8/31/2016

The Getty Vocabularies: Technical Overview



Joan Cobb

Technical Lead, Getty Vocabularies J. Paul Getty Trust jcobb@getty.edu

jcobb @gettv.edu International Terminology Working Group August 22-24, 2016

ITWG

Æ

August 2016

Technical Overview

l Overview

Joan Cobb

Linked 답답 Open data

1







Vocabularies Provide Access Points to Works of Art











jcobb

@gettv.edu

Project Communication Tools

Wiki share.getty.edu =

.....

BY

Æ

United Open Data - Vocabularies	Pages / / AAT Semantic Representation 🖉 🖉 LilRA link				
Pages	Turbox Inix Creative by Volume Average, text modified on Jun 10, 2014 How tanguages are represented and used in RDP * Initio * Representing Languages * Detail Languages * Dual Links Intro Grey has data about a petroon of Languages, both ancient and modern. Other cultural heretages transfactor for any area.				
- AAT - AAT External Ontotogies - AAT Review - AAT Berwantic Representation - Associative Relations - Crick Associative Relative Relative Relative Relative Relative Relative Relative - Crick Associative -	Getty make the smart decision of maintaining this data in AAT (as concepts). All alinguages under and 3000/8743 danganges and writing system by specific example> The data will be used uniformly across AAT, TGN and ULAN The data includes names in several languages and ULAN The data includes names in several languages and ULAN The data includes names in several languages and ULAN The data includes names in several languages and used ULAN The data includes names in several languages and used ULAN The data includes names in several languages and used ULAN The data includes names in several languages and used ULAN The data includes names in several languages and used ULAN The data includes names in several languages and used ULAN The data includes names in several languages The data includes names in several languages				
 Code Mapping Descriptive Info 	Languages are represented just like any other AAT concept.				
Orecupiere ind Orecupie	 Be etc al. 2005/8077 Explosit (longage) at the webster. If has several terms: names (in etc, b;) and language tags erg (C.U. Engine). UPU, un etc). UE-piptic UPU. UPU If has inde back contributions and sources. For the language tags, the sources are its [#IR-00-41 - sources[0:0] gaps is spectration. (IDS) PID See its corresponding semantic representation. (IDS) PID/PID (IDE) (IDE) Language tags are mapped to adLabet engine, mog@en Language tags are mapped to adLabet engine, mog@en 				
O Space tools •	Pseudo Languages				

Issue Tracking jira.gtety.edu

Source Code Control stash.getty.edu



jcobb @gettv.edu

 \odot

•

BY

(F)

Human-readable Data

http://vocab.getty.edu/page/aat/300198841

Research TTY search Home + Tools + Art & Architecture Thesaurus + Full Record Displa Art & Architecture Thesaurus® Online Full Record Display Previous Page ? Help Q New Search Click the 📩 icon to view the hierarchy. Semantic View (JSON, RDF, N3/Turtle, N-Triples) Representative Images: 1 2 3 4 5 6 ID: 300198841 Record Type: concept rhyta (drinking vessels, <vessels for serving and consuming food>, ... Furnishings and Equipment (hierarchy name) Note: Vessels from Ancient Greece, eastern Europe, or the Middle East that were typically made as a closed form with two openings, one at the top for filling and one at the base so that liquid could stream out. They are often in the shape of a horn or an animal's head, and were typically used as a drinking cup or for pouring wine into another vessel. Drinking was done by holding the rhyton above the drinker's head and catching the stream of liquid in the mouth. Terms ms: htyta (preferred, C,U,LC,English-P,D,U,PN) (Greek (transilierated)-P,D,U,PN) (Spanish,JK,U,PN) (Greek (transilierated),AD,U,SN) (Greek (transilierated),AD,U,SN) (Spanish,AD,U,SN) htyton (C,U,English,JU,U,SN) (French-P,D,U,PN) (Spanish-P,D,U,PN) (Spanish-P,D,U,PN) (Spanish-PD,U,PN) (Tellich-J.U.U.PH) (Tellich-J.U.U.PH) (Tellich-J.D.U.PH) (Telli ritón (C,U,Spanish,UF,U,SN) escanciadora (C,U,Spanish,UF,U,SN)

