GVP LOD: ONTOLOGIES AND SEMANTIC REPRESENTATION

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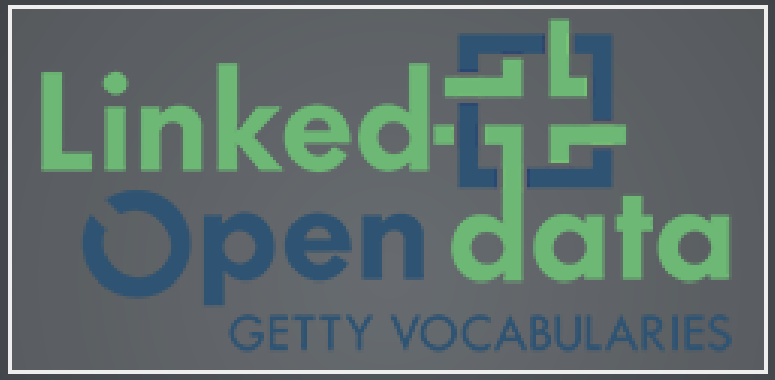


CIDOC Congress, Dresden, Germany
2014-09-05: International Terminology Working Group: full version (HTML)
2014-09-09: Getty special session: short version (PDF)

Press O for overview, H for help.
Proudly made in plain text with reveal.js, org-reveal, org-mode and emacs.

ONTOTEXT SCOPE OF WORK

http://vocab.getty.edu

- Ontology development: http://vocab.getty.edu/ontology
- Contribution to ISO 25964 ontology (latest thesauri standard)
- Complete mapping specification
- Help with R2RML conversion scripts, contrib to RDB2RDF (Perl), rrx:languageColumn extension
- GraphDB (OWLIM) repository. Enterprise Edition (clustered)
- Sem app dev (customized Forest UI), tech consulting
- SPARQL 1.1 endpoint: http://vocab.getty.edu/sparql
- Documentation (100 pages): http://vocab.getty.edu/doc
- Lots of sample queries, incl charts, geographic, etc
- Per-entity export files, explicit/total data dumps
- Help desk / support
- Presentations, scientific papers

SEMANTIC RESOLUTION & CONTENT NEGOTIATION

All GVP, AAT and TGN URLs resolve, returning human or machine readable content through content negotiation (303 redirect). Eg about the ontology:

http://vocab.getty.edu/ontology	semantic URI, content-negotiated
http://vocab.getty.edu/ontology.html	page (application/xhtml+xml)
http://vocab.getty.edu/ontology.rdf	application/rdf+xml
http://vocab.getty.edu/ontology.ttl	text/turtle

Eg about an AAT subject

http://vocab.getty.edu/aat/300011154	semantic URI, con-neg
http://vocab.getty.edu/aat/300011154.html	page (application/xhtml+xml)
http://vocab.getty.edu/aat/300011154.rdf	application/rdf+xml
http://vocab.getty.edu/aat/300011154.ttl	text/turtle
http://vocab.getty.edu/aat/300011154.nt	NTriples

GVP VOCABULARY DATA

Scope includes:

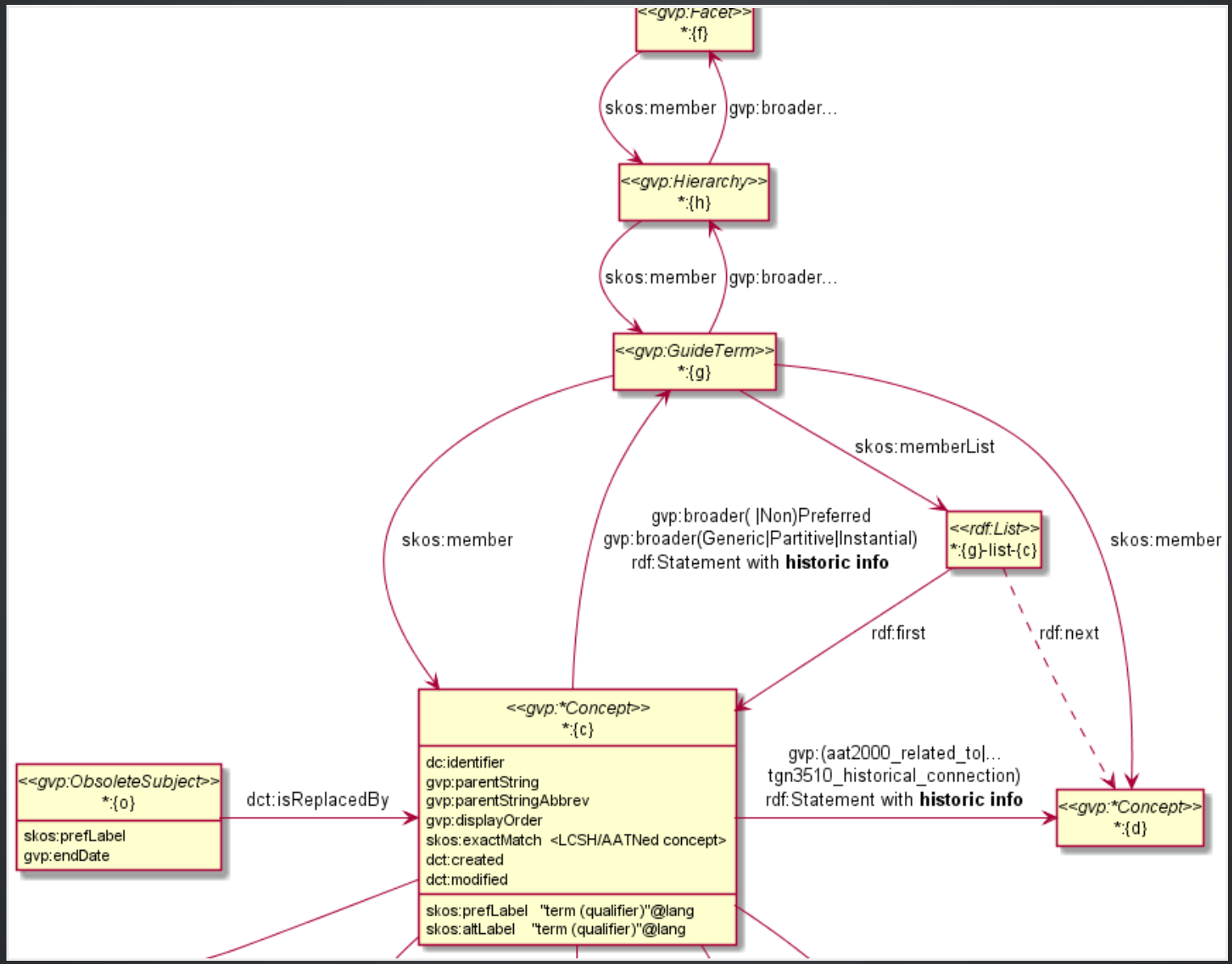
- Subjects: Concepts but also non-concepts
- Obsolete subjects (and dct:isReplacedBy)
- Terms: plain (SKOS) & rich (SKOS-XL). Term characteristics
- Languages (some custom lang tags)
- Hierarchical rels: custom & standard, distinguish BTG,BTP,BTI
- Associative rels (170 subprop of skos:related)
- Historic info on rels (rdf:Statement) and terms
- Alignment (exactMatch to LCSH)
- Sources (bibo:Document, bibo:DocumentPart with locator)
- Contributors (foaf:Agent)
- Revision history (prov:Activity)
- Thesaurus-specific (TGN place types, coordinates)

