

re3data.org  
REGISTRY OF RESEARCH DATA REPOSITORIES

NFDI4Ing Conference

🔍 2022

NFDI4Ing Conference 2022

**How to use re3data – Creating, editing, and analyzing information on research data repositories**

Wednesday, October 26th, 10:30 - 12:00

Rouven Schabinger, Dorothea Strecker & Nina Leonie Weisweiler

# Schedule

|               |   |
|---------------|---|
| 10:30 - 10:45 | Introduction to re3data   |
| 10:45 - 11:15 | The editorial process in re3data, new entries and change requests |
| 11:15 - 11:45 | The re3data API: Obtaining and using metadata                     |
| 11:45 - 12:00 | Summary and questions   |

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# Registration with CoCalc

If you want to participate in querying the re3data API later in the session, please create an (anonymous) account with CoCalc:

<https://cocalc.com/auth/sign-up>

A **Project Invite Token** will be shared later.

Global Registry  
of Research Data  
Repositories

re3data.org  
REGISTRY OF RESEARCH DATA REPOSITORIES

Search...

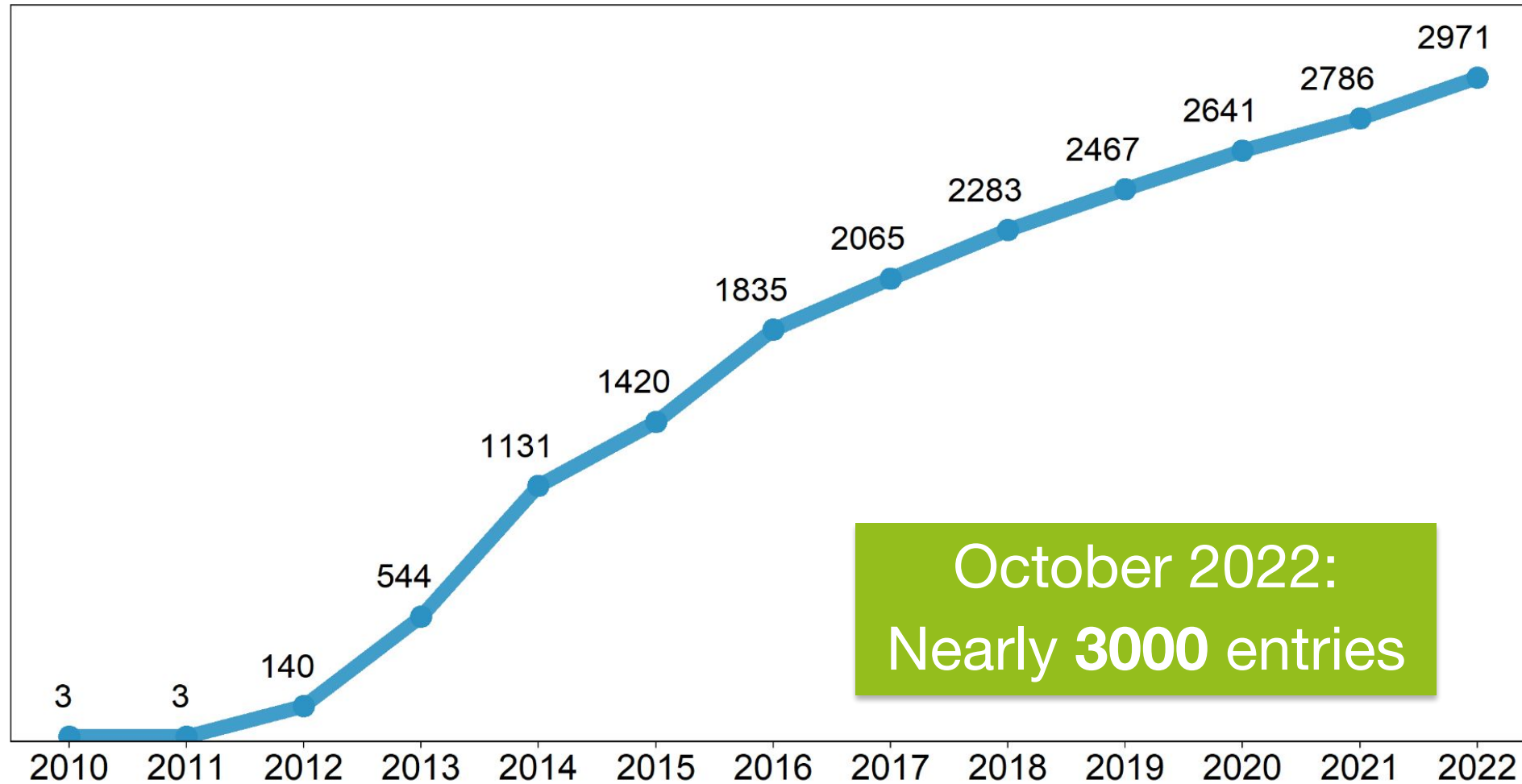
Search

across all  
research  
disciplines

... presents **repositories** for the **permanent storage** and **access** of research data sets to researchers, funding bodies, publishers and scholarly institutions.

