

# HeFDI Data Talk

Date	Topic	Presenter
30 June 2023	NFDI4Ing. RDM from an engineering perspective	Mario Moser Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University



## Abstract:

In this presentation, the NFDI4Ing (National Research Data Infrastructure for Engineering) introduces itself: We show how we address the heterogeneity of engineering with our structure and content and which offerings are available.

## About the HeFDI Data Talks:

The HeFDI Data Talks are a bi-weekly open information and discussion event focused on data management in the context of science, in which relevant NFDI consortia as well as research data management services present themselves. The series discusses current topics and presents numerous – including local and regional – tools and services. The HeFDI Data Talks are an offer of the HeFDI Initiative (Landesinitiative HeFDI), which is funded by Hesse's Ministry for Science and Arts (HMWK).

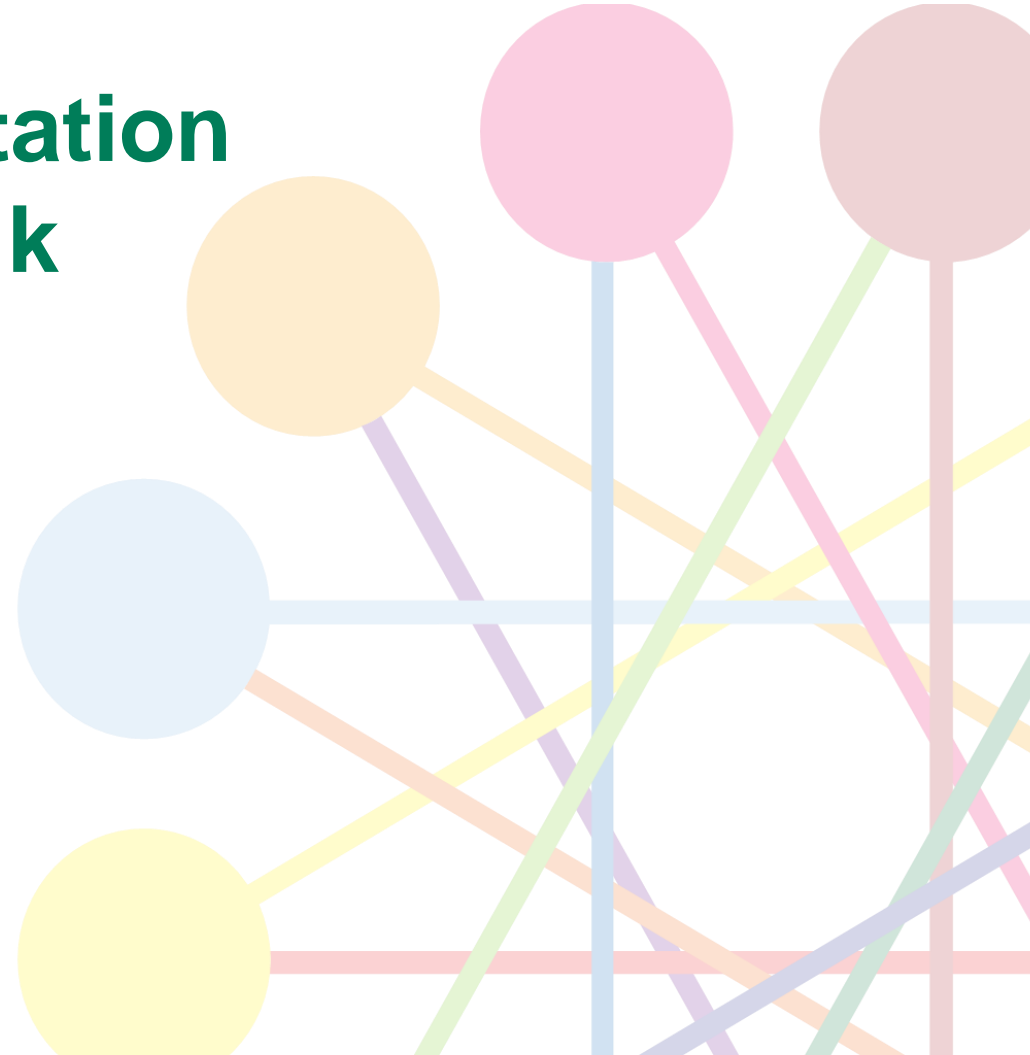
DOI link: <https://doi.org/10.5281/zenodo.8274696>; License information: Creative Commons Attribution 4.0 International ([CC BY 4.0](https://creativecommons.org/licenses/by/4.0/))