One of the richest thesauri I've seen

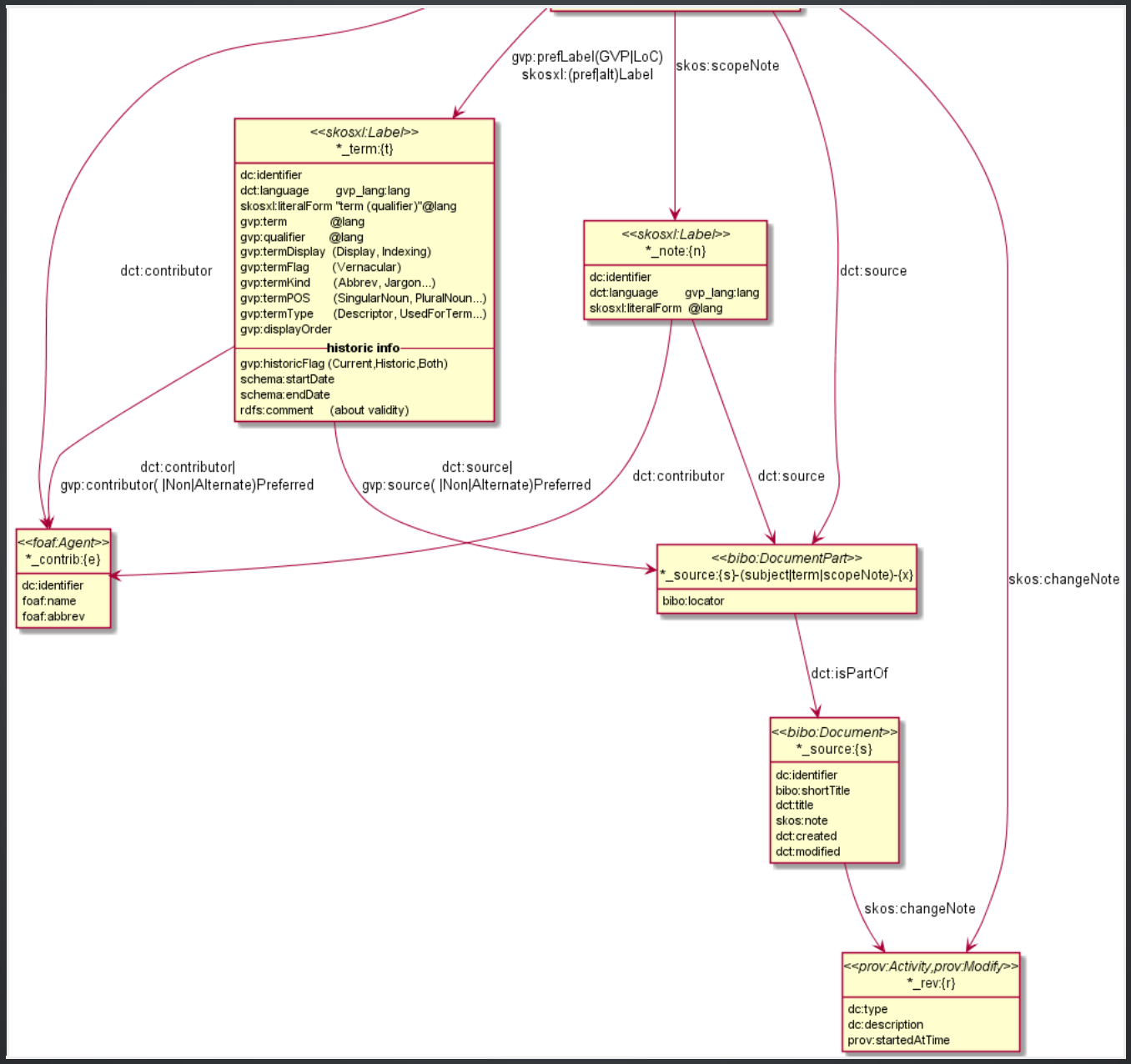
EXTERNAL ONTOLOGIES

Prefix	Ontology	Used for
bibo:	Bibliography Ontology	Sources
dc:	Dublin Core Elements	common
dct:	Dublin Core Terms	common
foaf:	Friend of a Friend ontology	Contributors
iso:	ISO 25946 (latest on thesauri)	iso:ThesaurusArray, BTG/BTP/BTI
owl:	Web Ontology Language	Basic RDF representation
prov:	Provenance Ontology	Revision history
rdf:	Resource Description Framework	Basic RDF representation
rdfs:	RDF Schema	Basic RDF representation
schema:	Schema.org	common, geo (TGN)
skos:	Simple Knowledge Org System	Basic vocabulary representation
skosxl:	SKOS Extension for Labels	Rich labels
wgs:	W3C World Geodetic Survey geo	Geo (TGN)
xsd:	XML Schema Datatypes	Basic RDF representation

