

Vocabulary API Guide

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LoCloud Vocabulary API Guide

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Overview

The aim of the work within Task 3.4 of the LoCloud project¹ was to develop an experimental application for enabling local cultural institutions to collaborate in the development of multilingual vocabularies for local history and archaeology and allow the retrieval of terms to be integrated during semantic enrichment in the LoCloud aggregation process. Furthermore, this application should be made available for the local users as a cloud-based service.

Especially in the cultural heritage domain vocabularies can vary to a huge extend from country to country. Terms existing in one language might not be known in another language, or the hierarchies of the vocabularies in the various languages could vary.

Hence, the main issues for multilingual thesauri are:

- Structural problems: The conceptual systems can differ in different languages
- Equivalence problems:
 - The lexicalization of concepts can differ in different languages (eg. bone – fish bone (en); Knochen – Gräten (de))²
 - The translation of a thesaurus from one language to another does not make it a thesaurus for the other language (intra and inter-language equivalence problems, terms might differ in meaning etc.)

A good way to tackle these problems is to choose a federated model for thesaurus creation. With the federated model it is possible to have indepent vocabularies for the various languages in the same domain. The alignment of the various vocabularies in the different languages is done via concept identifiers. The linking of vocabulary concepts makes it possible for the end-user to search in all linked indexing vocabularies using any one of the linked thesauri or subject heading lists.

The LoCloud experimental vocabulary application is based on the federated model and a well-established platform, TemaTres³, has been chosen as baseline for development.

The tool has been integrated in the LoCloud testlab where it can be accessed via <http://test113.ait.co.at/tematres/unesco/index.php> or via the testplatform of the microservices at <http://lc004.ait.co.at:8080/portal/site/wp3>. It supports the import of vocabularies and the online collaboration in the creation and updating of vocabularies. For these purposes the TemaTres software had to be extended. A rewritten SKOS importer was added and two new webservice calls were developed to allow importing data into a remote thesaurus.

¹ <http://www.locloud.eu> 3rd September, 2014

² <http://www.dsoergel.com/cv/B67.pdf> 20th August, 2014

³ <http://www.vocabularyserver.com/> 31th August, 2014



The present document describes the experimental application that has been set up til August 2014. The test phase of the microservices is a staged testing process til November 2014. Therefore, future test results or recommendations might lead to the updating of the tool.

1. Introduction

Overview of the microservice

The vocabulary services are used:

- a) in the various enrichment workflows automatically through the generic enrichment service and
- b) through the Aggregator UI.

Regarding the first case, the generic enrichment service of LoCloud allows to orchestrate various REST micro-services into complex enrichment workflows. The user can create a workflow by selecting and combining the micro-services he wants. More specifically for the vocabulary service the user is able to select terms to attach to a harvested package. Regarding the latter, the user is presented with the various thesauri and is capable of searching and navigating through the concepts.

In order to minimize the effort for the development of the experimental vocabulary application various vocabulary tools that are currently available and open source have been evaluated. Research showed that the implementation and adaptation of the TemaTres tool, an open source vocabulary server and web application to manage and exploit vocabularies, thesauri, taxonomies and formal representations of knowledge would be a very appropriate starting point for the development. <http://www.vocabularyserver.com/>

Thereupon it was decided to use TemaTres as starting application for shaping an experimental collaborative vocabulary tool for LoCloud purposes.

The vocabulary web services of the tool can be used for the integration of the vocabularies into remote local systems. And vice versa it is possible to integrate existing concepts from remote vocabularies via the web services into the cloud based vocabulary tool. Therefore the webservice calls "*import*" and "*linkTerm*" were added to TemaTres (see webservice call documentation in chapter 3. API Reference).

2. Getting started

Terms of use

The experimental vocabulary application (eva) is freely available under GNU General Public License version 2.0 (GPLv2). This is the same licence as for the standard TemaTres tool. Once the LoCloud developments have been finalized and fine-tuned it is envisaged to contribute them to the TemaTres repository (<http://sourceforge.net/projects/tematres/>).

