BITS

BluePrints for the Integration of Terminology Services in Earth System Sciences

Establishing a Terminology Service for the Earth System Sciences

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Why Use Terminologies in Earth System Sciences?

- Clarity Across Disciplines
- Consistent Data Annotation with Terminologies
- Improved Data Discovery
- Support for Automation
- Enhanced Collaboration

→ *Terminologies are not just labels – they enhance clarity, consistency, and collaboration*

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The BITS Project

Blueprints for the Integration of Terminology Services in Earth System Sciences

Development of a Terminology Service for Earth Scientists (TS ESS):

- Closely connected to the two ESS repositories of our partners DKRZ and SGN
- Involvement of the ESS community:
  - choice of terminologies for the TS ESS,
  - finding and closing gaps in terminologies,
  - development of supporting tools.

https://projects.tib.eu/bits/home

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DKRZ DEUTSCHES KLIMARECHENZENTRUM

SENCKENBERG world of biodiversity

funded by: DFG Deutsche Forschungsgemeinschaft

TIB Terminology Service (TIB TS)

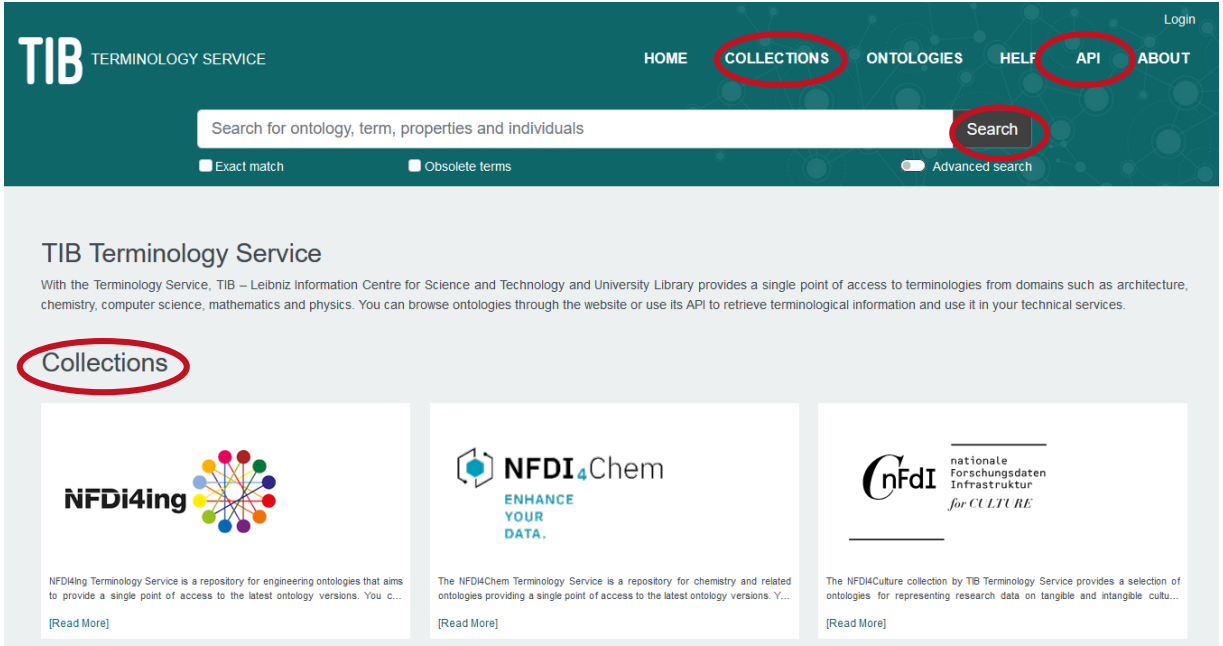
- **Central service** that hosts all terminologies
- **Permanent** service
- **Co-developed across multiple projects and communities** (BITS, NFDI4Ing, NFDI4Chem,...).
- **Special services** for communities, e.g. engineers, chemists, earth scientists,...
- All terminologies in the TIB TS are **quality controlled**