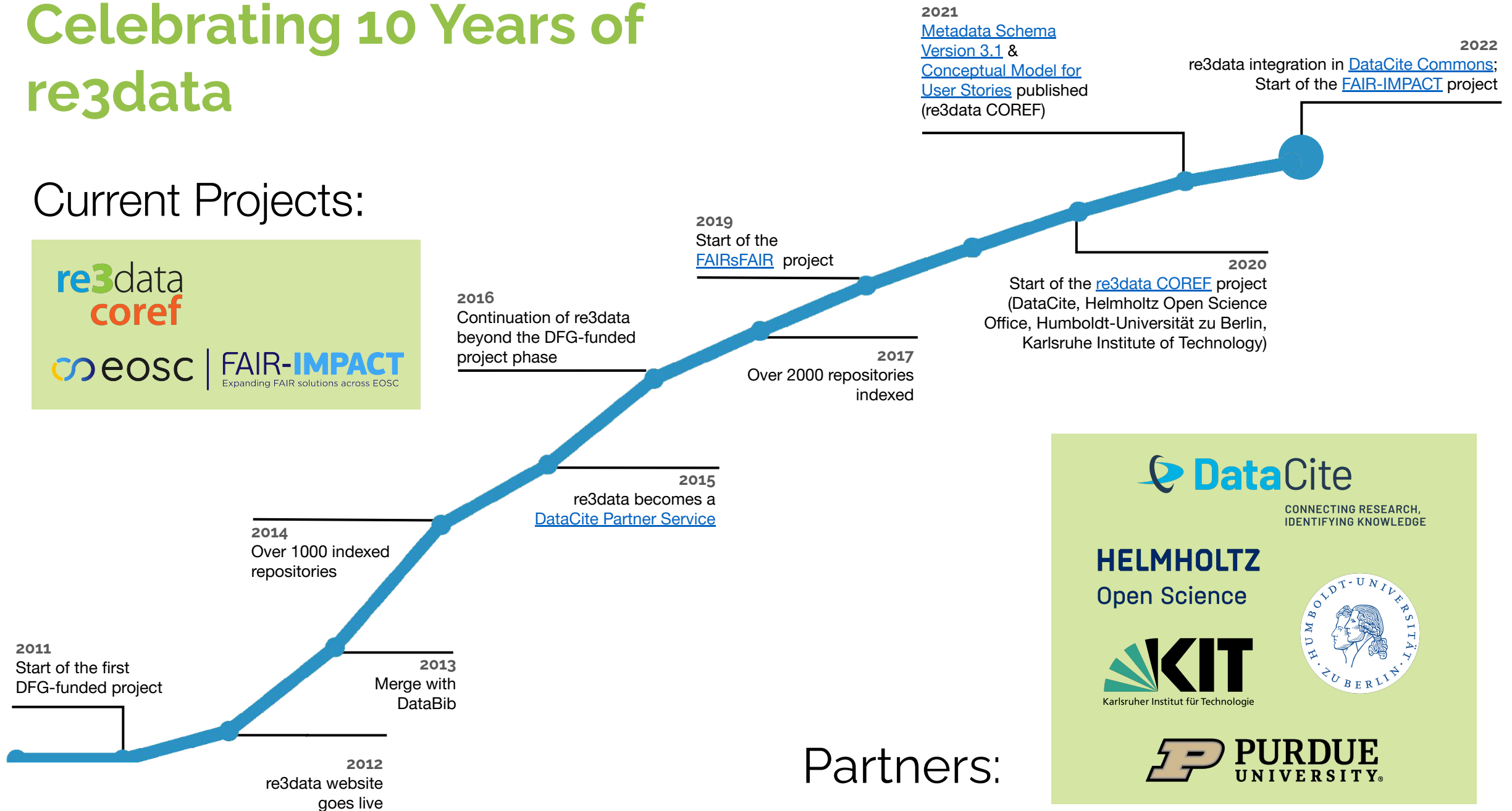
...promotes a culture of **sharing, increased access and better visibility** of research data

# Number of repositories indexed in re3data per year:



# Celebrating 10 Years of re3data

## Current Projects:



## Partners:



# What is a “repository” in re3data?

- We generally refer to all re3data entries as “repositories”.
  - Repositories in re3data are defined as “[...] a subtype of a sustainable information infrastructure providing long-term storage of and access to research data.” ([Metadata Schema for the Description of Research Data Repositories, Version 3.1](#))
- The re3data registration policy is intentionally inclusive to cover a broad range of infrastructures for research data.

