

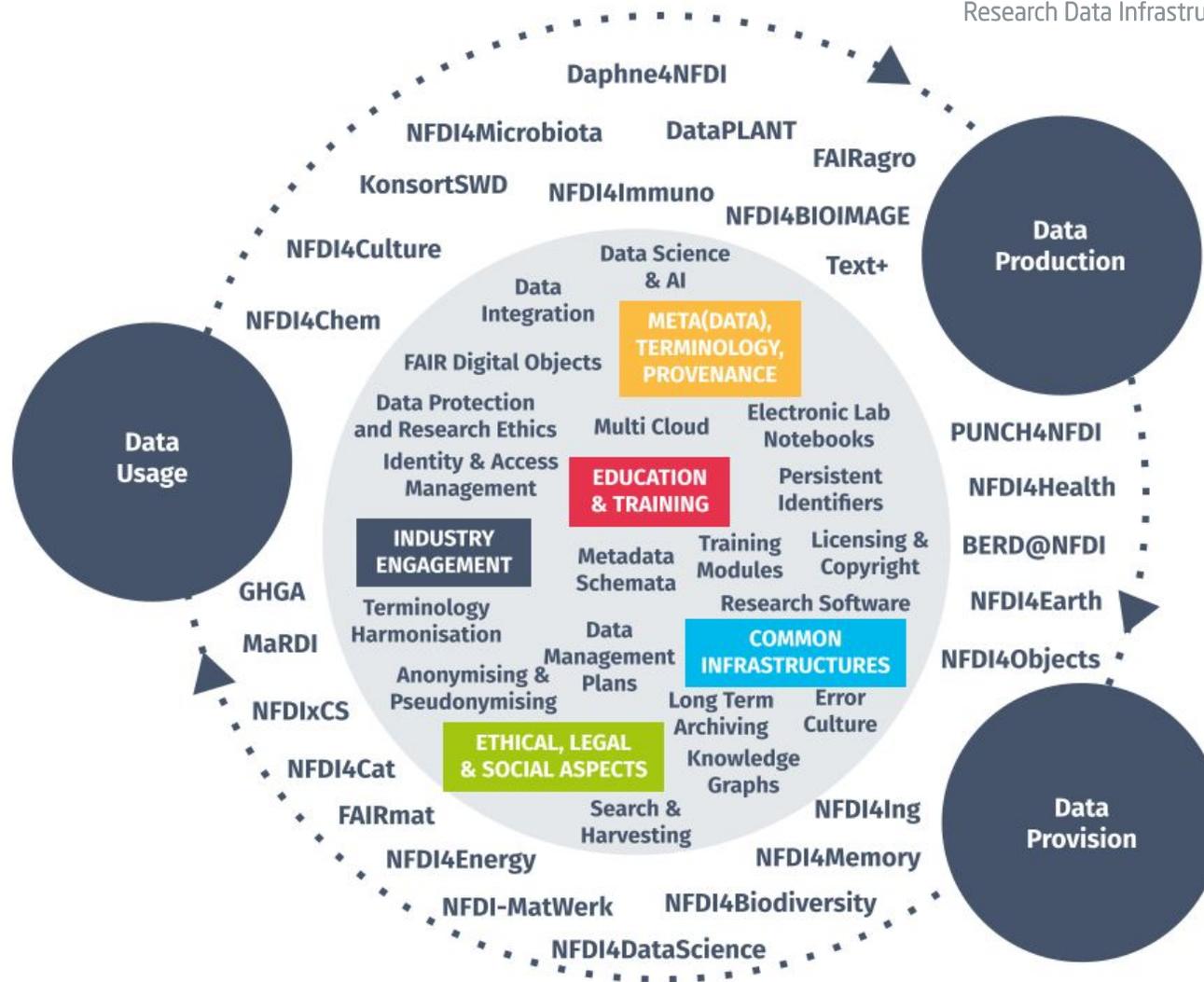
# Base4NFDI

## Basic Services for NFDI

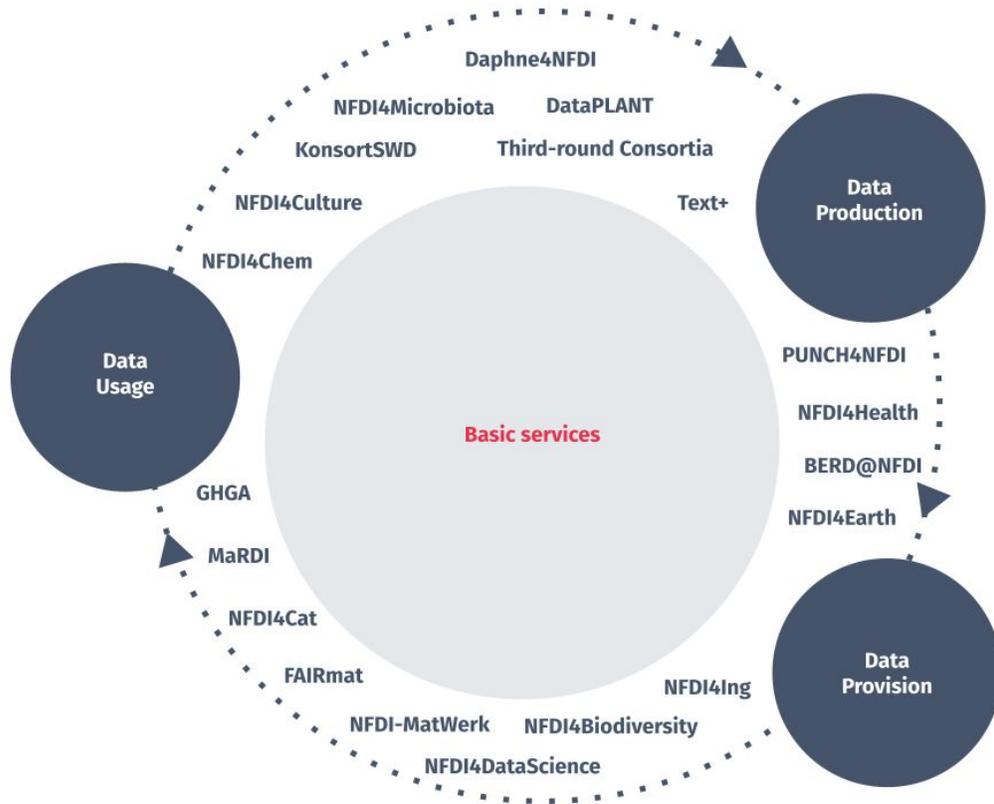
Creating NFDI-wide basic services in a world of specific domains