# ● NFDI4ing presentation @ HeFDI Data Talk

30.06.2023, online

Mario Moser



## About me

#NFDI4ing #productionengineering  
#FAIR #rdm  
#dataengineer  
#produktionstechnik #datennachnutzung  
#WZL #fdm #training  
#dataarchitecture #education  
#industrialengineer #Aachen



**Mario Moser, M.Sc.**  
Research Associate

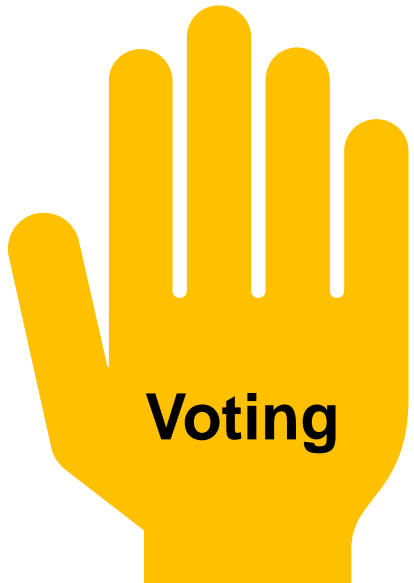
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## Who is in the audience today?



### What is your professional background?

- (A) Engineering
- (B) Informatics
- (C) Other

### From which perspective are you looking today?

- (A) Research
- (B) IT Center
- (C) Library
- (D) Data Steward
- (E) Otherwise interested

### Have you ever heard of ...?

- (A) Research Data Management
- (B) NFDI  
(Nationale Forschungsdateninfrastruktur)
- (C) NFDI4Ing  
(Nationale Forschungsdateninfrastruktur für die Ingenieurwissenschaften)

## Topics for today's introduction of NFDI4Ing

**NFDI**

**NFDI4Ing**

(Functional) Structure  
Offerings & Services  
Contact



# Background NFDI e.V. and consortia

## What is the National Research Data Infrastructure (NFDI)?

- Funding initiative by the **federal government and the governments of the „Länder“**; ~ €90 Mio. ( $10^6$ ) annually from 2018-2028. Administration of the selection process and oversight of funds by the DFG, final funding decisions by the GWK
- The non-profit association NFDI e.V. was founded on October 12th, 2020 and serves as **coordinating institution** with the goal of perpetuating the endeavor

- **Goals:**

NFDI is the backbone of research data management (RDM) in Germany

(Rat für Informationsinfrastrukturen 2016, p 2)