ITWG

August 2016

Machine-readable Data

http://vocab.getty.edu/aat/300198841

Y	Interence Explicit and implicit			
	Statements in which the resource exists as a subject.			
	bject		Predicate	
	vp Concept, gvp Subject, skos Concept		nttitype	
	ihytäigide, Rhytonijen, escanciadoraijjes, lai l'an chu peligich-lähr-wadopile, lai tan ju beligich-lähr-pinyn-k-notoen, läi tän juö Rigich-ährpynis-k-hanyu, inea viesseksi jäen, monoigen, microsigen, hytaigen-tan jutagen-tan, mytagen, mytonigen, hytonigen, mytonigen-tan, mytonigen kunoigen, mytonigen, microsigen kunoigen, kunoigen, kunoigen, mytonigen, s ytonigen, sytonisigen, ytonisigen, storisigen hant, Ritfrigen-hant, Ritfrigen-hant	rdh label		
	ttp://www.getty.edu/vow/AATF/utDisplay?find=&logic=AND¬e=&subjectid=300198841	10	dts.seeAlso	
2,5	ait 300045611, aat 300194567, aat 300197197, aat 300197200, aat 300197577, aat 300196760, aat 30019656, aat 300264052 at 300264551	orPreferredExtende	yvp: broaderPvete	
v. :	trinking vessels, -vessels for serving and consuming food-, -containers for serving and consuming food-, cultivary containers, containers by function or context-, containers (receptacies). Containers (hierarchy name), Furnishings and Equipment (hierarchy ame), Depices Tack	Shing	gyp parentShing	
18.35.11.95.10.25.14.24.44.17.25.14.	at prev 5000007766, and prev 5000171612, and prev 5001147023, and prev 5001147024, and prev 500114704, and pre			
	tinking vessels, <vessels and="" consuming="" food="" for="" serving="">, Objects Facet</vessels>	SkringAbbrev	ovp parentStringAbbrev	
	9	Otder	gyp displayOrder	
X99-	ial, bern 1000198641-e44.am, aad, bern 1000199841-en, aad, bern 1000116909-es, aad, bern 1000316909-br, aad, bern 100049894 (aad, bern 1000099031-c3-balen, aad, bern 1000599055-br, Lato-parjos-k-solorice, aad, bern 1000599030-c3-balen wadergie, ad, bern 100009904-ca, ad, bern 1000591642-balen, bergerise-k-aabij			
	Rh tagðe, lai fan chu peilgzh-latn-waðegle, lai tan jiu beilgzh-lath-pinyin-x-notone, lái tán jú beilgzh-lath-pinyin-x-hamyu, hytaglei-lath, mytaglen, mytonsges, mytonsgin, ytonsgint, 東田道杯侵zh-hant	abei		
	al, bem 1000198644 es, aal, jem 1000272716-en, aaf, jem 1000272717 en, aaf, jem 1000272718 en, aaf, jem 1000272218- am, aal, jem 1000292236-en, aaf, jem 1000297236-es, aaf, jem 100031980-en, aaf, jem 100019819-es, af, jem 10001980-es, aaf, jem 100019746-b, aaf, jem 1000319746-b, aaf, jem 100019746-jem 10001970- aaf, jem 100019801-gr-lam, aaf, jem 1000498096-en, aaf, jem 10004970-bi, aaf, jem 100009902-en jar, jem 100019801-an Han, aaf, jem 1000498096-en, aaf, jem 10004970-bi, aaf, jem 100009902-en			

Joan Cobb

Opendata

Technical Overview



Existing Standards (Ontologies) Used

- Thesaurus information: SKOS, SKOSXL, ISO 25964
- **Common properties:** Dublin Core (DC), Dublin Core Terms (DCT)
- **Sources and contributors:** Bibliographic Ontology (BIBO), Friends of a Friend (FOAF)
- Geographic information: W3C Geo Ontology (WGS)
- Revision History: Provenance (PROV)
- **System properties:** Resource Description Framework (RDF), RDF Schema (RDFS), Web Ontology Language (OWL), and XML Schema Definition (XSD)
- **Implementation of the conversion:** RDB to RDF Mapping Language (R2RML)

jcobb @gettv.edu



CC OIG J. Fayal Get

(AF)

Link to the HTML version of the full documentation: <u>http://vocab.getty.edu/doc/</u>

