

Publish your SKOS vocabulary with Skosmos

Osma Suominen and Henri Ylikotila

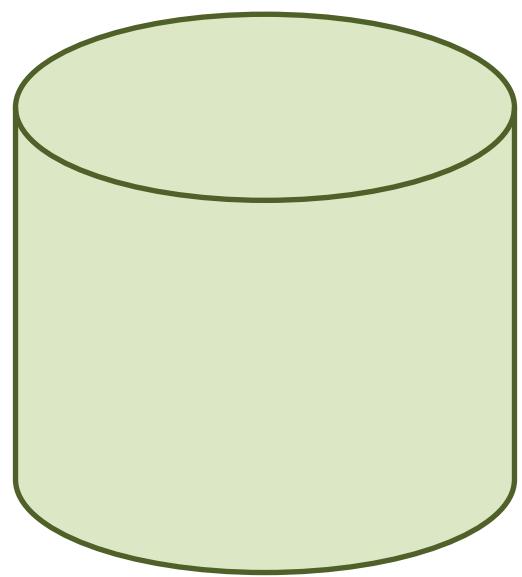
SWIB14, Bonn, December 3, 2014

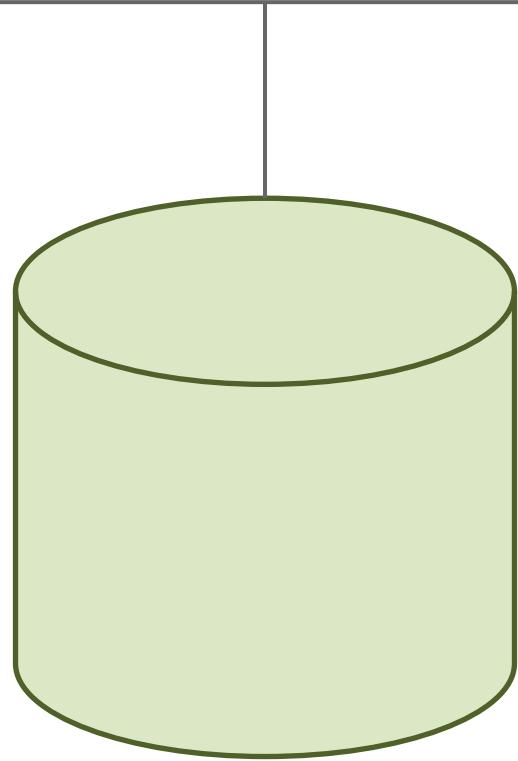


THE NATIONAL LIBRARY OF FINLAND – Library Network Services

How do you put a thesaurus* on the web?

* or any KOS: classification, authority file, term list, lightweight ontology...





A search bar with the word "Search" and a magnifying glass icon.

The Library of Congress > Linked Data Service > LC Subject Headings

Philosophy

From Library of Congress Subject Headings

[Details](#) [Visualization](#) [Suggest Terminology](#)

Philosophy

URI(s)

- <http://id.loc.gov/authorities/subjects/sh85100849>
- <http://id.loc.gov/authorities/sh85100849#concept>

Instance Of

- [MAO3RDF_Type](#)
- [MAO3RDF_Authority](#)
- [SKOS_Concept](#)

Scheme Memberships

- [Library of Congress Subject Headings](#)

Collection Memberships

- [LCSH Collection - Authorized Headings](#)
- [LCSH Collection - General Collection](#)
- [LCSH Collection - May Subdivide Geographically](#)

Variants

- [Mental philosophy](#)

Broader Terms

- [Humanities](#)

Narrower Terms

- [Absent \(Philosophy\)](#)

LCSH

Iconclass

Outline · Edits · Clipboard

Options · Help ..

0 Abstract, Non-representational Art

1 Religion and Magic

2 Nature

21 the four elements, and ether, the fifth element

21C fire (one of the four elements)
elements · fire · five · four · nature

See also:

- 22E12 burning
- 25F412 salamander (fabulous animal); salamander as spirit of fire
- 41B1 open fire (in general)
- 41C254 kitchen-fire

3 Human Being, Man in General

4 Society, Civilization, Culture

5 Abstract Ideas and Concepts

6 History

7 Bible

8 Literature

9 Classical Mythology and Ancient History

hbz-Verbundkatalog - Gemeinsame Normdatei

Standardsuche Expertensuche Indexsuche Ergebnisliste
Einstellungen Suchverlauf Korb Kataloge Feedback

hbz-Verbund Datenbank

Indexsuche

Schlagwort: baauhaus

Absenden Verwerfen

Indexliste: Schlagwort-Entitäten.