S. Schimmler; R. Altenhöner; L. Bernard; J. Fluck; A. Klinger; S. Lorenz; B. Mathiak; B. Miller; R. Ritz; T. Schörner-Sadenius; A. Szcyrba; R. Stein

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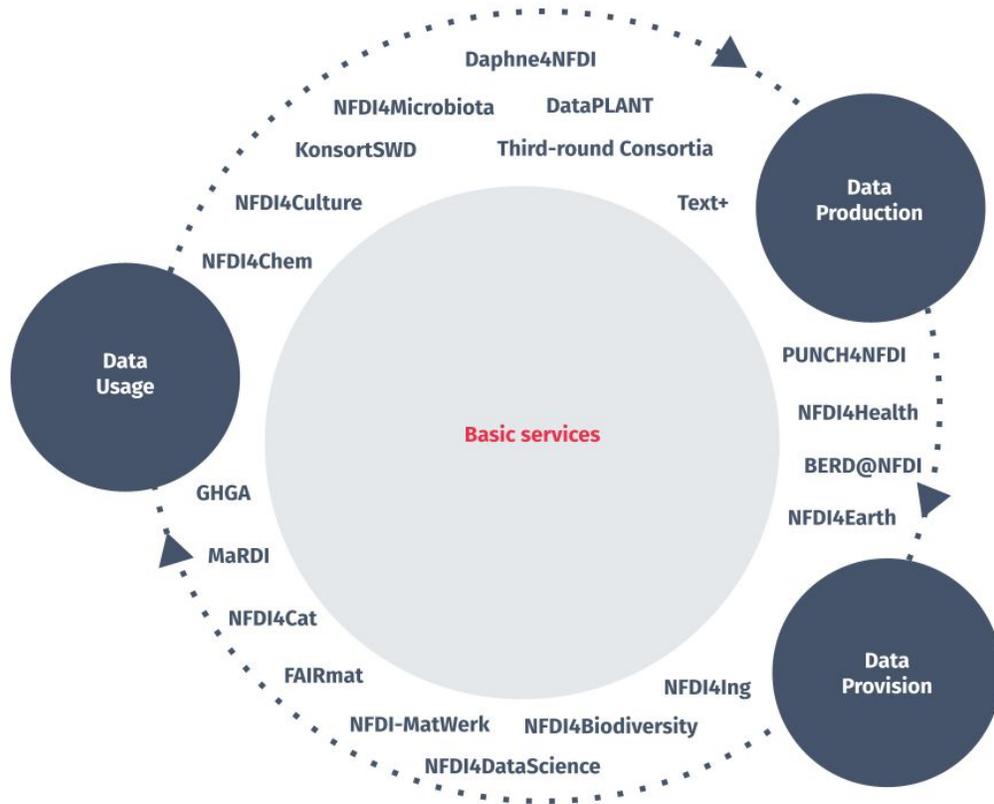


