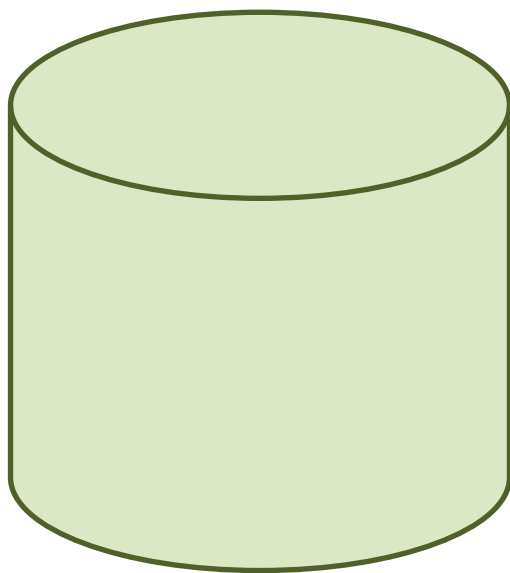


Publish your SKOS vocabulary with Skosmos

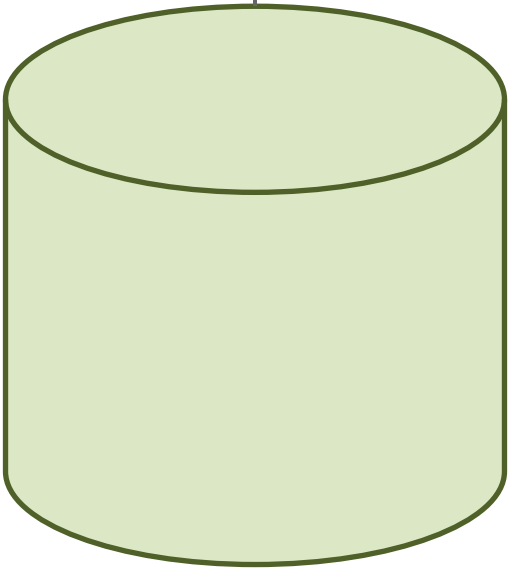
Osma Suominen and Henri Ylikotila
SWIB14, Bonn, December 3, 2014

How do you put a thesaurus* on the web?