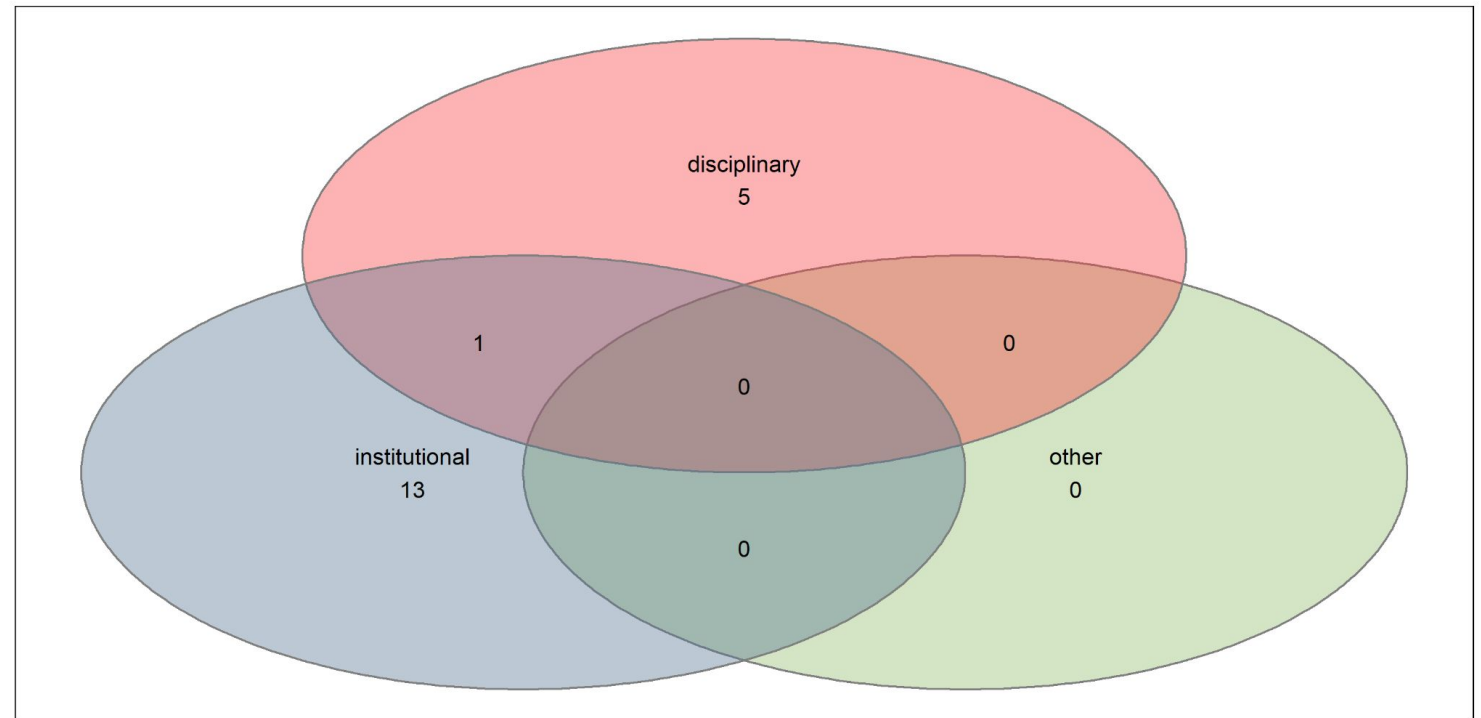
The screenshot displays the re3data.org interface for the 'Forschungsdatenzentrum im Kraftfahrt-Bundesamt' repository. The page includes a navigation bar with 'Search', 'Browse', 'Suggest', 'Resources', and 'Contact'. The repository details are organized into sections: 'General', 'Institutions', 'Terms', and 'Standards'. The 'General' section provides the following information:

- Name of repository:** Forschungsdatenzentrum im Kraftfahrt-Bundesamt
- Additional name(s):** FDZ im KBA
- Repository URL:** [https://www.kba.de/DE/Statistik/Forschungsdatenzentrum/forschungsdatenzentrum\\_node.html](https://www.kba.de/DE/Statistik/Forschungsdatenzentrum/forschungsdatenzentrum_node.html)
- Subject(s):** Traffic and Transport Systems, Logistics; Systems Engineering; Computer Science, Electrical and System Engineering; Engineering Sciences; Human Factors, Ergonomics, Human-Machine Systems
- Description:** The statistics pages of the Kraftfahrt-Bundesamt (KBA) provide an overview of official facts and figures relating to motor vehicles and their users. The data on this page are continuously updated. Publications generally appear as annual statistics. In addition to this, we provide monthly results relating to new registrations and changes of ownership in Germany, as well as information relating to road haulage with German vehicles. The currently provisionally accredited research data center of the Kraftfahrt-Bundesamt extends the data portfolio of the official register data and initially provides anonymised microdata for access to the driving fitness register (FAER). Statistics published by the KBA are available exclusively in German.
- Contact:** fdz@kba.de
- Content type(s):** Standard office documents; Plain text; Scientific and statistical data formats
- Certificates and Standards:** Rat für Sozial- und Wirtschaftsdaten
- Keyword(s):** Register of Driver Fitness - Fahreignungsregister - FAER; drivers; driving licenses; motor vehicles; road haulage; tachograph cards
- Repository type(s):** disciplinary
- Research data repository language(s):** German
- Data and/or service provider:** data provider