# Why NFDI needs Basic Services



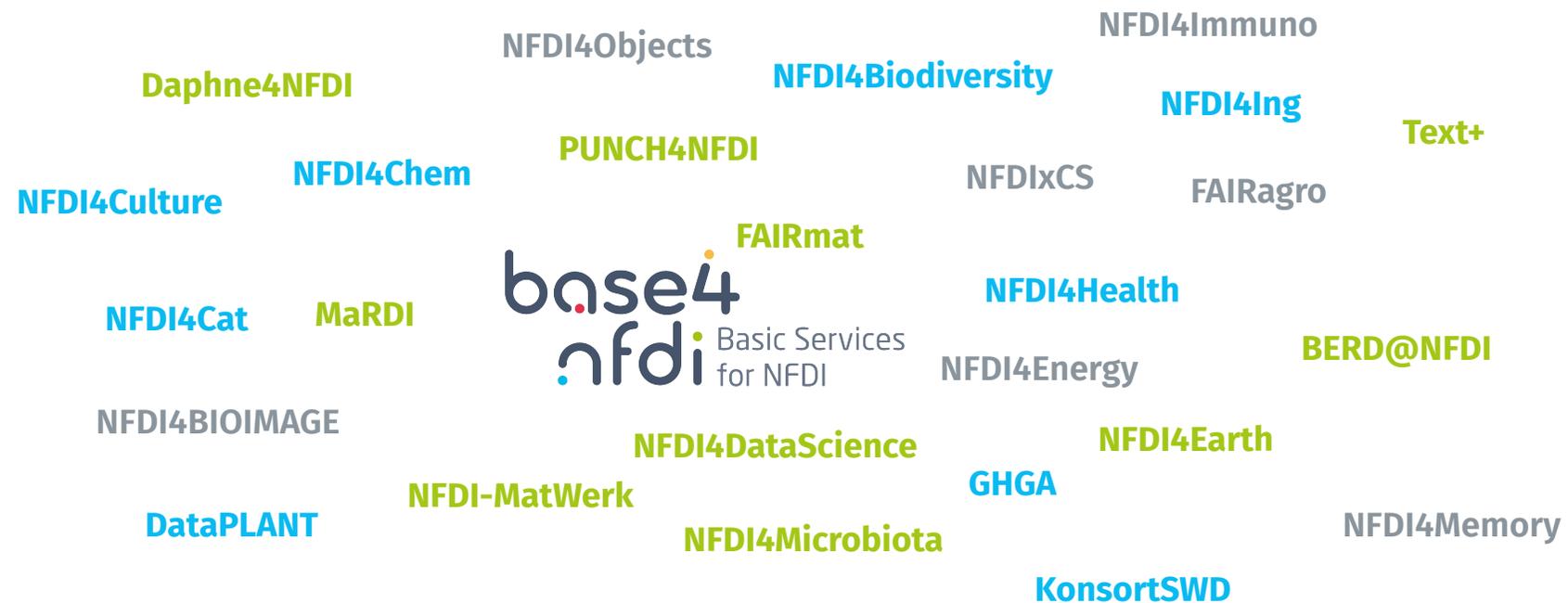
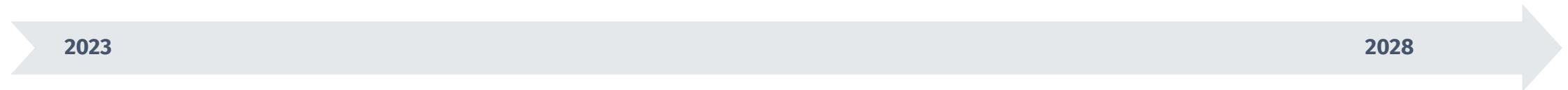
- Consortia represent their **specific domains** and their infrastructural expertise including domain-specific basic services
- Interoperability and cost-efficiency in NFDI however, requires **NFDI-wide basic services**