Treffer	Eintrag
1	Bauhaus (DE-588)10277503-5 KF.I.1
1	Bauhaus (DE-588)10314524-6 KF.I.6
1	Bauhaus (DE-588)130303-9 SA.L1
1	Bauhaus 1986-1993 (DE-588)1423575-5 KS.I.1
1	Bauhaus AG (DE-588)16074888-7 KF.I.1
1	Bauhaus AG Zug Bauhaus AG Zug Bauhaus AG Münster (DE-588)16074888-9 KF.I.1
1	Bauhaus AG Zug Zweigstellenklassifikation (DE-588)16074888-9 KF.I.1
1	Bauhaus, Albert 1929 (DE-588)126006857 PF.I.6
1	Bauhaus, Andreas 1963 (DE-588)172943124 PF.I.6
1	Bauhaus Archiv Museum für Gestaltung Berlin (DE-588)4129019-7 KS.I.1

GND

SWD

Navigate from tree top

MeSH Browser (2015 MeSH):
The files are updated each week day Monday-Friday by 6AM EST.

Go to 2014 MeSH

Search: brain

Find Exact Term Find Terms with ALL Fragments Find Terms with ANY Fragment

Search Options:

All Terms

- Main Heading Terms
- Qualifier Terms
- Supplementary Concept Terms
- MeSH Unique ID
- Text words in Annotation & Scope Note
- Search in these fields of chemicals:
- Heading Mapped To (HM) (Supplementary List)
- Indexing Information (II) (Supplementary List)
- Pharmacological Action (PA)
- CAS Registry/EC Number/UNII Code (RN)
- Related Registry Number (RR)

MeSH

gesis ▾

sowiport Das Portal für die Sozialwissenschaften

Home Thesaurus

Deutsch English Français russski

soziologie

soziologie of aging
soziologie of architecture
soziologie of art
soziologie of communication
soziologie of education
soziologie of gender
soziologie of information
soziologie of knowledge
soziologie of language
soziologie of law
soziologie of leisure
soziologie of literature
soziologie of music
soziologie of religion
soziologie of science
soziologie of sports
soziologie of technology
soziologie of the body
soziologie of family
soziologie of work
soziologie student

Descriptor: soziologie of literature

Weiterer Begriff: soziologie

Zuordnung: 0.7.07 Sociology/Social Psychology

Scrollelement: Ein Aus

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TheSoz

Agrovoc

Search

Home | Search | Alphabetical List | Hierarchy | News | Word Tree | Scope notes and Descriptions | Categories | Help

Language: English Search In: Term Comments Definition History Note Taxonomic Term (animals)

Show: Current Terms Deleted Terms All Terms

Search by code: Search range

exact match starting with Enter the word you are looking for

Submit Reset

Results from Term Description: See Legend for symbols

8309 Water (EN)	Term without BT relations
24929 Water activity (EN)	Term with relations
16064 Water analysis (EN)	Term without BT relations
8310 Water availability (EN)	Term with relations
8311 Water balance (EN)	Term without BT relations
8312 Water binding capacity (EN)	Term with relations
36197 Water birds (EN)	Non-Descriptor with USE relation
32369 Water blooms (EN)	Non-Descriptor with USE relation

AAT

ZBW Leibniz-Informationszentrum
Wirtschaft
Leibniz Information Centre
for Economics

Home Alphabetical descriptor list Wiki STW Web Services

Marketing

Marketing (german)

Narrower Terms

- Cause-related marketing
- Computer-assisted marketing
- Cross-cultural marketing
- Direct marketing
- Event marketing
- Farm promotion
- Green marketing
- Guerrilla marketing
- International marketing
- Neuromarketing
- Nonprofit marketing
- Services marketing
- SME marketing
- Viral marketing

Related Terms

- HR marketing
- Marketing management
- Marketing theory
- Market research
- Sales
- Selling

