a)**
  - **E.g., The Drawings of the Florentine Painters (example b)**

Example a.

MoMA

Plan your visit | Exhibitions and events | Art and artists | Store

Frank Lloyd Wright

American, 1867–1959

A pragmatist, technical innovator, and independent thinker, Frank Lloyd Wright designed cities and buildings and their interior furnishings across a prolific 72-year career, reflecting his vision of an ideal American society.

Raised in rural Wisconsin in a family of Unitarians, Wright relocated to Chicago and gained experience in various

Show full text +

Wikipedia entry

Getty record

View the Frank Lloyd Wright Foundation

Explore the Frank Lloyd Wright Collection at the Avery Architectural & Fine Arts Library, Columbia University

Exhibitions

Frank Lloyd Wright at 150: Unpacking the Archive
Through October 1
The Museum of Modern Art
Member Early Hours

Latin America in Construction: Architecture 1955–1980
March 29–July 19, 2015
The Museum of Modern Art

Frank Lloyd Wright and the City: Density vs. Dispersal
February 1–June 1, 2014
The Museum of Modern Art

Designing Modern Women 1890–1990
October 5, 2013–October 19, 2014
The Museum of Modern Art

Century of the Child: Growing by Design, 1900–2000
July 29–November 5, 2012
The Museum of Modern Art

Frank Lloyd Wright has 45 exhibitions online.

Getty record

Introduction

Architect, draftsman, furniture and interior designer and author, Wright is internationally recognized as one of the most important figures in 20th century architecture. However, unlike other architects whose success and reputation are measured in part by the dispersal of their ideals into the everyday landscape, Wright remained an individualist who made only a slight impact on the evolution of 20th century architecture. Instead, his fame is derived from its intuitive ability to mold space within an environment and within space itself. He is best known for his "Prairie style" homes, efficient office buildings, and innovative furniture and chinaware designs.

Nationalities
American, undetermined

Gender
Male

Roles
Artist, Author, Architect, Furniture designer, Interior designer

Names
Frank Lloyd Wright, Frank Lloyd Lincoln Wright, Frank Lloid Rait, Frank Luyd Rayt