# What is a Basic Service



- A **service** is a technical-organisational solution, which typically includes storage and computing services, software, processes and workflows, as well as the necessary personnel support for different service desks.
- A basic service shall create **added value** for the consortia and their users. Typically based on **bundling existing services**. It is characterized by **scalability** and **sustainable operating** models, which require a certain degree of technicality. A basic service must be **effective over time and in terms of usage**, and must be trackable by KPIs.

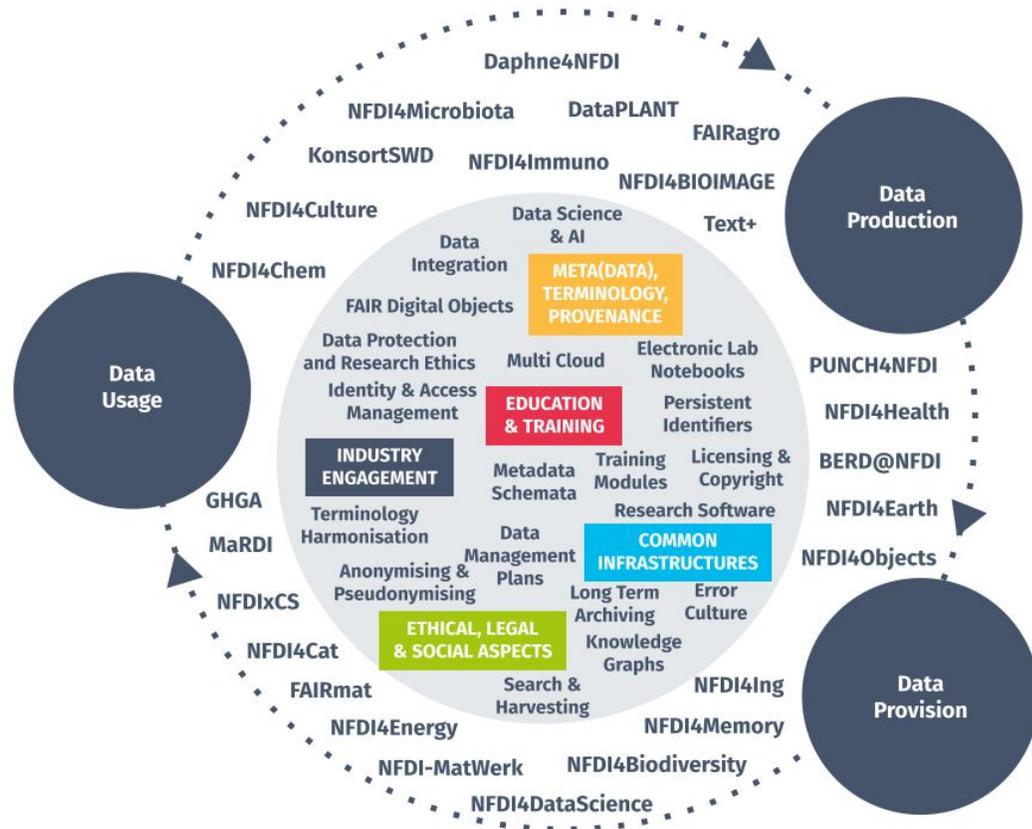
# Who is Base4NFDI



**26** Consortia = **1** proposal

# What Base4NFDI will do

Translate needs & topics in basic services



- Sections of the NFDI Association are the places to identify cross-cutting needs of consortia
- Combine infrastructural & technological expertise and domain knowledge
- Provide expertise, blueprints, and resources for development processes
- Act as incubators for continuously identifying potential basic services

