

# Software for management of knowledge organization systems

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*This report is much more usable in HTML at <https://bartoc.org/software!>*

The terminology registry **BARTOC** collects information about all kinds of **knowledge organization systems** (KOS) such as controlled vocabularies, classifications, ontologies, and other semantic artifacts. This report summarizes information about [software for KOS management](#).

## Scope

This report is limited to **specialized KOS software for editing, vizualizing and/or analyzing terminologies**. The term “terminology” in this document is used as synonym for all kinds of KOS. Software is excluded if:

- it only happens to make use of terminologies (for instance [OpenRefine](#) and [mix’n’match](#)), or
- it is more [generic software](#) that can be used for terminology management among other use cases (like database management systems), or
- it is only used as [hosted service](#), or
- it is a programming library ([jskos-vue](#), [cocoda-sdk](#), [TSS Widgets](#), [ng-skos...](#)), or
- it is limited to simple lists of terms, glossaries and similar, or
- it is so called [terminology management](#) software for a centralized repository of approved terms, definitions, and translations in an organization, or
- it is only meant [to manage identifiers](#).

## KOS software

This report includes **69** instances of KOS software so far. The list is managed [in a JSON file](#) as array of records with flat fields as [described below](#). Applications without license or repository are closed source. Deprecated applications are included for historical reference.

Table 1

name	operatingSystem	edit	api	programmingLanguage	license	codeRepository	dateModified	applicationSubCategory
<a href="#">Semantic MediaWiki</a>	Web			PHP	<a href="#">GPL-3.0-or-later</a>	<a href="#">github</a>	2025	editor
<a href="#">Wikibase</a>	Web			PHP	<a href="#">GPL-3.0-or-later</a>	<a href="#">wikimedia</a>	2025	database, editor
<a href="#">TemaTres</a>	Web			PHP	<a href="#">GPL-3.0-or-later</a>	<a href="#">github</a>	2025	editor
<a href="#">iQvoc</a>	Web			Ruby	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2025	editor
<a href="#">VocBench</a>	Web			Java, JavaScript	<a href="#">BSD-3-Clause</a>	<a href="#">bitbucket</a>	2025	editor
<a href="#">Skosmos</a>	Web	-		PHP	<a href="#">MIT</a>	<a href="#">github</a>	2025	viewer
<a href="#">Cocoda</a>	Web		-	JavaScript	<a href="#">MIT</a>	<a href="#">github</a>	2025	mapping editor
<a href="#">MSCR</a>	Web			Java	<a href="#">MIT</a>	<a href="#">github</a>	2025	mapping editor
<a href="#">JSKOS Server</a>	Web			JavaScript	<a href="#">MIT</a>	<a href="#">github</a>	2025	database
<a href="#">SkoHub Vocabs</a>	Web			JavaScript	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2025	viewer
<a href="#">OpenTheso</a>	Web			Java	<a href="#">GPL-3.0-or-later</a>	<a href="#">github</a>	2025	editor
<a href="#">Ontology Lookup Service (OLS)</a>	Web	-		JavaScript, Java	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2025	viewer
<a href="#">OntoPortal Alliance</a>	Web	-		Ruby	<a href="#">BSD-3-Clause</a>	<a href="#">github</a>	2025	viewer
<a href="#">voc4cat-tool</a>	CLI, GitHub, Excel	-	-	Python	<a href="#">BSD-3-Clause</a>	<a href="#">github</a>	2025	converter
<a href="#">ShowVoc</a>	Web	-	-	JavaScript	<a href="#">BSD-3-Clause</a>	<a href="#">bitbucket</a>	2025	viewer
<a href="#">Protégé</a>	JVM		-	Java	<a href="#">BSD-3-Clause</a>	<a href="#">github</a>	2025	editor
<a href="#">VocExcel</a>	Excel, CLI	-	-	Python	<a href="#">BSD-3-Clause</a>	<a href="#">github</a>	2025	converter
<a href="#">sssom-java</a>	CLI	-	-	Java	<a href="#">GPL-3.0-or-later</a>	<a href="#">github</a>	2025	converter
<a href="#">jskos-cli</a>	CLI	-	-	JavaScript	<a href="#">MIT</a>	<a href="#">github</a>	2025	converter, validator
<a href="#">TS4NFDI API Gateway</a>	Web	-		Java, JavaScript	<a href="#">MIT</a>	<a href="#">github</a>	2025	viewer, converter
<a href="#">sssom-py</a>	CLI	-	-	Python	<a href="#">MIT</a>	<a href="#">github</a>	2025	converter
<a href="#">jskos-proxy</a>	Web	-		JavaScript	<a href="#">MIT</a>	<a href="#">github</a>	2025	viewer, converter
<a href="#">sssom-js</a>	CLI	-	-	JavaScript	<a href="#">MIT</a>	<a href="#">github</a>	2025	converter
<a href="#">Network of Terms</a>	Web	-		Typescript	<a href="#">EUPL-1.2</a>	<a href="#">github</a>	2025	converter
<a href="#">TerminoloGit</a>	Web, git	-	-	Python	<a href="#">GPL-3.0-or-later</a>	<a href="#">gitlab</a>	2025	converter
<a href="#">FOOPS!</a>	Web	-	-	Java, JavaScript	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2025	validator
<a href="#">Chowlk</a>	Web	-	-	Python	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2025	converter
<a href="#">WIDOCO</a>	JVM	-	-	JavaScript, Java	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2025	viewer
<a href="#">O'FAIRe</a>	Web	-		Java	<a href="#">MIT</a>	<a href="#">github</a>	2025	validator
<a href="#">Ontology Development Kit</a>	CLI	-	-	Python	<a href="#">BSD-3-Clause</a>	<a href="#">github</a>	2025	converter, validator
<a href="#">OOPS!</a>	Web	-	-	Java	<a href="#">?</a>	<a href="#">github</a>	2025	viewer
<a href="#">Atramhasis</a>	Web			Python	<a href="#">GPL-3.0-or-later</a>	<a href="#">github</a>	2024	editor
<a href="#">Jekyll RDF</a>	Web	-		Ruby	<a href="#">MIT</a>	<a href="#">github</a>	2024	viewer
<a href="#">OnToology</a>	Web, git	-	-	Python	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2024	viewer, validator
<a href="#">SkoHub Shapes</a>	RDF	-	-	SHACL	<a href="#">?</a>	<a href="#">github</a>	2024	validator
<a href="#">OxO</a>	Web	-		JavaScript	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2024	viewer
<a href="#">qSKOS</a>	CLI	-		Java	<a href="#">GPL-3.0-or-later</a>	<a href="#">github</a>	2024	validator
<a href="#">Vocabseditor</a>	Web		-	Python	<a href="#">MIT</a>	<a href="#">github</a>	2024	editor

