FAIR Data Spaces

A common data space for industry and science

FAIR-IMPACT National Roadshow Germany

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FAIR Data Spaces

Image by Freepik

Gaia-X and NFDI

Gaia-X

Economy

- EU-initiated project, brings together stakeholders from industry, science and administration

- The goal is to create an **open, transparent and secure federated data infrastructure**

- Gaia-X architecture consists of a variety of **individual platforms** that **follow a common standard**

Gaia-X and NFDI
Linking domains

Gaia-X

Economy

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NFDI

Science

- Purpose of the association is to **promote science and research** through a National Research Data Infrastructure

- The goal is to establish and further develop an **overarching research data management in Germany** and to **increase** the **efficiency** of the entire German science and research system

- Making research data FAIR

FAIR Data Spaces

FAIR Data Spaces at a glance (1/2)

- **FAIR DS in numbers**
  - Runs May 2021 – December 2024
  - 16 participating institutions
  - Funded by the German Federal Ministry for Education and Research
- **Goal**:
  - Interlinking the two domains by clarifying legal and ethical issues
  - Providing technical foundations
  - Demonstrating and promoting a sovereign exchange of data between industry and science both nationally and in the EU in concrete applications
  - Building a common community within the project and beyond
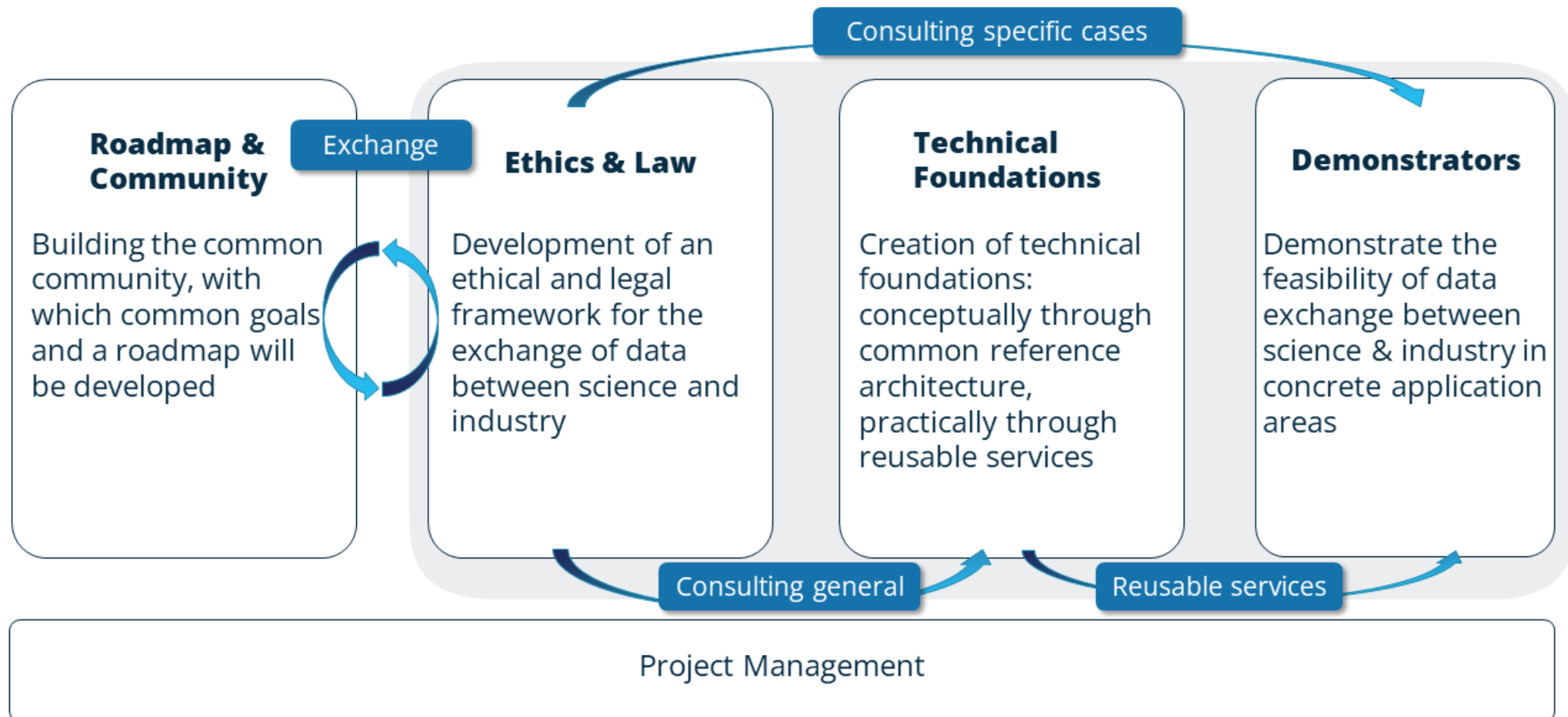 - In addition, linkage with **EU data spaces** and connection to **EOSC**

