



LATVIJAS  
UNIVERSITĀTE  
ANNO 1919

# Interoperability of knowledge organization systems in the semantic web

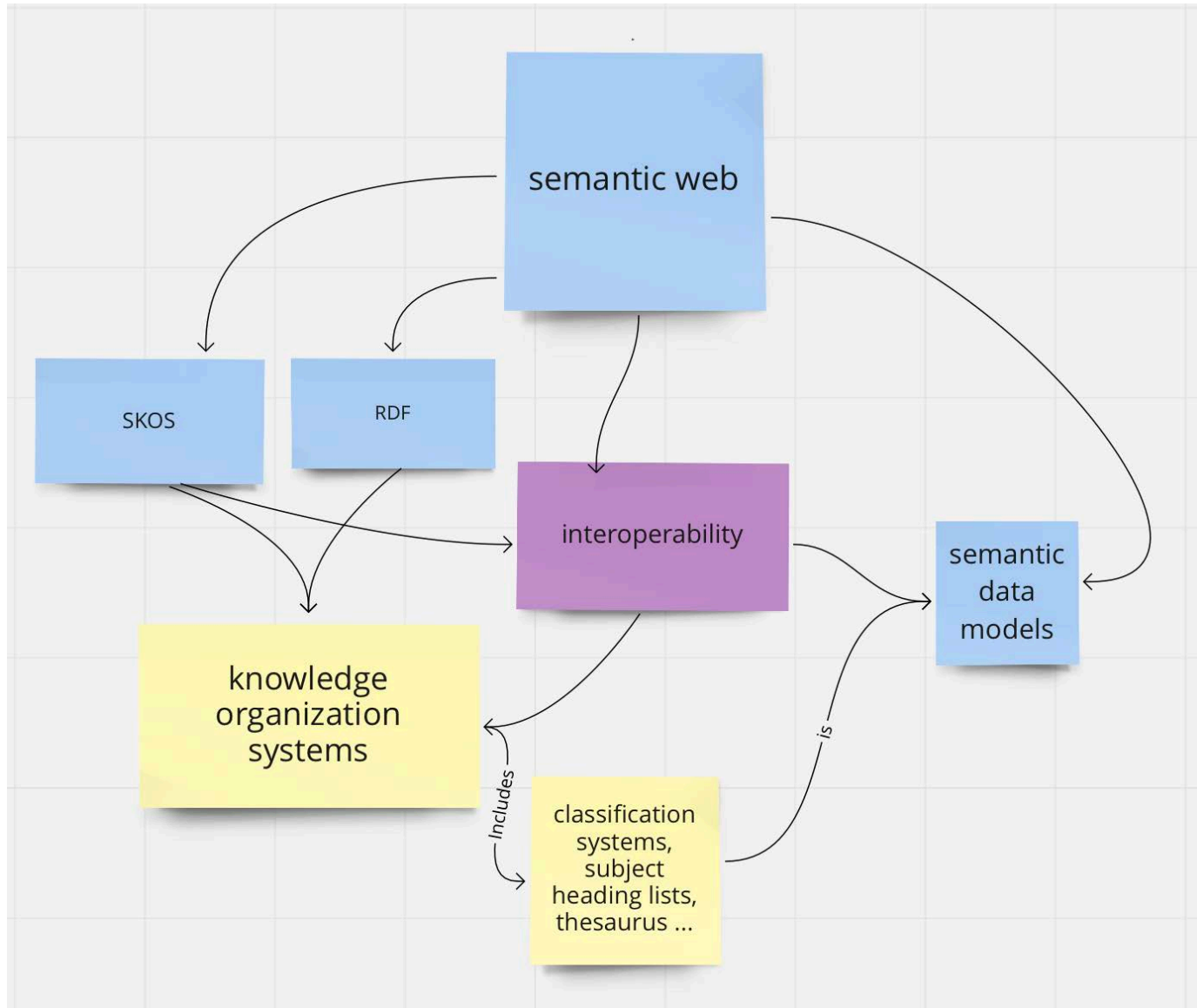
## Aspect of terminology

Asoc. professor Baiba Holma  
Assist. professor Daina Pakalna

“Interoperability of Data of Cultural Heritage Institutions in the Digital Space:  
Terminological Aspect”

08/10/2021

# Topic





To assess provision of terms in Latvian of the field.

