

Interoperability of KOS Metadata Schemas in BARTOC and JSKOS

Jakob Voß Andreas Ledl

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BARTOC.org
Basel Register of Thesauri, Ontologies &
Classifications

English ▾

A multilingual, interdisciplinary directory of Knowledge Organization Systems & KOS related Registries

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I'm speaking at...
taxonomy
BOOT CAMP
LONDON
18 & 19
October

Publications

Proceedings of TKE 2016 #
European DDC Users Group 2016 #
International UDC Seminar 2015 #
104th German Library Congress 2015 #



Founding Reasons

- ▶ Make traditional resources more visible
- ▶ Provide key characteristics of resources
- ▶ Encourage human and machine assessment of these resources by applicability to semantic projects
- ▶ Promote information exchange and knowledge sharing

Hlava (2011): Developing an eclectic terminology registry

Collaborations



Inter-Active Terminology for Europe

View

Voting results

Abstract:

"In IATE you can find EU-specific terminology and jargon, as well as terms from all sorts of areas, such as law, agriculture, information technology and many others. IATE has 8.4 million terms, including approximately 540 000 abbreviations and 130 000 phrases, and covers all 23 official EU languages.

New terms are added every day and the contents are constantly updated. IATE plays a major role in ensuring the quality of the written communication of the EU institutions and bodies."

Alternative Title: IATE

Size: 8.4 million terms, including approximately 540 000 abbreviations and 130 000 phrases (2016-06)

Year of Creation: 1999

Author: Translation Centre for the Bodies of the European Union

VIAF: Translation Centre for the Bodies of the European Union[#]

Link: <http://iate.europa.eu>[#]

Topic: European Union

DDC: 001 Knowledge

ILC:

s: civil society, communities, groups, people t: governments, political power, political units, sovereign states

u: economies, economic systems v: technologies, technological systems, production systems

tUE: European Union, EU

Access: Free

Format: Online

Type: thesaurus

Wikidata: <http://www.wikidata.org/entity/Q1520860>[#]

Wikipedia: [be](#) [da](#) [de](#) [en](#) [es](#) [et](#) [fr](#) [ga](#) [gl](#) [it](#) [lt](#) [pl](#) [pt](#) [ru](#) [uk](#)

Language:

Bulgarian Croatian Czech Danish Dutch English Estonian Finnish French German Greek

Hungarian Irish Italian Latin Latvian Lithuanian Maltese Polish Portuguese Romanian Slovak

Slovenian Spanish Swedish

Location: Luxembourg Unknown Luxembourg

Geo: POINT (6.1424653 49.6184686)

License: Unknown

Rate



EuroVoc URIs

<http://eurovoc.europa.eu/4060>[#]

ISO 639-2 URIs

<http://id.loc.gov/vocabulary/iso639-2/bul>[#]

<http://id.loc.gov/vocabulary/iso639-2/hrv>[#]

<http://id.loc.gov/vocabulary/iso639-2/cze>[#]

<http://id.loc.gov/vocabulary/iso639-2/dan>[#]

<http://id.loc.gov/vocabulary/iso639-2/dut>[#]

<http://id.loc.gov/vocabulary/iso639-2/eng>[#]

<http://id.loc.gov/vocabulary/iso639-2/est>[#]

<http://id.loc.gov/vocabulary/iso639-2/fln>[#]

<http://id.loc.gov/vocabulary/iso639-2/fre>[#]

<http://id.loc.gov/vocabulary/iso639-2/ger>[#]

<http://id.loc.gov/vocabulary/iso639-2/gre>[#]

<http://id.loc.gov/vocabulary/iso639-2/hun>[#]

<http://id.loc.gov/vocabulary/iso639-2/gle>[#]

<http://id.loc.gov/vocabulary/iso639-2/ita>[#]

<http://id.loc.gov/vocabulary/iso639-2/lat>[#]

<http://id.loc.gov/vocabulary/iso639-2/lav>[#]

<http://id.loc.gov/vocabulary/iso639-2/ltt>[#]

<http://id.loc.gov/vocabulary/iso639-2/mtt>[#]

Interoperability



Main page
Community portal
Project chat
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Inter-Active Terminology for Europe (Q1520860)

No description defined

[edit](#)

IATE

[+ In more languages](#) Configure

Language	Label	Description	Also known as
English	Inter-Active Terminology for Europe	No description defined	IATE
German	Inter-Active Terminology for Europe	No description defined	IATE
Swiss German	No label defined	No description defined	
French	Terminologie interactive pour l'Europe	No description defined	IATE Inter-Active Terminology for Eur...