STW

This site is part of Europa

EuroVoc Multilingual Thesaurus of the European Union

Europe - EuroVoc homepage > Domains and MFT > principle of subsidiarity

Content language: (en) English

Simple search Advanced search

Browse Browse the subject-oriented version

Download By domain Permitted alphabetical Multilingual list Alphabetical Index EuroVoc SKOS/RDF EuroVoc XML

Your proposals Contribute New approved concepts

principle of subsidiarity

DEF Principle according to which the European Union takes action only when the objectives in question can be better achieved at EU level than by the Member States. [Glossary](#), [Summaries of EU legislation](#)

10 EUROPEAN UNION MT | European Union law BTLE | European Union law BTLE | European Union law

EuroVoc

LANGUAGE EQUIVALENTS

BG	принцип на субсидиарност
ES	principio de subsidiariedad
CS	principál de subsidiárnosti
DA	subsidiaritetsprincippet
DE	subsidiaritätsprinzip
ET	subsidiarise põhimõte
EN	principle of subsidiarity
EL	οργή της επικοινότητας
IT	principio di solidarietà
PT	princípio da subordinação
FR	principe de subsidiarité
HR	náčelo subsidiarnosti
IT	principio di solidarietà
LV	subsidiaritātes principijs
LT	subsidiarumo principi
HU	szubszidiárisztikus elvek
MT	subsidiaritetsprincipjētā
NL	subsidiariteitsbeginsel
PL	zasada subsidiarności
RO	principiu de subordinație
SK	princípia subsidiárnosti
SL	náčelo subsidiarnosti
FI	toissijaisuusperante
SV	subsidiaritetsprincipen
SR	начело субсидијарности

Art & Architecture Thesaurus® Online Full Record Display

New Search Previous Page Help

Click the icon to view the hierarchy.

Semantic View (JSON, RDF, N3/Turtle, N-Triples)

ID: 300021432

Bauhaus (<modern German styles and movements>, <modern European regional styles and movements>, ...)

Note: Refers to the German School of art, design, and architecture active in Weimar from 1919 to 1925, in Dessau from 1925 to 1932, and in Berlin from 1932 to 1933. Training students in both fine art and craftsmanship, it produced objects and building designs intended for mass production using simple, geometric forms.

Terms:

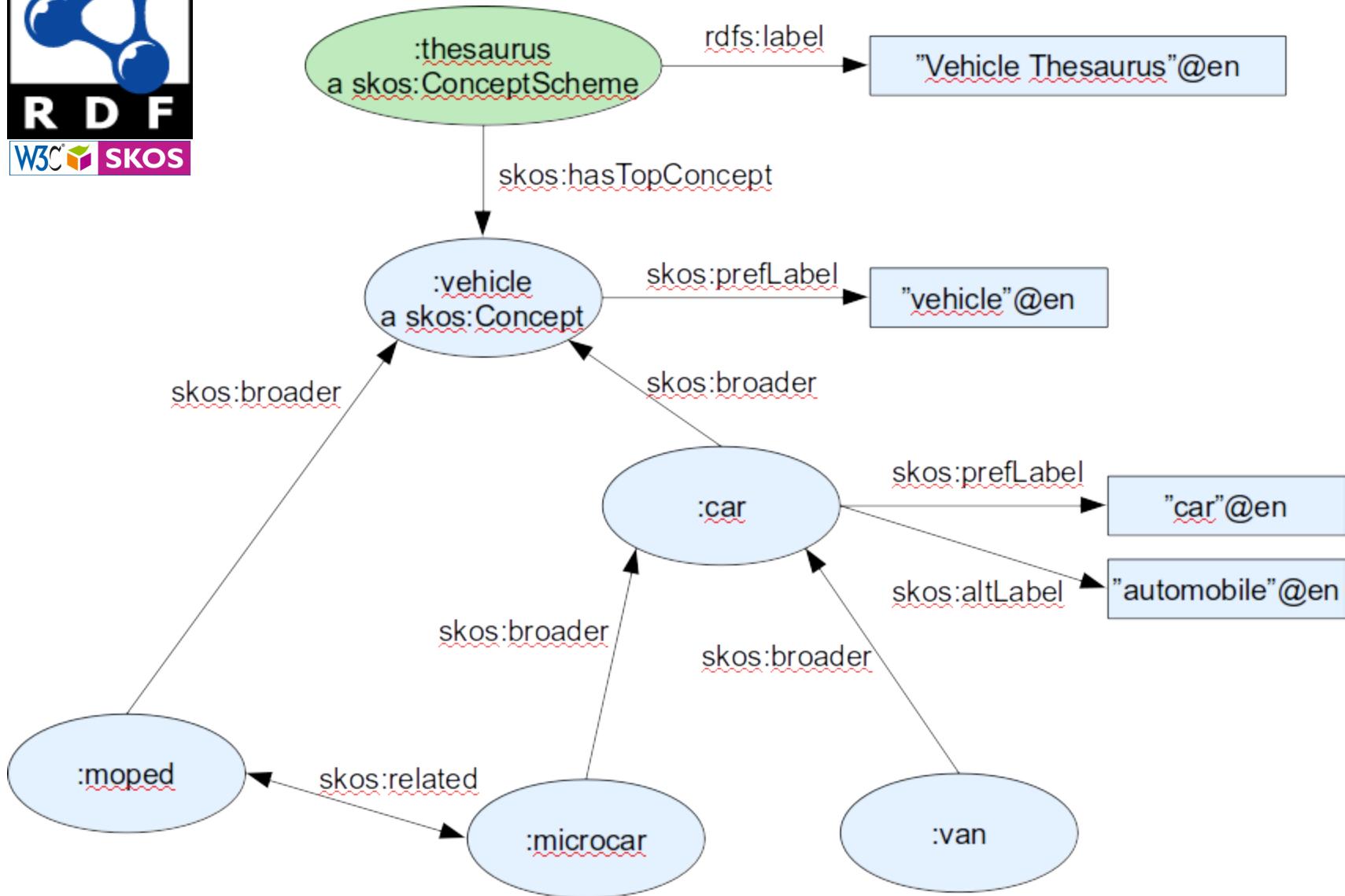
- Bauhaus (preferred, C,U,English-P,D,U)
- (Spanish-P,D,U)
- (Dutch-P,D,U)
- 包浩斯 (C,U,Chinese (traditional)-P,D,U)
- 包浩斯建築學派 (C,U,Chinese (traditional),U,F,U)
- 包浩斯 (C,U,Chinese (traditional),U,F,U)
- bāo hào sī (C,U,Chinese (transliterated Hanzi Pinyin)-P,U,F,U)
- pao hao ssu (C,U,Chinese (transliterated Pinyin without tones)-P,U,F,U)

Facet/Hierarchy Code: F,FL

**How do you put a
thesaurus on the
Semantic Web?**

1. Make a SKOS/RDF file
2. Put it in a triple store
3. Set up Pubby^{*} to serve RDF and HTML
4. Maybe allow SPARQL access

* or Elda, Loddy...



Subject: librar

librarians

libraries

libraries at workplaces

library (institution)