TIB TERMINOLOGY SERVICE

https://terminology.tib.eu/ts/

TIB TS Central

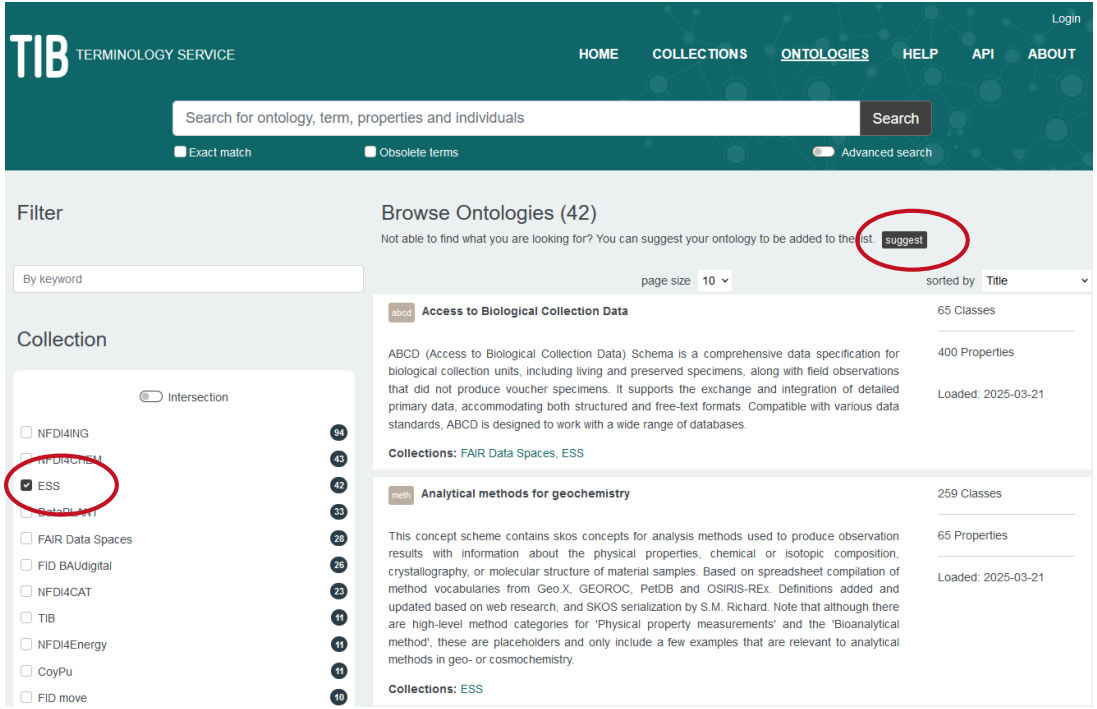
- Freetext searching
- Machine to machine communication (REST API)
- Collections



https://terminology.tib.eu/ts/

The ESS Collection

- Terminologies useful for ESS
- Additional terminologies can be suggested
- Work in progress - further terminologies will be added