ITWG August 2016

Technical Overview

Joan Cobb

bb

inked 답급 Open data

jca @get

		Explore the Getty 🔻	Getty360 Calendar Blog Connect with Us Shop	t Search
			The Getty Research Institute	E AN MAN
j l	General Information Site	Exhibitions & Even	ts Special Collections Library Search Tools & Databases Scholars & Projects Publica	fions About the GRI
-		Search Tools & Databases		use Print Isal Share
		Primo Search Getty Research Portal	Getty Vocabularies as Linked Open Data	Inside Perspective
2		Collection Inventories & Finding Aids Photo Archive	The Getty vocabularies are constructed to allow their use in linked data. A project to publish them to the LOD (Linked Open Data)	 Unlocking hidden resources for scholars
5		 Research Guides & Bibliographies 	cloud is underway. The documents on this page contain news and presentations about	Have a Question?
		Digital Collections Article & Research Databases Collecting & Provenance	releasing the Getty vocabularies as LOD. These materials are subject to frequent modification and addition.	Contact the Vocabulary Program
-		Research BHA & RILA	News and Status of the Project	
)		Getty Vocabularies Art & Architecture	URIs (Uniform Resource Identifiers) What Is LOD?	
	Target audience:	Thesaurus (AAT) Cultural Objects Name Authority (CONA) ©	 Introduction to Getty Vocabularies as LOD (PDF, 3.8 MB, 46pp) List of External Advisors (PDF, 88KB, 7pp) 	
		 Getty Thesaurus of Geographic Names (TGN) ⊕ Union List of Artist Names 	The AAT, TGN, and ULAN are now available as LOD. They are published under the Open Data Commons Attribution License (ODC-By) 1.0. CONA is being mapped to CIDOC CRM.	
>	Appropriate and in compared	(ULAN) ® Contribute	 Attention developers and programmers: 	
	Anyone interested in general	Editorial Guidelines Getty Vocabularies as Linked Open Data	Technical documentation to assist in exploring the AAT, TGN, and ULAN data is available at the SPARQL endpoint at vocab.getty.edu	
	information about the project	Frequently Asked Questions Obtain the Getty	News and Status of the Project	
ן י	information about the project	Vocabularies • Training Materials	Releasing the Getty vocabularies as Linked Open Data is part of the Getty's onpoing effort to make our knowledge resources freely available to all. Making the Getty vocabularies	
			available to the research community as LDD could have a truly transformative effect on the discipline of art history in general, and on Digital Art History in particular.	
			Working with the community: The Getty vocabulary LOD project is committed to maintaining an open community and collaboration. In an ongoing effort to involve the LOD	
			community, we have established a public discussion forum. Please use this forum to ask guestions, discuss issues, and find solutions related to the technical aspects of our LOD	
,			publications. Usage examples are especially welcome and encouraged. To join the group, send an email to gettyvocablod+subscribe@googlegroups.com.	
-			This public discussion forum replaces previous methods of communication via email and the SemanticWeb.com Q&A forum.	
-			For questions and comments about editorial content or general information regarding the Cetty vocabularies, please contact us at vocab@petty.edu.	
	http://www.getty.edu/research/tools/vocabularies/lod/ind	<u>lex.html</u>	Ontology update: Note that the ontology has changed. Click on the "Developers and programmers." Fink above for details.	
			Additional releases: Information regarding additional releases will be announced on this page.	
bb			Other formats: In addition to LOD, the AAT, TGN, and ULAN are currently released annually in relational tables and XML formats. However, users are urged to transition to LOD release formats, because relational tables and XML formats will likely be discontinued in the future.	
v.edu			URIS (Uniform Resource Identifiers): A description of the full set of URIs for the Getty vocabularies is available in Getty Vocabulary Semantic Representation, section 1.5.3 GVP URLs and Prefixes.	
T-				
-				proint.
	🖸 🕐 🕅 ITWG August 2016 Te	chnical Over	view Joan Cobb	Linked 1



12



@gettv.edu

<u>()</u>

Tracking Usage Can Be Difficult

- Once data is truly open it is difficult to track usage.
- Usage is often not visible because the LOD links are part of the machine code that create what is visible.
- Ways we know the data is being used:
 - Comments on Twitter
 - Comments on other cultural heritage sites like Europeana or LODLAM (Linked Open Data for Libraries, Archives, and Museums)
 - Discussions on our public forum
 - Publications
 - Email from users

F ITWG

August 2016

Technical Overview

Joan Cobb

Linked 53 Open data

Outreach and Collaboration

- Collaboration with internal and external colleagues
- Workshops at conferences
- Virtual presentations
- In-person presentations
- Publications
- Blogs

