

# Data Collections Explorer

An Information System for the Engineering Sciences

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## Motivation

Efficient re-use of research data requires easy findability and accessibility. The Data Collections Explorer is supposed to:

- Provide an overview of research data repositories, databases, and archives relevant to the engineering community
- Make individually published datasets more accessible

## Use Cases

We are concentrating on the following use cases:

1. Researchers looking for datasets
  - Are there any datasets to support my research questions?
  - Are there benchmarks available to check my results?
  - Are the datasets published Open Access?
2. Researchers looking to publish their datasets
  - Where to publish my dataset?
  - Are there size limits or publication costs?

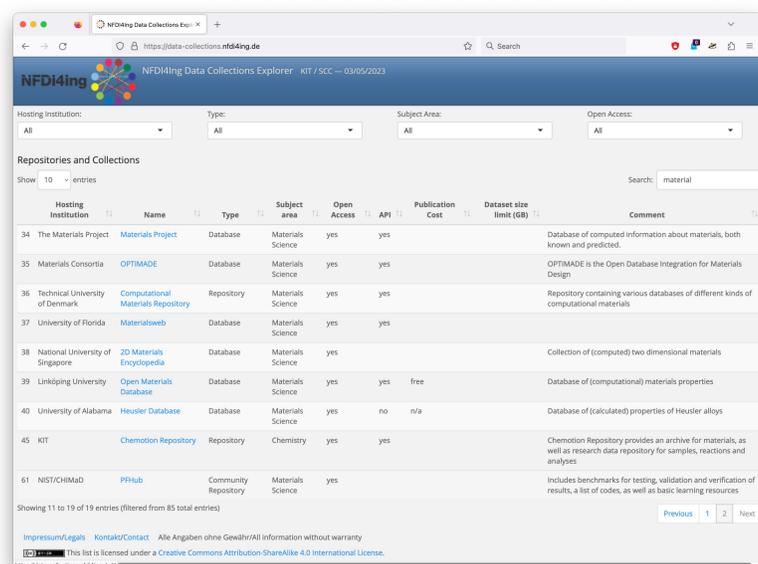
## Ongoing Work

- Improved user interface
- API access
- Expanding to NFDI-MatWerk

## Future Work

Currently planned, based on feedback by the NFDI community:

- Mechanism for users to add/recommend new entries
- Use of controlled vocabularies
- Curation processes



Hosting Institution	Name	Type	Subject Area	Open Access	API	Publication Cost	Dataset size limit (GB)	Comment
34	The Materials Project	Database	Materials Science	yes	yes			Database of computed information about materials, both known and predicted.
35	Materials Consortia	OPTIMADE	Materials Science	yes	yes			OPTIMADE is the Open Database Integration for Materials Design
36	Technical University of Denmark	Computational Materials Repository	Materials Science	yes	yes			Repository containing various databases of different kinds of computational materials
37	University of Florida	Materialsweb	Materials Science	yes	yes			
38	National University of Singapore	2D Materials Encyclopedia	Materials Science	yes				Collection of (computed) two dimensional materials
39	Linköping University	Open Materials Database	Materials Science	yes	yes	free		Database of (computational) materials properties
40	University of Alabama	Heuser Database	Materials Science	yes	no	n/a		Database of (calculated) properties of Heuser alloys
45	KIT	Chemotion Repository	Chemistry	yes	yes			Chemotion Repository provides an archive for materials, as well as research data repository for samples, reactions and analyses
61	NIST/CHIMM	PHub	Materials Science	yes				Includes benchmarks for testing, validation and verification of results, a list of codes, as well as basic learning resources

## Current Status

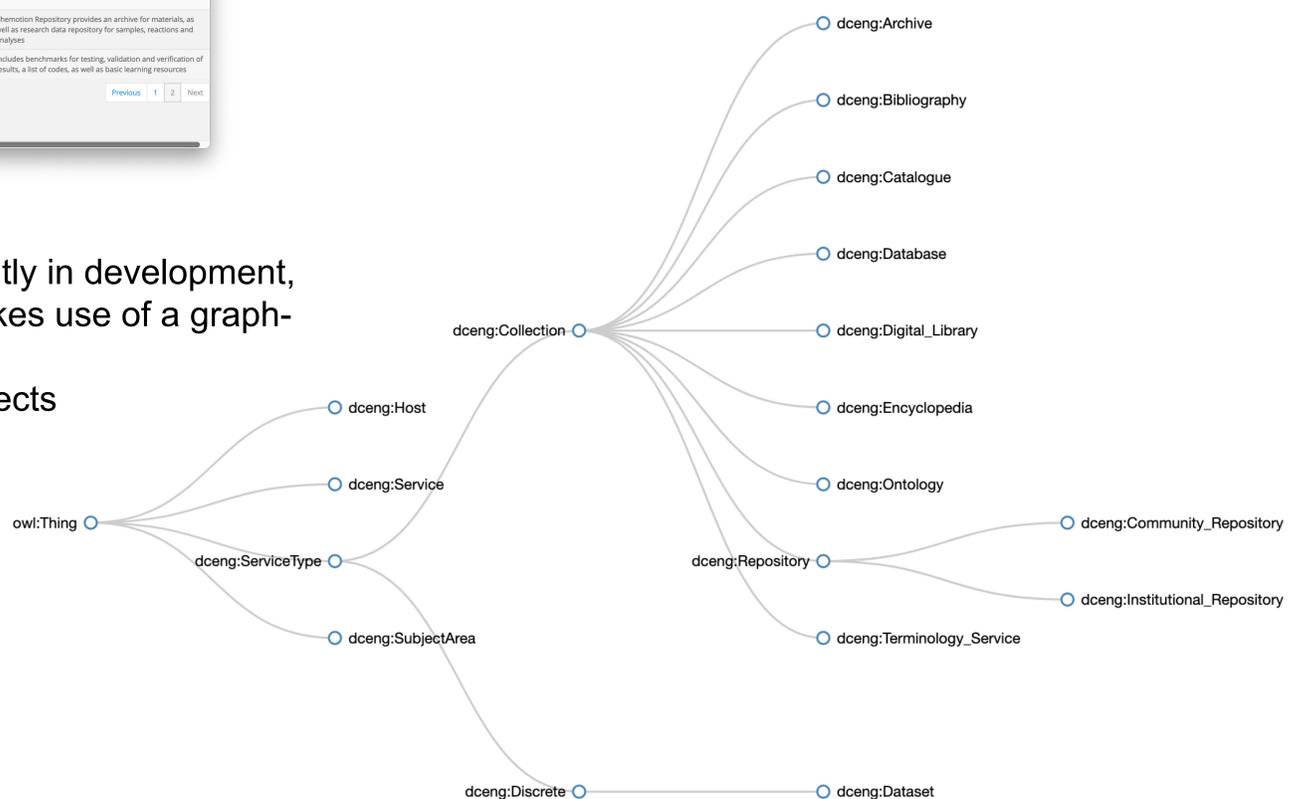
The current interface provides a full-text search, short descriptions of the linked resources as well as drop down menus allowing to filter for

- Hosting Institution
- Subject Area
- Type
- Open Access

## Knowledge Graph

A new and improved version is currently in development, based on community feedback. It makes use of a graph-based data model. It offers:

- Easier integration into existing projects
- Easier machine accessibility
- Access via SPARQL
- Increased flexibility



## Community Involvement

- Currently there are over 80 entries
- Continuously updated based on community feedback

Try it here: [data-collections.nfdi4ing.de](https://data-collections.nfdi4ing.de)



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