Importance:

- Field development: practical tasks and solutions, and research



# Methodology

Lūdzam reģistrēties, lai iegūtu pilnīgus rezultātus un pieprasītu eksemplārus. [Ienākt](#) [NERĀDĪT](#)

Atlasīts 0 [LAPA 1](#) [29 Rezultāti](#)  Personalizēt

**1** **RAKSTS** ↓ “ ✉ 📌 ...

**Working framework of semantic interoperability for CRIS with heterogeneous data sources**

Leiva-Mederos, Amed ; Senso, Jose A ; Hidalgo-Delgado, Yusniel ; Hipola, Pedro  
Journal of documentation, 2017-05-08, Vol.73 (3), p.481-499

“ ... systems, platforms, sources and/or formats. Based on functionalities and materials of the VLIR project, the purpose of this paper is to present a model that provides for interoperability by means of semantic alignment techniques and metadata... ”

Recenzēts žurnāls

[Pieejams pilnais teksts](#) [✉](#) [>](#)

Aktīvie filtri

- 🔒 Information Science & ... ✕
- 🔒 Raksti ✕
- 🔒 Recenzētie žurnāli ✕
- 🔒 2016-2021 ✕
- 🔒 Pilnais teksts tiešsaistē ✕
- [🔒 Atcerēties visus filtrus](#)
- [🔄 Noņemt filtrus](#)

**The INNOVance Lexicon: Organisation of terms and concepts about construction products**

Maria Teresa Guaglianone, Giovanna Araci, Elisabetta Oliveri

First Published January 6, 2017 | Research Article  
<https://doi.org/10.1177/0165551516682446> [Check for updates](#)

Article information

**Abstract**

The construction sector is also a knowledge-intensive domain, in which effective and unambiguous communication and knowledge sharing are, at the same time, both essential yet difficult to accomplish. This is primarily due to the several professionals interacting and facing situations involving diverse resources, processes and activities. Each of them brings a different background and perspective, often generating poorly integrated information. Knowledge Organization Systems (KOSs) are crucial for ensuring completeness, consistency and quality of information. Despite the international trend to encourage the development and use of controlled vocabularies, especially classification systems, until recently in Italy the national coordination policy has not been effective enough. This article describes the first national attempt made, the INNOVance Lexicon that collects and organises knowledge about construction products. It combines taxonomic, terminological and semantic aspects of knowledge and it is a reference language to support information exchange and sharing in collaborative context.

**Keywords**

Construction domain, INNOVance Lexicon, knowledge management, Knowledge Organization Systems

**A semantic web methodological framework to evaluate the support of integrity in thesaurus tools**

M Mercedes Martinez-Gonzalez, Maria-Luisa Alvirre-Diez

First Published March 27, 2019 | Research Article  
<https://doi.org/10.1177/0165551519837196> [Check for updates](#)

Article information

**Abstract**

With the Semantic Web, thesauri regain a relevant role supporting semantic searches and other added-value services. Thesaurus standards define the constructs a thesaurus can have and the integrity rules it must comply with. Thesaurus editors can be helped in their work if thesaurus tools offer them support for integrity, warning when integrity rules are violated and/or helping them to correct these mistakes. The most recent thesaurus standard is ISO 25964, which supersedes ISO 2788, evolving towards concept-based thesauri and better aligned with the Semantic Web approach than the term-based thesauri of ISO 2788. However, the W3C recommendation for Knowledge Organisation System (KOS) representation in the semantic web context is Simple Knowledge Organisation Systems (SKOS), which is in fact prior to ISO 25964. This article focuses on thesaurus integrity and the evolution from ISO 2788 to ISO 25964. Its effect on integrity issues is analysed. A methodological proposal for evaluating integrity support in thesaurus tools, arising from the results of this work, is presented. Its target audience is professionals in charge of thesaurus editing. Besides being adapted to the most recent thesaurus standard, ISO 25964, it also includes the comparison of ISO standards with SKOS. The article concludes with the presentation of the results obtained by applying the framework to three thesaurus tools.