GVP SEMANTIC REPRESENTATION

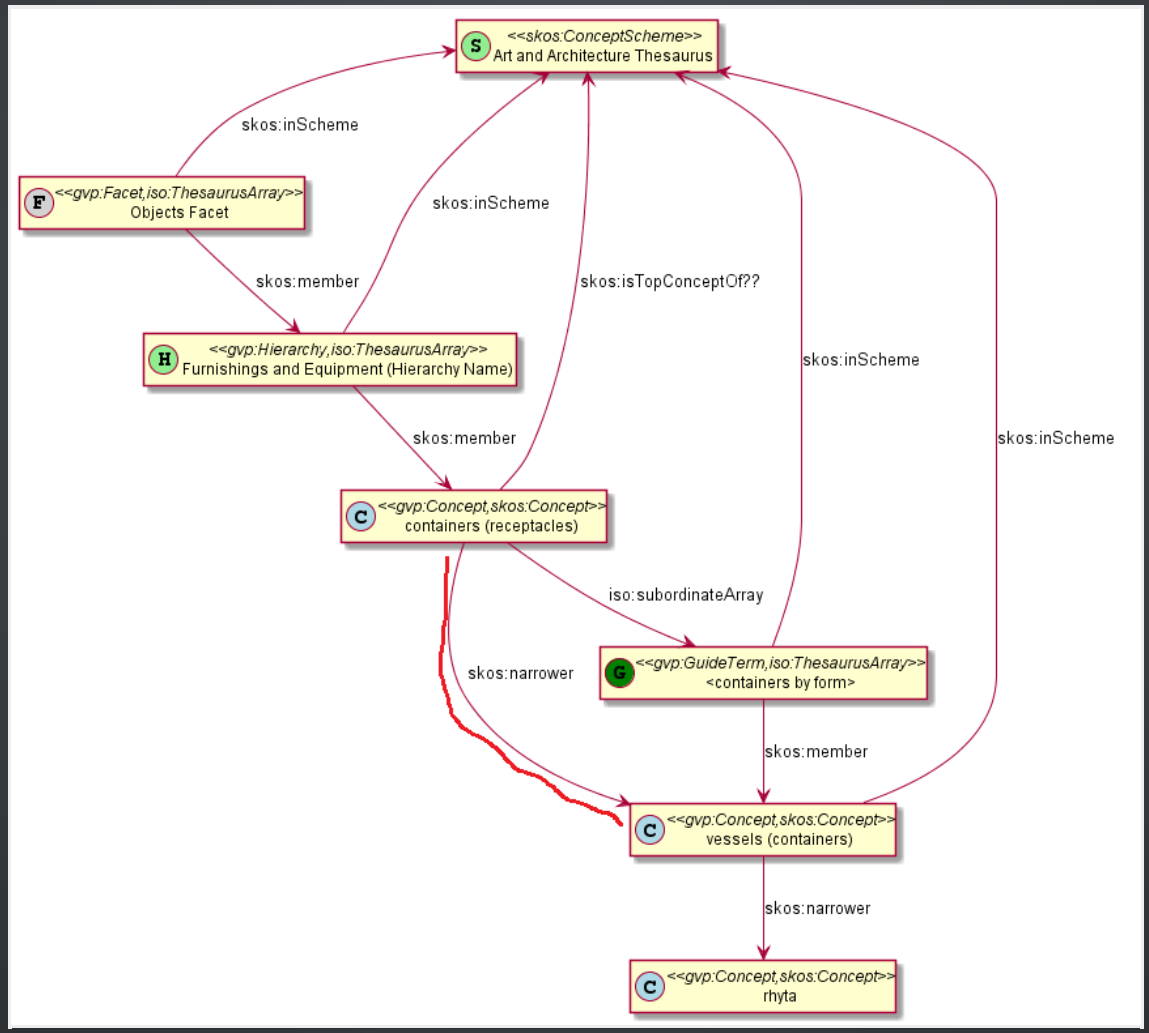


GVP SEMANTIC REPRESENTATION (2)



HIERARCHICAL RELATIONS

Use iso:ThesaurusArray to allow Guide Terms below Concepts.
Infer cross-threading SKOS/ISO broader relations



KEY VALUES (FLAGS) ARE IMPORTANT

Excel-driven Ontology Generation™ (getty-codes.xls to getty-codes.ttl)

Key **val** can be mapped to Custom sub-class, Custom (sub-)prop, Ontology Value (eg <term/kind/Abbreviation>)

voca	table	field	val	ObjectProperty	Class	label	domain	range	subProperty	subClassOf	ConceptSchem
	subject	record_type	F		gvp:Facet	Facet				gvp:Subject, iso:ThesaurusArray	
AAT	subject	record_type	H		gvp:Hierarchy	Hierarchy Name				gvp:Subject, iso:ThesaurusArray	
AAT	subject	record_type	G		gvp:GuideTerm	Guide Term				gvp:Subject, iso:ThesaurusArray	
AAT	subject	record_type	C		gvp:Concept	Concept				gvp:Subject, skos:Concept	
	subject	record_type	-		gvp:ObsoleteSubject	Obsolete Subject				gvp:Subject	
TGN	subject	record_type	P		gvp:PhysPlaceConcept	Physical Place Concept				gvp:Subject, skos:Concept	
TGN	subject	record_type	A		gvp:AdminPlaceConcept	Administrative Place Concept				gvp:Subject, skos:Concept	
TGN	subject	record_type	B		gvp:PhysAdminPlaceConcept	Physical and Administrative Place Concept				gvp:Subject, skos:Concept	
	subject_rels	preferred	P	gvp:broaderPreferred		Preferred Parent	gvp:Subject	gvp:Subject	gvp:broader		
	subject_rels	preferred	N	gvp:broaderNonPreferred		Non-Preferred Parent	gvp:Subject	gvp:Subject	gvp:broader		
	subject_rels	hier_rel_type	G	gvp:broaderGeneric		Parent (Generic)	gvp:Subject	gvp:Subject	gvp:broader		
	subject_rels	hier_rel_type	P	gvp:broaderPartitive		Parent (Partitive)	gvp:Subject	gvp:Subject	gvp:broader		
	subject_rels	hier_rel_type	I	gvp:broaderInstantial		Parent (Instantial)	gvp:Subject	gvp:Subject	gvp:broader		
	term	preferred	P	gvp:prefLabelGVP		Preferred Label for GVP	gvp:Subject	skosxl:Label			
	term	aacr2_flag	Y	gvp:prefLabelLoC		Preferred Label for LoC	gvp:Subject	skosxl:Label			
	term	vernacular	V	gvp:termFlag		Term Flag	skosxl:Label	skos:Concept			term/flag/
	term	other_flags	A	gvp:termKind		Term Kind	skosxl:Label	skos:Concept			term/kind/
AAT	term	other_flags	C	gvp:termKind		Term Kind	skosxl:Label	skos:Concept			term/kind/
AAT	term	other_flags	CN	gvp:termKind		Term Kind	skosxl:Label	skos:Concept			term/kind/
AAT	term	other_flags	F	gvp:termKind		Term Kind	skosxl:Label	skos:Concept			term/kind/
AAT	term	other_flags	J	gvp:termKind		Term Kind	skosxl:Label	skos:Concept			term/kind/
AAT	term	other_flags	N	gvp:termKind		Term Kind	skosxl:Label	skos:Concept			term/kind/
AAT	term	other_flags	S	gvp:termKind		Term Kind	skosxl:Label	skos:Concept			term/kind/

```
gvp:Facet a owl:Class ;
  rdfs:isDefinedBy <http://vocab.getty.edu/ontology> ;
  rdfs:subClassOf gvp:Subject, iso:ThesaurusArray ;
  rdfs:label "Facet" ;
  rdfs:comment "One of the major divisions of a vocabulary" ;
  skos:example "Objects Facet (AAT), World (TGN)" ;
  dct:description "One of the major divisions of a vocabulary.\nExample: Objects Facet (AAT), World (TGN)".
```

