



HELMHOLTZ
METADATA
COLLABORATION

Data Policies of Research Field Matter in Helmholtz

Oonagh Mannix

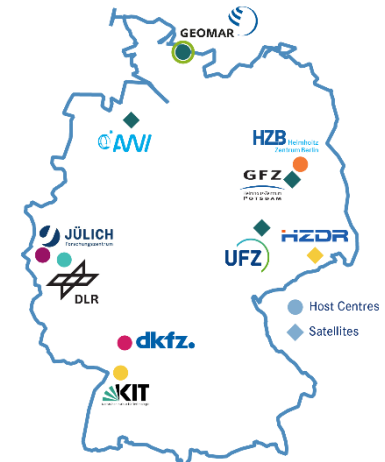
Helmholtz-Zentrum für Materialien und Energie

www.helmholtz-metadata.de

- Make Helmholtz' Data **FAIR** - findable, accessible, interoperable and reusable
- Provide comprehensive and **sustainable services**, consulting, information and tools for efficient metadata handling as a **distributed and shared facility**.
- Jointly develop, share and **consolidate community-expertise** for metadata of the six Helmholtz research Fields.



- Turning FAIR into reality* on all levels to enable reuse of data
- Develop HMC as a research infrastructure platform!



* From: *Turning FAIR into Reality, Final Report and Action Plan from the European Commission Expert Group on FAIR Data*, doi: 10.2777/1524

Findable:

- F1. (meta)data are assigned a **globally unique and persistent identifier**
- F2. data are described with **rich metadata** (defined by R1 below)
- F3. metadata clearly and **explicitly include the identifier** of the data it describes
- F4. (meta)data are registered or indexed in a **searchable resource**

Accessible:

- A1. (meta)data are **retrievable** by their **identifier** using a **standardized communications protocol**
 - A1.1 the protocol is **open, free, and universally implementable**
 - A1.2 the protocol allows for an **authentication and authorization** procedure, where necessary
- A2. **metadata are accessible**, even when the data are no longer available

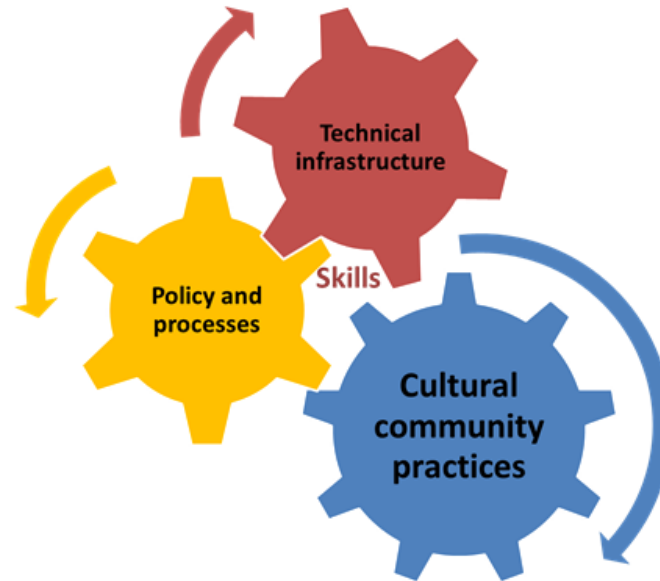
Interoperable:

- I1. (meta)data use a **formal, accessible, shared, and broadly applicable** language for **knowledge representation**.
- I2. (meta)data use **vocabularies** that follow **FAIR** principles
- I3. (meta)data include **qualified references** to other (meta)data

Reusable:

- R1. meta(data) are **richly described** with a plurality of accurate and relevant attributes
 - R1.1. (meta)data are released with a clear and accessible data **usage license**
 - R1.2. (meta)data are associated with **detailed provenance**
 - R1.3. (meta)data meet domain-relevant **community standards**

M. D. Wilkinson et al. "The FAIR Guiding Principles for scientific data management and stewardship." *Scientific data* 3.1 (2016): 1-9.