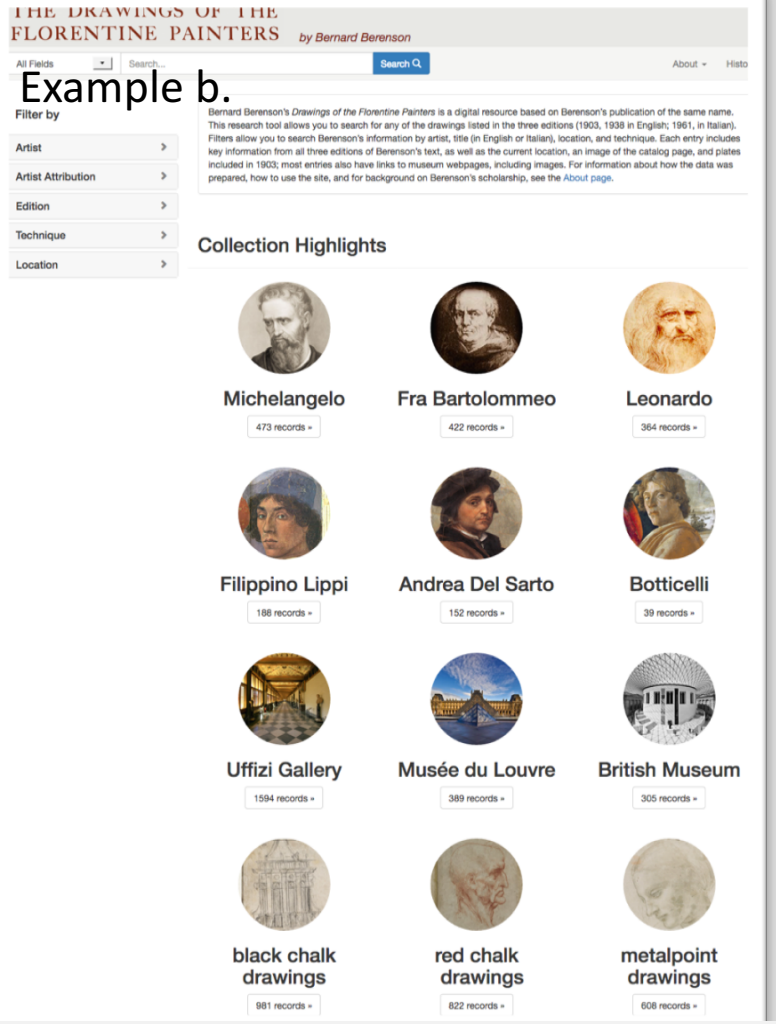
ULAN
500020307

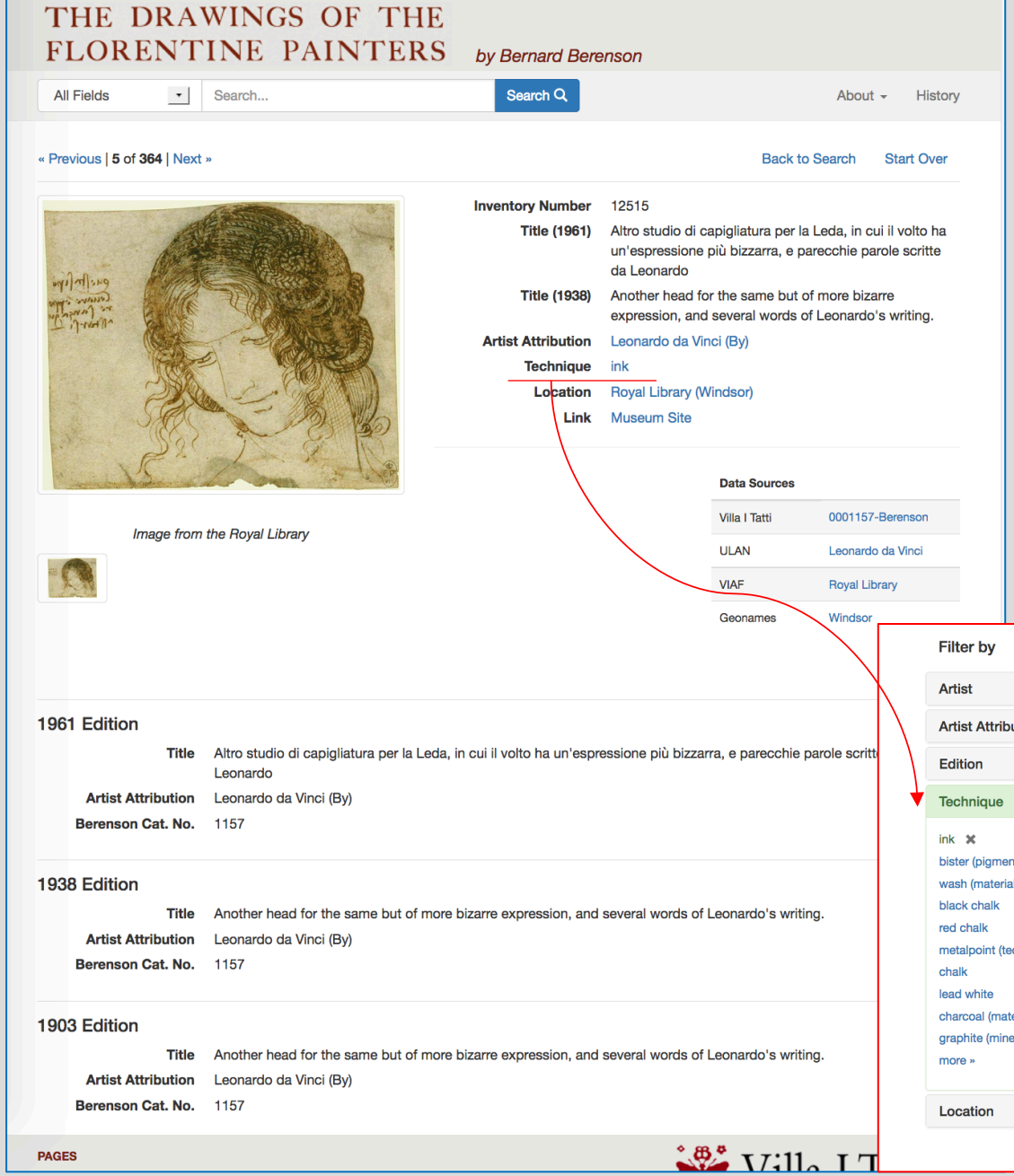
View the full Getty record

Information from Getty's Union List of Artist Names ® (ULAN), made available under the ODC Attribution License

https://www.moma.org/artists/6459?locale=en

Example b.