ASSOCIATIVE RELATIONS ARE VALUABLE

More Excel-driven Ontology Generation™ (assoc-rels.xls to assoc-rels.ttl)

- Relations come in owl:inverseOf pairs (or owl:SymmetricProperty self-inverse)

fcode	icode	domain (C1)	LOD frel	range (C2)	LOD irel	Editor frel - From C1 to C2	Editor irel - From C2 to C1	fexample	iexample
2000		any	related to	any		any - related to - any	same	*gulf red* is related to *light red (pigment)*	*light red (pigment)* is related to *gulf red*
2001		any	formerly referred to	any		any - formerly referred - any	same	*gigues formerly referred to fiddles*	*fiddles* formerly referred to *gigues*
2100		any	distinguished from	any		any - distinguished from - any	same	*historic farms* are distinguished from *abandoned farms; naive art* is distinguished from *outsider art*	*abandoned farms* are distinguished from *historic farms; outsider art* is distinguished from *naive art*

```
gvp:aat2000_related_to a owl:ObjectProperty;
  rdfs:subPropertyOf skos:related;
  rdfs:domain skos:Concept; rdfs:range skos:Concept;
  # domain "any"; range "any";
  dc:identifier "2000";
  skos:prefLabel "aat2000_related_to";
  dc:title "related to - any";
  skos:example "gulf red is related to light red (pigment)";
  skos:scopeNote "generic relationship, not explained" ;
  dct:description """any - related to - any; generic relationship, not explained.
Example: gulf red is related to light red (pigment)""" .
gvp:aat2000_related_to a owl:SymmetricProperty.
```

GVP ONTOLOGY

http://vocab.getty.edu/ontology, LOV Entry. 10 classes, 177 props: a lot are from excel, so editable by Getty

Table of contents

Ontologies (1):

Getty Vocabulary Program ontology

Classes (10):

AdminPlaceConcept , Concept , Facet , GuideTerm , Hierarchy , ObsoleteSubject , PhysAdminPlaceConcept , PhysPlaceConcept , Scope Note , Subject

Properties (177):

aat2000_related_to , aat2001_formerly_referred_to , aat2100_distinguished_from , aat2110_meaning-usage_overlaps_with , aat2203_associated_with , aat2205_causes-is_required , aat2206_caused_by-requires , aat2208_locus-setting_for , aat2209_used-located_in , aat2211_produce , aat2212_produced_by , aat2215_required_for , aat2216_require , aat2218_used-function_as , aat2219_have_form , aat2222_act_upon , aat2223_are_acted_upon , aat2281_have_counterpart , aat2285_practiced-studied_by , aat2286_practice-study , aat2291_locus-setting_for , aat2292_work-live_in , aat2294_locus-setting_for , aat2295_located_in , aat2311_performed_by , aat2312_perform , aat2315_used_by , aat2316_use , aat2318_involved_in , aat2319_involves , aat2321_used_by , aat2322_use , aat2325_created_by , aat2326_create , aat2328_involved_with , aat2329_involves , aat2332_affiliated_with , aat2333_have_affiliates , aat2335_associated_with , aat2336_has_associates , aat2397_focus_of , aat2398_focuses_on , aat2408_locus-setting_for , aat2409_takes_place_in , aat2411_involved_in , aat2412_involves , aat2415_required_for , aat2416_requires , aat2418_uses , aat2419_used_for , aat2421_locus-setting_for , aat2422_takes_place_in , aat2424_produced_by , aat2425_produces , aat2427_produced_by , aat2428_produces , aat2431_required_for , aat2432_requires , aat2434_contextualized_in , aat2435_context_for , aat2501_made_of-require , aat2502_material_for , aat2504_used-located_in , aat2505_locus-setting_for , aat2507_produce-process , aat2508_produced-processed_by , aat2551_reflect-produced_by , aat2552_reflected_in-produces , aat2554_reflects , aat2555_reflected_in , aat2557_reflects , aat2558_reflected_in , aat2562_locus-setting_for , aat2563_located_in , aat2601_possessed_by-existing_in , aat2602_possess-exist_in , aat2604_possessed_by-existing_in , aat2605_possess-exist_in , aat2607_caused_by-requires , aat2608_causes-required_for , aat2612_possessed_by-existing_in , aat2613_possess-exist_in , aat2801_conjuncted_with , aat2802_exemplified_by , aat2803_example_of , aat2805_contextualized_in , aat2806_provide_context , aat2807_derived_from_common_source , aat2809_coexisted_with , aat2811_preceded , aat2812_followed , aat2814_constituent_of , aat2815_composed_of , aat2817_derived-made_from , aat2818_source_for , aat2821_based_on , aat2822_basis_of , aat2824_has_parallels_with , aat2826_used_with , aat2828_use-require , aat2829_used-required_for , aat2831_associated_with , aat2833_ancestor_of , aat2834_decendant_of , aat2836_derived-made_from , aat2837_source_for , aat2841_derived-made_from , aat2842_source_for , aat2845_used-located_in , aat2846_locus-setting_for , aat2848_involved_in , aat2849_involves , aat2852_involved_with , aat2853_involve , aat2875_characteristic_of , aat2876_characterized_by , aat2878_preceded-source_for , aat2879_followed-developed_from , aat2881_reflected_in , aat2882_reflect , aat2884_involved_with , aat2885_involves , aat2891_exemplified_by , aat2892_example_of , aat2894_exemplified_by , aat2895_example_of , aat2900_miscellaneous_relationship , broader , broaderExtended , broaderGeneric , broaderGenericExtended , broaderInstantial , broaderInstantialExtended , broaderNonPreferred , broaderPartitive , broaderPartitiveExtended , broaderPreferred , broaderPreferredExtended , contributorAlternatePreferred , contributorNonPreferred , contributorPreferred , displayOrder , historicFlag , narrower , narrowerExtended , parentString , parentStringAbbrev , placeTypeNonPreferred , placeTypePreferred , prefLabelGVP , prefLabelLoC , qualifier , sourceAlternatePreferred , sourceNonPreferred , sourcePreferred , term , termDisplay , termFlag , termKind , termPOS , termType , tgn3000_related_to , tgn3001_distinguished_from , tgn3005_possibly_identified_as , tgn3101_adjacent_to , tgn3102_coextensive_with , tgn3110_meaning-usage_overlaps_with , tgn3201_capital_of , tgn3202_capital_is , tgn3301_ally_of , tgn3317_member_of , tgn3318_member_is , tgn3401_moved_from , tgn3402_moved_to , tgn3411_successor_of , tgn3412_predecessor_of , tgn3510_historical_connection