At the bottom of the page, there are links for 'Back to search', 'Submit a change request', and 'Get a badge'. A 'Cite this re3data.org record:' section provides the following information:

re3data.org: Forschungsdatenzentrum im Kraftfahrt-Bundesamt; editing status 2019-11-08; re3data.org - Registry of Research Data Repositories. <http://doi.org/10.17616/R31NJMNI> last accessed: 2022-10-26

# Repositories of NFDI4Ing institutions



As of February 2022, 18 repositories indexed in re3data are affiliated with NFDI4Ing (co-)applicant and participant institutions and also cater to the engineering sciences.

Most of them are institutional repositories.

• maintains repository catering to the engineering sciences    • does not maintain repository catering to the engineering sciences



# Registration Policy

Search

Browse ▾

Suggest

Resources ▾

Contact

## re3data.org Registration Policy

To be registered in re3data.org a research data repository must

- be run by a legal entity, such as a sustainable institution (e.g. library, university)
- clarify access conditions to the data and repository as well as the terms of use
- **have focus on research data**



A research data repository is a subtype of a sustainable information infrastructure which provides long-term storage and access to research data that is the basis for a scholarly publication. Research data means information objects generated by scholarly projects for example through experiments, measurements, surveys or interviews.

# Metadata Schema Version 3.1



## Metadata Schema for the Description of Research Data Repositories

Version 3.1, August 2021

DOI: <https://doi.org/10.48440/re3.010>

Authors: [Dorothea Strecker](#)<sup>1</sup>, [Roland Bertelmann](#)<sup>2</sup>, [Helena Cousijn](#)<sup>3</sup>, [Kirsten Elger](#)<sup>4</sup>, [Lea Maria Ferguson](#)<sup>5</sup>, [David Fichtmüller](#)<sup>6</sup>, [Hans-Jürgen Goebelbecker](#)<sup>6</sup>, [Maxi Kindling](#)<sup>1</sup>, [Gabriele Kloska](#)<sup>6</sup>, [Thanh Binh Nguyen](#)<sup>6</sup>, [Heinz Pampel](#)<sup>2</sup>, [Vivien Petras](#)<sup>1</sup>, [Rouven Schabinger](#)<sup>6</sup>, [Edeltraud Schnepf](#)<sup>6</sup>, [Angelika Semrau](#)<sup>6</sup>, [Margarita Trofimenko](#)<sup>6</sup>, [Robert Ulrich](#)<sup>6</sup>, [Arne Upmeyer](#)<sup>6</sup>, [Paul Verkant](#)<sup>3</sup>, [Nina Leonie Weiswaller](#)<sup>2</sup>, [Yi Wang](#)<sup>1</sup>, [Michael Witt](#)<sup>7</sup>.

<sup>1</sup> [Humboldt-Universität zu Berlin](#), Berlin School of Library and Information Science, Germany

<sup>2</sup> [Helmholtz Association](#), Helmholtz Open Science Office, Germany

<sup>3</sup> [DataCite - International Data Citation Initiative e.V.](#)

<sup>4</sup> [GFZ German Research Centre for Geosciences / Helmholtz-Zentrum Potsdam – Deutsches GeoForschungsZentrum \(GFZ\)](#), Germany

<sup>5</sup> [Botanischer Garten und Botanisches Museum Berlin](#), Germany

<sup>6</sup> [Karlsruher Institut für Technologie / Karlsruhe Institute of Technology \(KIT\)](#), Germany

<sup>7</sup> [Purdue University](#), United States

Contact  
[info@re3data.org](mailto:info@re3data.org)  
<https://www.re3data.org>

## 42 Properties on...

- General information
- Responsibilities
- Policies
- Legal aspects
- Technical standards
- Quality standards
- DOI for repository descriptions
- Since 2020: ROR IDs for institutions

## Version 3.1 of the Metadata Schema:

<https://www.re3data.org/schema>



# Icons – facilitating the selection process of appropriate research data repositories



# re3data as a metadata provider

re3data is a **central reference point and metadata source** for other service providers, see for example:

- [Open Science Observatory](#)
- [European Open Science Monitor](#)
- [DataCite Commons](#)
- [F-UJI Automated FAIR Data Assessment Tool](#)
- [DARIAH-EU Data Deposit Recommendation Service](#)

# re3data coref

COMMUNITY DRIVEN OPEN REFERENCE FOR  
RESEARCH DATA REPOSITORIES

## Conceptual Service Model

- Embed the registry within the research community and infrastructure landscape to meet the emerging needs for a trusted repository reference.