library assistants

library boards

library buildings

library cards

library catalogues

library databases





User interface

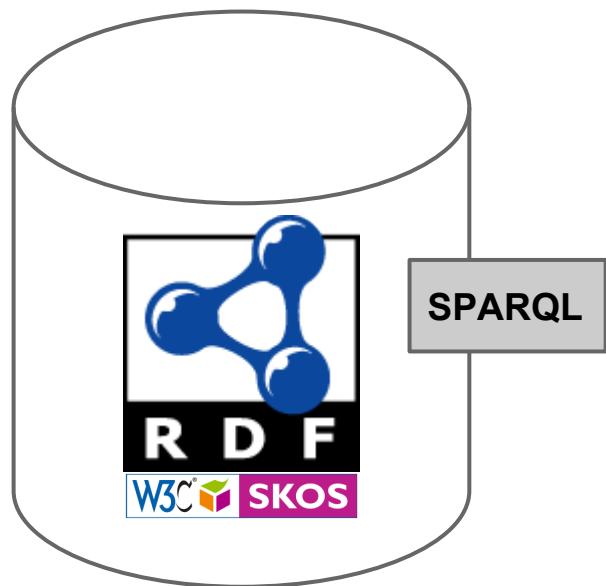
Linked Data

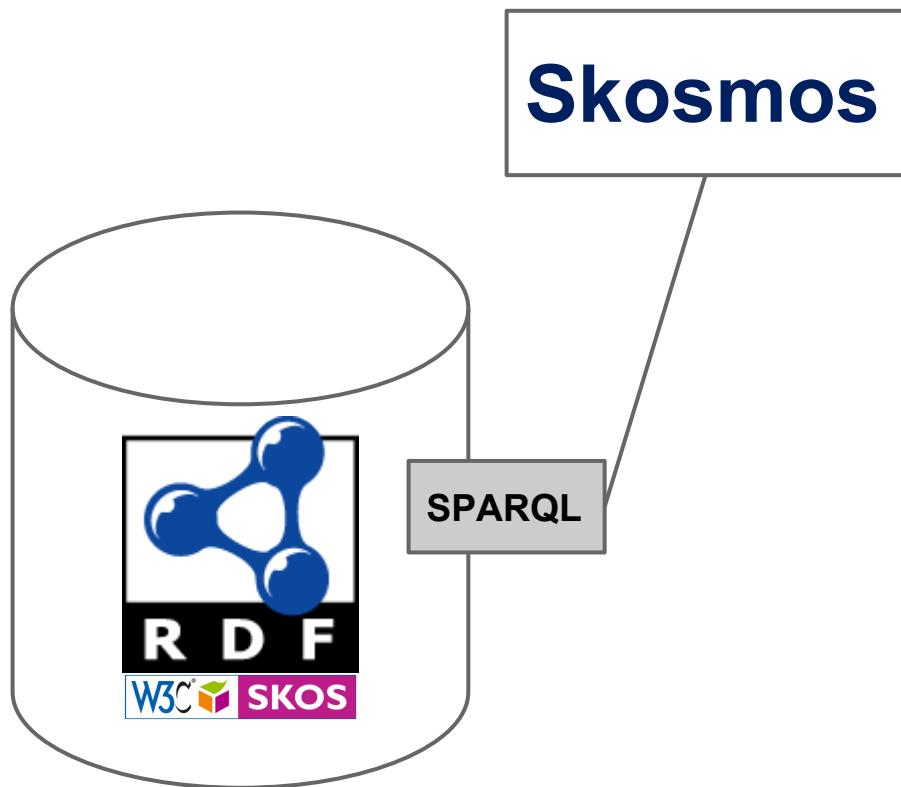
RESTful
Search API

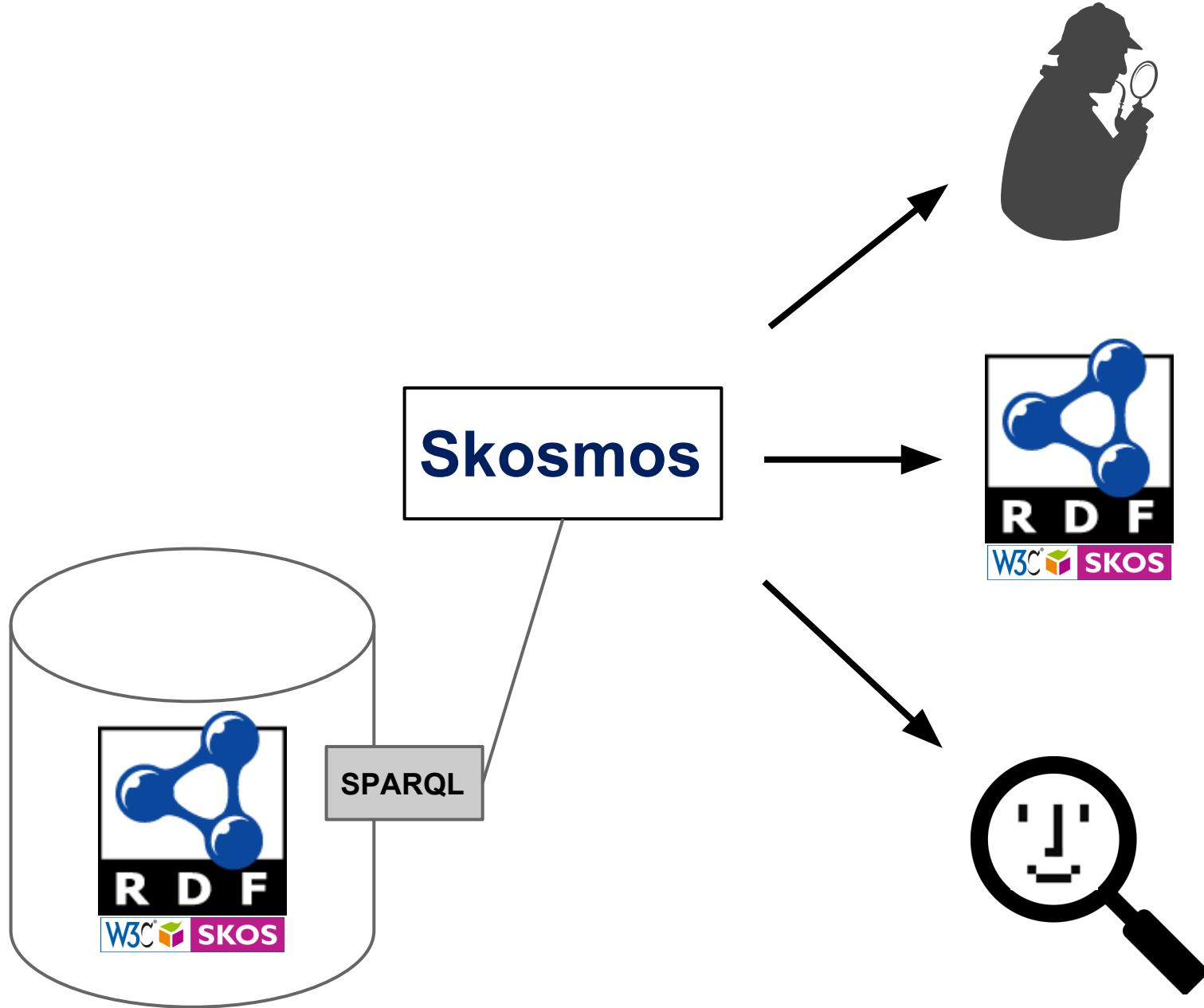
Skosmos

**SKOS publishing platform
for SPARQL endpoints**









Demo

from all ▾ Any language ▾

Search

Welcome to the Skosmos browser demo

Skosmos is a web-based tool providing services for accessing controlled vocabularies, which are used by indexers describing documents and searchers looking for suitable keywords.

Vocabularies are accessed via SPARQL endpoints containing SKOS vocabularies.

Available vocabularies and ontologies

GENERAL

[Eurovoc, the EU's multilingual thesaurus](#)

[LC Subject Headings](#)

SOCIETY

[STW Thesaurus for Economics](#)

SCIENCE AND MEDICINE

[AGROVOC](#)

[Medical Subject Headings](#)

[NAL Thesaurus](#)

ART AND CULTURE

[Iconclass](#)

LANGUAGES AND LITERATURE

[Lexvo - ISO 639-3 language codes](#)

5 results for 'semantic web'