# What Base4NFDI will do

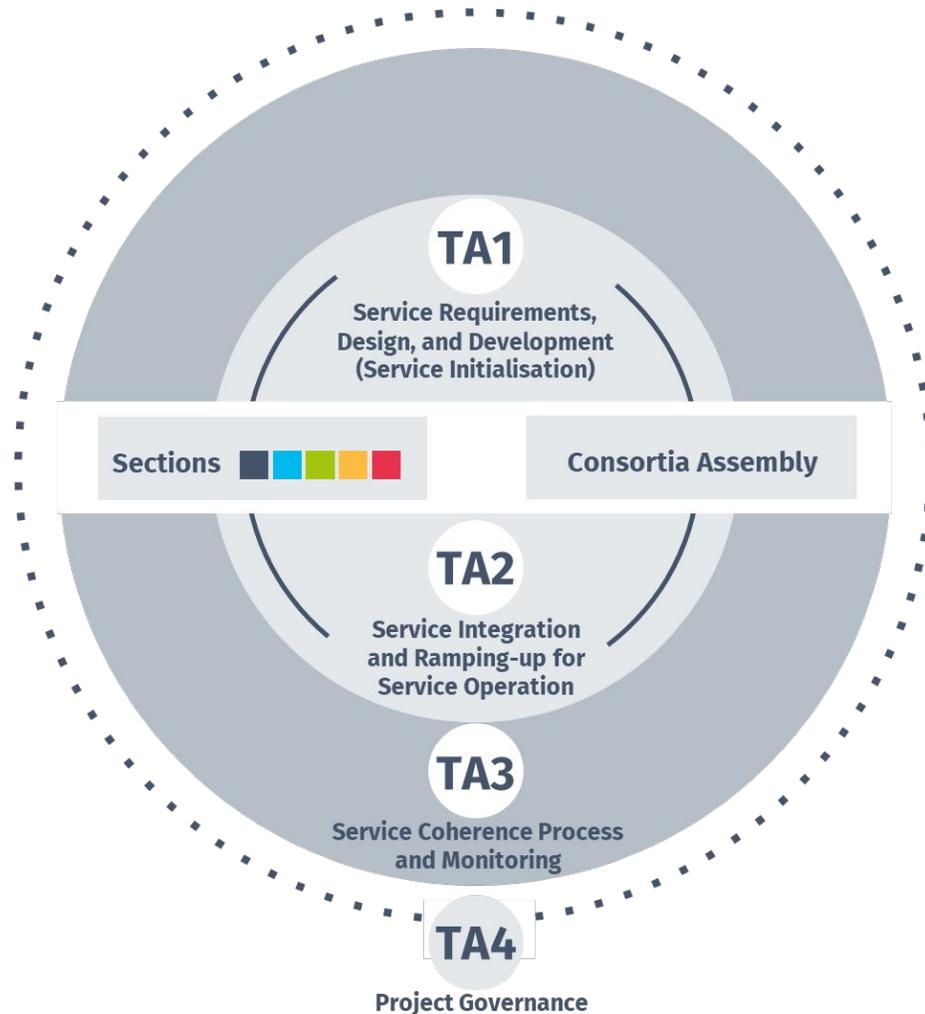
## Key deliverables

- **Framework** for user-driven and quality-assured basic service development
- **Agile process** to establish a NFDI-wide basic service portfolio
- **Establish basic services** starting with
  - Identity and Access Management
  - Persistent Identifiers
  - Terminologies
- **Building** on **existing solutions** and **complementing EOSC**



# What Base4NFDI will do

## Work program



- TA1: Service Requirements, Design and Development (Service Initialisation)
- TA2: Service Integration and Ramping-up for Service Operation
  - maintaining basic service portfolio
- TA3: Service Coherence Process and Monitoring
  - providing a framework
  - monitoring and evaluation
- TA4: Project Governance
  - transparent allocation of flexible funding