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name	operatingSystem	edit	api	programmingLanguage	license	codeRepository	dateModified	applicationSubCategory
<a href="#">VocPrez</a>	Web	-		Python	<a href="#">GPL-3.0-or-later</a>	<a href="#">github</a>	2024	viewer
<a href="#">Snowstorm</a>	Web	-		Java	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2024	viewer
<a href="#">VocPub Profile</a>	RDF	-	-	SHACL	<a href="#">CC-BY-4.0</a>	<a href="#">github</a>	2024	validator
<a href="#">ODM2 Controlled Vocabularies</a>	Web			Python	<a href="#">BSD-3-Clause</a>	<a href="#">github</a>	2024	editor
<a href="#">Onto4ALL Editor</a>	Web		-	JavaScript, PHP	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2024	editor
<a href="#">Web Protégé</a>	Web		-	Java	<a href="#">BSD-3-Clause</a>	<a href="#">github</a>	2023	editor
<a href="#">Django Controlled Vocabularies</a>	Web			Python	<a href="#">BSD-3-Clause</a>	<a href="#">github</a>	2023	editor
<a href="#">Amalgame</a>	Web		-	prolog	<a href="#">BSD-3-Clause</a>	<a href="#">github</a>	2023	mapping editor
<a href="#">Wandora</a>	JVM		-	Java	<a href="#">GPL-3.0-or-later</a>	<a href="#">github</a>	2023	editor
<a href="#">Alignment API and Alignment Server</a>	CLI	-		Java	<a href="#">GPL-3.0-or-later</a>	<a href="#">inria</a>	2023	database
<a href="#">Neologism</a>	Web			JavaScript	<a href="#">MIT</a>	<a href="#">github</a>	2023	editor
<a href="#">Ginco</a>	Web			Java	<a href="#">GPL-3.0-or-later</a>	<a href="#">github</a>	2022	editor
<a href="#">WebVOWL</a>	Web	-	-	JavaScript	<a href="#">MIT</a>	<a href="#">github</a>	2022	viewer
<a href="#">SKOSjs</a>	Web		-	JavaScript	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2022	editor
<a href="#">VoCol</a>	Web		-	JavaScript	<a href="#">MIT</a>	<a href="#">github</a>	2021	editor
<a href="#">Skosify</a>	CLI	-		Python	<a href="#">MIT</a>	<a href="#">github</a>	2021	converter, validator
<a href="#">mc2skos</a>	CLI		-	Python	<a href="#">Unlicense</a>	<a href="#">github</a>	2021	converter
<a href="#">Themis</a>	Web	-		Java	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2021	validator
<a href="#">OpenSKOS</a>	Web	-		PHP	<a href="#">GPL-3.0-or-later</a>	<a href="#">github</a>	2020	viewer, editor
<a href="#">LODE</a>	Web	-		Java	<a href="#">ISC</a>	<a href="#">github</a>	2020	viewer
<a href="#">SISSVoc</a>	Web	-		XSLT	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2019	viewer
<a href="#">SKOS Play</a>	Web	-	-	Java	<a href="#">CC-BY-SA-4.0</a>	<a href="#">bitbucket</a>	2018	viewer, converter
<a href="#">OntoBee</a>	Web	-		PHP, JavaScript	<a href="#">Apache-2.0</a>	<a href="#">github</a>	2018	viewer
<a href="#">SKOS Editor</a>	Web			Java	<a href="#">LGPL-3.0-or-later</a>	<a href="#">github</a>	2016	editor
<a href="#">HIVE Vocabulary Server</a>	Web		-	Java	<a href="#">BSD-3-Clause</a>	<a href="#">github</a>	2015	viewer
<a href="#">ASKOSI</a>	Web	-	-	Java	<a href="#">GPL-3.0-or-later</a>	<a href="#">askosi</a>	2011	viewer
<a href="#">THManager</a>	JVM		-	Java	<a href="#">LGPL-3.0-or-later</a>	<a href="#">sourceforge</a>	2006	editor
<a href="#">OntoServer</a>	Web				-	-		viewer
<a href="#">PoolParty Thesaurus Server</a>	Web				-	-		editor
<a href="#">Lexasaurus</a>	Web				-	-		editor
<a href="#">Fiblio</a>	Web		-		-	-		editor