Source: SAB feedback to the HMC 2021-08-18

FAIR DATA HANDLING HELPS WITH:



REUSABILITY



BENEFITS FOR GRANTS



SAVE TIME



COLLABORATION



PUBLICATION STATISTICS

DATA SHOULD BE AS OPEN AS POSSIBLE, AS CLOSED AS NECESSARY

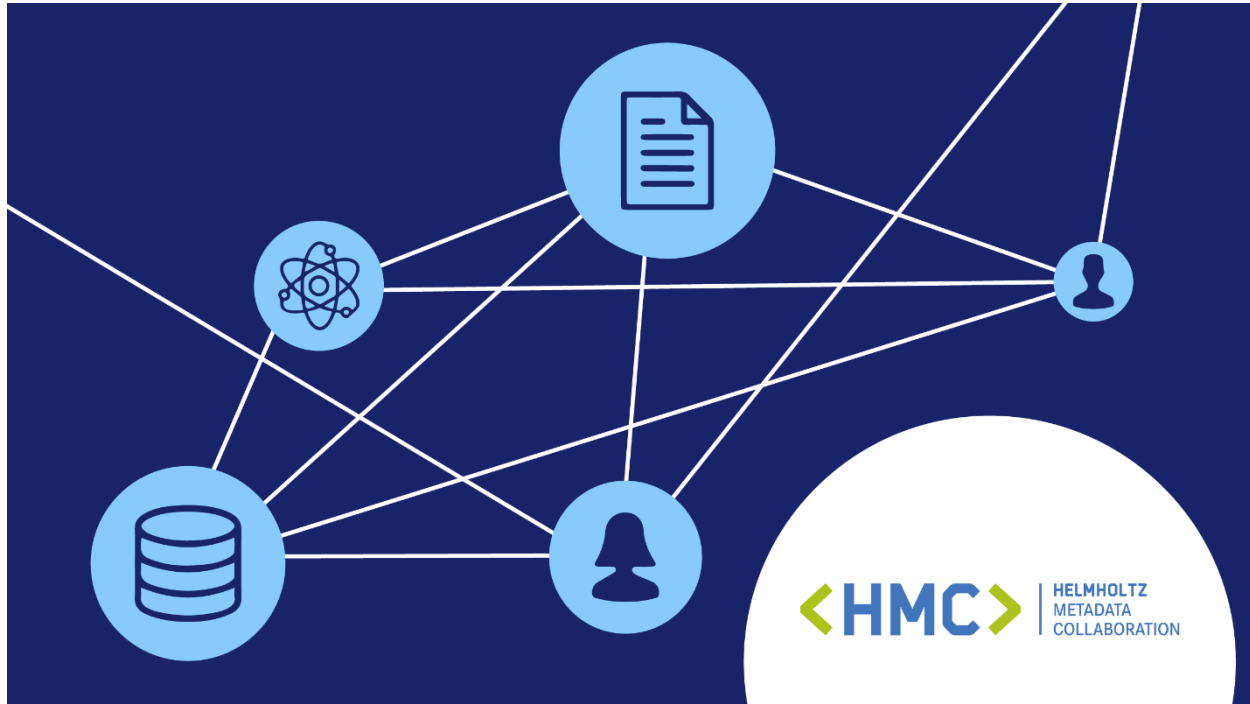
Horizon Europe Programm Guide version 2.0. 11 April 2022 https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/programme-guide_horizon_en.pdf

Data are typically from large scale infrastructure for physics research:

- Particle accelerators
- Synchrotrons
- Free-electron lasers
- Neutron sources
- Laser facilities

These are large data sets which require centralised infrastructure





Institutional	Institutional data policies (see map)
National	An interpretation of the FAIR principles to guide implementations in the HMC digital ecosystem Recommendations for Policies of the Helmholtz Centers on Research Data Management Guidelines for Safeguarding Good Research Practice (DFG) Germany's digital strategy
European	ExPaNDS D 2.3 Final Data Policy Framework for Photon and Neutron RIs Horizon Europe Funding guidelines v1.0 G6 Statement on Open Science <i>General Data Protection Regulation (GDPR)</i>
Global	Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities Beijing Declaration on research data *A selection