NFDI is a sustainable, networked repository of knowledge

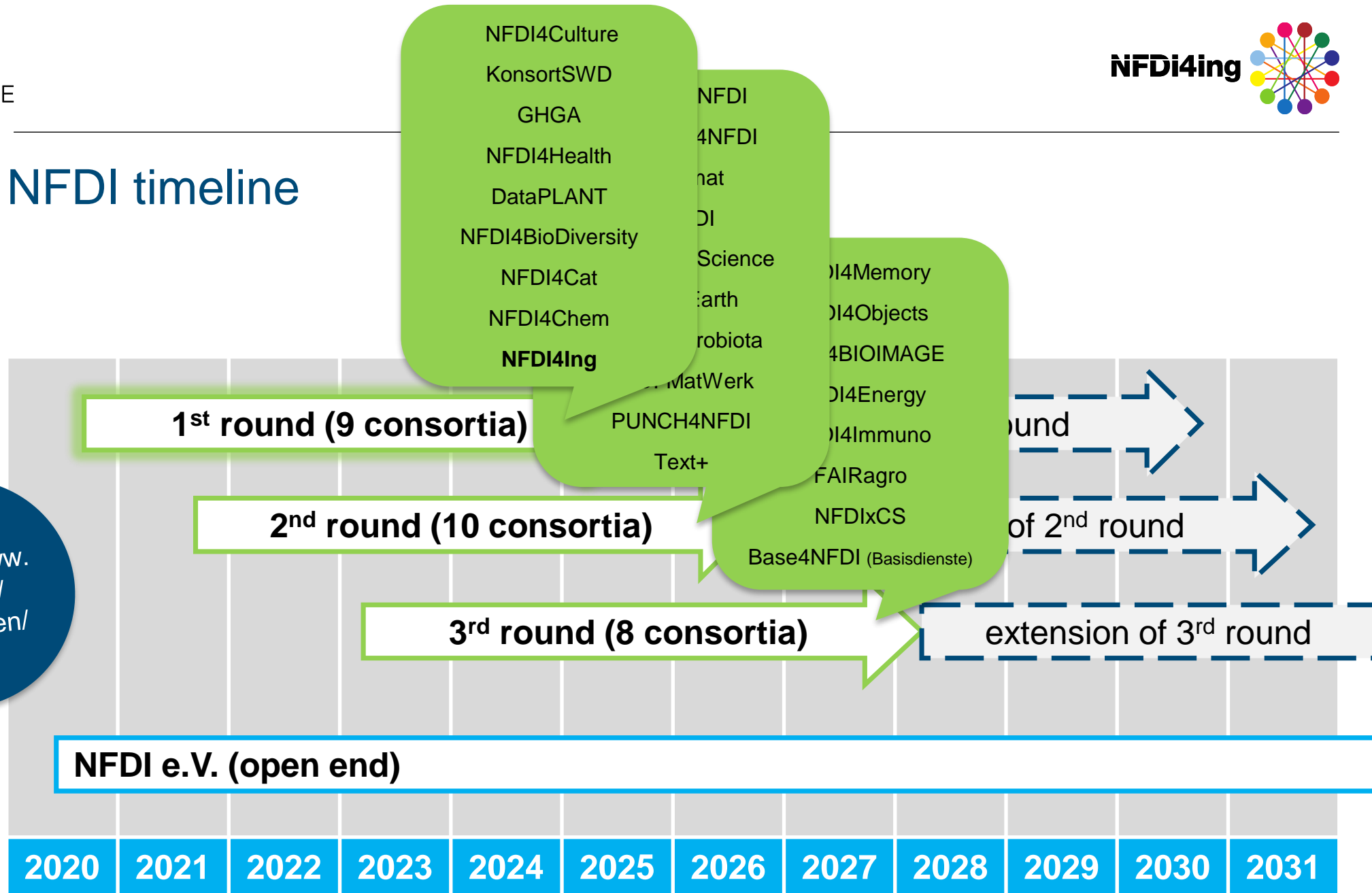
(Bund-Länder-Vereinbarung zu Aufbau und Förderung einer Nationalen Forschungsdateninfrastruktur 2018, p 1)

NFDI brings about a cultural change in the handling of data

(Leipzig-Berlin-Erklärung zu NFDI-Querschnittsthemen der Infrastrukturentwicklung 2020, p 3)

- **NFDI e.V.:** 249 institutions, incl. the federal government and 16 Länder, (co-) applicant institutions, participant institutions („participants“), institutions involved with RDM cross-cutting topics

## NFDI timeline





# NFDI with Germany-wide consortias

## Participation of scientific institutions in the National Research Data Infrastructure (NFDI) consortia and resulting cooperative relationships