## Base4NFDI

### Manage complexities of integrating and adapting services

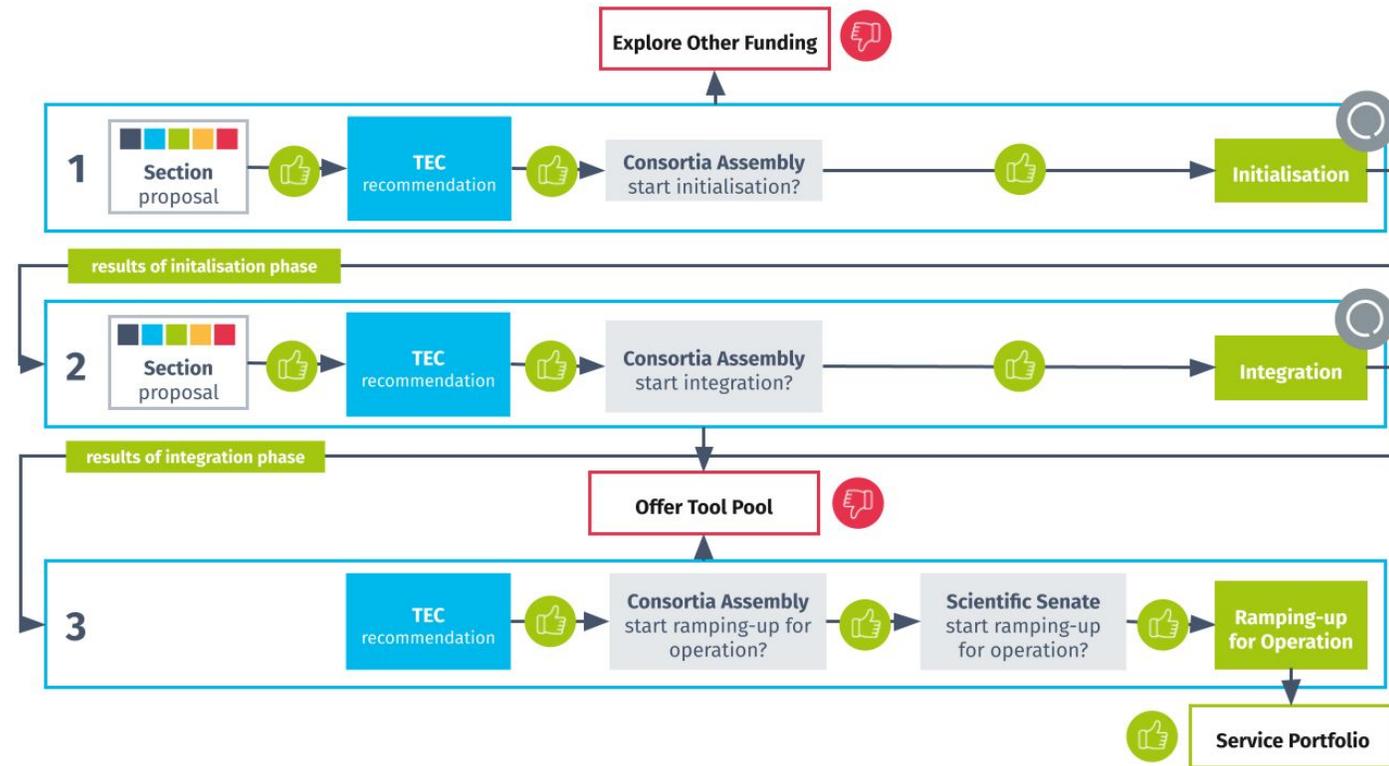
- **Section Liaison Officers** support the work of the Sections in matters directly related to preparing basic service development strategies, decisions and monitoring (TA3)
- **Service Stewards** support the service development process through all stages of the development (TA1 and TA2). They will ensure a smooth interplay between the sections, participating consortia and partner organisations involved in the development of a basic service.



## How Base4NFDI will decide

### Tightly embedded in the NFDI Association

- Each development step is subject to evaluation and joint agreement on next steps
- Proposals are initiated and coordinated by NFDI Sections
- Proposals are evaluated by Technical Expert Committee (TEC), Consortia Assembly and Scientific Senate



# Basic Services in Initialization Phase

## Initialisation Phase started in 2023

### IAM4NFDI

#### Identity & Access Management

Supported by: Section Common Infrastructures

IAM4NFDI is concerned with **connecting and expanding existing and emerging Identity and Access Management (IAM) systems** in a way that researchers from different domains and institutions are able to access digital resources within NFDI as easily as possible, including access to and exchange with external infrastructures and resources like the European Open Science Cloud (EOSC). **A decentralised, federated IAM is required**. This way, users from approx. 400 German research and higher education institutions plus approx. 5000 home organisations worldwide -number increasing - will be able to access services and resources provided by the NFDI Community Authentication & Authorisation Infrastructure (AAI).