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





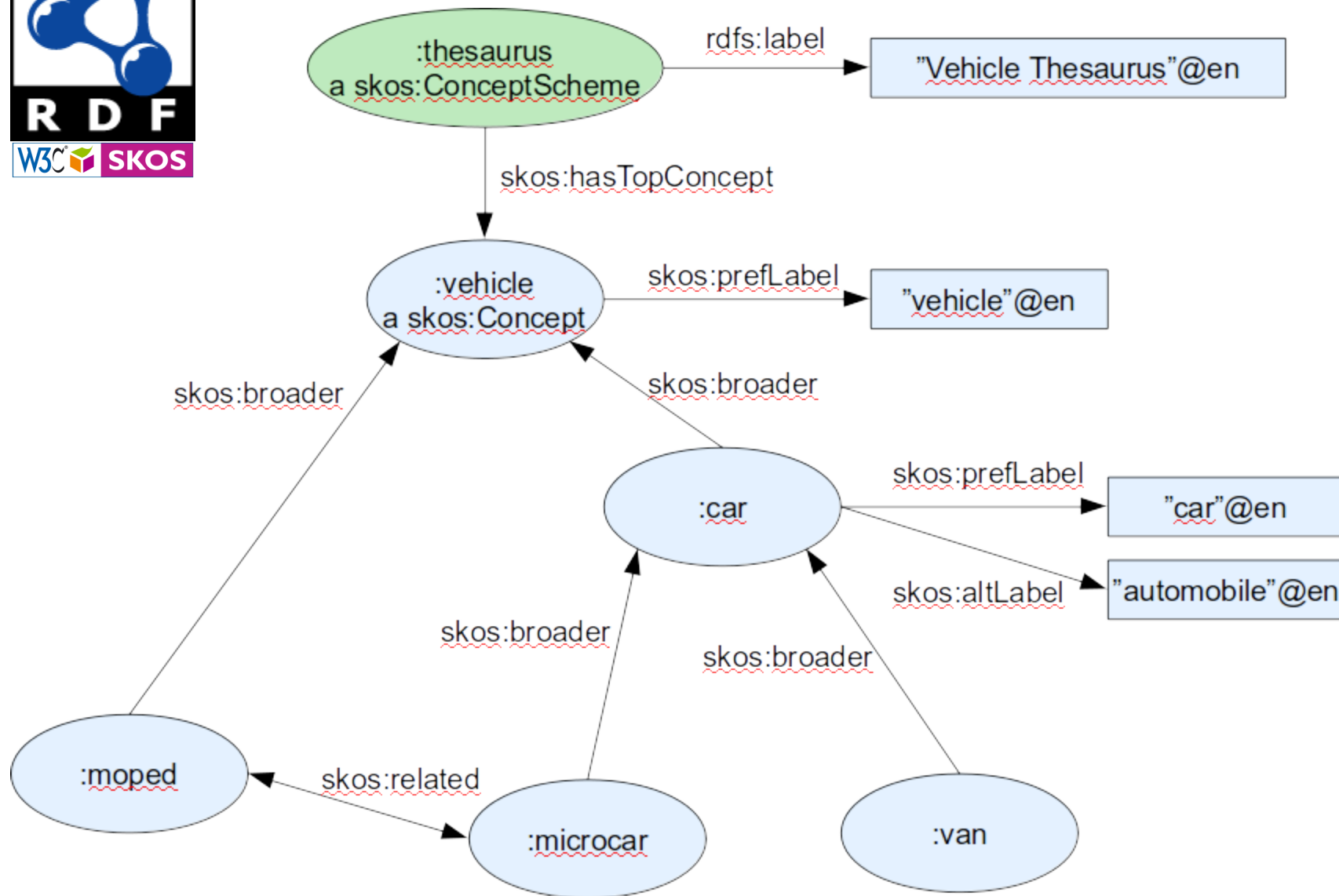


**How do you put a
thesaurus on the
Semantic Web?**

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

+

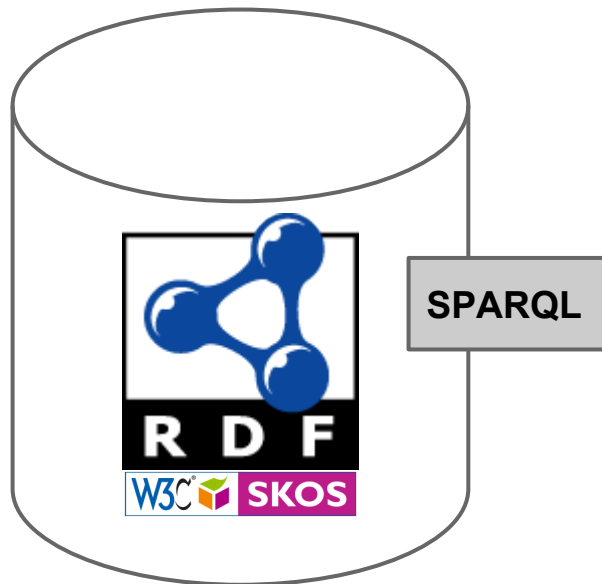


**RESTful
Search API**

Skosmos

SKOS publishing platform
for SPARQL endpoints

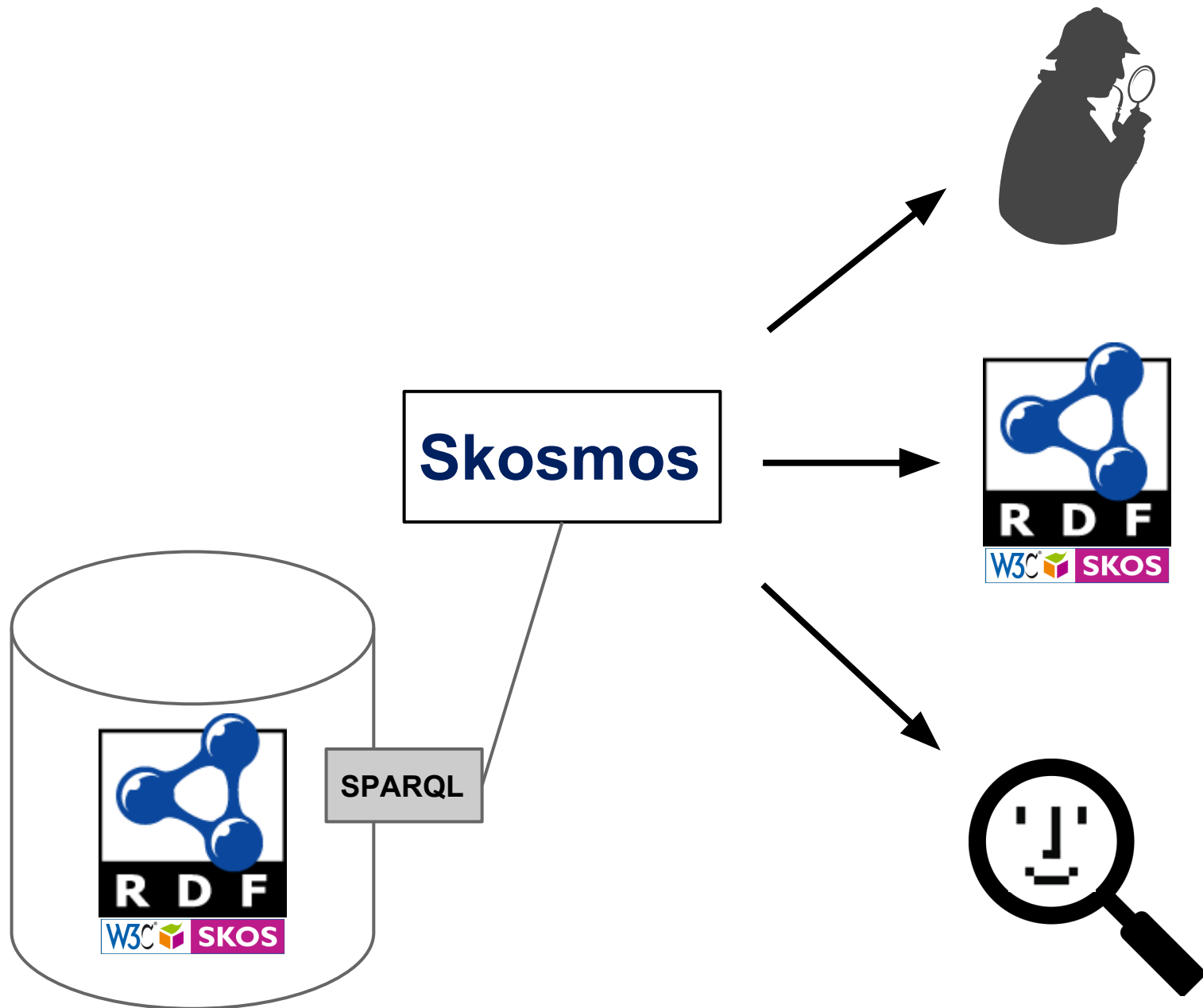




Skosmos

SPARQL





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/ysop21716>

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

W3C: Semantic Web

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

↳ Linked data

⦿ Microformats

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

YSO - Yleinen suomalainen ontologia

Hae tästä sanastosta

kaikilla kielillä ▾

Hae

Aakkosellinen

Hierarkia

Ryhvät

- oliot
 - fyysinen kokonaisuus
 - fyysiset objektit
 - henkiset tuotokset
 - järjestelmät
 - paikka
 - alueet
 - ihmisen määrittämä paikka
 - luonnon muodostama paikka
 - hiidenkimut
 - kasvupaikat
 - koralliriutat**
 - kraatterit
 - lammikot (luonnon muodostama paikka)
 - muu paikka
 - ominaisuudet
 - tapahtumat ja toiminta

oliot > paikka > luonnon muodostama paikka > koralliriutat

KÄYTETTÄVÄ TERMI

koralliriutat

TYYPPI

YLÄKÄSITE

ASSOSIATIIVISET KÄSITTEET

KORVATUT TERMIT

HUOMAUTUS

LÄHDE

KUULUU RYHMÄÄN

MUUNKIELISET TERMIT

ruotsiksi

korallrev

atoller

englanniksi

coral reefs

URI

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

Lataa tämä käsite:

RDF/XML TURTLE

LÄHES VASTAAVA KÄSITE

korallrev (sv)

Coral reefs and islands (en)

koralliriutat

Allärs - Allmän tesaurus på svenska

Library of Congress Subject Headings

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/ysop14886>