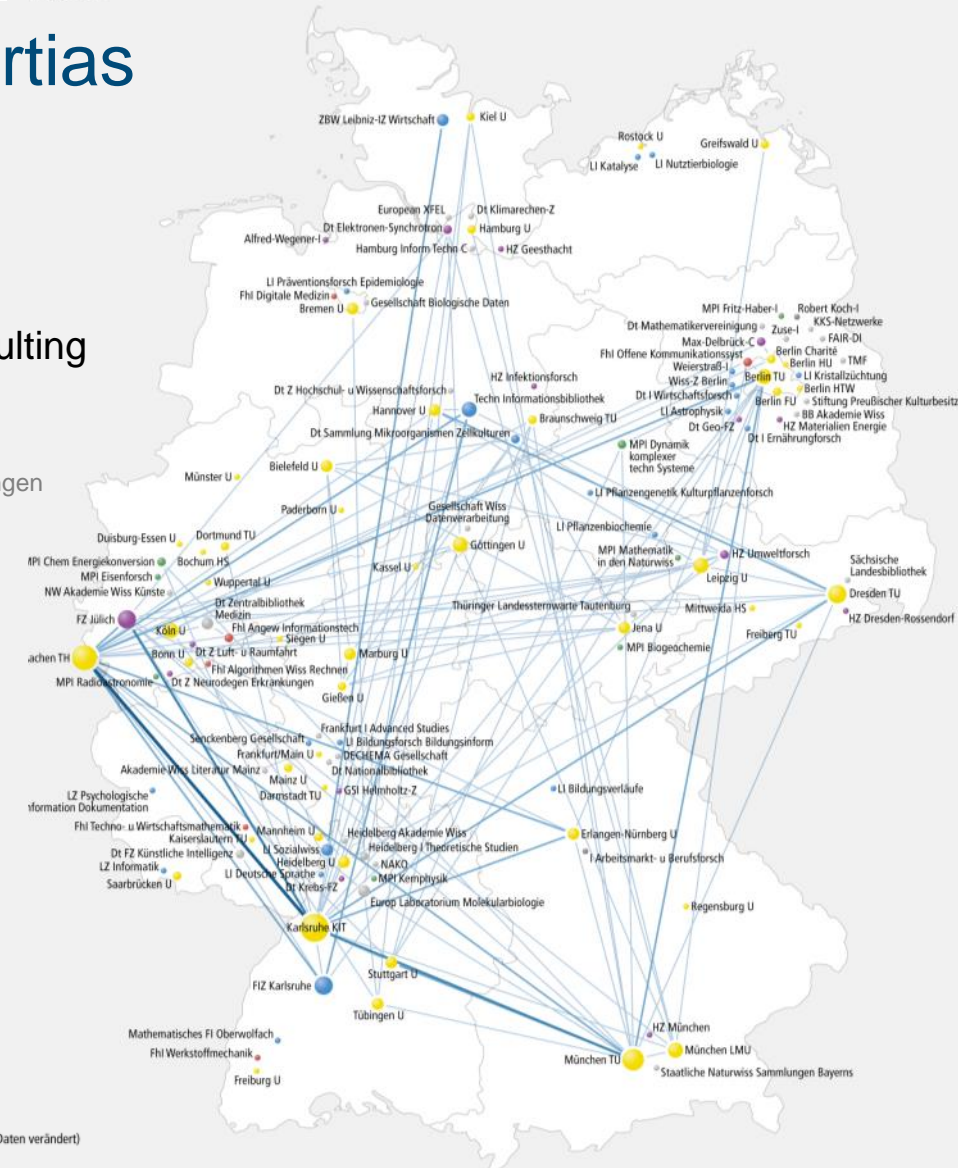
Beteiligungen von Wissenschaftseinrichtungen an den Konsortien der Nationalen Forschungsdateninfrastruktur (NFDI) sowie draus resultierende Kooperationsbeziehungen

### Status July 2021

Stand Juli 2021

[[https://www.dfg.de/sites/foerderatlas2021/download/abbildungen/dfg-foerderatlas2021\\_abb\\_2-7.png](https://www.dfg.de/sites/foerderatlas2021/download/abbildungen/dfg-foerderatlas2021_abb_2-7.png)]

- Art der Einrichtung**
- Hochschulen
  - Fraunhofer-Gesellschaft (FhG)
  - Helmholtz-Gemeinschaft (HGF)
  - Leibniz-Gemeinschaft (WGL)
  - Max-Planck-Gesellschaft (MPG)
  - Bundesforschungseinrichtungen
  - Weitere Einrichtungen