All entered languages

Statements

instance of termbase [edit](#)
[+ 0 references](#)
[+ add reference](#)
[+ add](#)

Identifiers

BARTOC ID 20 [edit](#)
[+ 0 references](#)
[+ add reference](#)
[+ add](#)

Wikipedia (15 entries) [edit](#)

- [be](#) IATE
- [da](#) IATE
- [de](#) Inter-Active Terminology for Europe
- [en](#) Inter-Active Terminology for Europe
- [es](#) Inter-Active Terminology for Europe
- [et](#) IATE
- [fr](#) terminologie interactive pour l'Europe
- [ga](#) Inter-Active Terminology for Europe (IATE)
- [gl](#) IATE
- [it](#) Inter-Active Terminology for Europe
- [it](#) IATE
- [pl](#) IATE
- [pl](#) IATE (base terminologica)
- [ru](#) IATE
- [uk](#) IATE

Wikibooks (0 entries) [edit](#)

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Wikisource (0 entries) [edit](#)

Wikiversity (0 entries) [edit](#)

Wikivoyage (0 entries) [edit](#)

Other sites (0 entries) [edit](#)

NKOS DC Application Profile

Zeng and Žumer (2015): Networked Knowledge Organization Systems Dublin Core Application Profile (NKOS AP) v0.2

- ▶ BARTOC is aligned with NKOS AP
- ▶ Some NKOS AP fields are not included or applicable [yet?]
- ▶ Additional constraints make sense

→ BARTOC RDF \subset (NKOS AP \cup Schema.org \cup FOAF)

BARTOC KOS Metadata in RDF

```
<http://bartoc.org/en/taxonomy/term/1> a skos:Concept;
  rdfs:label "thesaurus"@en ; skos:prefLabel "thesaurus"@en .

<http://bartoc.org/en/node/20> a sioc:Item, schema:Dataset, foaf:Document;
  dc:type <http://bartoc.org/en/taxonomy/term/1>;
  schema:name "IATE", "Inter-Active Terminology for Europe"@en;
  dc:title "IATE";
  dc:creator "Translation Centre for the Bodies of the European Union";
  foaf:maker <http://viaf.org/viaf/167896131>,
    "Translation Centre for the Bodies of the European Union";
  dc:created "1999"^^xsd:gYear;
  nkos:sizeNote
    "8.4 million terms, including approximately 540.000 abbreviations and 130 000 phrases (2016-06)" ;
  dc:description "In IATE you can find EU-specific terminology and jargon, as well as terms from all sorts";
  dc:identifier <http://iate.europa.eu>;
  dc:relation <http://www.wikidata.org/entity/Q1520860>;
  schema:about
    <http://bartoc.org/en/taxonomy/term/10656>,
    <http://bartoc.org/en/taxonomy/term/11597>,
    <http://bartoc.org/en/taxonomy/term/50220>,
    <http://bartoc.org/en/taxonomy/term/50430>,
    <http://bartoc.org/en/taxonomy/term/50770>;
    <http://bartoc.org/en/taxonomy/term/51043>;
    <http://bartoc.org/en/taxonomy/term/49253>,
  dc:language
    <http://bartoc.org/en/taxonomy/term/10746>,
    <http://bartoc.org/en/taxonomy/term/10747>,
    <http://bartoc.org/en/taxonomy/term/10748>,
    <http://bartoc.org/en/taxonomy/term/10749>,
    ...
```


BARTOC KOS Metadata in RDF

```
<http://bartoc.org/en/taxonomy/term/1> a skos:Concept; # == <http://w3id.org/nkos/nkostype#thesaurus>
  rdfs:label "thesaurus"@en ; skos:prefLabel "thesaurus"@en .

<http://bartoc.org/en/node/20> a sioc:Item, schema:Dataset, foaf:Document;
  dc:type <http://bartoc.org/en/taxonomy/term/1>; # == <http://w3id.org/nkos/nkostype#thesaurus>
  schema:name "IATE", "Inter-Active Terminology for Europe"@en;
  dc:title "IATE";
  dc:creator "Translation Centre for the Bodies of the European Union";
  foaf:maker <http://viaf.org/viaf/167896131>, # => VIAF
    "Translation Centre for the Bodies of the European Union";
  dc:created "1999"^^xsd:gYear;
  nkos:sizeNote
    "8.4 million terms, including approximately 540.000 abbreviations and 130 000 phrases (2016-06)" ;
  dc:description "In IATE you can find EU-specific terminology and jargon, as well as terms from all sorts";
  dc:identifier <http://iate.europa.eu>;
  dc:relation <http://www.wikidata.org/entity/Q1520860>; # => Wikidata
  schema:about
    <http://bartoc.org/en/taxonomy/term/10656>, # == <http://dewey.info/class/001/e23/> DDC 001: Knowledge
    <http://bartoc.org/en/taxonomy/term/11597>, # == <http://eurovoc.europa.eu/4060> European Union
    <http://bartoc.org/en/taxonomy/term/50220>, # == s: civil society, communities, groups, people
    <http://bartoc.org/en/taxonomy/term/50430>, # == t: governments, political power, political units, sov
    <http://bartoc.org/en/taxonomy/term/50770>; # == tUE: European Union, EU
    <http://bartoc.org/en/taxonomy/term/51043>; # == u: economies, economic systems
    <http://bartoc.org/en/taxonomy/term/49253>, # == v: technologies, technological systems, production sy
  dc:language
    <http://bartoc.org/en/taxonomy/term/10746>, # == en (English)
    <http://bartoc.org/en/taxonomy/term/10747>, # == fr (French)
    <http://bartoc.org/en/taxonomy/term/10748>, # == de (German)
    <http://bartoc.org/en/taxonomy/term/10749>, # == es (Spanish)
    ...
```