Authentication

Authentication for the test platform to access the vocabulary application is: test@ait.co.at/test (user account/password)

Base URL

Please go to <http://test113.ait.co.at/tematres/unesco/index.php> in your browser or enter the test platform for the microservices at: <http://lc004.ait.co.at:8080/portal/site/wp3> , user account/password: test/test, go to the work space > micro services and select "Vocabulary Tool".

3. API Reference

In the following section each TemaTres API request and its response is described.

PLEASE NOTE: The APIs “import” and “linkTerm” have been developed by AIT for LoCloud purposes.

fetch

Search and retrieve terms using exact matching.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetch&arg=culture

Parameter	Datatype	Description
arg	string	exact matching terms

Response

Status	Response
200	The response shows the exact matching term . Example response:

```

--<vocabularyservices>
  --<result>
    --<term>
      <term_id>142</term_id>
      <string>CULTURE</string>
      <isMetaTerm></isMetaTerm>
      <no_term_string></no_term_string>
      <order>1</order>
    </term>
    --<term>
      <term_id>1650</term_id>
      <string>CULTURE</string>
      <isMetaTerm></isMetaTerm>
      <no_term_string></no_term_string>
      <order>2</order>
    </term>
  --</term>

```

fetchAlt

The alternative or non-preferred terms for one vocabulary term ID are requested.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchAlt&arg=2575

Parameter	Datatype	Description
arg	integer	Term ID

Response

Status	Response
200	The response shows the alternative or non-preferred terms for one ID. Example response:

	<pre> --<vocabularyservices> -<result> -<term> <term_id>4234</term_id> <code></code> <lang>en</lang> <string>Republic of Belarus</string> <relation_type_id>4</relation_type_id> <relation_type>UF</relation_type> <relation_code></relation_code> <relation_label></relation_label> </term> </result> </pre>
200	<p>The response shows simple term data retrieved by code.</p> <p>Example response:</p>

fetchDirectTerms

The alternative, related or direct hierarchical terms for a vocabulary term ID are requested.

Request

Method	URL
<i>GET</i>	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchDirectTerms&arg=155

Parameter	Datatype	Description
arg	integer	Term ID

Response

Status	Response
200	<p>The response shows the alternative, related or direct hierarchical terms one term ID.</p> <p>Example response:</p>

```

--<vocabularyservices>
- <result>
- <term>
  <term_id>154</term_id>
  <code>http://iaaa.cps.unizar.es/thesaurus/EXHIBITIONS</code>
  <lang>en</lang>
  <string>EXHIBITIONS</string>
  <isMetaTerm>0</isMetaTerm>
  <relation_type_id>3</relation_type_id>
  <relation_type>BT</relation_type>
  <relation_code></relation_code>
  <relation_label></relation_label>
</term>

```

fetchDown

More specific terms for one vocabulary term ID are requested.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchDown&arg=142

Parameter	Datatype	Description
arg	integer	Term ID

Response

Status	Response
200	The response shows the more specific terms for one ID . Example response:

	<pre> - <vocabularyservices> - <result> - <term> <term_id>156</term_id> <string>HISTORY</string> <isMetaTerm>0</isMetaTerm> <lang></lang> <relation_type_id>3</relation_type_id> <relation_type>NT</relation_type> <relation_code></relation_code> <relation_label></relation_label> <hasMoreDown>1</hasMoreDown> </term> - <term> <term_id>143</term_id> <string>LINGUISTICS</string> <isMetaTerm>0</isMetaTerm> <lang></lang> <relation_type_id>3</relation_type_id> <relation_type>NT</relation_type> <relation_code></relation_code> <relation_label></relation_label> <hasMoreDown>1</hasMoreDown> </pre>
--	--

fetchLast

Retrieve recent terms created.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchLast

Response

Status	Response
200	<p>The response shows the lastest terms created.</p> <p>Example response:</p>

```

- <vocabularyservices>
  - <result>
    - <term>
      <term_id>2575</term_id>
      <code></code>
      <lang>en</lang>
      <string>Republic of Belarus (UF)</string>
      <isMetaTerm>0</isMetaTerm>
      <date_create>2014-08-26 11:01:34</date_create>
      <date_mod></date_mod>
    </term>
    - <term>
      <term_id>4233</term_id>
      <code></code>
      <lang>de</lang>
      <string>Wirtschaft</string>
      <isMetaTerm>0</isMetaTerm>
      <date_create>2014-08-26 10:26:44</date_create>
      <date_mod></date_mod>
    </term>
  </result>
</vocabularyservices>

```

fetchNotes

Retrieve notes for one term.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchNotes&arg=2575

Parameter	Datatype	Description
arg	integer	Term ID

Response

Status	Response
200	The response shows the notes for a term . Example response:

```

- <vocabularyservices>
  - <result>
    - <term>
      <term_id>2575</term_id>
      <string>BELARUS</string>
      <note_id>298</note_id>
      <note_type>NA</note_type>
      <note_lang>en</note_lang>
      <note_text>USE FOR EVENTS AFTER 1991.</note_text>
    </term>
  </result>

```

fetchRelated

The related terms for a vocabulary term ID are requested.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchRelated&arg=3173

Parameter	Datatype	Description
arg	integer	Term ID

Response

Status	Response
200	The response shows the related terms for one ID . Example response:

```

- <vocabularyservices>
  - <result>
    - <term>
      <term_id>2791</term_id>
      - <code>
        http://www.vocabularyserver.com/unesco/en/?tema=3910
      </code>
      <lang>en</lang>
      <string>READING ABILITY</string>
      <isMetaTerm>0</isMetaTerm>
      <relation_type_id>2</relation_type_id>
      <relation_type>RT</relation_type>
      <relation_code></relation_code>
      <relation_label></relation_label>
    </term>
  
```

fetchRelatedTerms

The related terms for several vocabulary terms are requested.

Request

Method	URL
<i>GET</i>	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchRelatedTerms&arg=3173,3248

Parameter	Datatype	Description
arg	list of integers	Term ID, separated by comma

Response

Status	Response
200	The response shows the related terms for more than one ID . Example response:

```

- <vocabularyservices>
  - <result>
    - <term>
      <term_id>3174</term_id>
      <string>APTITUDE</string>
      <isMetaTerm>0</isMetaTerm>
    </term>
    - <term>
      <term_id>3249</term_id>
      <string>CONTRACEPTION</string>
      <isMetaTerm>0</isMetaTerm>
    </term>
    - <term>
      <term_id>3400</term_id>
      <string>MATERNAL AND CHILD HEALTH</string>
      <isMetaTerm>0</isMetaTerm>
    </term>
  
```

fetchSimilar

Search and retrieve similar term for string search expression.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchSimilar&arg=kultu

Parameter	Datatype	Description
arg	string	similar expression

Response

Status	Response
200	The response shows the similar term for a string search expression Example response:

```

- <vocabularyservices>
- <result>
  <string>culture</string>
</result>
- <resume>
  <status>available</status>
- <param>
  <task>fetchSimilar</task>
  <arg>kultu</arg>
</param>
  <web_service_version>1.4</web_service_version>
  <version>TemaTres 1.72</version>
  <cant_result>1</cant_result>
</resume>
</vocabularyservices>

```

fetchSourceTerms

Search and retrieve terms mapped in target vocabulary for a given term.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchSourceTerms&arg=cultura

Parameter	Datatype	Description
arg	string	term

Response

Status	Response
200	The response shows the terms mapped in a target vocabulary for a given term. Example response:

```

--<vocabularyservices>
  --<result>
    --<term>
      <term_id>142</term_id>
      <tema_id>142</tema_id>
      <code>http://iaaa.cps.unizar.es/thesaurus/T3_CULTURE</code>
      <lang>es</lang>
      <string>CULTURE</string>
      <isMetaTerm>0</isMetaTerm>
      <date_create>2014-02-25 09:53:48</date_create>
      <date_mod>2014-02-25 09:53:48</date_mod>
    </term>
  </result>