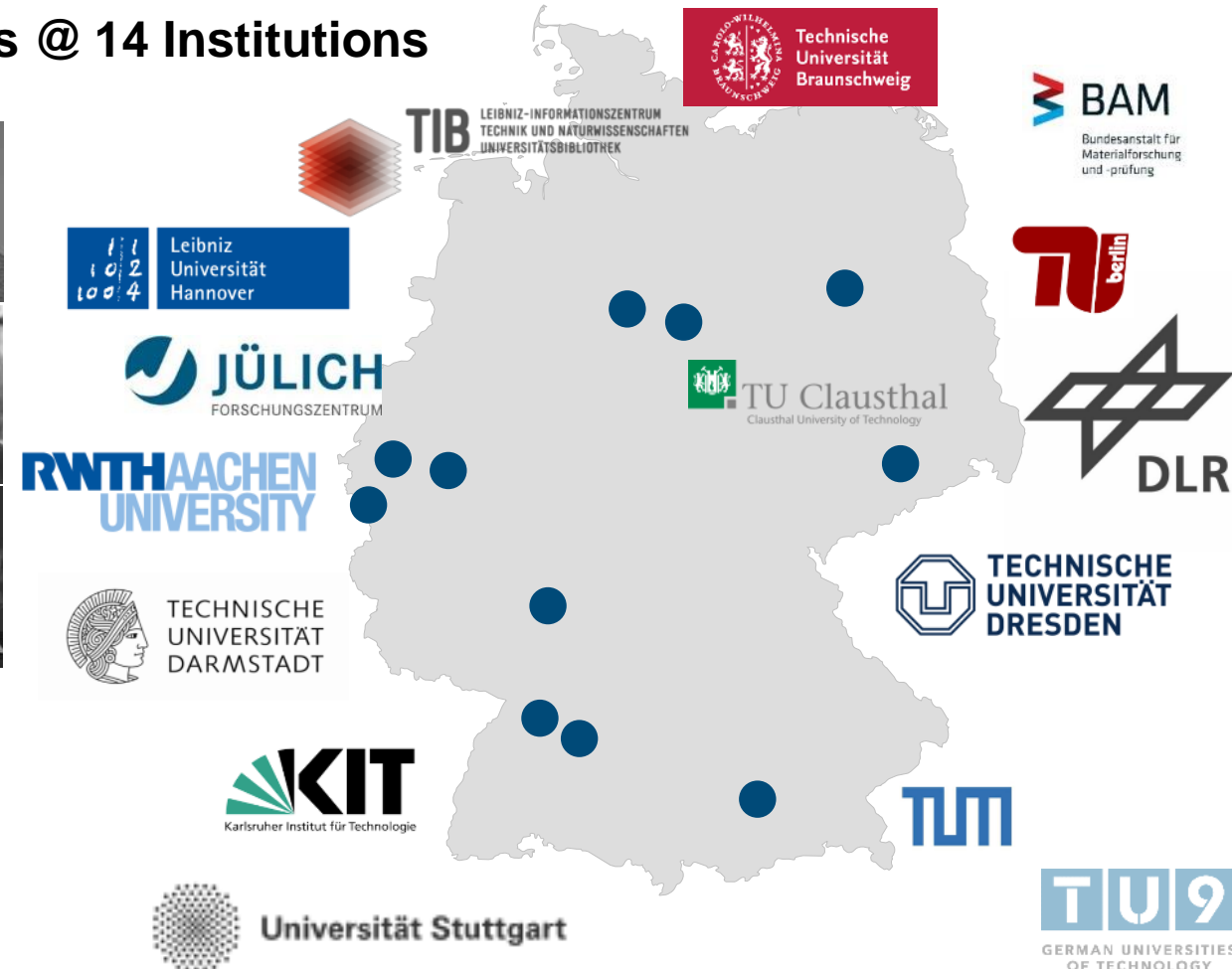


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 **NFDI4ing**

## NFDI4Ing: a strongly integrated and coherent team

23 steering committee members @ 14 Institutions





Gesamtteammeeting 2023  
June 22 – 23, 2023  
DLR, Cologne

## Focus

- One of the nine **consortia** funded in the first round of NFDI
- „The **voice of the engineering sciences**“ in NFDI
- As part of the NFDI, NFDI4Ing is primarily an **infrastructure project**.
- While there are task areas conducting research, the focus is on **developing, disseminating, standardizing and providing methods and services** to make engineering research data FAIR.