agrovoc: semantic web

↳ world wide web

http://aims.fao.org/aos/agrovoc/c_49832

LCSH: Semantic Web

↳ Semantic integration (Computer systems), Semantic networks (Information theory), World ... (3)

↳ Linked data

↳ Microformats

<http://id.loc.gov/authorities/subjects/sh2002000569>

YSO: semantic web

↳ information networks

↳ Internet, metadata, ontologies, semantics, World Wide Web

<http://www.yso.fi/onto/yso/p21716>

STW: Semantic web

↳ Internet, N.10.07.04 Applied Computer Science

↳ Knowledge representation

🚫 Linked data

<http://zbw.eu/stw/descriptor/29223-0>

LCSH: Semantic Web--Congresses

<http://id.loc.gov/authorities/subjects/sh2010112582>

All 5 results displayed

5 results for 'semantic web'

agrovoc: semantic web

↪ world wide web

http://aims.fao.org/aos/agrovoc/c_49832

Broader concept

LSHM: Semantic Web

↪ Semantic integration (Computer systems), Semantic networks (Information theory), World ... (3)

↪ Linked data

↪ Microformats

<http://id.loc.gov/authorities/subjects/sh2002000569>

[Aakkosellinen](#) [Hierarkia](#) [Ryhmät](#)