```

fetchTargetTerms

Search and retrieve data about target terms mapped via web services for one Term ID.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchTargetTerms&arg=142

Parameter	Datatype	Description
arg	integer	Term ID

Response

Status	Response
200	<p>The response shows data about target terms mapped via web services for one Term ID.</p> <p>Example response:</p>

```

- <vocabularyservices>
  - <result>
    - <term>
      <string>DERECHOS HUMANOS</string>
    - <url>
      http://test113.ait.co.at/tematres/unesco_es/?tema=http://iaaa.cps.unizar.es/thesaurus/MT_6.10 HUMAN RIGHTS
    </url>
    - <uri>
      http://test113.ait.co.at/tematres/unesco_es/services.php?task=fetchTerm&arg=http://iaaa.cps.unizar.es/thesaurus/MT_6.1
    </uri>
    <term_id>142</term_id>
    <target_vocabulary_label>Tesauro de la UNESCO</target_vocabulary_label>
    <target_vocabulary_tag>EQ</target_vocabulary_tag>
    <target_vocabulary_title>Tesauro de la UNESCO</target_vocabulary_title>
  </term>
</result>

```

fetchTerm

The data for a vocabulary term is requested.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchTerm&arg=142

Parameter	Datatype	Description
arg	integer	Term ID

Response

Status	Response
200	The response shows the simple term data . Example response:

```

--<vocabularyservices>
  --<result>
    --<term>
      <term_id>142</term_id>
      <tema_id>142</tema_id>
      <code>http://iaaa.cps.unizar.es/thesaurus/T3_CULTURE</code>
      <lang>en</lang>
      <string>CULTURE</string>
      <isMetaTerm>0</isMetaTerm>
      <date_create>2014-02-25 09:53:48</date_create>
      <date_mod>2014-02-25 09:53:48</date_mod>
    </term>
  
```

fetchTerms

The data for several vocabulary terms is requested.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchTerms&arg=142,458

Parameter	Datatype	Description
arg	list of integers	Term ID, separated by comma

Response

Status	Response
200	The response shows simple term data for more than one term . Example response:

```

- <vocabularyservices>
  - <result>
    - <term>
      <term_id>142</term_id>
      <string>CULTURE</string>
      <isMetaTerm>0</isMetaTerm>
    </term>
    - <term>
      <term_id>458</term_id>
      <string>PARTICLE ACCELERATORS</string>
      <isMetaTerm>0</isMetaTerm>
    </term>
  </result>

```

fetchTopTerms

The top terms of a vocabulary are requested.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchTopTerms

Response

Status	Response
200	The response shows the top terms of the complete vocabulary . Example response:

```

- <vocabularyservices>
  - <result>
    - <term>
      <term_id>161</term_id>
      <code>http://iaaa.cps.unizar.es/thesaurus/T1_EDUCATION</code>
      <lang>en</lang>
      <string>EDUCATION</string>
      <isMetaTerm>0</isMetaTerm>
    </term>
    - <term>
      <term_id>120</term_id>
      <code>http://iaaa.cps.unizar.es/thesaurus/T2_SCIENCE</code>
      <lang>en</lang>
      <string>SCIENCE</string>
      <isMetaTerm>0</isMetaTerm>
    </term>
    - <term>
      <term_id>142</term_id>
      <code>http://iaaa.cps.unizar.es/thesaurus/T3_CULTURE</code>
      <lang>en</lang>
      <string>CULTURE</string>
      <isMetaTerm>0</isMetaTerm>
    </term>
  </result>
</vocabularyservices>

```

fetchUp

Request the hierarchical structure for one ID.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchUp&arg=163

Parameter	Datatype	Description
arg	integer	term ID

Response

Status	Response
200	The response shows the hierarchical structure for one term ID . Example response:

	<pre> - <vocabularyservices> - <result> - <term> <term_id>161</term_id> <string>EDUCATION</string> <isMetaTerm>0</isMetaTerm> <relation_type_id></relation_type_id> <order>1</order> </term> - <term> <term_id>163</term_id> <string>CURRICULUM</string> <isMetaTerm>0</isMetaTerm> <relation_type_id></relation_type_id> <order>2</order> </term> </result> </pre>
--	---

fetchVocabularyData

Request the data about a vocabulary.