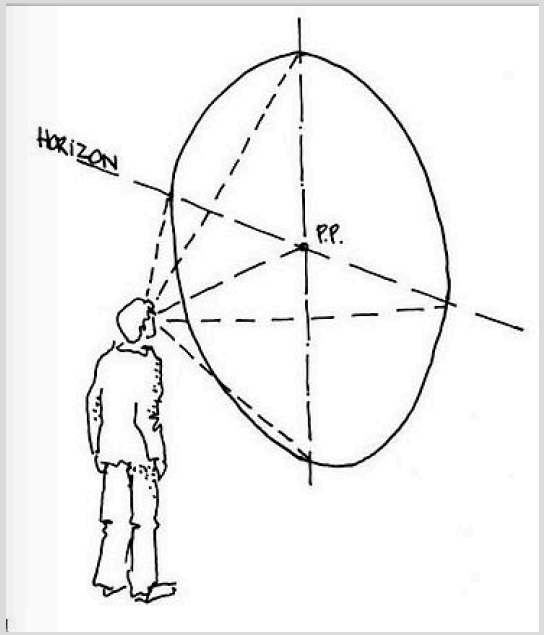


"The amount of energy put into translating (from Italian to English) and standardizing the metadata for each record in this resource cannot be overlooked, as Getty's ***Art & Architecture Thesaurus***, ***GeoNames*** and ***Virtual International Authority File (VIAF)*** terms will help streamline the research process."
-- https://arlisna.org/publications/multimedia-technology-reviews/1229-the-drawings-of-the-florentine-painters

http://florentinedrawings.itatti.harvard.edu/catalog/00001157-Berenson

Needed Actions

1. Getty Vocabs ←→ Others' Metadata



E.g., Used by MARC, LIDO, EAD, local dbs, Wikipedia, Wikidata, etc.

1.2 For tech users

- New and innovative service ideas & tools.

- Successful stories (websites and codes.)
  - E.g., MOMA (example a)
  - E.g., The Drawings of the Florentine Painters (example b)

- **Guidelines & examples for high-level use (in written document)**
- **(with codes, plug-ins, walk-through, hands-on)**
  - Focused user communities:
    - MARC users, RDA,
    - Archives (EAD3 or other, Describing Archives: A Content Standard (DACS)), and Encoded Archival Context for Corporate Bodies, Persons, and Families - EAC-CPF
    - Selected museum models
    - IIIF …

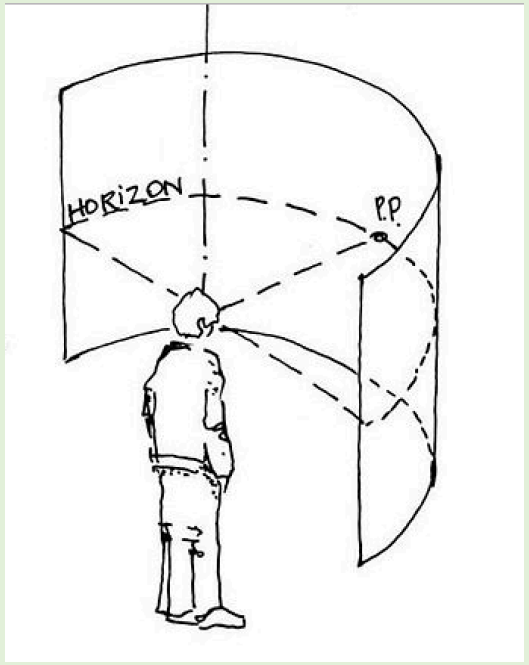
Demo:

- **Extending Exhibitions to Historical Journeys through Data [in the Semantic Web]**
- <Available at http://www.getty.edu/research/tools/vocabularies/zeng_silk_road_tgn.pdf >

2.

Needed Actions

2. Getty Vocabs ←→ Other Vocabs



E.g.,
- Integrated multilingual versions;
- Aligned with [to or by] other vocabs.

- **Map with other's models**
  - To promote easy use
    - CIDOC-CRM
    - IFLA LRM (consolidated FRBR family model)
    - BibFrame model
    - Schema.org
  - To enable enriching automatically
    - Specialized ontologies
      - W3C time ontology
- **Map to other's concepts/labels**
  - Need strategies and collaborative efforts.
  - Need to use new semantic technologies, AI, deep learning…
- **Map to real things' URIs. Enrich each other**
  - EAMENA Endangered Archaeology in the Middle East and North Africa (Example a)
  - SAAM (example b)
  - Dbpedia (example c)
  - FishBase
- **Become an upper model /hub for alignments**

Example a.