*How to cover all types  
of engineers?*

## Functional structure in NFDI4Ing

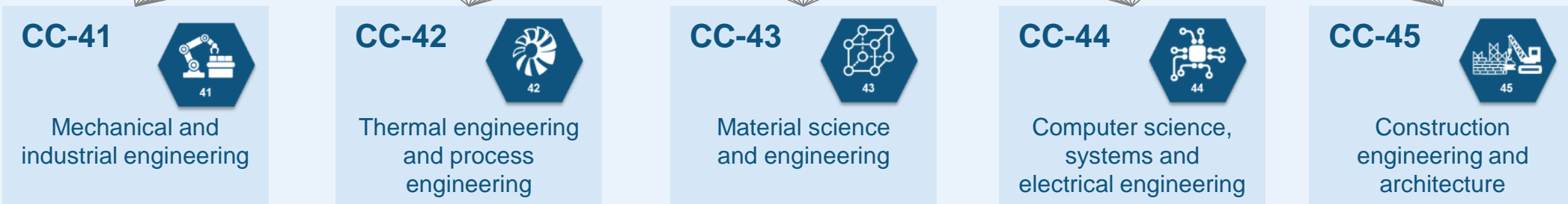
**Orientation** by  
research  
method:  
**Archetypes**



**Overarching solutions:**  
**Base Services**

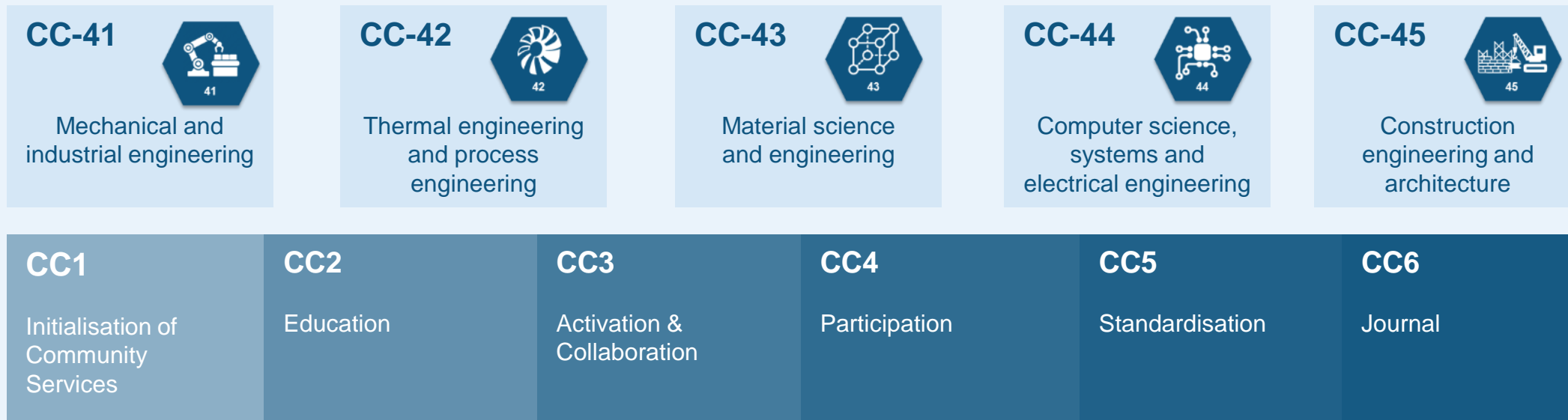


**Orientation** by  
research  
discipline:  
**Community Clusters**



## Functional structure in NFDI4Ing: Community Clusters

### Orientation by research discipline: **Community Clusters**



- ➔ Addressing and involving the community, user-orientation
- ➔ CC-4# according to DFG classification
- ➔ No service development



## Functional structure in NFDI4Ing: Archetypes

### Orientation by research method: Archetypes



- 'Gateway' to communicate engineering demands
- Independent of research discipline
- Validated in survey with > 400 participants
- Combinations of archetypes for researchers are possible