## Metadata Schema

- Revision and enhancement of the re3data metadata schema for the description of research data repositories.

## Technical Infrastructure

- Implement new features and the updated metadata schema.
- Provide the necessary technical infrastructure and services

## Quality & Transparency

- Conduct a comprehensive study on quality assurances at research data repositories to improve re3data metadata information
- Improve re3data metadata quality, trust and transparency.

## Community Building

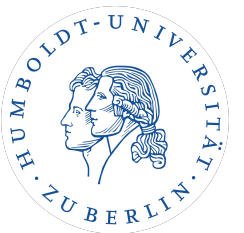
- Extensive outreach activities, networking and policy development.



Project blog:  
[coref.project.re3data.org](http://coref.project.re3data.org)



**HELMHOLTZ**  
Open Science



# What makes a good registry record?

Search

Browse ▾

Suggest

Resources ▾

Contact

re3data.org  
REGISTRY OF RESEARCH DATA REPOSITORIES

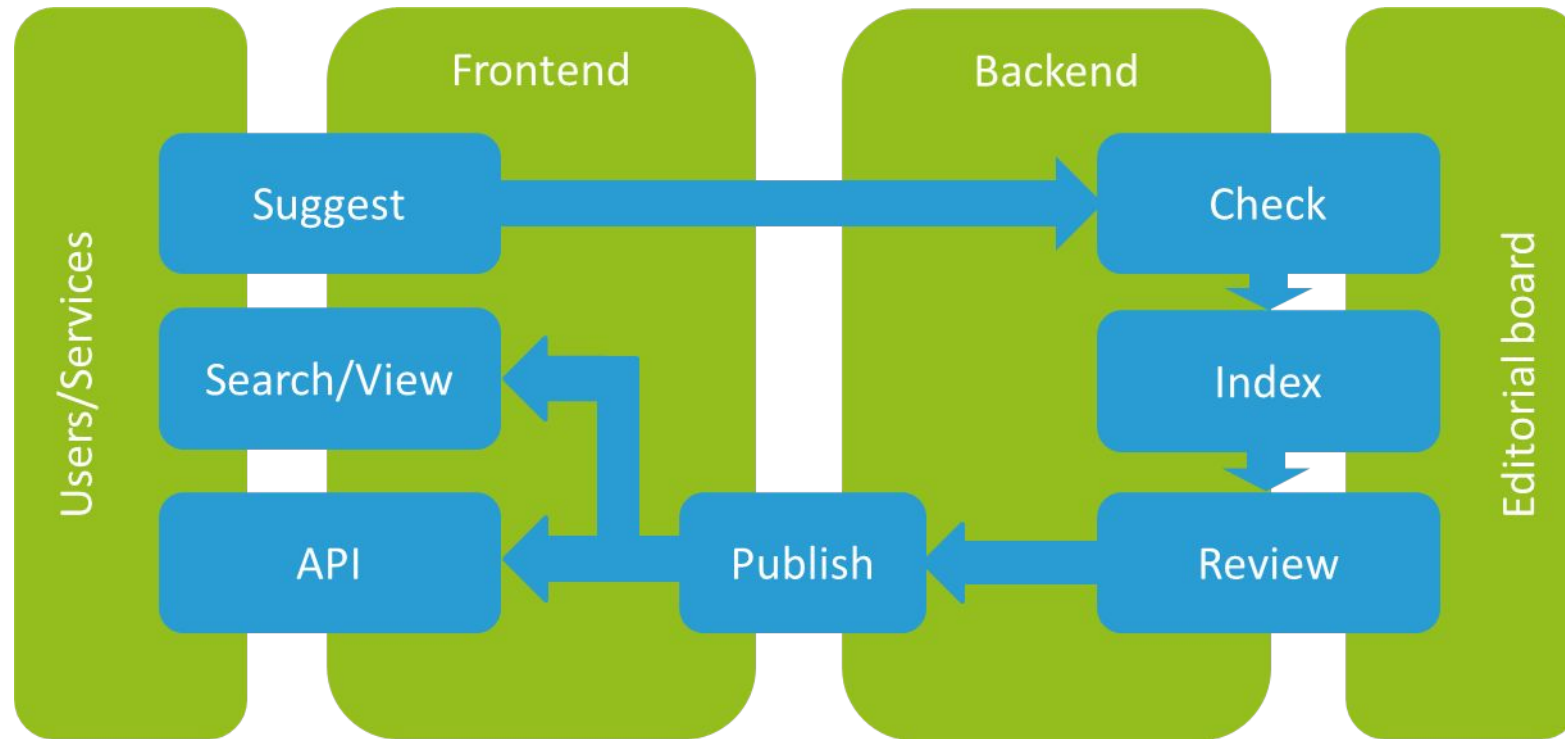
Search...