# Basic Services in Initialization Phase

## Initialisation Phase started in 2023

### **PID4NFDI**

#### **Persistent Identifier Service**

Supported by: Section Common Infrastructures

Persistent identifiers (PIDs) are central to FAIR research data management. However, different disciplines and different resources result in diverse requirements and the different NFDI consortia have different levels of maturity in PID implementation. PID4NFDI will design a work programme to build an **NFDI foundation service on established PID infrastructures**.

# Basic Services in Initialization Phase

## Initialisation Phase started in 2023

### TS4NFDI

#### Terminology Services

Supported by: Section Metadata, Terminologies, Provenance

Terminology Services for NFDI (TS4NFDI) is a **cross-domain service for the provision, curation, development, harmonization and mapping of terminologies**. It aims to facilitate consensus-building and interoperability of services across disciplines to achieve a shared knowledge representation and knowledge engineering framework. The service seeks to integrate and converge individual solutions into a standardized, interoperable, and sustainable service suite with service wrapper, API gateway, mapping service and reusable GUI widgets.

# Basic Service Proposals under Review

## Proposals submitted in 2023

### **IAM4NFDI** (Integration Phase)

Supported by: Section Common Infrastructures

### **RDMTraining4all** (Initialisation Phase)

Supported by: Section Training and Education

RDMTraining4all aims to develop **modular teaching concepts and materials** that can be used to create training programmes and courses in research data management (RDM). Experts in RDM training will furthermore support training responsibilities in the consortia in transforming these modular concepts and materials into discipline-specific training programmes and running and certifying the corresponding training activities.

### **nfdi.software** (Initialization Phase)

Supported by: Section Common Infrastructures

nfdi.software will implement a **central research software marketplace** to enable access to a large portfolio of research software relevant to researchers and research software engineers. nfdi.software will integrate information on relevance and adoption of software in communities and connect research software to publications, data, services and more.

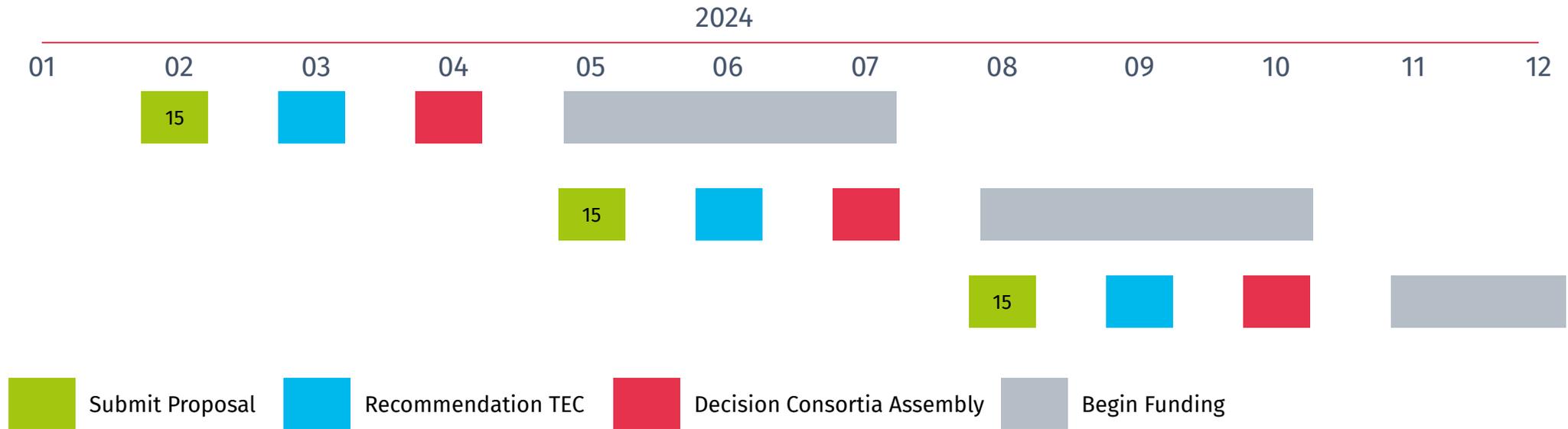
### **Jupyter4NFDI** (Initialisation Phase)