<u>____</u>

• Public discussion forum

To join send email to

Google	Search for topics • 9.		Ш	0 🕘		
Broups	And LOPE O Mark all as insul Arburn + Pitters +			2	59 -	¢٠
ly groups tune	Getty Vocabularies as Linked Open Data Strand publicly 21 of 38 types (18 unread) # Get			Tags Manage	Menbers	About 🛞
itaried	📄 * 🖾 TGN spatial relations	1	.9	Vladimir Alexiev		May 30
avortes	# III Why ISO-8858-1 charset from spargljaon endpoint? (7)	7	26	Christopher Johnson +1		Apr 10
Click on a group's star icon to add it to your favorites	🔲 🍵 🖾 large results download limits (2)	2	29	Matthew Lincols +1		Mar 8
	🔅 🔅 📰 Getty vocalulary in Skinsmus. (12)	13	83	Bandor Kopacsi +1		Feb 19
lecently veneed Getty Vocatularie MLS Shareable	🖂 😑 🔛 Getting more data out of ULAN (2)	3	54	Vladimir Alessev +1		Jan 31
	📄 🗢 🛱 ULAN Import Error (2) Company	2	20	Nabeel Alwred -1		Jan 13
Arches Project	I = III How to get all Subjects of a Given Parent in a different language than EWF (2)	3	26	Yiue +1		12/22/15
IIF Announce IIF Decum	= Hulp with a query (1)	2	29	Karan +1		12/22/15
lecent searches	I II Worgly merged biographies	2	- 16	Gabriel Kerneis. +1		12/15/15
triantenance (in g	* El queres for TON and ULAN	3.	- 26	Vadmir Alesiev +1		11/19/15
planturel	# # Potential trojan problem on the Getty Vocab page? (2)	2	30	Jason Heppler <1		115/15
sidoe umi lecently posted to Getty Vocatularia Mapping CDOC Arches Project Linked Open Data	📄 🍵 🔝 General question about reliability of Getty Vocabularies (3)	3	36	Andre Waloszek +2		11/3/15
	📋 🔅 🖾 Query out birth & death locations (li)	.6	17	David Lowe +3		11/2/15
	= III Property Value Issue (0)	14	30	Nabeel Atmed +1		10/12/15
	🔅 🔅 🖾 Ordered Hierarchy of all accestors of AAT Terms (1)	5	24	Jula Iwanowa +1		10/9/15
	# III question about multiple vocabs for use in facetod navigation (2)	2	14	Jane Frazer +1		10/9/15
Pevery - Terms of Service	💿 🔹 📮 QueryEvaluationException while Quering Getty AAT with Java and Sexame Framework (4.	4	20	Julia Iwanowa +1		105/15
	* 🖬 TMS and Getty Vocatularies	7	51	sieven_moore@mona.org +2		9/26/15

jcobb @gettv.edu





Augu

gettyvocablod+subscribe@googlegroups.com

August 2016

Technical Overview

Joan Cobb

Linked 등급 Open data





What's Next?

Publish the rest of the Getty resources as "open content"



Connect the silos in the process

- Museum Objects
- Library resources
- Provenance
- Conservation
- Research
- Images
- Getty Vocabularies

jcobb @gettv.edu





ITWG

August 2016

Technical Overview

Joan Cobb





Project scope.

- Dataset will mirror Collection Online
- Correlation with GRI Vocabs will be limited (but extendable in future)
- Data will be accessible via a simple Web portal
- Modest enhancements to Collection Online: linking to resources

bpodemski @getty.edu

Museum Collection Info as

ata

pen Da

Linked O









Cataloging Data Analysis.