https://terminology.nfdi4earth.de/

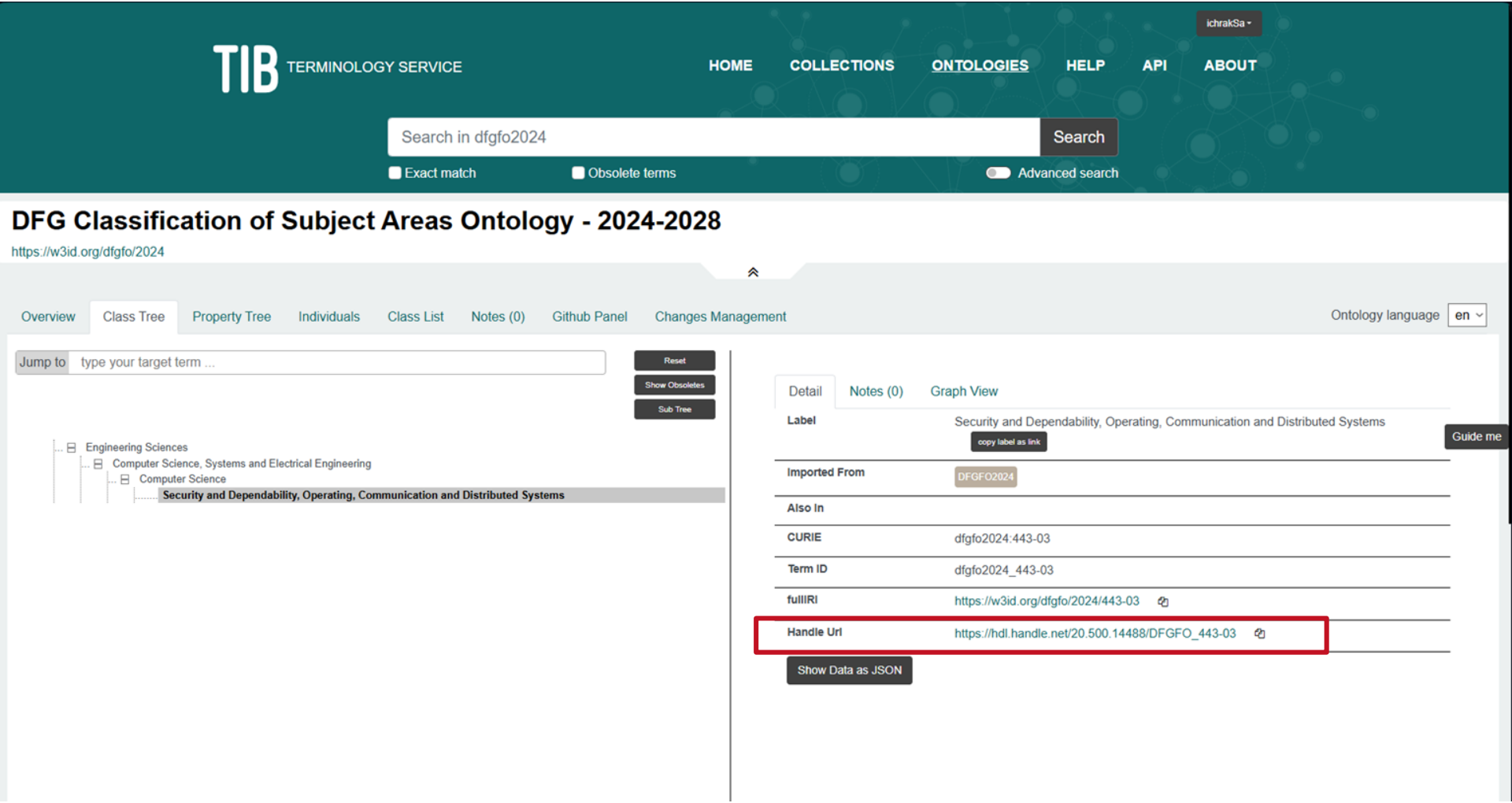
Feasibility study: PIDs for Terms of Terminologies

Problem: Disappearance of classes and individuals

New versions of some terminologies: classes or individuals have been deleted
→ the corresponding IRIs are no longer resolvable

Suggestion: PIDs for the terms of terminologies in the TIB TS

- All versions of a term are stored
- Persistent handles for terms are assigned by TIB
- Landing page of the handle is the page of the term in the TIB TS
- Each new version of a term gets an own handle