Search

Rouven Schabinger

# Editorial Workflow



Workflow for new repository suggestions and change requests for re3data

# Editorial Board

**Catherine Jones**

Science and Technology Facilities Council (STFC)



**Jiban K. Pal**

Indian Statistical Institute (ISI)



**Iris Lindenmann**

University of Basel

**Rouven Schabinger**

Karlsruhe Institute of Technology (KIT)



**Angelika Semrau**

Karlsruhe Institute of Technology (KIT)

**Edeltraud Schnepf**

Karlsruhe Institute of Technology (KIT)



**Sarah J. Wright**

Cornell University

**Hui Wang**

Chinese Academy of Sciences (CAS) / National Science Library (NSL)



**Gabriele Weickert**

Karlsruhe Institute of Technology (KIT)

**Sarah Williams**

University of Illinois





**Michael Witt**

Purdue University



# Required information

| Required information            |  |
|---------------------------------|--|
| <b>Repository name</b>          | <input type="text"/>   |
| <b>Repository name language</b> | <input type="text" value="English"/>  |
| <b>Repository url</b>           | <input type="text"/>   |
| <b>Description</b>              | <input type="text"/>   |
| <b>Description language</b>     | <input type="text" value="English"/>  |
| <b>Data licenses</b>            | <a href="#">+ Add dataLicenses</a>   |
| <b>Suggester's email</b>        | <input type="text"/>   |

# General

- Additional names
- **Subjects**
- **Repository contacts**
- Content types
- **Certificates**
- Keywords
- **Repository identifiers**
- Size
- **Types**
- Mission statement URL
- Start date
- Repository languages
- Provider types

## PANGAEA

Data Publisher for Earth and Environmental Science

<https://www.pangaea.de/>

Oceanography   Geology and Palaeontology   Geophysics   Geochemistry, Mineralogy and Crystallography   Biology  
Atmospheric Science and Oceanography   Geosciences (including Geography)   Natural Sciences  
Geology and Palaeontology   Geophysics and Geodesy   Geochemistry, Mineralogy and Crystallography  
Life Sciences

The information system PANGAEA is operated as an Open Access library aimed at archiving, publishing and distributing georeferenced data from earth system research. The system guarantees long-term availability of its content through a commitment of the operating institutions.

<https://www.pangaea.de/contact/>

Source code   Standard office documents   Images   Plain text   Archived data   Audiovisual data

## CoreTrustSeal

lithosphere   paleontology   atmosphere   ecology   biosphere   land surface   cryosphere   fisheries  
agriculture   earth science   environmental science   biology

FAIRsharing\_doi:10.25504/FAIRsharing.6yw6cp

disciplinary

<https://www.pangaea.de/about/>

English

data provider

# Institutions

- Name
- Name language
- **Country**
- Type
- URL
- Responsibility start date
- Responsibility end date
- Additional names
- Contacts
- Identifiers
- **Responsibility types**

Alfred Wegener Institute - Helmholtz Centre for Polar and Marine Research

AWI

Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung

ROR:032e6b942

<https://www.awi.de/en/about-us/service/contact.html>

Germany

general

technical

non-profit

# Terms

- Policies
- **Database access**
- **Data accesses**
- **Data uploads**
- Data upload licenses

## Policies (2)

Policy Name [CoreTrustSeal assessment](#)

Policy Name [Data policy of the information system PANGAEA](#)

## Database access

Type of access to research data repository [open](#)

## Database licenses (1)

Database License [CC0](#)

## Data access (1)

Type of access to data [open](#)

## Data licenses (4)

DataLicense [CC](#)

DataLicense [other](#)

| <i>Access (property)</i>                          | <i>Open Access</i>                   |        | <i>Restricted Access</i>       |        | <i>Closed Access</i> |
|---|--------------------------------------|--------|--------------------------------|--------|----------------------|
| Access to Repository<br>(20.1 databaseAccessType) | open                                 |        | open or restricted             |        | closed               |
| Access to Data<br>(22.1 dataAccessType)           | open (embargoed, restricted, closed) |        | restricted (embargoed, closed) |        | closed               |
| Data Upload<br>(24.1 dataUploadType)              | open or restricted                   | closed | open or restricted             | closed | -                    |