FAIR Data Spaces

Vision: common cloud-based data space for industry and science (based on the FAIR principles)

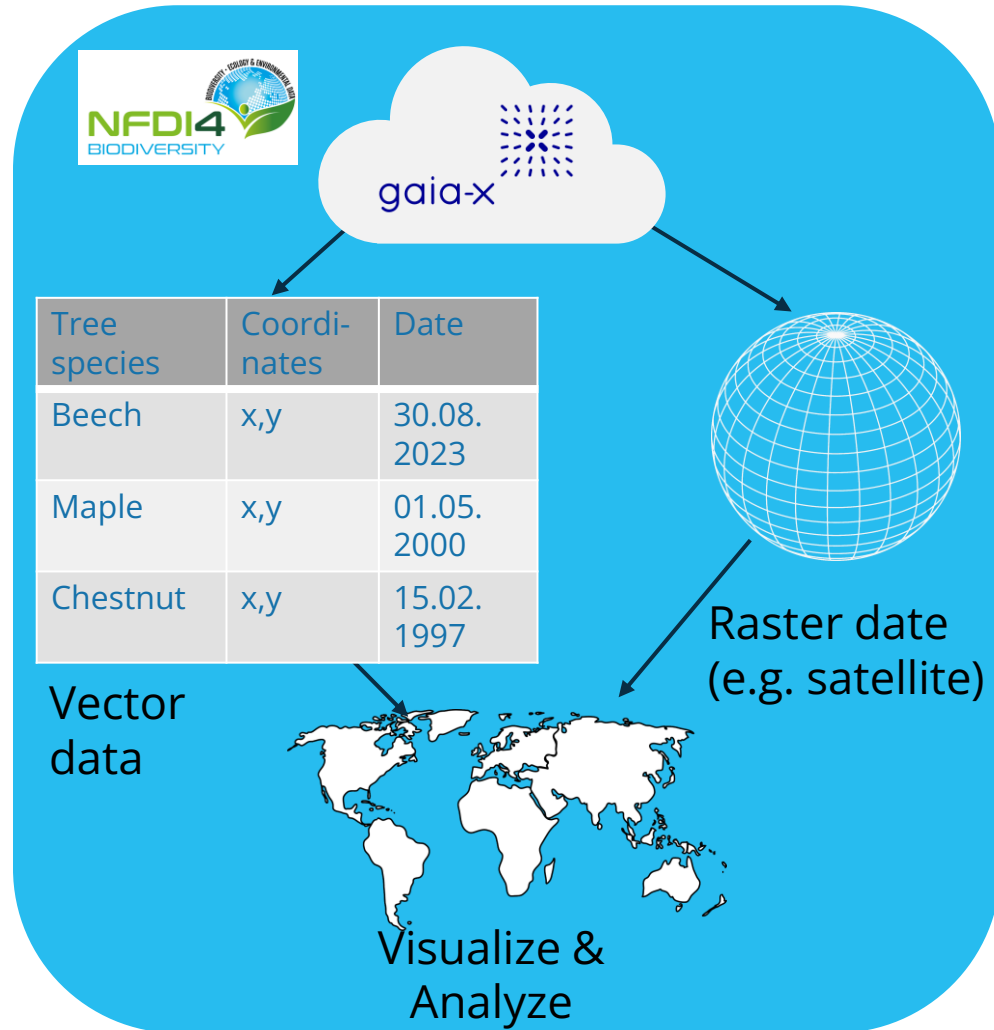**Mission**: Create and expand synergies between existing technologies and communities

FAIR Data Spaces

GEFÖRDERT VOM
Bundesministerium
für Bildung
und Forschung

FAIR Data Spaces at a glance (2/2)

Consulting specific cases

Roadmap & Community

Exchange

Building the common community, with which common goals and a roadmap will be developed

Ethics & Law

Development of an ethical and legal framework for the exchange of data between science and industry

Technical Foundations

Creation of technical foundations: conceptually through common reference architecture, practically through reusable services