Endangered Archaeology in the Middle East and North Africa

http://eamena.arch.ox.ac.uk/

eamena.arch.ox.ac.uk/resources/database-2/ 67% Search

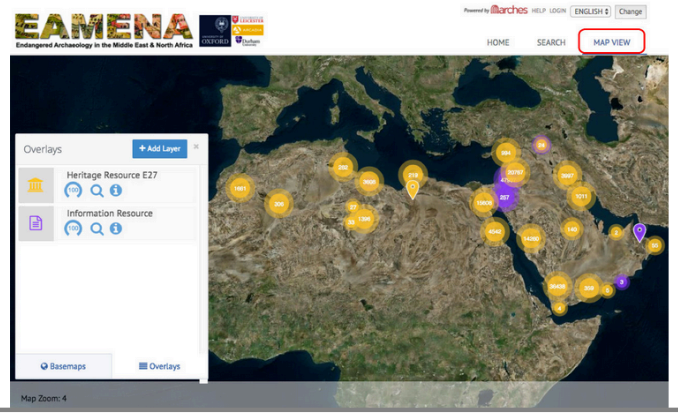
+44(0)1865 611660 eamena@arch.ox.ac.uk University of Oxford, 2 South Parks Road, Oxford OX1 3TG

EAMENA Endangered Archaeology in the Middle East & North Africa

Home About Case Studies Threats Blog Resources Events Database Contact Support Us

Database

Database landing page screenshot



قاعدة البيانات

Welcome

Welcome to the Endangered Archaeology in the Middle East & North Africa (EAMENA) Database. Supported by Arcadia Fund and based at the Universities of Oxford, Leicester and Durham, the EAMENA Database brings together data from satellite imagery and published reports to make available information about archaeological sites and landscapes which are under threat. Using Arches, an open source platform designed by the Getty Conservation Institute and World Monuments Fund, we have been able to build a resource that can be used online by researchers and heritage professionals across the MENA region, Europe and beyond.

How to use the Database

How to get a general overview

The archaeology of this region can be explored via the **public Database**, which is available in both English and Arabic. Users can see the progress of the project so far by clicking on the **Map View**. This will display all the records that we have created, and it is continually updated. As the Database contains over 150,000 records, please be patient while these resources are loaded. Different types of records are coloured differently. So, for example, all our site records are in yellow. The key to the different colours is located in the **Overlays** tab. If you click on this, you can also select whether you want to see the site records (called Heritage Resource E27 records) displayed on the map, or all of the site records and information records (called Information Resources). Information Resources are the records of the imagery, articles, etc that we have consulted about each site. Using the **Map View** it is also possible to zoom in to see more details about each area. Try toggling to a full-screen view by clicking on the arrows in the top right hand corner of the map screen. To see a list of records created by the project, you can also select the **Search** option in the top right hand tab.

How to look at site types or examples of typical disturbances

EAMENA
Endangered Archaeology in the Middle East & North Africa

Powered by arches HELP LOGIN ENGLISH Change

HOME SEARCH MAP VIEW

EAMENA-0116928

Heritage Resource E27

Resource Summary

Resource ID
EAMENA-0116928

Names
Μονὴ τῆς Ἁγίας Αἰκατερίνης (Toponym)
دير القديسة كاترين (Toponym)
Gebel Musa (Toponym)
St Katherine's Monastery (Toponym)
UNESCO World Heritage List 954 (Designation)
St Catherine's Monastery (Toponym)
Jebel Musa (Toponym)
Saint Catherine Area (Designation)

Overall Site Certainty

http://eamena.arch.ox.ac.uk/

Note: the blue colored terms are not clickable.

Overall Site Certainty
Definite

Site function(s)
Domestic (Function) Definite (Certainty)
Religious (Function) Definite (Certainty)

Cultural periods
Medieval (Egypt) (Period) Definite (Certainty)
Ottoman (Egypt) (Period) Definite (Certainty)
British Colonial (Egypt) (Period) Definite (Certainty)
Kingdom of Egypt (Egypt) (Period) Definite (Certainty)
Byzantine (Egypt) (Period) Definite (Certainty)
Roman (Egypt) (Period) Definite (Certainty)

Example b. SAAM

americanart.si.edu/collections/search/artwork/?id=3

Search

Acquisitions
ection Highlights
e Center
wick Gallery
and Media Arts
ts and
roductions

are this page

View Larger ZOOM

The Queen in "Hamlet"

1895
Edwin Austin Abbey
Born: Philadelphia, Pennsylvania 1852
Died: London, England 1911
pastel on paperboard
sheet: 27 7/8 x 21 7/8 in. (70.8 x 55.6 cm)
Smithsonian American Art Museum
Gift of Sen. Stuart Symington and Rep. James W. Symington
1973.28.1
Not currently on view

Keywords

Dress - royal
Figure female
Performing arts - theater - performer
State of being - mood - meditation
drawing
crayon - pastel
paperboard

About Edwin Austin Abbey
Born: Philadelphia, Pennsylvania 1852
Died: London, England 1911

More works in the collection by
Edwin Austin Abbey

Linked Open Data URI (What's this?)