# Standards

- Software
- Versioning
- **PID systems**
- Citation guideline URL
- AID systems
- Enhanced publication
- Quality management
- **APIs**
- **Metadata standards**
- Syndications
- Remarks

DOI

other

yes

<https://wiki.pangaea.de/wiki/Citation>

ORCID

unknown

yes

interfaces (1)

OAI-PMH

Darwin Core

DCC

ISO 19115

DCC

Dublin Core

DCC

DIF - Directory Interchange Format

DCC

# Keeping your record up-to-date

- Automated updates (e.g. CTS)
- Reviews by the editorial team
- Your change request?

|  |   |
|--|---|
| Contact                                    | <a href="https://nanohub.org/about/contact">https://nanohub.org/about/contact</a>                             |
| Content type(s)                            | <a href="#">Databases</a> <a href="#">Audiovisual data</a> <a href="#">Software applications</a>              |
| Keyword(s)                                 | <a href="#">Nanomaterial Registry</a> <a href="#">nanoBIO</a> <a href="#">nanoscience</a> <a href="#">nan</a> |
| Persistent identifier(s) of the repository | RRID:SCR_013963<br>OMICS_27120  |
| Repository size                            | 6.139 resources   |
| Repository type(s)                         | disciplinary  |
| Mission statement for designated community | <a href="https://nanohub.org/about">https://nanohub.org/about</a>   |
| Research data repository language(s)       | English   |
| Data and/or service provider               | data provider<br>service provider   |

[Back to search](#)

[Submit a change request](#)

## Submit a change request

Make changes to the properties that need an update. The editorial board will review the submitted record and put it online

General

|                          |  |
|--------------------------|--|
| Repository name          | <input type="text" value="nanoHUB"/>   |
| Repository name language | <input type="text" value="English"/>   |
| Additional names         | <p><b>Text</b> <input type="text" value="nanoHUB.org"/></p>  |
| Language                 | <input type="text" value="English"/>   |
| Repository url           | <input type="text" value="https://nanohub.org/"/>  |
| Subjects                 | <p><b>Name</b> <input type="text" value="31 Chemistry"/></p> <p><b>Scheme</b> <input type="text" value="DFG"/></p> |

pre-filled  
metadata  
fields

[Get a badge](#)

# Demo Instance

- URL: <https://demo.project.re3data.org>
- Login: re3data.org
- Password: NFDI4Ing2022

# Querying the re3data API with R

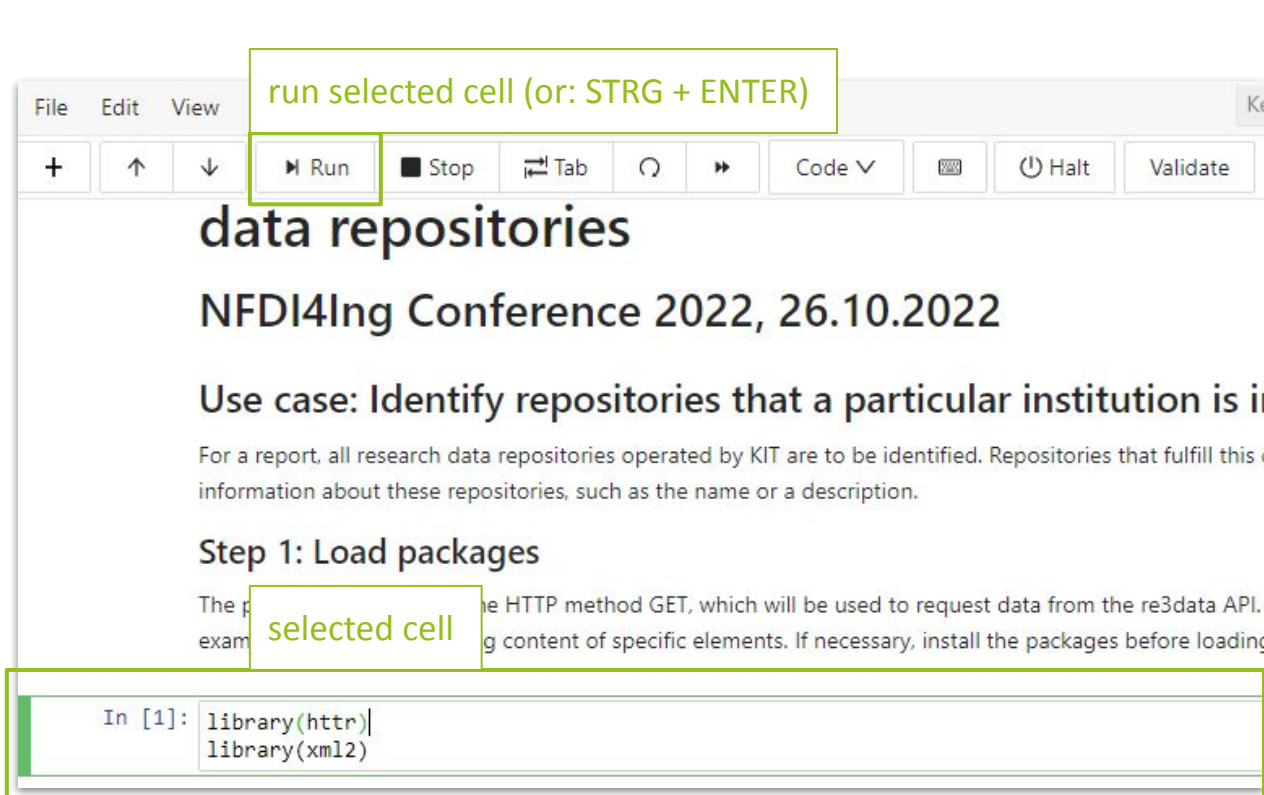
We will use the platform CoCalc.

