

TS4NFDI support for semantic metadata

2nd NFDI Metadata Workshop

2025-06-25

Outline

- ▶ Semantic Metadata and Terminologies
- ▶ TS4NFDI and its Services

Semantic Metadata?

- ▶ All meaningful metadata is semantic!
- ▶ Semantic does not imply interoperability
- ▶ Shared semantics allow for interoperability

It's all about identifiers!

- ▶ 64 61 74 65 \Rightarrow “date” in ASCII/Unicode
- ▶ date \Rightarrow ? in ?
- ▶ date \Rightarrow <http://purl.org/dc/terms/date> in DC
- ▶ <http://purl.org/dc/terms/date> \Rightarrow “A point or period of time associated with an event in the lifecycle of the resource” in DC
- ▶ *data/identifier* \Rightarrow *semantics in format/schema/terminology*

Terminologies give context to identifiers

- ▶ **Terminology** (Dublin Core Elements, schema.org...)
- ▶ Names (“Date”, “Datum”...)
- ▶ Description (“A point or period of time...”)
- ▶ Related entities (created, dateSubmitted...)
- ▶ Rules (ISO 8601-1 date/time value, created < submitted, ...)
- ▶ Mappings (dc:created = schema:dateCreated...)

Terminology Services 4 NFDI (TS4NFDI)

- ▶ BASE4NFDI project, integration phase 2025 & 2026
- ▶ Joint effort of ZB Med, InfAI, TIB, RPTU, VZG
- ▶ “provision, curation, development, harmonization and mapping of terminologies”
- ▶ Standardise and harmonise terminology management within the NFDI

Working Packages

1. TS4NFDI Service Portal
<https://terminology.services.base4nfdi.de/>
2. **Mapping Service**
<https://coli-conc.gbv.de/cocoda/ts4nfdi/>
3. Terminology Curation
4. **API Gateway** <https://ts4nfdi.github.io/api-gateway>
5. **Terminology Service Suite** <https://github.com/ts4nfdi/terminology-service-suite>
6. Community engagement, communication, and training

- ▶ Meta search for terminology services
(OLS, OntoPortal, Skosmos, JSKOS, GND...)
- ▶ Server-side integration: one API to query them all
- ▶ Create and publish collections/lists of terminologies

Mapping Service

- ▶ Create and review mappings with a nice UI
- ▶ Create, edit, annotate mappings via API

IKMK_MATERIAL Material aus IKMK ▼

BY-MC-SA

Q Silber

1 Silber ★

Konzept Meta Links

Silber bevorzugt, de

Silber bevorzugt, en

Hierarchie

1 Silber

10 Stein

11 Messing

12 Kupfer

13 Silber, vergoldet

14 Zinn

15 Stahl

16 Gips

17 Eisen

18 Elfenbein

19 Porzellan

2 Bronze

20 Nickel

IKMK_MATERIAL

Mapping-Editor

GND

1 Silber

= Silber

nicht gespeichert

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keine Konkordanz

Konkordanzen

Suche

Navigator

Mappings

Konkordanz-Register

3 von 3

GND Silber = DDC 669.23 Silber

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GND Silber = STW 14308-2 Silber

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GND Silber = DDC 546.654 Silber

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Enthaltene Mappings

5 von 5

GND Silber = WD Q1090 Silber

GND Silber = STW 14308-2 Silber

GND Silber = LCSH Silber

GND Silber = DDC 546.654 Silber

GND Silber = DDC 669.23 Silber

Vorschläge

CR CO GR

IKMK_MA 1 Silber

GND Silber

IKMK_MA 13 Silber, vergoldet

GND Silber

Co-Occurrences

1 2

5 von 10

GND Gemeinsame Normdatei

0 ALLGEMEIN

Q Silber

Edelmetall

Erste Nebengruppe

Vier-d-Element

1 Silber ★

Konzept Meta Links

Silber bevorzugt, de

Blattsilber

Silberisotop

Brandsilber

Schnellauswahl

keine Konzepte vorhanden

Terminology Service Suite

- ▶ React library to interact with terminologies
- ▶ Search, Infobox, Tree-view...
- ▶ Common data model to be used with API Gateway

Please contact us!

- ▶ Have a look and try out!
- ▶ Incubators: Bring you use cases!

Limitations and related projects

- ▶ Most data formats are not terminologies
- ▶ But they often make use of terminologies
- ▶ Current MOD data model lacks multilinguality and mappings (have a look at JSKOS instead)
- ▶ Similar client-side integration with cocoda-sdk
- ▶ Project BARTOC: Terminology Registry build with data librarians