Download this concept:

RDF/XML TURTLE

CLOSELY MATCHING CONCEPT

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

Allärs - Allmän tesaurs på svenska

Library of Congress Subject Headings

YSA - General Finnish thesaurus

Linked data query for labels

URI	<i>allmän</i> 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

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

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objects > place > place created by nature > coral reefs

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IN OTHER LANGUAGES

Finnish **koralliriutat**
atollit

Swedish **korallrev**
atoller

URI

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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

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AGROVOC

Search within this vocabulary

English ▾

rice

Search

Search options

By group

By parent

Limit search

17 results for 'rice'

Rice

↶ Cereals

↳ Basmati rice, Broken rice

🌾 Paddy

🌐 ryža (sk), 벼 (ko), ຕຳ (lo), 𑜋𑜧𑜨𑜫 (th), أرز (ar), 稻米 (zh), piring (tr), Riso (it), برنج (fa), Arroz (pt), Arroz (es), rýže (cs), рис (зерно) (ru), 米 (ja), REIS (de), rizi (hu), Ryż (ziarno) (pl), चावल (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), ओराइजा (धान) (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), اوريزا (fa)

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

<http://aims.fao.org/standards/agrovoc/functionalities/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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osma.suominen@helsinki.fi

onki-posti@helsinki.fi

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