Image courtesy of Helmholtz Open Science Office

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European	<p>ExPaNDS D 2.3 Final Data Policy Framework for Photon and Neutron RIs</p> <p>Horizon Europe Funding guidelines v1.0</p> <p>G6 Statement on Open Science</p> <p><i>General Data Protection Regulation (GDPR)</i></p>
Global	<p>Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities</p> <p>Beijing Declaration on research data</p>



Image courtesy of Helmholtz Open Science Office

Alignment is an ongoing activity

*A selection

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Image courtesy of Helmholtz Open Science Office

Alignment is an ongoing activity

Institutional	Data stewards
National	Helmholtz Information and Data Science Incubator , Helmholtz Open Science Office , NFDI : German National Research Data Infrastructure
European	EOSC : European Open Science Cloud
Global	RDA : Research Data Alliance, Codata , GoFAIR , World Data System

*A non-exhaustive list

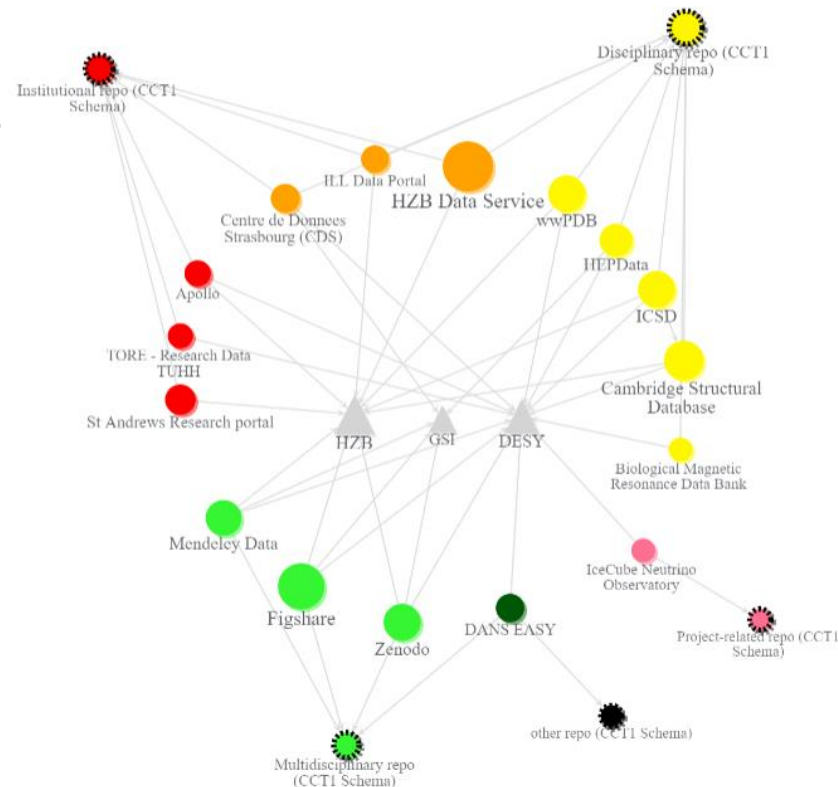