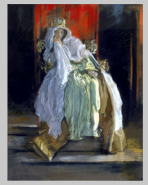
http://americanart.si.edu/collections/search/artwork/?id=3

edan.si.edu/saam/id/object/1973.28.1 80% Search

Smithsonian American Art Museum
Renwick Gallery
Linked Open Data

URI: http://edan.si.edu/saam/id/object/1973.28.1

Mapping to its type, keeper, object-mainclass, location, carries?

Property	Value
http://www.w3.org/1999/02/22-rdf-syntax-ns#type	http://www.cidoc-crm.org
http://www.cidoc-crm.org/cidoc-crm/P138i_has_representation	
http://www.cidoc-crm.org/cidoc-crm/P1_is_identified_by	http://edan.si.edu/saam/id/object/1973.28.1/id
http://www.cidoc-crm.org/cidoc-crm/P102_has_title	http://edan.si.edu/saam/id/object/1973.28.1/title
http://www.cidoc-crm.org/cidoc-crm/P30i_custody_transferred_through	http://edan.si.edu/saam/id/object/1973.28.1/acquisition
http://www.cidoc-crm.org/cidoc-crm/P48_has_preferred_identifier	http://edan.si.edu/saam/id/object/1973.28.1/objnum
http://www.cidoc-crm.org/cidoc-crm/P50_has_current_keeper	http://edan.si.edu/saam/id/the-smithsonian-american-art-museum
http://edan.si.edu/saam/id/ontologies/PE_medium_description	pastel on paperboard
http://edan.si.edu/saam/id/ontologies/PE_object_mainclass	http://edan.si.edu/saam/id/thesauri/classification/Drawing
http://www.cidoc-crm.org/cidoc-crm/P55_has_current_location	http://edan.si.edu/saam/id/object/1973.28.1/location
http://www.cidoc-crm.org/cidoc-crm/P128_carries	http://edan.si.edu/saam/id/object/1973.28.1/concept/2027520 http://edan.si.edu/saam/id/object/1973.28.1/concept/2027521 http://edan.si.edu/saam/id/object/1973.28.1/concept/2027524 http://edan.si.edu/saam/id/object/1973.28.1/concept/2027544 http://edan.si.edu/saam/id/object/1973.28.1/concept/2027547 http://edan.si.edu/saam/id/object/1973.28.1/concept/2027548 http://edan.si.edu/saam/id/object/1973.28.1/concept/2027550 http://edan.si.edu/saam/id/object/1973.28.1/concept/2027551 http://edan.si.edu/saam/id/object/1973.28.1/concept/2027555 http://edan.si.edu/saam/id/object/1973.28.1/concept/2028282 http://edan.si.edu/saam/id/object/1973.28.1/concept/2049806 http://edan.si.edu/saam/id/object/1973.28.1/concept/2045008
http://www.cidoc-crm.org/cidoc-crm/P43_has_dimension	http://edan.si.edu/saam/id/object/1973.28.1/dimension/height/cm http://edan.si.edu/saam/id/object/1973.28.1/dimension/width/cm http://edan.si.edu/saam/id/object/1973.28.1/dimension/height/in http://edan.si.edu/saam/id/object/1973.28.1/dimension/width/in
is http://www.cidoc-crm.org/cidoc-crm/P30_transferred_custody_of of	http://edan.si.edu/saam/id/object/1973.28.1/acquisition
is http://www.cidoc-crm.org/cidoc-crm/P108_has_produced of	http://edan.si.edu/saam/id/object/1973.28.1/production http://edan.si.edu/saam/id/object/3/production

http://edan.si.edu/saam/id/object/1973.28.1

Example c

DBpedia

dbpedia.org/page/Category:Frank_Lloyd_Wright_buildings 80%

DBpedia Browse using Formats

About: Frank Lloyd Wright buildings

An Entity of Type : Concept, from Named Graph : http://dbpedia.org, within Data Space : dbpedia.org