Separate Service Overview  
currently in creation



## Functional structure in NFDI4Ing: Base Services

### Overarching solutions: Base Services



- Scalable applications for RDM centrally provided
- Open, modular and standardised design allows usage even across consortia and beyond



See Service Overview  
on slide 20

## Functional structure in NFDI4Ing

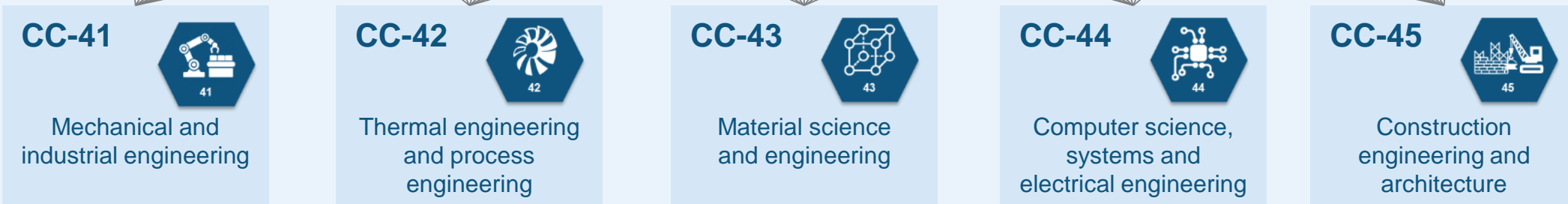
**Orientation** by  
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**Overarching solutions:**  
**Base Services**



**Orientation** by  
research  
discipline:  
**Community Clusters**



# NFDI4Ing Base Service's tools and services along the DLC

<https://nfdi4ing.de/community-hub/#tools>



## Journal: ing.grid (CC6)

<https://www.inggrid.org/>

- Open Access, Open Review, Open Data
- Text and data publications
- First article published ✓
- Pre-print server included

**FAIR DATA MANAGEMENT  
IN ENGINEERING SCIENCES**

## Special Interest Groups (SIGs)

Open for  
everyone!

<https://nfdi4ing.de/special-interest-groups-sig/>

### Discourse arena & pool of experts

- Purpose: enable communication on overarching issues & interests between
  - members of the archetype TAs & Base Services, as well as
  - Scientists & future users as experts
- In contrast to concrete measures in the individual TAs, SIGs do not have to deliver a result: they bring together interested parties on a certain issue and support delivery by facilitating the exchange of ideas and information.
- Current SIGs:

Metadata &  
ontologies

RDM training &  
education

QA & metrics

Workflow tools

## NFDI4Ing in the NFDI e.V.: RDM cross-cutting topics

### NFDI4Ing's commitment to sections of the NFDI e.V.

	<u><i>-metadata</i></u>	<u><i>-infra</i></u>	<u><i>-edutrain</i></u>	<u><i>-ELSA</i></u>	<u><i>-industry</i></u>
	(Meta)data, terminologies, and provenance	Common infrastructures	Training & education	Ethical, legal, & social aspects	Industry engagement
<b>collaboration</b>	✓ NFDI4Ing	✓ NFDI4Ing	✓ NFDI4Ing	✓ NFDI4Ing	✓ NFDI4Ing
<b>white paper</b>	✓ NFDI4Ing		✓ NFDI4Ing		
<b>lead</b>			✓ NFDI4Ing		

## Upcoming events

### Conference:

<https://nfdi4ing.de/conference-2023/>



Registration is open!

**NFDI4ing Conference 2023 (online)**

Hosted by TU Dresden and SLUB Dresden

Innovation in Research Data Management:  
Bridging the gaps between disciplines and opening new perspectives for research in engineering science

September 27<sup>th</sup> and 28<sup>th</sup>, 2023

online

[nfdi4ing.de/conference-2023](https://nfdi4ing.de/conference-2023)

Here you can find additional information, sign up for the event, hand in your contributions and contact us if you have questions!