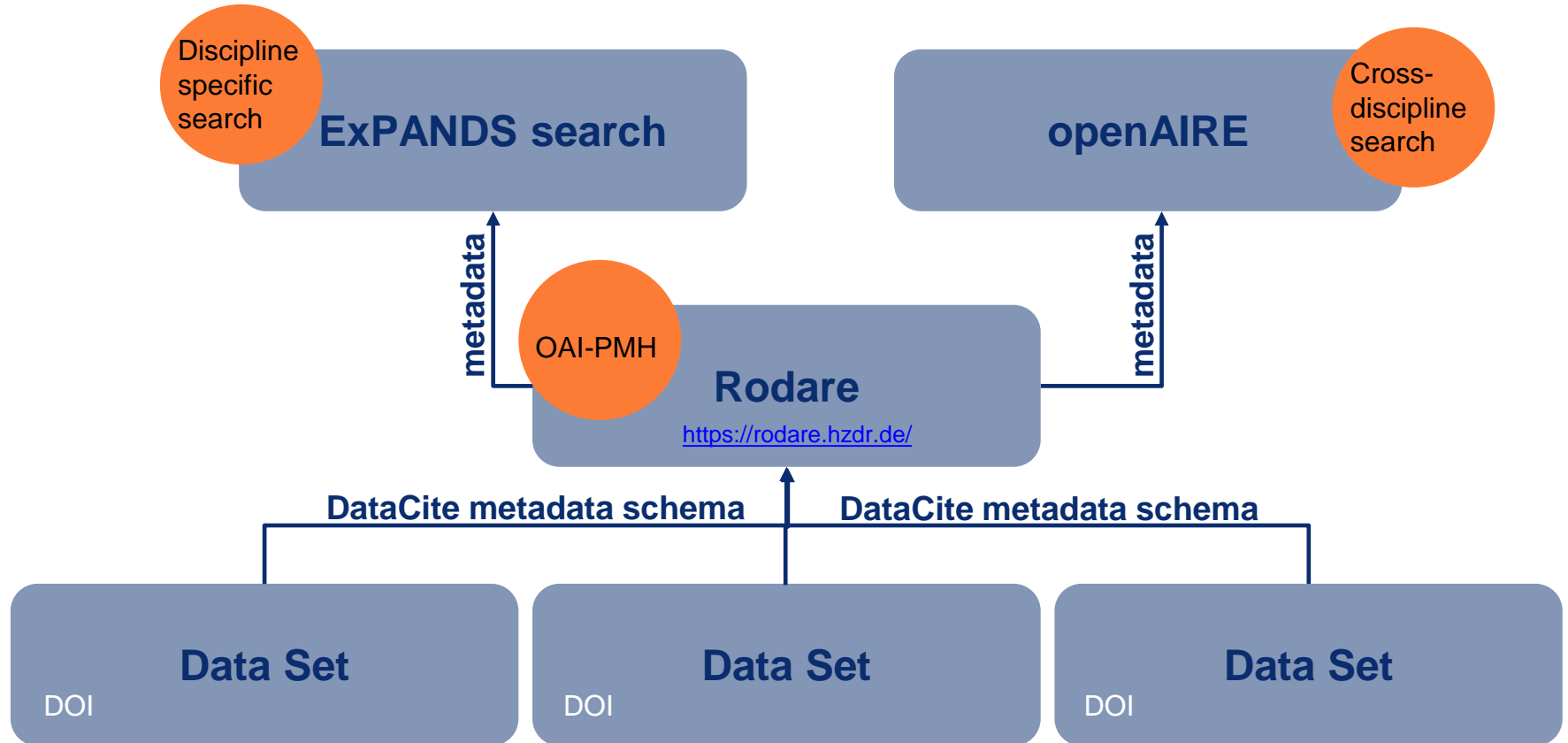
Source: SAB feedback to the HMC 2021-08-18

FAIR principles guide activities at each level

- Digital repository is a system which is used to store and preserve digital assets following a policy or rule set that defines storage and access norms.¹
- Variety of repository types available:
 - Institutional
 - Discipline specific
 - Generic
- Helmholtz has about 100 data infrastructures

1. https://purls.helmholtz-metadaten.de/hob/HDO_0000108/





- Data should be as open as possible, as closed as necessary
- This principle is seen in policies implemented on an institutional, national, European and international level
 - The landscape is dynamic, and resources are increasing
 - Alignment an ongoing activity
- The FAIR principles, along with high-level guidance, require real technical implementation
- An example of this technical detail is given in the RODARE repository of the HZDR

Thank you

Get in touch ...

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