Demonstrators

Demonstrate the feasibility of data exchange between science & industry in concrete application areas

Consulting general

Reusable services

Project Management

Biodiversity data space
Demonstrator

Tree species	Coordi-nates	Date
Beech	x,y	30.08. 2023
Maple	x,y	01.05. 2000
Chestnut	x,y	15.02. 1997

Vector data

Raster date (e.g. satellite)

Visualize & Analyze

- **Goal:**

    Combination of data from science and industry through Gaia-X-compatible clouds

- **Use case:**

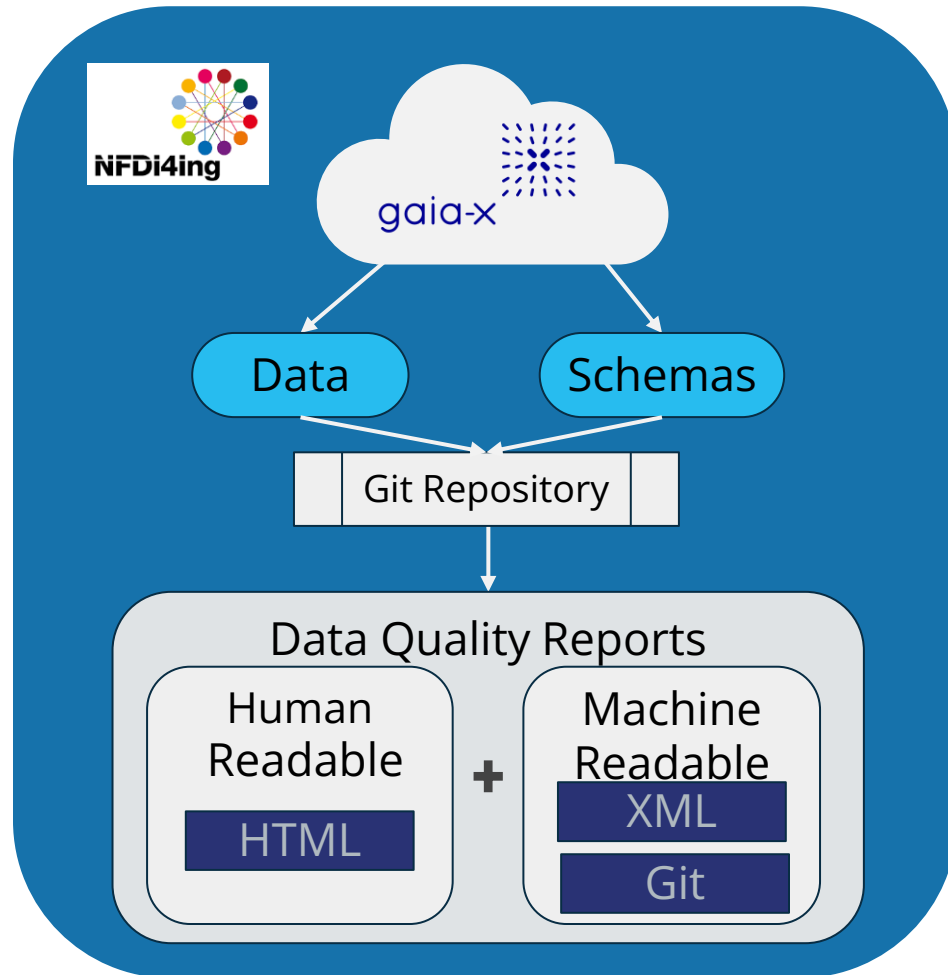   Analysis of a tree population (beetle infestation, irrigation, etc.)
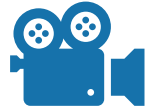
- **Challenge:**

    Various data formats, data acquisition methods

F A I R

Data quality assurance
Demonstrator

- **Goal:**

  Development of an automatic quality assurance system for (largely) manually recorded data