- oliot
 - fysisen kokonaisuus
 - fysiset objektit
 - henkiset tuotokset
 - järjestelmät
 - paikka
 - alueet
 - ihmisen määrittämä paikka
 - luonnon muodostama paikka
 - hiidenkirnut
 - kasvupaikat
 - koralliriutat**
 - kraatterit
 - lammikot (luonnon muodostama paikka)
 - mui paikka
 - ominaisuudet
 - tapahdumat ja toiminta

[oliot](#) > [paikka](#) > [luonnon muodostama paikka](#) > [koralliriutat](#)**KÄYTETTÄVÄ TERMI****koralliriutat****TYYPPI**

Käsite

YLÄKÄSITE[luonnon muodostama paikka](#)**ASSOSIATIIVISET KÄSITTEET**[laguunit](#)**KORVATUT TERMIT**[atollit](#)**HUOMAUTUS**

Runkokunnissa elävien korallien kalkkirangoista, simpukoista ym. muodostunut särkkä.

LÄHDE[Kielitoimiston sanakirja](#)**KUULUU RYHMÄÄN**[11 Maantiede. Kartografia. Karttoitus. Geodesia. Geologia. Paleontologia](#)[13 Hydrologia](#)**MUUNKIELISET TERMIT**

ruotsiksi

[korallrev](#)

englanniksi

[atoller](#)[coral reefs](#)**URI**<http://www.yso.fi/onto/ys0/p14886>

Lataa tämä kässite:

[RDF/XML TURTLE](#)**LÄHES VASTAAVA KÄSITE**[korallrev \(sv\)](#)

Allärs - Allmän tesaurus på svenska

[Coral reefs and islands \(en\)](#)

Library of Congress Subject Headings

[koralliriutat](#)

YSA - Yleinen suomalainen asiasanasto

YSO - General Finnish ontology

Search within this vocabulary

Any language ▾

Search

[Alphabetical](#) [Hierarchy](#) [Group index](#)

- events and action
- objects
- intellectual accomplishments
- physical objects
- physical whole
- place
 - other place
 - place created by nature
 - coral reefs**
 - craters
 - natural sites
 - ponds (place created by nature)
 - potholes
 - place defined by human
 - regions
 - systems
 - properties

objects > place > place created by nature > coral reefs

PREFERRED TERM

coral reefs

CONCEPT TYPE

Concept

BROADER CONCEPT

[place created by nature](#)

RELATED CONCEPTS

[lagoons](#)

BELONGS TO GROUP

[11 Geography. Cartography. Geodesy. Geology. Palaeontology](#)
[13 Hydrology](#)

IN OTHER LANGUAGES

Finnish	koralliriutat atollit
---------	--

Swedish	korallrev atoller
---------	--

URI

<http://www.yso.fi/onto/yso/p14886>

Download this concept:

[RDF](#) / [XML](#) [TURTLE](#)

CLOSELY MATCHING CONCEPT

korallrev (sv)	Coral reefs and islands
koralliriutat (fi)	

Allärs - Allmän tesaurus på svenska	Library of Congress Subject Headings
	YSA - General Finnish thesaurus

Linked data query for labels

URI

<http://www.yso.fi/onto/yso/p14886>

Download this concept:

[RDF](#) / [XML](#) [TURTLE](#)

CLOSELY MATCHING CONCEPT

[korallrev \(sv\)](#)

Allärs - Allmän tesaurus på svenska

[Coral reefs and islands](#)

Library of Congress Subject Headings

[koralliriutat \(fi\)](#)

YSA - General Finnish thesaurus

Skosmos is open source software

- Available under MIT License
- Developed on GitHub

<https://github.com/NatLibFi/Skosmos>

Implementation

- PHP with Twig templates
- EasyRdf for SPARQL access and RDF parsing

Key features

- Multilingual browser interface
 - Autocomplete search
 - Alphabetical index
 - Concept hierarchy display
- REST API for enabling use of vocabularies in other applications
 - responses usually JSON-LD