TIB TERMINOLOGY SERVICE
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HOME
COLLECTIONS
ONTOLOGIES
HELP
API
ABOUT
Search in dfgfo2024
Search
Exact match
Obsolete terms
Advanced search
DFG Classification of Subject Areas Ontology - 2024-2028
https://w3id.org/dfgfo/2024
Overview
Class Tree
Property Tree
Individuals
Class List
Notes (0)
Github Panel
Changes Management
Ontology language
en
Jump to
type your target term ...
Reset
Show Obsoletes
Sub Tree
Engineering Sciences
Computer Science, Systems and Electrical Engineering
Computer Science
Security and Dependability, Operating, Communication and Distributed Systems
Detail
Notes (0)
Graph View
Label
Security and Dependability, Operating, Communication and Distributed Systems
copy label as link
Guide me
Imported From
DFGFO2024
Also In
CURIE
dfgfo2024:443-03
Term ID
dfgfo2024_443-03
fullIRI
https://w3id.org/dfgfo/2024/443-03
Handle Url
https://hdl.handle.net/20.500.14488/DFGFO_443-03
Show Data as JSON

Senckenberg Collections: Automated annotation of digital objects descriptions

- More than 40 million physical specimen
- Currently: 1,547,711 digital specimen in 124 collections
- Partial use of taxonomic transcriptions, but also use of mixed languages, handwritten notes, labels and other image data

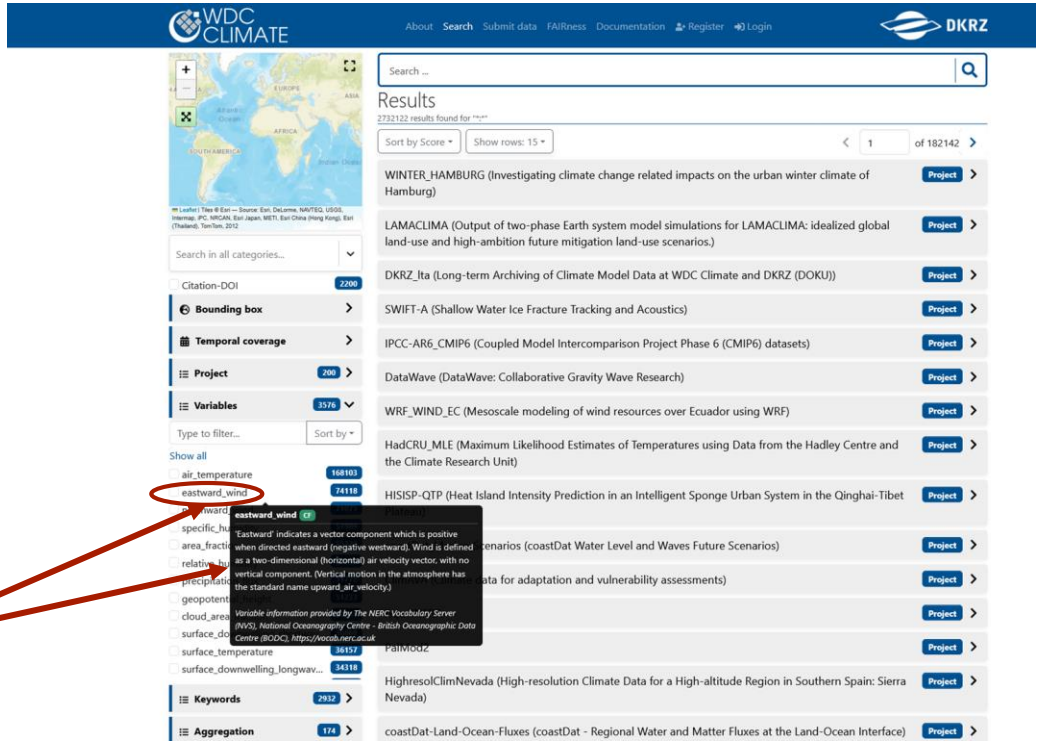
Task:
Standardised descriptions of the specimen via automated annotation with terms from terminologies in the ESS Collection

World Data Center for Climate: Displaying Definitions of Search Terms

Data from climate simulations: standardised metadata (CF-conventions)

Problem:
Researcher from other disciplines are not familiar with these conventions

Solution: Definition of the term in the CF-vocabulary will be shown



We need your participation:

Please test our Terminology Service:

and

Please take part in our survey:
Improving the ESS Collection of the TIB TS

Thank You !

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