Dimensions

Medium

632	Y	Rembrandt Harmensz. van	St. Bartholomew	Paintings	1661	Oil on canvas	Unframed: 86.7 × 75.6 cm	Completed
862	Y	Workshop of Rembrandt	A Young Scholar and his	Paintings	about 1629 - 1630	Oil on canvas	Unframed: 104.6 × 88.9 cm	Completed
344716	Y	Rembrandt Harmensz. van	Rembrandt Laughing	Paintings	about 1628	Oil on copper	Unframed: 22.2 × 17.1 cm (8	Completed
787	Y	Rembrandt Harmensz. van	An Old Man in Military	Paintings	about 1630 - 1631	Oil on panel	Unframed: 65.7 × 51.8 cm	Completed
1070	Y	Rembrandt Harmensz. van	Daniel and Cyrus Before	Paintings	1633	Oil on panel	Unframed: 23.5 × 30.2 cm (9	Completed
1069	Y	Rembrandt Harmensz. van	The Abduction of Europa	Paintings	1632	Oil on single oak panel	Unframed: 64.6 × 78.7 cm	Completed
45	Y	Unknown maker,	The Mocking of Christ	Drawings	about 1650 - 1655	Pen and brown ink	18.1 × 24.6 cm (7 1/8 × 9	Completed
190	Y	Rembrandt Harmensz. van	An Artist in His Studio	Drawings	about 1630	Pen and brown ink	20.5 × 17 cm (8 1/16 × 6	Completed
210	Y	Rembrandt Harmensz. van	Study of a Man Talking to a	Drawings	about 1635 - 1636	Pen and brown ink	10 × 10 cm (3 15/16 × 3	Completed
117	Y	Rembrandt Harmensz. van	A Wooded Road	Drawings	about 1650	Pen and brown ink and brown	15.9 × 20.2 cm (6 1/4 × 7	Completed
114	Y	Rembrandt Harmensz. van	Shah Jahan and Dara	Drawings	about 1654 - 1656	Pen and brown ink and brown	21.3 × 17.8 cm (8 3/8 × 7 in.)	Completed
116	Y	Rembrandt Harmensz. van	A Sailing Boat on a Wide	Drawings	about 1650	Pen and brown ink and brown	8.9 × 18.3 cm (3 1/2 × 7 3/16	Completed
424	Y	Rembrandt Harmensz. van	Joseph in Prison	Drawings	about 1639	Pen and brown ink on light	20 × 18.7 cm (7 7/8 × 7 3/8	Completed
23	Y	Rembrandt Harmensz. van	Christ and the Canaanite	Drawings	about 1650	Pen and brown ink, brown	20 × 27.9 cm (7 7/8 × 11 in.)	Completed
49	Y	Rembrandt Harmensz. van	Landscape with the House	Drawings	about 1651	Pen and brown ink, brush and	9.7 × 21.5 cm (3 13/16 × 8	Completed
115	Y	Rembrandt Harmensz. van	Two Thatched Cottages	Drawings	about 1640	Pen and brown ink, corrected	13.3 × 20.2 cm (5 1/4 × 7	Completed
33	Y	Rembrandt Harmensz. van	Two Studies of the Head of	Drawings	1626	Pen and brown ink, torn down	9 × 14.9 cm (3 9/16 × 5 7/8	Completed
2	Y	Rembrandt Harmensz. van	Nude Woman with a Snake	Drawings	about 1637	Red chalk with white gouache	24.7 × 13.7 cm (9 3/4 × 5 3/8	Completed

Title

Classification

Date

Tombstone	
Completed	and the second
Completed	A CONTRACTOR OF THE
Completed	
Completed	
ampleted.	

bpodemski

Museum Collection Info as

pen Data

Ō

Linked



 \odot (\mathbf{i}) BY

Objects (cataloging)

ObjectID Catalog Me

Artist / Maker

GETTY CONSERVATION INSTITUTE + GETTY FOUNDATION + GETTY RESEARCH INSTITUTE + J. PAUL GETTY MUSEUM



22







Vocabularies: Collection Info Building On V Transforming 6

Conceptua

I mapping

test using

real world

examples.

bpodemski @getty.edu



Diagramming. E37_Mark E57_Materia E56_Language Oil on single oak gvp_lang:en Signed lower right: "RHL (in monagram) van Rijn.1632" aat:300028705 panel aat 30016334 P45_consists of E57 Mater



Observations.



Museum Collection Info as Linked Open Data

bpodemski @getty.edu





Figure of an Elephant Unknown maker 1736-1795, hard-paste porcelain, polychrome enameled decoration, gilding

"When eating an

bite at a time."

elephant, take one

GETTY CONSERVATION INSTITUTE + GETTY FOUNDATION + GETTY RESEARCH INSTITUTE + J. PAUL GETTY MUSEUM



N + GETTY RESEARCH INSTITU

Observations.

Museum Collection Info as Linked Open Data

No matter how clean and consistent you think your data is, this project will illustrate all the ways it isn't.

It's a humbling process.

bpodemski @getty.edu





Initial O: Madonna of Humility (detail) Master of the Dresden Prayer Book or workshop (Flemish, active about 1480-1515) about 1480-1485, tempera colors and gold on parchment

GETTY CONSERVATION INSTITUTE + GETTY FOUNDATION + GETTY RESEARCH INSTITUTE + J. PAUL GETTY MUSEUM



STITUTE + J. PAUL GETTY MUSE

Observations.

The Corollary: Don't let the perfect be the enemy of the good (enough).

bpodemski @getty.edu

Museum Collection Info as Linked Open Data





Initial O: Madonna of Humility (detail) Master of the Dresden Prayer Book or workshop (Flemish, active about 1480-1515) about 1480-1485, tempera colors and gold on parchment









8/31/2016

Museum LOD via IIIF

@azaroth42 rsanderson @getty.edu





Providing Access to Museum Linked Data via IIIF

Image Interoperability Framework

PNC 2016, August 16-18, Getty Center, Los Angles http://iiif.io/ #iiif