Request

Method	URL
<i>GET</i>	http://test113.ait.co.at/tematres/unesco/services.php?task=fetchVocabularyData

Response

Status	Response
200	<p>The response shows the data about the vocabulary.</p> <p>Example response:</p>

```

- <vocabularyservices>
  - <result>
    <vocabulary_id>1</vocabulary_id>
    <title>UNESCO Thesaurus</title>
    <author>AIT</author>
    <lang>en</lang>
    <scope></scope>
    <keywords></keywords>
    <uri>http://test113.ait.co.at/tematres/unesco/</uri>
    <createDate>2014-02-21</createDate>
    <lastMod>2014-02-21 13:07:11</lastMod>
    <contributor></contributor>
    <publisher></publisher>
    <rights></rights>
    <cant_terms>4233</cant_terms>
  </result>

```

import

Import terms into the thesaurus. Currently this routine supports the data format “SKOS”. This API call is used by the SKOS importer when importing multilingual concepts.

Request

Method	URL
POST multipart/form-data	http://test113.ait.co.at/tematres/unesco/services.php?task=import&arg=skos

URL-Parameter	Datatype	Description
arg	string	Fixed to “skos”

POST-Parameter	Datatype	Description
id_correo_electronico	string	Admin user account (email)
id_password	string	Admin user password
file	xml-skos-file	The import file. This XML file has to contain the skos:Concepts that will be added to the thesaurus.

Response

Status	Response
200	The response shows a list of the imported terms and import problems if applicable.

letter

Request terms by the initial letter.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=letter&arg=d

Parameter	Datatype	Description
arg	character	initial letter

Response

Status	Response
200	<p>With this task terms with a certain initial letter can be searched and retrieved.</p> <p>Example response:</p> <pre> - <vocabularyservices> - <result> - <term> <term_id>193</term_id> <string>DAIRY INDUSTRY</string> <isMetaTerm>0</isMetaTerm> <no_term_string></no_term_string> <relation_type_id></relation_type_id> </term> - <term> <term_id>967</term_id> <string>DAIRY PRODUCTS</string> <isMetaTerm>0</isMetaTerm> <no_term_string></no_term_string> <relation_type_id></relation_type_id> </term> - <term> <term_id>3728</term_id> <string>DAMAGE</string> <isMetaTerm>0</isMetaTerm> <no_term_string></no_term_string> <relation_type_id></relation_type_id> </term> </pre>

linkTerm

Link one or more terms of two remote vocabularies. All resulting links with term equivalences (EQ). If you have for example an English and a Spanish vocabulary you can use this call to send the English vocabulary the equivalent terms in Spanish and vice versa. This API call is used by the SKOS importer when importing multilingual concepts.

Request

Method	URL
POST multipart/form-data	http://test113.ait.co.at/tematres/unesco/services.php?task=linkTerm

POST-Parameter	Datatype	Description
id_correo_electronico	string	Admin user account (email)
id_password	string	Admin user password
vocab_url[]	string[]	The remote vocabulary base URL. This must already exist as a remote target vocabulary. You have to use the same URL provided in remote target vocabulary configuration
term[]	string[]	The remote term label.
remote_term_id[]	string[]	The identifier of the term in the remote vocabulary.
local_term_id[]	string[]	The identifier of the term you want to connect to the remote term.

Response

Status	Response
200	The response shows a list of the connected terms or problems if applicable.

search

Search and retrieve terms.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=search&arg=culture

Parameter	Datatype	Description
arg	string	search term (automatically truncated on both ends)

Response

Status	Response
200	<p>The response shows the searched terms</p> <p>Example response:</p> <pre> - <vocabularyservices> - <result> - <term> <term_id>142</term_id> <string>CULTURE</string> <isMetaTerm></isMetaTerm> <no_term_string></no_term_string> <index>142</index> <order>1</order> </term> - <term> <term_id>1650</term_id> <string>CULTURE</string> <isMetaTerm></isMetaTerm> <no_term_string></no_term_string> <index>1650</index> <order>2</order> </term> </pre>

searchNotes

Retrieve terms searching in notes.