1. log in to CoCalc using the account you created earlier
2. click on “projects” in the top left corner
3. enter the **Project Invite Token** in the top right corner:  
**CLS5VYnBuB7WJTZE**
4. start the project **NFDI4Ing Conference 2022**



# Querying the re3data API with R

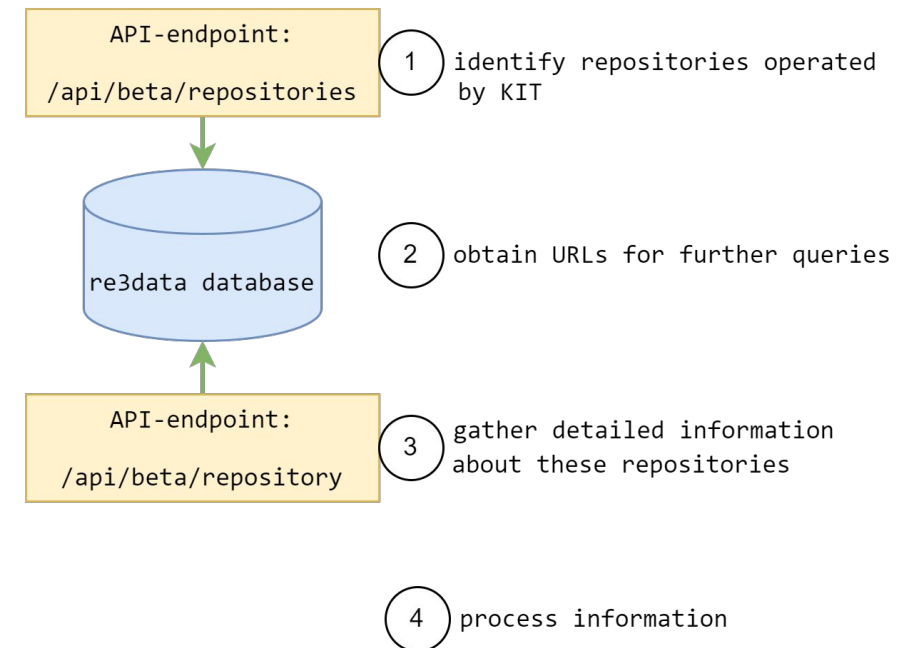
## Using Jupyter Notebooks



The screenshot shows a Jupyter Notebook interface. At the top, there is a menu bar with 'File', 'Edit', and 'View'. Below it is a toolbar with buttons for '+', '↑', '↓', 'Run', 'Stop', 'Tab', 'Refresh', 'Code', 'Halt', and 'Validate'. A green box highlights the 'Run' button with the text 'run selected cell (or: STRG + ENTER)'. The notebook content includes a title 'data repositories', a subtitle 'NFDI4Ing Conference 2022, 26.10.2022', and a use case: 'Identify repositories that a particular institution is in'. Below this is a section 'Step 1: Load packages' with a code cell. A green box highlights the code cell with the text 'selected cell'. The code in the cell is:

```
In [1]: library(httr)
library(xml2)
```

## Schematic overview of the process



**re3data.org**  
REGISTRY OF RESEARCH DATA REPOSITORIES

Any questions?



Stay in touch!

Web: [www.re3data.org](http://www.re3data.org)

Mail: [info@re3data.org](mailto:info@re3data.org)

Twitter: [@re3data](https://twitter.com/re3data)

Project Blog:

[coref.project.re3data.org](http://coref.project.re3data.org)

[Rouven Schabinger](#) (Karlsruher Institut für Technologie)

[Dorothea Strecker](#) (Humboldt-Universität zu Berlin)

[Nina Weisweiler](#) (Helmholtz-Gemeinschaft, Helmholtz Open Science Office)