Please [open an issue](#) if some relevant software is missing or data seems invalid!

## Metadata

Field	Purpose
<code>name</code>	name with link to homepage
<code>operatingSystem</code>	operating system or similar dependency (Web, CLI...)
<code>api</code>	whether a web service or similar API is provided to connect to
<code>edit</code>	whether vocabularies can be modified with the software
<code>programmingLanguage</code>	programming language(s)
<code>license</code>	license of the software (if free software)
<code>codeRepository</code>	source Code repository (if open source)
<code>dateModified</code>	year of most recent update
<code>applicationSubCategory</code>	type of KOS software

## KOS software categories

- **viewer**: to display terminologies (23)
- **editor**: to create and modify terminologies (24)
- **mapping editor**: to create and modify mappings/alignments (3)
- **converter**: to convert from one format into another (15)
- **validator**: to check terminologies (10)
- **database**: to store terminologies (3)

## Related software

Knowledge organization systems are also managed by other types software [excluded from this report](#).

### Generic software

Simple terminologies can be managed in a **spreadsheet** (LibreOffice Calc, Excel, Google Sheets...). This software lacks most special functionality for terminology management but the usability and accessibility is very high. Some tools in the list above (VocExcel, voc4cat-tool) enhance standard spreadsheets with terminology management functionalities.

The same applies to **database management systems** (RDBMS, NoSQL, RDF triple stores, property graph databases...) with some additional features such as unique key constraints but less usability. An edge case might be systems for management of knowledge graphs (such as Wikibase), included above.

Tools for personal **knowledge management** (such as [Obsidian](#) and [Notion](#)) help to structure ideas and concepts. Similar tools exist for enterprises to support data integration, knowledge management and/or business intelligence of an organization (for instance [PoolParty Semantic Suite](#)).

Several **Content Management Systems** (CMS) allow to manage a list or hierarchy of topics or other entities for knowledge managements. If these lists can be exported, the CMS can be applied to manage terminologies. An example is [Drupal](#), which was used for the first version of BARTOC terminology registry.

Terminologies can also directly be managed in **files** for instance in RDF/Turtle syntax. This only requires a text editor but the risk is high to introduce errors. A version control system such as git can be used on top to track changes.

## Hosted services

Some organizations host their own applications for KOS management or related services. Examples include:

- [DANTE](#)
- [xTree](#)
- [Linked Open Vocabularies \(LOV\)](#)

More examples may be found in the BARTOC [list of terminology registries](#).

## Terminology management

The term “terminology management” is also used for systems to organize the terms, definitions, and translations used in an organization. See Montoro (2018) for a list of terminology management systems. The focus of these systems is more on translation but there is some overlap with KOS management.

## Identifier systems

Several systems and applications exist to manage identifiers (Domain Name System, [w3id...](#)). These systems are relevant to manage KOS but they are rarely enough for KOS management alone. See <https://bioregistry.io/registry/> for a registry of identifier systems used with KOS.

## Other software

The following do not fit into of of the software categories above or there was not enough information:

- [Scripts to analyze concept drift](#) as part of a research project (Open Source)
- [TopBraid EDG](#) is a commercial knowledge graph editor
- [Apelon DTS](#) (Distributed Terminology System) and Apelon TermManager are commercial terminology editors. An earlier [version from 2013](#) is available as Open Source.
- [Grafo](#) is a collaborative knowledge graph editor, available as commercial web application
- [Vitro](#) is a framework for semantic web applications, used in [VIVO](#)

## Related works

This report is based on two reports (Voß 2016a, 2016b) from the beginning of [project coliconc](#) that led to a [a wiki page](#) managed between 2020 and 2024. Other lists of software for management of terminologies include: See Miles and Bechhofer (2009) for a report created during the specification of SKOS W3C Recommendation and the corresponding wiki pages at <https://www.w3.org/2001/sw/wiki/Category:Editor>.

## Acknowledgements

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## References

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