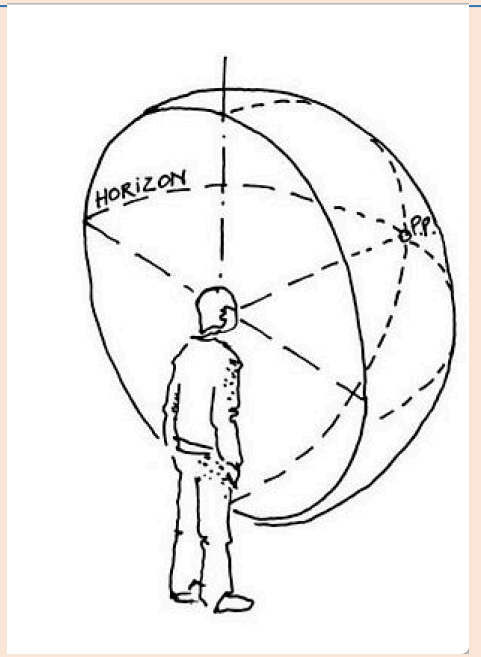
Property	Value
dbo:wikiPageID	1297692 (xsd:integer)
dbo:wikiPageRevisionID	622936262 (xsd:integer)
rdf:type	skos:Concept
rdfs:label	Frank Lloyd Wright buildings (en)
owl:sameAs	wikidata:Frank Lloyd Wright buildings dbpedia-de:Frank Lloyd Wright buildings dbpedia-es:Frank Lloyd Wright buildings dbpedia-fr:Frank Lloyd Wright buildings dbpedia-it:Frank Lloyd Wright buildings dbpedia-ko:Frank Lloyd Wright buildings dbpedia-nl:Frank Lloyd Wright buildings dbpedia-pl:Frank Lloyd Wright buildings dbpedia-pt:Frank Lloyd Wright buildings dbpedia-wikidata:Frank Lloyd Wright buildings
skos:broader	dbc:Frank_Lloyd_Wright dbc:Modernist_architecture_by_architect dbc:Buildings_and_structures_by_American_architects
skos:prefLabel	Frank Lloyd Wright buildings (en)
skos:related	dbc:Buildings_and_structures dbc:American_architects

- dbr:Midway_Gardens
- dbr:King_Kamehameha_Golf_Course_Clubhouse
- dbr:Solomon_R._Guggenheim_Museum
- dbr:Fallingwater
- dbr:Robie_House
- dbr:Winslow_House_(River_Forest,_Illinois)
- dbr:Coonley_House
- dbr:Darwin_D._Martin_House
- dbr:Ennis_House
- dbr:George_Barton_House
- dbr:Johnson_Wax_Headquarters
- dbr:Louis_Penfield_House
- dbr:Taliesin_West
- dbr:Unity_Temple
- dbr:Wingspread
- dbr:Herman_T._Mossberg_Residence
- dbr:New_Orleans_Union_Station
- dbr:Pope-Leighey_House
- dbr:Annunciation_Greek_Orthodox_Church
- dbr:Fasbender_Clinic
- dbr:Frank_Lloyd_Wright_Home_and_Studio
- dbr:Jesse_R._Zeigler_House
- dbr:Rosenbaum_House
- dbr:Theodore_Baird_Residence
- dbr:Polymath_Park

http://dbpedia.org/page/Category:Frank_Lloyd_Wright_buildings

3.

3. Getty Vocabs ←→ Other Services



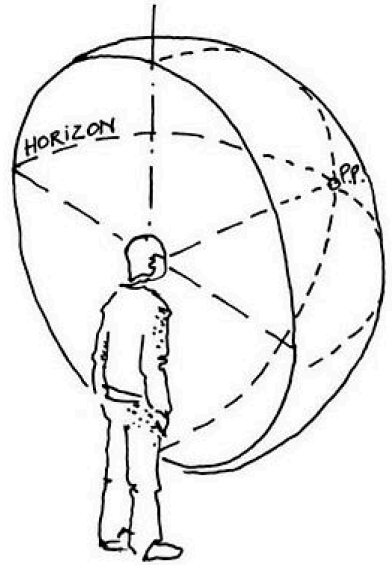
E.g., Served through APIs & SPARQL end-points; included by other services (VIAF, Finto, etc.).