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=searchNotes&arg=culture

Parameter	Datatype	Description
arg	string	search term

Response

Status	Response
200	<p>The response shows terms searching in notes.</p> <p>Example response:</p> <pre> - <vocabularyservices> - <result> - <term> <term_id>1693</term_id> <string>CULTURAL INEQUALITY</string> <isMetaTerm></isMetaTerm> <no_term_string></no_term_string> <index> 1650 1651 1689 1693</index> <order>1</order> </term> - <term> <term_id>1679</term_id> <string>SUBCULTURES</string> <isMetaTerm></isMetaTerm> <no_term_string></no_term_string> <index> 1650 1651 1672 1679</index> <order>2</order> </term> </pre>

suggest

Simple search and retrieve terms who start with string (only string).

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=suggest&arg=culture

Parameter	Datatype	Description
arg	string	search term

Response

Status	Response
200	<p>The response shows terms starting with string.</p> <p>Example response:</p> <pre> - <vocabularyservices> - <result> <term>CULTURE</term> <term>CULTURE</term> <term>CULTURE</term> <term>CULTURE</term> <term>CULTURE AND DEVELOPMENT</term> <term>CULTURE OF PEACE</term> <term>CULTURE OF POVERTY</term> <term>CULTURE OF WORK</term> </result> </pre>

suggestDetails

Search and retrieve terms who start with string (term ID, term, and more data).

Request

Method	URL
GET	http://test113.ait.co.at/tematres/unesco/services.php?task=suggestDetails&arg=culture

Parameter	Datatype	Description
arg	string	search term

Response

Status	Response
200	<p>The response shows terms starting with string.</p> <p>Example response:</p> <pre> - <vocabularyservices> - <result> - <term> <term_id>639</term_id> <string>CULTIVATION</string> <isMetaTerm></isMetaTerm> <no_term_string></no_term_string> <index> 168 626 636 639</index> <order>1</order> </term> - <term> <term_id>1827</term_id> <string>CULTS</string> <isMetaTerm></isMetaTerm> <no_term_string></no_term_string> <index> 1650 1800 1824 1827</index> <order>2</order> </term> - <term> <term_id>2087</term_id> <string>CULTURAL ACTION</string> <isMetaTerm></isMetaTerm> <no_term_string></no_term_string> <index> 1650 2064 2087</index> <order>3</order> </term> </pre>

4. How the micro service is installed in LoCloud

An instance of tematres is installed in the cloud testing lab at <http://test113.ait.co.at/tematres/> . To get a list of available vocabularies browse to <http://test113.ait.co.at/tematres/locloud-vocabularies/> and you can download a CSV file with the vocabulary URLs and names.

The technical infrastructure for running the service is an Ubuntu 12.04 LTS server machine with apache 2.2, php 5.3 and mysql 5.5 which run as a KVM guest in the OpenNebula cloud.

The vocabulary services are used in LoCloud:

- a) in the various enrichment workflows automatically through the generic enrichment service and
- b) through the Aggregator UI.

Regarding the first case, the generic enrichment service of LoCloud allows to orchestrate various REST micro-services into complex enrichment workflows. The user can create a workflow by selecting and combining the micro-services he wants. More specifically for the vocabulary service the user is able to select terms to attach to a harvested package. Regarding the latter, the user is presented with the various thesauri and is capable of searching and navigating through the concepts.