Supported by: Section Common Infrastructures

Though Jupyter notebooks are widely used across scientific disciplines, their deployment through individual JupyterHubs results in access barriers to computational and data resources. Jupyter4NFDI aims to unify these efforts by offering a **centralized service**, simplify access, support the import of projects and extend the reach of Jupyter to a broader audience.

# Base4NFDI looking Forward

## Proposals in 2024



- **Templates** for applications are available through [base4nfdi.de](https://base4nfdi.de)



# Base4NFDI at CoRDI

**base4nfdi** Basic Services for NFDI

**What is Base4NFDI?**  
 Base4NFDI creates the basis for better **findability, accessibility, interoperability and reusability** of research data. For this purpose, common, technical services are developed together with experts for the data in the different research disciplines.  
 Since many scientific fields have similar requirements for research data, Base4NFDI **supports common solutions to avoid parallel developments**. Already existing services are thereby adapted or extended to be usable for researchers from other disciplines.

**What is a basic service?**  
 A service is a technical-organizational solution which typically includes:  
 • storage and computing services  
 • software, processes and workflows  
 • personnel support for different service desks.  
 A basic service:  
 ✓ creates added value for the consortia and their user  
 ✓ typically bundles existing services  
 ✓ is characterized by scalability and sustainable operating models  
 ✓ must be effective over time and in terms of usage (trackable by KPIs)

**How does it work?**  
 All institutions in the scientific community can actively participate in the development and implementation of these services and submit proposals via the **sections of the German National Research Data Infrastructure (NFDI)**.  
 A panel of experts will select the proposals of the development teams for Base4NFDI, which will then receive funding from the **German Research Foundation (DFG)**. These teams will also receive support and guidance in areas such as development, implementation, and training. After development, the basic services of NFDI are to be made permanent. Base4NFDI thus actively contributes to the systematic opening and networking of the German science system.

**How to propose?**  
 Brainstorming during NFDI section meetings → Check proposal templates & timelines → Write a proposal with the support of your section → Submit your proposal to Base4NFDI

**Base4NFDI process and phases**

- Phase 1: Explore Other Funding**  
 1. Section proposal → 2. Consortia Assembly (start implementation) → 3. Implementation
- Phase 2: Explore Other Funding**  
 1. Section proposal → 2. Consortia Assembly (start integration) → 3. Implementation
- Phase 3: Explore Other Funding**  
 1. Section proposal → 2. Consortia Assembly (start operation) → 3. Scientific Service (start operation) → 4. Implementing the implementation → 5. Service Portfolio

**Basic services under development**

- ISAN@NFDI**: Digital identities and federated access across the NFDI consortia
- ISAN@NFDI**: Harmonization & mapping of terminologies
- PID@NFDI**: Persistent Identifier Services for the NFDI

**Wanna propose to us?**  
 Scan for more information!

**DFG** Deutsche Forschungsgemeinschaft  
 German Research Foundation  
 Founded by DFG as part of NFDI. Open Network. Coherent. Sustainable. Connected.  
 (DFG@NFDI, Coherent@NFDI, Connected@NFDI, Sustainable@NFDI)

**nfdi** National Research Data Infrastructure

**base4nfdi@nfdi.de**  
 CC BY 4.0  
 Base4NFDI Office  
 Hansika Fritzsche, Anja Marold, Lukas Weimer  
 GFDL 1.3, September 1976, 2001, 2004, 2007

- **Come talk to us** at our poster!
- Webpage: [base4nfdi.de](http://base4nfdi.de)
- Proposal: [doi.org/10.5281/zenodo.8329192](https://doi.org/10.5281/zenodo.8329192)



Please participate in our survey!



<http://www.dzhw.eu/ShortSurveyCORDI23>

- First small survey of accompanying research

# Base4NFDI

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Thank You !  
Questions ?