- **Use case:**

  Monitoring crop yields

- **Challenges:**

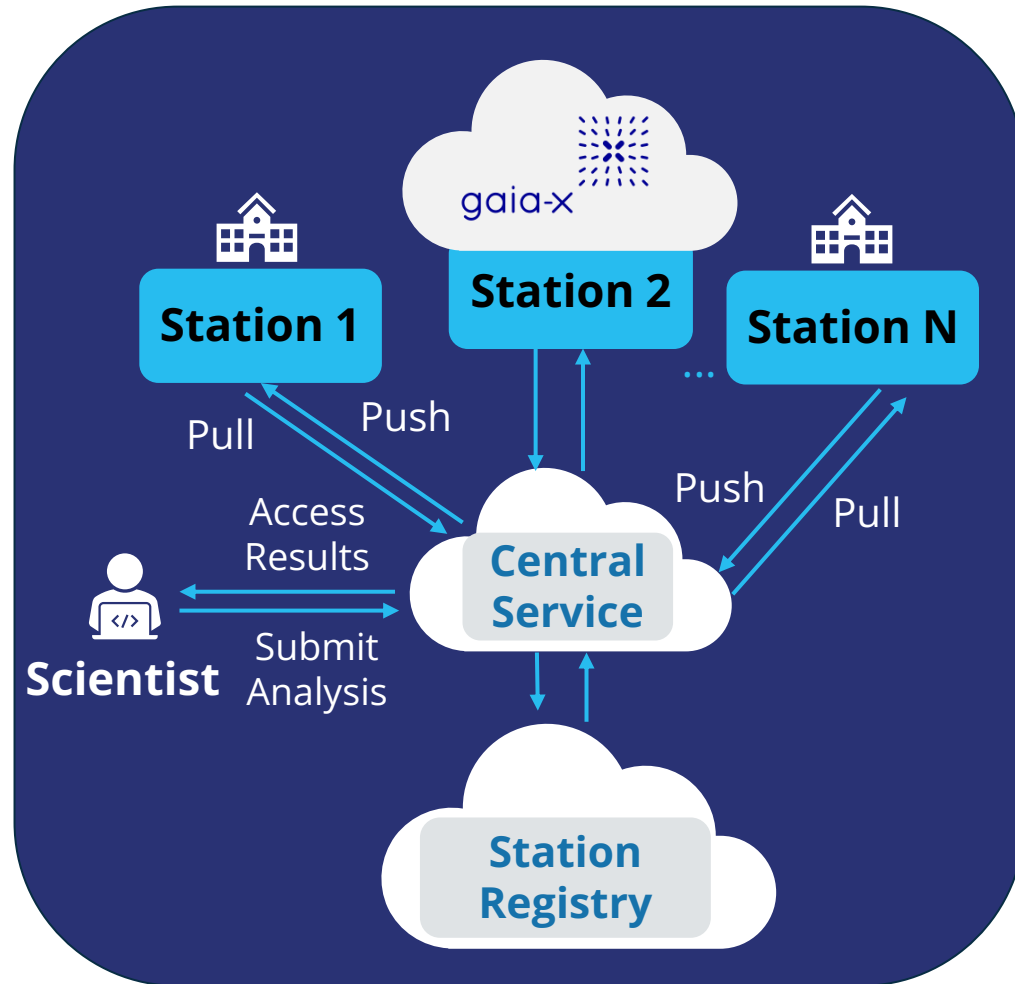 Many participants, many computer languages and data formats

F A I R

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8

Cross-plattform data analysis
Demonstrator

- **Goal:**

    Demonstration of cross-platform, privacy-compliant data analysis on distributed data sets without sharing the data itself

- **Use case:**

    Detection & classification of melanomas

- **Challenges:**

    Data distributed across multiple locations, different data formats, personal data

Legal and ethical aspects

- Clarification of questions regarding
  - IP laws (Secrecy law, copyright law, patent law)
  - Data privacy laws
- Currently: legal analysis of use cases (e.g. analysis of the data flow within the FAIR DS demonstrators)
- Ethical focus on informed consent for the use of personal data
- Stay tuned for more publications on our FAIR DS Zenodo community this year

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FAIR Data Spaces

ELSA Training for Data Scientists

- [Landscape analysis](#)
  - currently available university curricula on ELSA topics (*ethical, legal & social aspects*)
  - Ethics guidelines for AI
- Curriculum goals:
  - Raising awareness of ELSA issues
  - Establishing a common language with the domain experts
  - Integrating ELSA into the data science workflow
  - [First version available](#) on FAIR DS Zenodo community

Which topics come to your mind when you hear „ELSA topics?

Open Call

- Development of further scenarios for data exchange between industry and science (demonstrators)

- Partial reuse of the demonstrators from FAIR Data Spaces

- Open Call starting soon

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FAIR Data Spaces

Thank you for your interest!

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Stay in touch:

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🐦 @FAIRDataSpaces
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Community Newsletter: https://www.nfdi.de/newsletter-abo/

Zenodo Community: https://zenodo.org/communities/fair-ds/

LinkedIn: https://www.linkedin.com/company/fair-data-spaces/

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