**Keywords**

ISO 25964, ISO 2788, semantic web, SKOS, software evaluation, thesaurus integrity, thesaurus tools



- **124 keywords** retrieved from the selected **27 articles**;
- **43 keywords** selected which had been used as concepts or terms in the field of knowledge organization;
- grouped into **10 sets of terms (9, others)**;
- **three** terminology databases
  - National Portal of Terminology (NPT),
  - Database of Libraries, Archives and Museums (LAM),
  - Tilde Terminology (TT).



# Sets

knowledge

information

linked  
data

semantics

metadata

thesaurus

ontologies

interopera  
bility

concepts

other

**Termini.gov.lv** Kolekcijas Terminrade Komisija [Ienākt](#)

knowledge management

No:   Uz:  Nozare:   [Rādīt vienkāšī](#)

Atrasts 1 rezultāts pieprasījumam "knowledge management"

**LV zināšanu pārvaldība**

**Definīcija:**  
Dalīta hipervides sistēma, kas pārvalda zināšanas iestādē un kas no zināšanu bāzes īstajā brīdī sniedz darbiniekiem nepieciešamo informāciju.

**EN knowledge management**

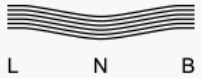
**RU управление знаниями**

**Kolekcija:** LZA TK ITTEA terminu datubāze

**Apstiprināts:** 01.01.2007.

138 līdzīgi termini

- EN knowledge
- EN sufficient knowledge
- EN knowledge base
- EN knowledge representation
- EN recorded knowledge
- EN technical knowledge
- EN compiled knowledge
- EN adequate knowledge
- EN knowledge spillover
- EN (knowledge) robot



Bibliotēku, arhīvu un muzeju terminu datubāze

[Par datubāzi](#) [Sadarbības partneri](#) [Citi resursi](#) [Ieteikumi](#)

Meklējamais termins:

Knowledge managemer

Meklēt

Termina valoda:

visas  LV  ORU  EN  ODE

Nozare:

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Avots:

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**Atrastie termini**

Nav atrasti atbilstoši rezultāti



## Linguistic search

## Semantic search

Home Projects Lookup my History Latvian University

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Knowledge management

Language Search Domain Search

From: English To: Latvian Domain: Any Source: Any Search

Powered by VIA

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knowledge management 🔍

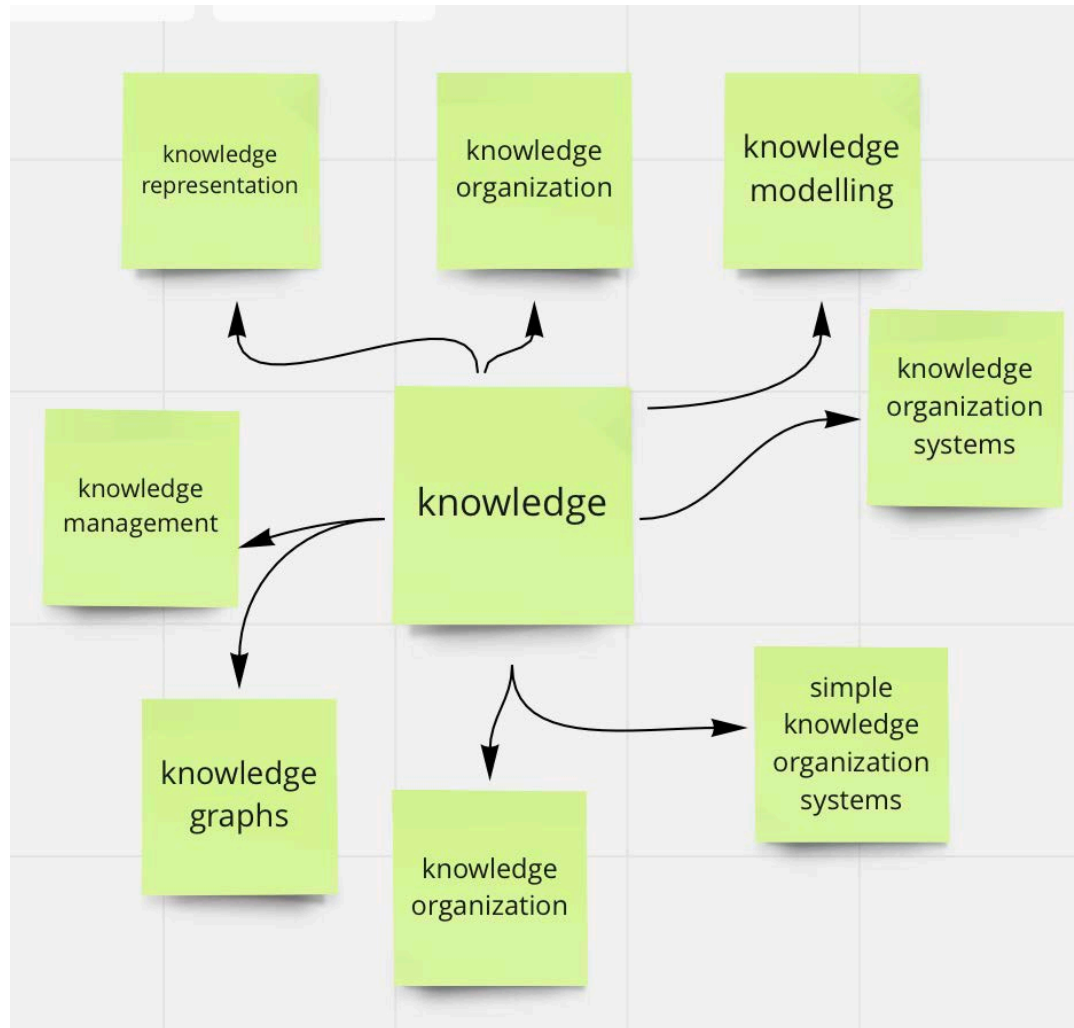
Target language	Translation	Domain	Collection	Other search suggestions for Knowledge management
lv	zināšanu pārvaldība	Business administration Communication and media Economics Industry and technology Information and communication technology Social sciences	<a href="#">EuroVoc, V 4.8 (2016)</a> <a href="#">Jaz</a> <a href="#">Europa Indijana Eurovoc</a> <a href="#">4.2 versija</a> <a href="#">Angļuvalodzināšanu informātikas termini</a>	<a href="#">knowledge management</a> <span style="float: right;">🔍</span> <a href="#">knowledge management</a> <span style="float: right;">🔍</span> <a href="#">knowledge management</a> <span style="float: right;">🔍</span> <a href="#">inside knowledge</a> <span style="float: right;">🔍</span> <a href="#">knowledge transfer</a> <span style="float: right;">🔍</span> <a href="#">knowledge article</a> <span style="float: right;">🔍</span> <a href="#">uniform knowledge</a> <span style="float: right;">🔍</span> <a href="#">technical knowledge</a> <span style="float: right;">🔍</span> <a href="#">knowledge-based</a> <span style="float: right;">🔍</span> <a href="#">knowledge-based</a> <span style="float: right;">🔍</span>
lv	zināšanu kapitāls		<a href="#">EuroVoc, V 4.8 (2016)</a>	
lv	zināšanu uzlabošana		<a href="#">EuroVoc, V 4.8 (2016)</a>	