Individuals (44):

Abbreviation , Adjectival , Alternate Descriptor , Art and Architecture Thesaurus , Both , Both Singular and Plural , Chemical Name , Common term , Current , Descriptor , FIPS Code , Full term , Getty Research Institute , Historic , Historic Flag concept scheme , ISO alpha-2 code , ISO alpha-3 code , ISO numeric-2 code , ISO numeric-3 code , Jargon or Slang , Loan Term , Neologism , Noun , Official Name , Ontotext Corp , Part of Speech concept scheme , Past Participle , Plural Noun , Provisional Name , Pseudonym , Scientific or Technical term , Singular Noun , Site Name , Term Display concept scheme , Term Flag concept scheme , Term Kind concept scheme , Term Type concept scheme , Thesaurus of Geographic Names , US Postal Service Code , Use for Display , Use in Indexes/lists , Used for Term , Verbal Noun/Gerund , Vernacular

Go to top | Ontologies | Classes | Properties | Individuals | Expand/Collapse all | Help | Back to form

OBSOLETE SUBJECTS

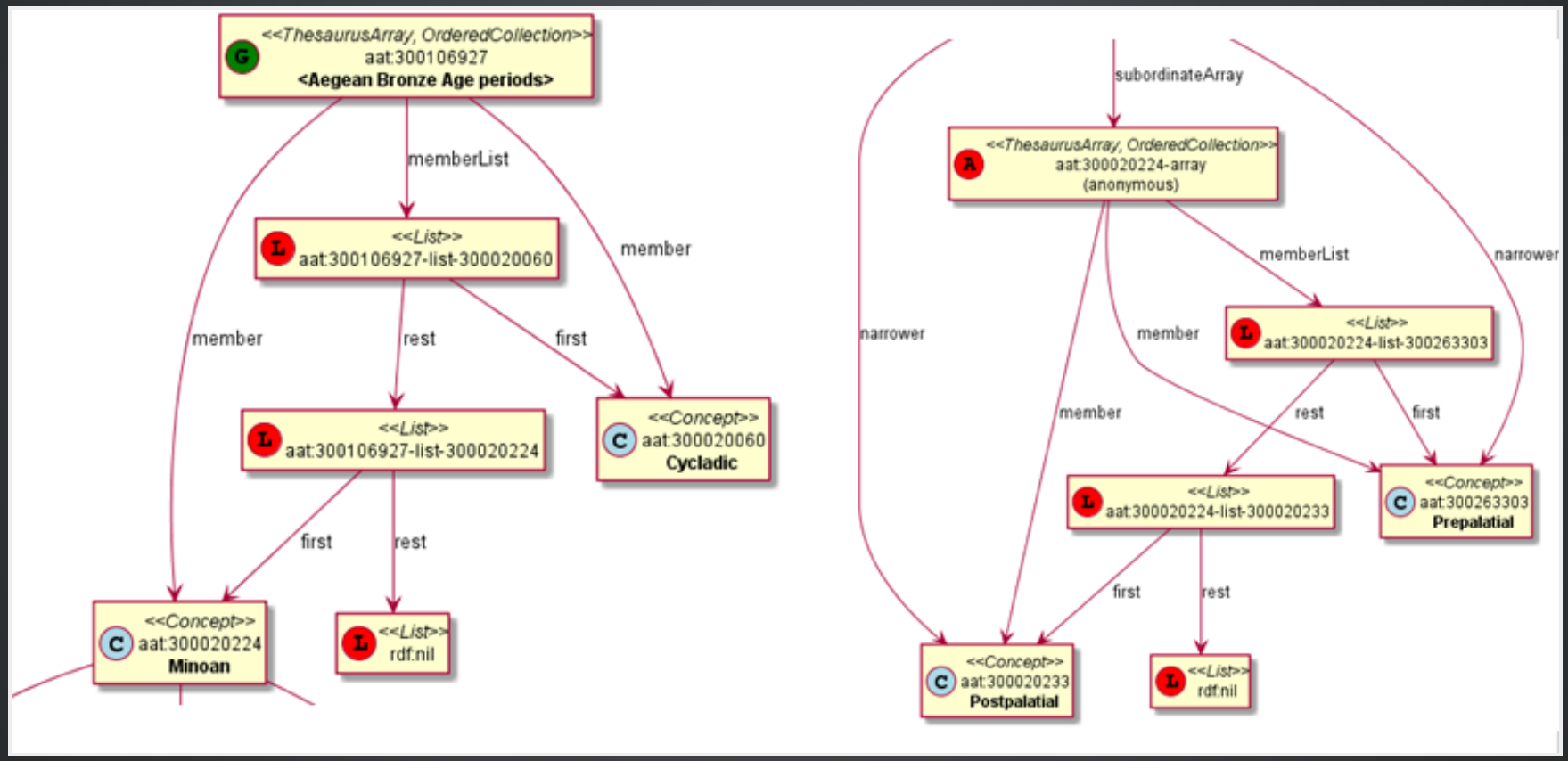
- AAT obsolete subjects are 4.4% of valid subjects, which shows a good rate of editorial actions
- Obsolete subjects may have been used in client data. In order not to leave such data hanging, we publish minimal information:

```
aat:300123456 a gvp:ObsoleteSubject; # Was made non-publishable
  skos:prefLabel "Made up subject";
  skos:inScheme aat: ;
  schema:endDate "2012-12-31T12:34:56"^^xsd:dateTime.

aat:300386746 a gvp:ObsoleteSubject; # Was merged to a dominant Subject
  skos:prefLabel "Buncheong";
  skos:inScheme aat: ;
  dct:isReplacedBy aat:300018699; # Punch'ong
  schema:endDate "2012-12-31T12:34:56"^^xsd:dateTime.
```

USE OF ISO:THESAURUSARRAY IN GVP

Use rdf:List for ordered children.
Novelty: if parent is Concept, use anonymous ThesaurusArray



CONTRIBUTION TO ISO 25946

- Contributed to ISO 25946 ontology (LOV entry)
- First industrial use of ISO 25946
- Defined appropriate combinations of BTG, BTP, BTI relations (first formally defined in ISO).