Background image by Dr. Jörg Elsbelt (retret 24.09.2017)



### Community Meetings

[https://nfdi4ing.de/community/#cm\\_2023](https://nfdi4ing.de/community/#cm_2023)

- 17.03.2023: FAIRe Softwareentwicklung in der Wissenschaft
- 26.05.2023: Datenschutz und Datenschatz: Richtiger Umgang mit (eigenen) Daten
- **10.08.2023**: Datenmodelle für ingenieurwissenschaftliche Forschung in Theorie und Praxis.
- **27. - 28.09.2023**: *NFDI4ing Konferenz*
- **27.10.2023**: Beschreibung und Metadaten
- **Dezember 2023**: FAIRes FDM und ELN

## Seed Funds

*Currently no call for contribution*

- NFDI4Ing Seed Funds are open to scientists from all engineering research areas. NFDI4Ing addresses overarching data management issues in data-generating engineering activities
- The NFDI4Ing Seed Funds are designed to continuously develop the consortium's work program and adapt it to the needs of the engineering community. The NFDI4Ing Seed Funds provide resources to support innovative approaches to research data management in all stages of development, testing and implementation.
- In order to ensure proper networking from the get-go, the application for funding should be made in close consultation with a representative from the NFDI4Ing consortium.





## NFDI4Ing News

**The NFDI4Ing Newsletter: <https://nfdi4ing.de/news>**

- New issues approx. every two months.
- Contents are highlights and reports from the NFDI4Ing task areas. You can subscribe at <https://nfdi4ing.de/news>



## Rocket.Chat

<https://all-chat.nfdi.de>

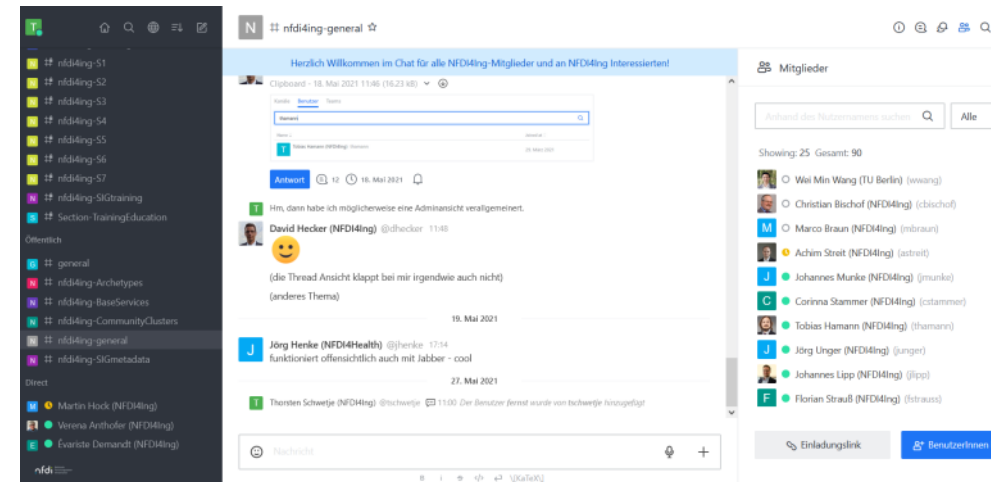
In NFDi4ing and NFDI in general,  
we use Rocket.chat für low-threshold,  
informal communication across consortial  
boundaries.



 # nfdi4ing-general

An invitation to the NFDI All-Chat is  
required.

Channel: #nfdi4ing-general



## Link list

- NFDI e.V. webseite: <https://www.nfdi.de/>
- NFDI4Ing webseite: <https://nfdi4ing.de/>
- NFDI4Ing contact: [contact@nfdi4ing.de](mailto:contact@nfdi4ing.de)
- NFDI4Ing news(-letter): <https://nfdi4ing.de/news> (subscribe!)
- NFDI4Ing Rocket.chat: <https://all-chat.nfdi.de>
- NFDI4Ing Twitter: @nfdi4ing
- NFDI and NFDI4Ing at Zenodo:
  - NFDI: <https://www.zenodo.org/communities/nfdi/>
  - NFDI4Ing: <https://www.zenodo.org/communities/nfdi4ing>



● Thank you!


Do you have  
questions?

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