Metadata Schema Conversion

manual input → BARTOC database fields (Drupal)

⇒ Drupal → BARTOC RDFa (NKOS AP & schema.org)

⇒ Wrapper → JSKOS (SKOS & extensions)

Conversions don't preserve all information (\Leftrightarrow) but normalize

See Ledl and Voß (2016) for conversion details

- ▶ based on RDF (SKOS and DC Terms)
 - ▶ additional constraints for better normalization
 - ▶ support of mappings, concordances, and registries in addition to concept schemes and concepts
- ▶ based on JSON-LD
 - ▶ simplified and extended with closed world statements

Primary use case: **simple use in web applications**

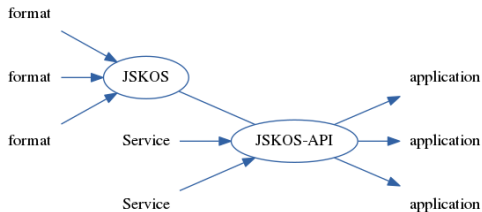
Specified at <https://gbv.github.io/jskos/>

BARTOC KOS Metadata in JSKOS

```
{
  "uri": "http://bartoc.org/en/node/20",
  "type": [
    "http://www.w3.org/2004/02/skos/core#ConceptScheme",
    "http://w3id.org/nkos/nkostype#thesaurus"
  ],
  "prefLabel": {
    "en": "Inter-Active Terminology for Europe"
  },
  "notation": [ "IATE" ],
  "created": "1999",
  "creator": [ {
    "uri": "http://viaf.org/viaf/167896131",
    "prefLabel": { "en": "Translation Centre for the Bodies of the European Union" }
  } ],
  "extent": "8.4 million terms, including approximately 540 000 abbreviations and 130 000 phrases (2016-06)",
  "identifier": [ "http://www.wikidata.org/entity/Q1520860" ],
  "url": "http://iate.europa.eu",
  "languages": [ "en", "fr", "de", "es", null ] # null: explicit existence
  "subject": [ {
    "uri": "http://eurovoc.europa.eu/4060",
    "prefLabel": { "en": "European Union" }
  }, {
    "uri": "http://dewey.info/class/001/e23/"
    "notation": [ "001" ],
    "prefLabel": { "en": "Knowledge" }
  },
  null # null: explicit existence
]
}
```

JSKOS-API Wrapper

- ▶ Implementation and demo:
<https://github.com/gbv/jskos-php-examples>
- ▶ Straightforward mapping from RDF to SKOS
- ▶ API specified at <https://gbv.github.io/elma/>



Daily BARTOC Dumps in JSKOS

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Publications

BARTOC database dumps and reports

This page contains database dumps of BARTOC.org converted to JSKOS format. All data is made available under CC Zero.

- [concept schemes in JSKOS](#) (1905, last updated 2016-10-13 02:00)
→ [download all](#) (NDJSON)
- [terminology registries in JSKOS](#) (75, last updated 2016-10-13 02:23)
→ [download all](#) (NDJSON)
- [data quality reports of concept schemes in JSKOS](#)

Please report error in BARTOC to the [BARTOC editors](#) and errors in the database dumps at [this issue tracker!](#)

Concept schemes report [hide](#)

id	notation	name	created	license	Wikidata
7	AGIFT	Australian Governments' Interactive Functions Thesaurus			
8		AHSP Descrição Arquivística ^{pt}			
9		AIM25 Thesaurus ^{und}			
10		APAIS Thesaurus ^{und}			
11	CSH	Canadian Subject Headings ^{und}			Q5030602
12		ACLearn ^{und}			
13		CSPS Controlled Vocabulary ^{und}			

Summary

- ▶ > 1.900 KOSs (and 70 KOS registries) in BARTOC
- ▶ RDF Metadata Schema: NKOS AP & schema.org & FOAF
- ▶ Controlled vocabularies: EuroVoc, DDC, Wikidata
ISO 639-2 languages, NKOS KOS Types, ILC. . .
- ▶ JSKOS format: SKOS & JSON-LD & constraints/extensions
- ▶ BARTOC dumps available as Open Data
- ▶ Contributions are welcome!

References

See also <http://bartoc.org/> and <https://coli-conc.gbv.de/publications>.

Hlava, Marjorie. 2011. "Developing an Eclectic Terminology Registry." *Bulletin of the American Society for Information Science and Technology* 37 (4): 19–22.
doi:10.1002/bult.2011.1720370406.

Ledl, Andreas, and Jakob Voß. 2016. "Describing Knowledge Organization Systems in BARTOC and JSKOS." In *Proceedings of International Conference on Terminology and Knowledge Engineering*, 168–78. <http://hdl.handle.net/10760/29366>.

Zeng, Marcia L., and Maja Žumer. 2015. "Networked Knowledge Organization Systems Dublin Core Application Profile (NKOS AP) V0.2." <http://w3id.org/nkos>.