On Compositionality of ISO 25964 Hierarchical Relations (BTG, BTP, BTI), V.Alexiev, J.Lindenthal, A.Isaac. Draft paper, Presentation at NKOS 2014 Workshop, London, 12 Sep 2014

	BTGx	**BTPx**	**BTIx**
BTGx	BTGE	BTPE	no
BTPx	BTPE	BTPE	no
BTIx	BTIE	no	no

- Eg: anvil components BTP <anvils and anvil accessories> BTG <forging and metal-shaping tools> => BTPE
- Mount Athos BTI Orthodox religious center BTG religious center => BTIE

TERMS

Support multilingual labels: both SKOS (plain)…

```
aat:300198841 a skos:Concept , gvp:Subject , gvp:Concept ;
  skos:prefLabel "rhyta"@el-latn , "rhyta"@en , "rhytons"@es , "rhytons"@fr ;
  skos:altLabel "rhyta"@es , "rhyton"@es , "rhyton"@en , "rhyton"@el-latn ...;
  skosxl:prefLabel aat_term:1000198841-en , aat_term:1000198841-el-Latn ...;
  skosxl:altLabel aat_term:1000198841-es , aat_term:1000297235-en ...
```

… and rich info in SKOS-XL:

```
aat_term:1000198841-en a skosxl:Label ;
  dc:identifier "1000198841" ;
  dct:language aat:300388277 , gvp_lang:en ; # owl:sameAs
  dct:contributor aat_contrib:10000000 , aat_contrib:10000131 ;
  skosxl:literalForm "rhyta"@en ;          #### with Qualifier if applicable
  gvp:term "rhyta"@en ;                    #### no qualifier
  gvp:displayOrder "1"^^xsd:positiveInteger ;
  gvp:termType <term/type/Descriptor> ;    #### Descr/AltDescr/UseFor
  gvp:termPOS <term/POS/PluralNoun> ;      #### Part of Speech
  gvp:contributorPreferred aat_contrib:10000000 , aat_contrib:10000088 ;
  gvp:contributorNonPreferred aat_contrib:10000131 ;
  gvp:sourcePreferred aat_source:2000051089-term-1000198841 ...;
  dct:source aat_source:2000024811 , aat_source:2000052946 ...;
  gvp:sourceNonPreferred aat_source:2000052946 ;
  gvp:sourceAlternatePreferred aat_source:2000048328-term-1000198841 .
```

SOME CUSTOM LANGUAGE TAGS

Despite the richness of IANA tags (9000), we had to define new tags, using several extension mechanisms:

- Private language, e.g.
  - **x-byzantin-Latn**: Byzantine Greek (transliterated)
  - **x-frisian** (IANA/ISO has codes for predecessor Old Frisian and dialects West, Saterland and North Frisian)
- Private language used in specific region, e.g.
  - **qqq-002**: African language (not specified which)
  - **qqq-ET**: Ethiopian (not specified: Boro/Borna, Karo…)
- Private modifier, e.g.
  - grc-Latn- **x-liturgic**: Liturgical Greek
  - ber-Latn- **x-dialect**: Berber Dialects (transliterated)
  - fa-Latn- **x-middle**: Persian, Middle (transliterated)
  - zh-Latn-pinyin- **x-notone**: transliterated Pinyin without tones

SOURCES

bibo:Document or bibo:DocumentPart

```
aat_source:2000051089 a bibo:Document;
  dc:identifier "2000051089"
  bibo:shortTitle "AATA database (2002-)";
  dct:title "Getty Conservation Institute (GCI). database of AATA Online...".
aat_source:2000051089-term-1000198841 a bibo:DocumentPart;
  dct:isPartOf aat_source:2000051089;
  bibo:locator "128257 checked 26 January 2012".
```

Applied to subject, term, scopeNote:

```
aat:300198841 # subject (rhyta)
  dct:source aat_source:2000030301-subject-300198841;
  dct:source aat_source:2000052378.
aat_term:1000198841-en # term "rhyta"@en
  gvp:sourceNonPreferred aat_source:2000049728;
  dct:source aat_source:2000051089-term-1000198841.
aat_scopeNote:34904 # scopeNote
  dct:source aat_source:2000046502.
```

CONTRIBUTORS

foaf:Agent

```
aat_contrib:10000131 a foaf:Agent;
  dc:identifier "10000131";
  foaf:nick "CDBP-DIBAM";
  foaf:name "Centro de Documentación de Bienes Patrimoniales...".
```

Applied to subject, term, scopeNote:

```
aat:300198841 # subject "rhyta"
  dct:contributor aat_contrib:10000131;
  dct:contributor aat_contrib:10000000.
aat_term:1000198841-en # term "rhyta"@en
  gvp:contributorNonPreferred aat_contrib:10000131;
  gvp:contributorPreferred aat_contrib:10000000.
aat_scopeNote:34904 # scopeNote
  dct:contributor aat_contrib:10000000.
```

HISTORIC INFO

Includes dates of applicability, historicFlag, comment. Applied to terms; hier & assoc rels, place types (using rdf:Statement)

```
aat_term:1000002693-en a skosxl:Label;
  skosxl:literalForm "lambruscatura"@en ;
  gvp:historicFlag <http://vocab.getty.edu/historic/historic> ;
  schema:startDate "0900"^^xsd:gYear ;
  schema:endDate "1700"^^xsd:gYear ;
  rdfs:comment "Medieval term for wainscoting".

aat_rel:300020271-aat2812_followed-300020269 a rdf:Statement;
  rdf:subject      aat:300020271;        # Second Dynasty (Egyptian)
  rdf:predicate    gvp:aat2812_followed;
  rdf:object       aat:300020269;        # First Dynasty (Egyptian)
  rdfs:comment     "Second Dynasty began ca. 2775 BCE";
  schema:startDate "-2785"^^xsd:gYear;
  schema:endDate   "-2765"^^xsd:gYear.

tgn:7011179-placeType-300008347 a rdf:Statement;
  rdf:subject      tgn:7011179;          # Siena
  rdf:predicate    gvp:placeTypePreferred;
  rdf:object       aat:300008347;        # inhabited place
  rdfs:comment     "settled by Etruscans (flourished 6th century BCE)";
  schema:startDate "-0800"^^xsd:gYear;
  gvp:displayOrder "1"^^xsd:positiveInteger.
```