An overview of the LOD KOS Vocabulary Services

- Individual vocabulary provider
  - E.g., EuroVoc http://eurovoc.europa.eu/
- Individual institute as the provider of all vocabularies produced in the institution
  - Library of Congress Linked Data Services – Authorities and Vocabularies http://id.loc.gov/
- Country-based provider
  - Finnish thesaurus and ontology service FINTO http://finto.fi/en/
- Domain-oriented portal
  - E.g., BioPortal www.bioportal.bioontology.org and many many
- Middleware that provides tools for end-users to use/reuse published vocabularies
  - Skosprovider http://skosprovider.readthedocs.io
- Upper ontology facilitated multiple vocabularies' concept- and entity-mapping and reuse
  - E.g., Linked Open Ontology cloud KOKO https://finto.fi/koko/en/
  - E.g., Upper Mapping and Binding Exchange Layer (UMBEL) http://umbel.org/

3.

3. Getty Vocabs ←→ Other Services

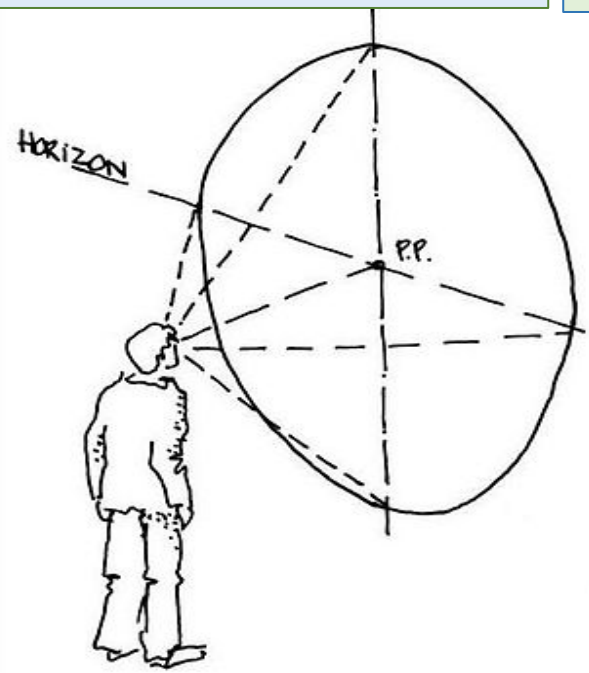


E.g., Served through APIs & SPARQL end-points; included by other services (VIAF, Finto, etc.).

Needed Actions

- Promote use, reach out to more.
- Involve in those vocab services' workflow.
- Get more ideas for services, auto-mapping, auto-enrichment, etc.

1.Getty Vocabs ←→ Others' Metadata



E.g., Used by MARC, LIDO, EAD, local dbs, Wikipedia, Wikidata, etc.

Needed Actions

- Promote use, reach out to more users.
- Better user-friendly interfaces.
- Multiple ways of access and use.
- Guidelines & examples for high-level use.
- New and innovative service ideas & tools.

2. Getty Vocabs ←→ Other Vocabs

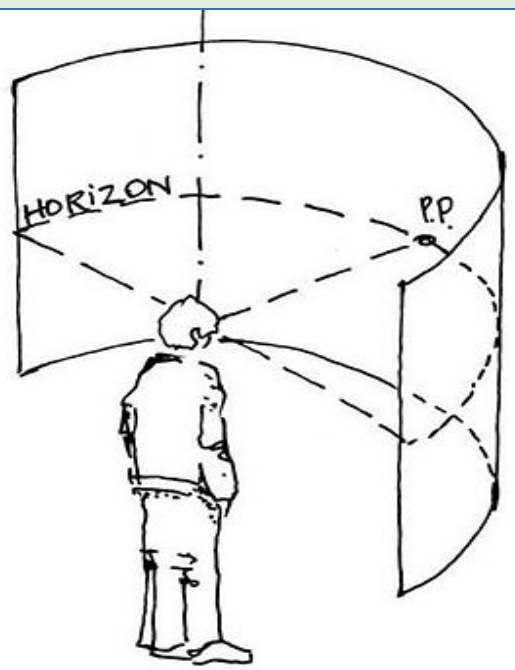


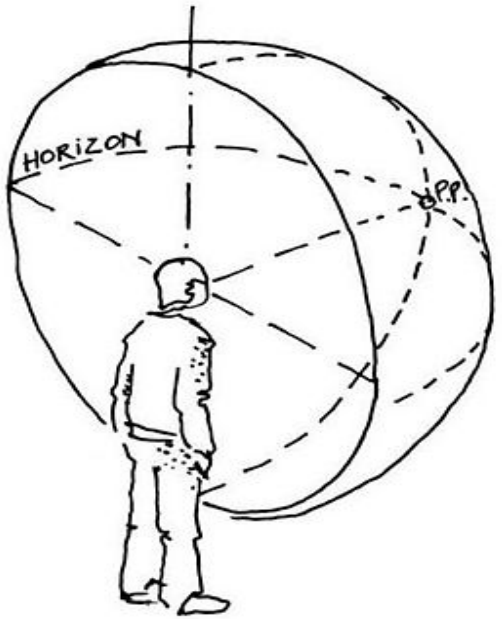
Image credit: https://commons.wikimedia.org/wiki/File:Three_perspectives.jpg

E.g., Integrated multilingual versions; Aligned with [to or by] other vocabs.