# Results

Analysis based on sets of keywords

# Set of terms «Knowledge» (12)

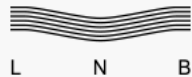
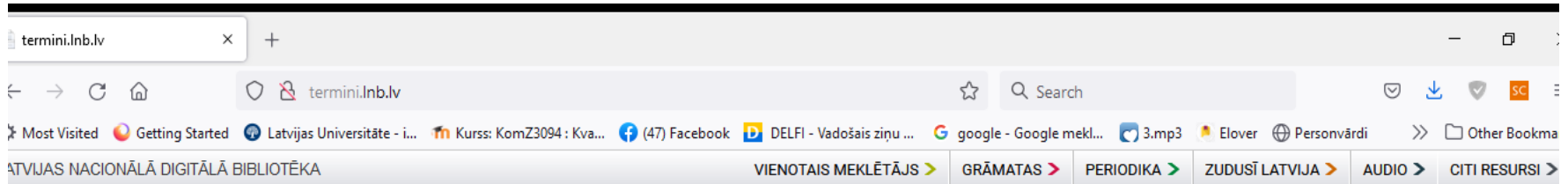


# Set of terms «Knowledge» (12)

Concept/term	Times mentioned	Term in Latvian	Latvian or internat.	Definition in latvian	Databases	Status, date of approval
<u>Knowledge management</u>	3	X	L	X	NPT, TT	S, D
<u>Knowledge organization systems</u>	2	-	-	-	-	-
Simple Knowledge Organisation Systems (SKOS)	2	-	-	-	-	-
<u>Knowledge organization</u>	2	-	-	-	-	-
<u>Knowledge representation</u>	1	X	L	X	NPT, TT	-
<u>Knowledge modelling</u>	1	-	-	-	-	-
<u>Knowledge graphs</u>	1	-	-	-	-	-

# Set of terms «Information» (9)

Concept/term	Times mentioned	Term in Latvian	Latvian or internat.	Definition in latvian	Databases	Status, date of approval
<b>Information retrieval</b>	2	X	L	X	BAM, NPT, TT	S, D
Information representation	1	-	-	-	-	-
<u>Information modeling</u>	1	-	-	-	-	-
<u>Information visualisation</u>	1	-	-	-	-	-
Information accessibility	1	-	-	-	-	-
<u>Information discovery</u>	1	-	-	-	-	-
<u>Information seeking</u>	1	-	-	-	-	-
<b>Information storage and retrieval systems</b>	1	X	L	-	TT	-



## Bibliotēku, arhīvu un muzeju terminu datubāze

[Par datubāzi](#) [Sadarbības partneri](#) [Citi resursi](#) [Ieteikumi](#)

Meklējamais termins:

Information retrieval

Meklēt

Termina valoda:

visas  LV  RU  EN  DE

Nozare:

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Avots:

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### Atrastie termini

[information retrieval](#)

**LV:** informācijas izguve

**Statuss:** apstiprināts

**EN:** information retrieval

**Avots:** LVS ISO 5127:2017 Informācija un dokumentācija. Pamatvirzieni un vārdnīca

**Nozare:** bibliotēkas

**Apstiprināts:** LZA TK ID TAK, 25.02.2021.



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# In TT



information retrieval



No

Angļu

Uz

Latviešu

Nozare

Visas nozares

Rādīt vienkārši

Atrasti 4 rezultāti pieprasījumam "Information retrieval"

**LV informācijas izguve**

Piezīme: prot. Nr. 249 (06.05.2005)

**EN information retrieval**

**IR**

Kolekcija: LZA TK ITTEA protokoll

Apslipe: 06.05.2005.

**LV informācijas izguve**

Piezīme: LVS ISO 5127:2005 informācija un dokumentācija. Vārdnīca

Definīcija:

Konkrētas informācijas vai informācijas ieguve no glabāšanas vietas.

**EN information retrieval**

Kolekcija: Bibliotēku un arhīvu terminu kolekcija

Apslipe: 01.01.2005.

**LV informācijas meklēšana**

informācijas meklējumi

**EN information search**

information retrieval

**DE Informationssuche**

**RU информационный поиск**

Kolekcija: Ekonomikas, lietošanas un darbu organizācijas termini (ELDO). R.: RTgas Pārvalde, 1995.

Apslipe: 01.01.1995.