User groups

- Indexers who describe documents
- Thesaurus managers
- Software developers

Organizations that use Skosmos

- The National Library of Finland - Finto.fi
 - Used by museums, libraries, archives, Finnish broadcasting company, etc.
 - <http://finto.fi/>
- Food and Agriculture Organization of the UN
 - Agrovoc browser
 - <http://aims.fao.org/standards/agrovoc/functionalities/search>
 - GACS project (presentation coming up next)
- Oslo University Library is testing Skosmos

YSO - General Finnish ontology

Search within this vocabulary

Any language ▾

Search

[Alphabetical](#)
[Hierarchy](#)
[Group index](#)

- [events and action](#)
- [objects](#)
- [intellectual accomplishments](#)
- [physical objects](#)
- [physical whole](#)
- [place](#)
 - [other place](#)
 - [place created by nature](#)
 - coral reefs**
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 - [place defined by human](#)
 - [regions](#)
 - [systems](#)
 - [properties](#)

objects > place > place created by nature > coral reefs

PREFERRED TERM

coral reefs

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BROADER CONCEPT

[place created by nature](#)

RELATED CONCEPTS

[lagoons](#)

BELONGS TO GROUP

[11 Geography. Cartography. Geodesy. Geology. Palaeontology](#)[13 Hydrology](#)

IN OTHER LANGUAGES

Finnish [koralliriutat](#)[atollit](#)Swedish [korallrev](#)[atoller](#)

URI

<http://www.yso.fi/onto/yso/p14886>

Download this concept:

[RDF/XML TURTLE](#)

CLOSELY MATCHING CONCEPT

[korallrev \(sv\)](#)[Coral reefs and islands](#)[koralliriutat \(fi\)](#)

Allärs - Allmän tesaurus på svenska

Library of Congress Subject Headings

YSA - General Finnish thesaurus

AGROVOC browser

Home ABOUT ACTIVITY COMMUNITY CAPACITY DEVELOPMENT VEST DIRECTORY CONTACT US

Home ▶ VEST Directory ▶ AGROVOC ▶

Explore

ABOUT | **SEARCH** | ACCESS | PEOPLE | USES | LINKED DATA | PUBLICATIONS | FAQ | CONTACT US

AGROVOC

Search options

By group

By parent

Limit search

Search within this vocabulary English ▾ rice Search

17 results for 'rice'

Rice

- ◀ Cereals
- ↳ Basmati rice, Broken rice
- ▢ Paddy

🌐 ryža (sk) , 벼 (ko) , 秈 (lo) , ข้าว (th) , جریب (ar) , 稻米 (zh) , pirinç (tr) , Riso (it) , برنج (fa) , Arroz (pt) , Arroz (es) , rýže (cs) , рис (зерно) (ru) , 米 (ja) , REIS (de) , rizs (hu) , Ryż (ziarno) (pl) , চাষাল (hi) , Riz (fr)

http://aims.fao.org/aos/agrovoc/c_6599

rice (plant) → **Oryza**

- ◀ Poaceae
- ↳ aerobic rice, Oryza glaberrima, Oryza longistaminata, Oryza perennis, Oryza p ... (9)
- ▢ rice (plant)

🌐 イネ属 (ja) , 오리자속 (ko) , ওরাইজা (ধান) (hi) , Oryza (tr) , Oryza (th) , Oryza (sk) , Oryza (ru) , Oryza (pt) , Oryza (pl) , Oryza (lo) , Oryza (it) , Oryza (hu) , Oryza (fr) , Oryza (es) , Oryza (cs) , أورزا (ar) , 稻属 (zh) , ORYZA (de) , اورزا (fa)

http://aims.fao.org/aos/agrovoc/c_5435

<http://aims.fao.org/standards/agrovoc/functionali.../search>

Requirements

- SPARQL 1.1 endpoint
 - with one or more SKOS vocabularies
 - recommended: Jena Fuseki with jena-text index
- server with Apache and PHP

See documentation in the Skosmos wiki:

<https://github.com/NatLibFi/Skosmos/wiki>

1. Make a SKOS/RDF file
2. Put it in a SPARQL triple store
3. Set up **Skosmos**
4. Have users, Linked Data agents and API clients come to your thesaurus
5. ???
6. Profit!!!

Thank you!

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onki-posti@helsinki.fi

These slides: <http://tinyurl.com/publish-with-skosmos>