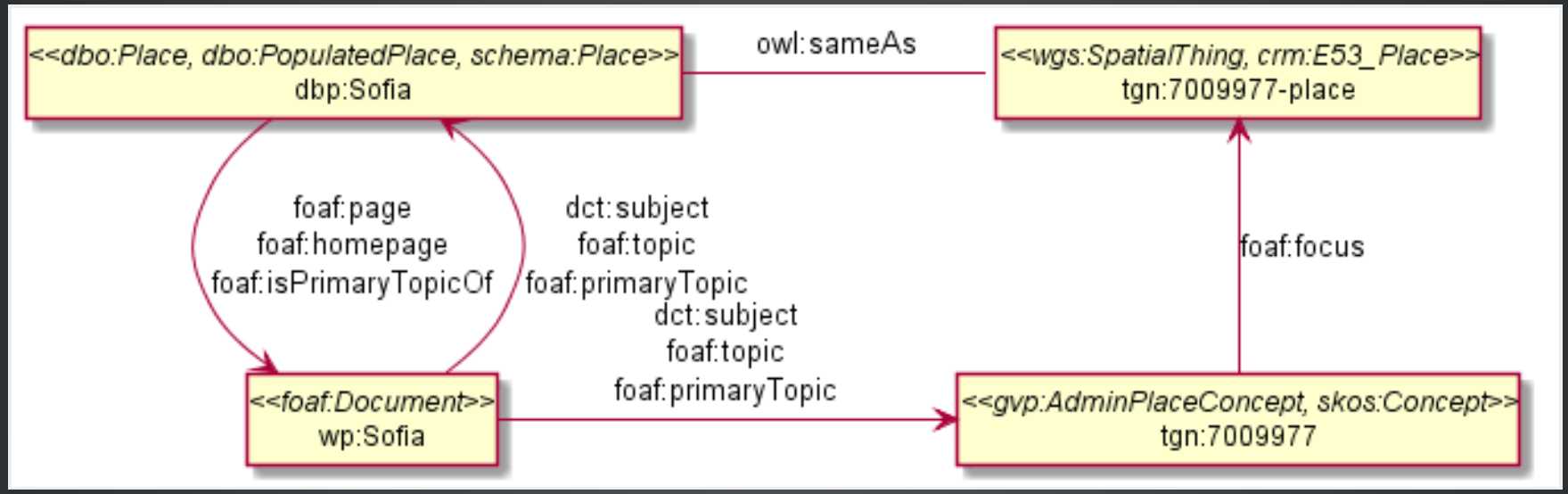
REVISION HISTORY

PROV is too complex, so we simplify:

```
aat:300018699
  skos:changeNote aat_rev:12345, aat_rev:12346, aat_rev:12347;
  prov:wasGeneratedBy aat_rev:12345;
  dct:created  "2014-01-02T01:02:03"^^xsd:dateTime;
  dct:modified "2014-01-03T01:02:03"^^xsd:dateTime;
  dct:issued   "2014-01-04T01:02:03"^^xsd:dateTime.
aat_rev:12345 a prov:Activity, prov:Create;
  dc:type "created";
  prov:startedAtTime "2014-01-02T01:02:03"^^xsd:dateTime.
aat_rev:12346 a prov:Activity, prov:Modify;
  prov:used aat:300018699;
  dc:type "term added";
  dc:description "leggings, puttee (1000248060)";
  prov:startedAtTime "2014-01-03T01:02:03"^^xsd:dateTime.
aat_rev:12347 a prov:Activity, prov:Publish;
  prov:used aat:300018699;
  dc:type "issued";
  prov:startedAtTime "2014-01-04T01:02:03"^^xsd:dateTime.
```

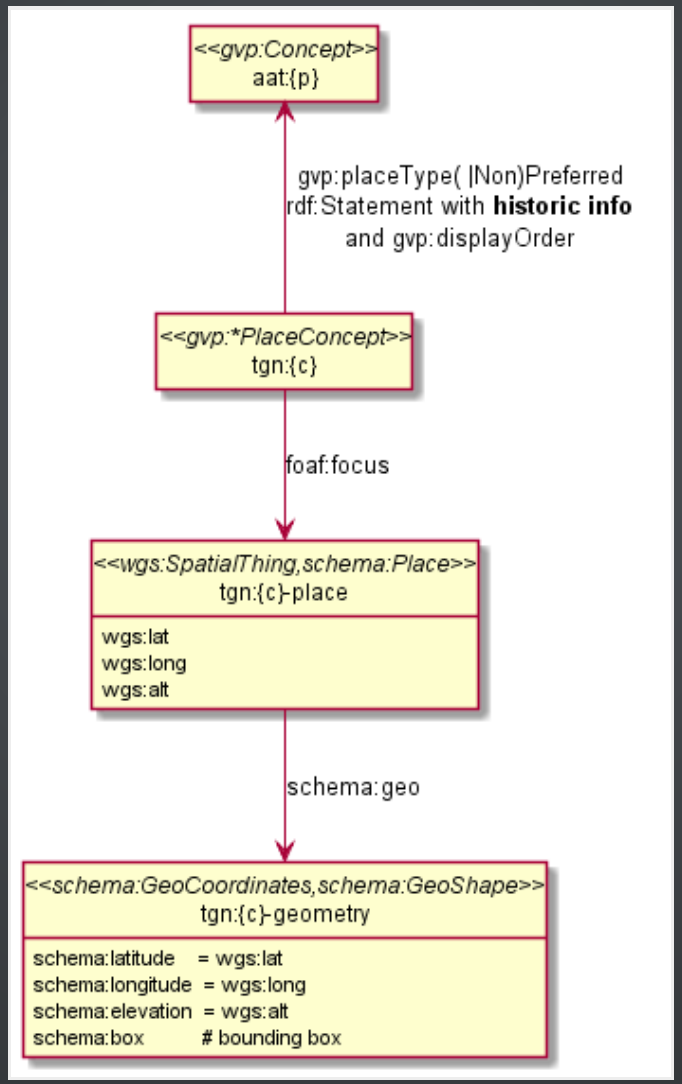
TGN SPECIFICS: CONCEPT-PLACE DUALITY

Duality between Concept and its denotation (ala VIAF, UK BL, FR BnF, SE KB…)