147 līdzīgi termini

**EN information retrieval system**

EN retrieval of information

EN information retrieval language

EN retrieval

EN data retrieval

EN retrieval procedure

EN message retrieval

EN retrieval system

EN probabilistic retrieval

EN retrieval tools

EN document retrieval

EN reference retrieval

EN document retrieval system

EN information

EN method of retrieval

EN search and retrieval

EN bibliographic retrieval system

EN informal information

EN automated storage and retrieval

EN retrieval (in electronic mail)

EN retrieval of suiken property

EN engineering and technical retrieval

EN information request

EN personal information

EN information technology

EN census information

EN information board

EN information material

EN proprietary information



# Set of terms «**Linked data**» (8)

Concept/term	Times mentioned	Term in Latvian	Latvian or internat.	Definition in latvian	Databases	Status, date of approval
<u>Linked data</u>	5	X 4	L, I	-	TT	-
<u>Linked open data</u>	2	X 4	L, I	-	TT	-
<u>Linked representations</u>	1	-	-	-	-	-



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# Set of terms «Semantics» (7)

Concept/term	Times mentioned	Term in Latvian	Latvian or internat.	Definition in latvian	Databases
<u>Semantics</u>	1	X	I	X	NPT, TT
<u>Semantic web</u>	5	X 4	L, I	-	TT-
<u>Deep semantic annotation</u>	1	-	-	-	-

# Set of terms «Metadata» (7)

Concept/term	Times mentioned	Term in Latvian	Latvian or internat.	Definition in latvian	Databases	Status, date of approval
Metadata	3	X	I	X	NPT, LAM, TT	X
Learning object metadata	1	-	-	-	-	
<a href="#">Metadata-crosswalk</a>	1	-	-	-	-	
Library metadata	1	-	-	-	-	

# Set of terms «Thesaurus» (5)

Concept/term	Times mentioned	Term in Latvian	Latvian or internat.	Definition in latvian	Databases	Status, date of approval
<u>Thesaurus tools</u>	1	-	-	-	-	-
<u>Art and Architecture Thesaurus</u>	1	-	-	-	-	-
<u>Thesaurus integrity</u>	1	-	-	-	-	-
<u>Thesaurus construction</u>	1	-	-	-	-	-
<u>Thesaurus query expansion</u>	1	-	-	-	-	-



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# Set of terms «**Ontology**» (5)

Concept/term	Times mentioned	Term in Latvian	Latvian or internat.	Definition in latvian	Databases
<u>Ontologies</u>	4	-	-	-	-
<u>Ontology alignment</u>	1	-	-	-	-

# Set of terms «Interoperability» (3)

Concept/term	Times mentioned	Term in Latvian	Latvian or internat.	Definition in latvian	Databases	Status, date of approval
<u>Interoperability</u>	1	X	L(4)	X	NPT, TT	S, D
Semantic interoperability	2	X	I, L	-	TT	D



# Set of terms «Concept» (3)

Concept/term	Times mentioned	Term in Latvian	Latvian or internat.	Definition in latvian	Databases	Status, date of approval
CIDOC Conceptual Reference Model (CRM)	1	X	L, I	-	NPT, LAM, TT	D, S
<u>Concept schemes</u>	1	-	-	-	-	-
Concept specialization	1	-	-	-	-	-

# Separate terms

Concept/term	Times mentioned	Term in Latvian	Latvian or internat.	Definition in latvian	Databases	Status, date of approval
<u>Controlled languages</u>	1	-	-	-	-	-
<u>Controlled vocabularies</u>	1	-	-	-	-	-
<u>Graphs and networks</u>	1	-	-	-	-	-
<b>Taxonomy</b>	1	X	I	X	NTP	X
<u>Web of data</u>	1	-	-	-	-	-

# Conclusions

- KOS, represented according to SW recommendations, are important conceptual tools that can be used to improve semantic interoperability and information search and retrieval quality
- The field started to develop from 2009, when W3C recommendation for KOS representation in the semantic web - SKOS - was published
- Qualitative terminology is the requirement for the field development.

# Conclusions

- A vast majority of terms and concepts used in this field are interdisciplinary.
- They are most frequently associated with the field of information and communication technologies.
- There is much work to be done in this field on terminology in Latvian language.