Needed Actions

- Map with other's models.
- Map to other's concepts/labels.
- Map to real things' URIs. Enrich each other.
- Become an upper model for alignments.
- Allow heterogeneous structures.

3. Getty Vocabs ←→ Other Services



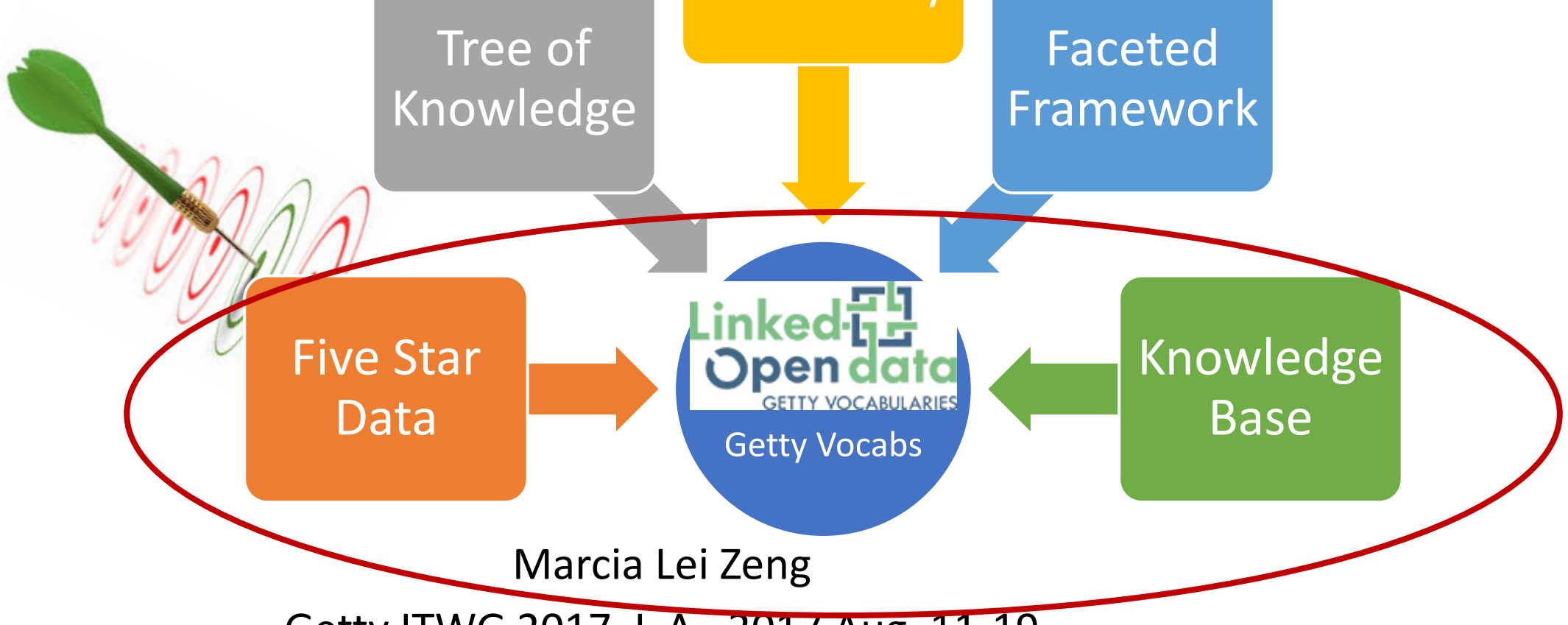
E.g., Served through APIs & SPARQL end-points; included by other services (VIAF, Finto, etc.).

Needed Actions

- Promote use, reach out to more.
- Involve in those vocab services' workflow.
- Get more ideas for services, auto-mapping, auto-enrichment, etc.

Thoughts on
the present & future of LOD KOS
and the
Getty vocabularies
in particular

Thank you!



Marcia Lei Zeng

Getty ITWG 2017, L.A., 2017 Aug. 11-19

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