5. References

Bégin, Laurent and de Smedt, John. SKOS Extensions for the EUROVOC Thesaurus. Mondeca Workshop Paris, June 2010

Guidelines for Multilingual Thesauri. Compiled by a Working Group on Guidelines for Multilingual Thesauri of IFLA Classification and Indexing Section chaired by: Gerhard J. A. Riesthuis and Patrice Landry The Hague, IFLA Headquarters, 2009. - 30p. 30 cm. (IFLA Professional Reports : 115) ISBN 978-90-77897-35-5. ISSN 0168-1931

INTERNATIONAL STANDARD ISO 25964-1 First edition 2011-08-15, Information and documentation — Thesauri and interoperability with other vocabularies — Part 1: Thesauri for information retrieval, Reference number ISO 25964-1:2011(E)

INTERNATIONAL STANDARD ISO 25964-2 First edition 2013-03-15, Information and documentation — Thesauri and interoperability with other vocabularies — Part 2: Interoperability with other vocabularies, Reference number ISO 25964-2:2013(E)

Mitre, María. TESQUAL: A micro-thesaurus for use in quality management in European Higher Education. *Revista Española de Documentación Científica*, 2009; 32 (2), pages 66-82

6. Glossary

Term	Description
API	Application Programming Interface ⁴
broader term	preferred term representing a concept that is broader than the one in question
BT	abbreviation for broader term
concept	unit of thought
instance relationship	links a general concept, such as a class of things or events, and an individual instance of that class, which is often represented by a proper name
meta-term	a term that cannot be used in the indexing process; it is a term to describe other terms, for example guide terms, facets, categories, etc.
narrower term	preferred term representing a concept that is narrower than the one in question
non-preferred term	non-descriptor term that is not assigned to documents but is provided as an entry point in a thesaurus or index
NT	abbreviation for narrower term
partitive relationship	A relation between two concepts where one of the concepts constitutes the whole and the other concept a part of that whole ⁵
polyhierarchical structure	hierarchical arrangement of concepts , in a thesaurus or classification scheme, in which each concept can have more than one broader concept
preferred term	descriptor term used to represent a concept when indexing
RDF	a family of World Wide Web Consortium (W3C) specifications originally designed as a metadata data model; It has come to be used as a general method for conceptual description or modeling of information that is

⁴ http://en.wikipedia.org/wiki/Application_programming_interface 1st September, 2014

⁵ http://www.iva.dk/bh/lifeboat_ko/concepts/partitive_relation.htm 25th June, 2014

Term	Description
	implemented in web resources, using a variety of syntax notations and data serialization formats ⁶
related term	covers associations between pairs of concepts that are not related hierarchically, but are semantically or conceptually associated to such an extent that the link between them needs to be made explicit in the thesaurus , on the grounds that it may suggest additional or alternative terms for use in indexing or retrieval
REST	Representational State Transfer ⁷
RT	abbreviation for related term
Skos	common data model for sharing and linking knowledge organization systems via the Web ⁸
SPARQL	an RDF query language, that is, a query language for databases, able to retrieve and manipulate data stored in Resource Description Framework format ⁹
target vocabulary	name TemaTres uses for a reference vocabulary
taxonomy	the practice and science (study) of classification of things or concepts, including the principles that underlie such classification ¹⁰
term	word or phrase used to label a concept
thesaurus	controlled and structured vocabulary in which concepts are represented by terms, organized so that relationships between concepts are made explicit, and preferred terms are accompanied by lead-in entries for synonyms or quasi-synonyms
top term	Preferred term representing a concept that has no broader concept in the thesaurus
use for	the term that follows the tag is a non-preferred term for which the preferred term preceding the tag should be used instead

⁶ http://en.wikipedia.org/wiki/Resource_Description_Framework 25th June, 2014

⁷ http://en.wikipedia.org/wiki/Representational_state_transfer 1st September, 2014

⁸ <http://www.w3.org/2001/sw/wiki/SKOS> 25th June, 2014

⁹ <http://en.wikipedia.org/wiki/SPARQL> 25th June, 2014

¹⁰ <http://en.wikipedia.org/wiki/Taxonomy> 25th June, 2014

Term	Description
USE/UF	abbreviation for used or use for

Thesaurus/Vocabulary related terms of the glossary are based on the ISO 25964-2:2013 definitions.