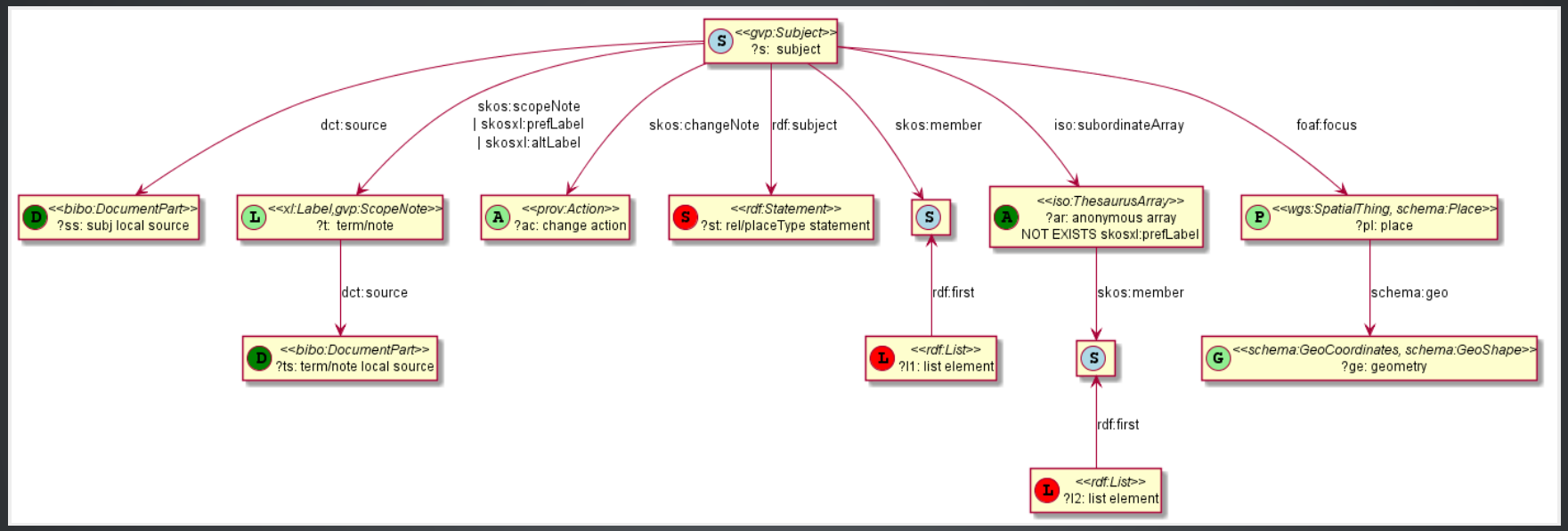


TGN SEMANTIC REPRESENTATION

Place types (TGN->AAT), Concept-Place duality, coordinates



CONSTRUCT QUERY: GET & CACHE ALL DATA FOR SUBJECT



- All data for these subsidiary objects is served by the resource URL
- Cached, thus served quickly
- Served in RDF/XML, N3/Turtle, NTriples, JSON, soon JSON-LD

DOCUMENTATION

Getty Vocabularies: Linked Open Data

Very detailed: 100 pages! Linkable anchors:

vocab.getty.edu/doc/#Full_Text_Search

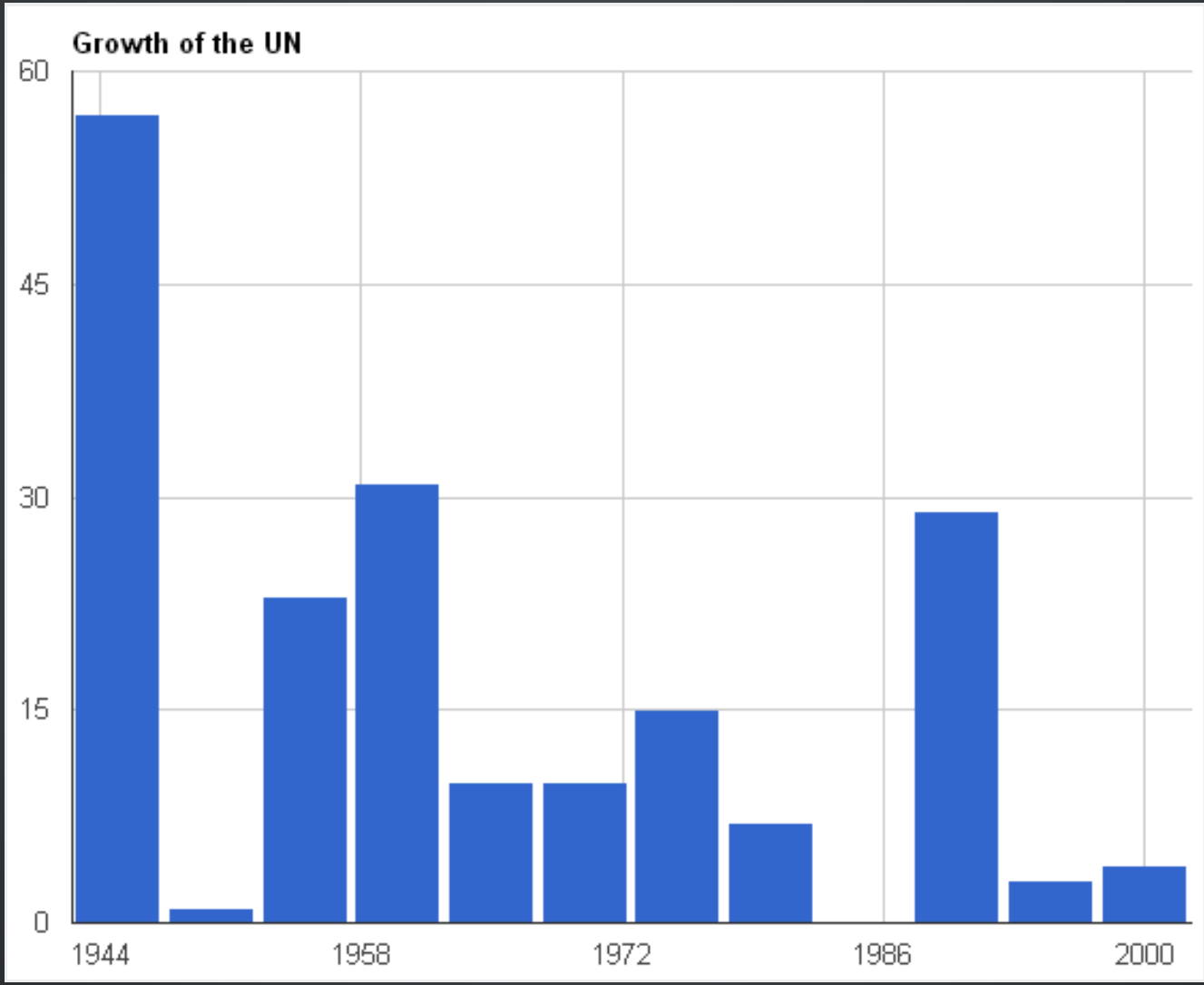
Semantic Representation

Version: 2.0
Last updated: 19 Aug 2014
HTML version: http://vocab.getty.edu/doc/ (for link
PDF version: http://vocab.getty.edu/doc/gvp-lod.
Formerly at: http://www.getty.edu/research/tool
Initial version: Vladimir Alexiev, Joan Cobb, Greg
Updates: Vladimir Alexiev, Joan Cobb

Table of Contents

SAMPLE QUERY: BAR CHART WITH SPARQL

Number of UN members per year. See doc or jsfiddle with it



THANKS FOR YOUR TIME!

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