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HMC Earth and Environment - Overall Strategy and Implementation of a FAIR Helmholtz Data Space

HMC Earth and Environment (E&E) strives to define, create and activate a Helmholtz FAIR Data Space (HFDS) as a "decentralized infrastructure for trustworthy data sharing and exchange in data ecosystems based on commonly agreed principles" (Nagel L., Lycklama D., 2021). Within HMC E&E the data space consists of common agreements to implement the FAIR building blocks (see below), leading to internal interoperability of data. In addition a data integration system is needed, which will act as a data broker between data infrastructures, providing internal and external integration and data access opportunities.

Unlike the concept for the European data space, which is largely tailored towards commercial data, the Helmholtz Association's data space covers primarily research data, which may or may not be openly accessible. For such research data, we envision four major building blocks required, to implement and activate the data space:

1. the consistent usage of high-resolution PID referable metadata elements, e.g. ORCID, DOI, ROR, Inst-PID and others (see other poster).
2. The implementation of consistent semantic concepts within data repositories and infrastructures (see other poster).
3. The containerization datasets and metadata within machine actionable FAIR digital objects (FDOs)
4. The agreement and implementation of standardized interfaces to access and address containerized data through common APIs.

To implement these features a co-design and implementation process needs to be set up. Within this co-design process procedures should be agreed upon, implemented and maintained by data stewards and data infrastructures together, in order to support data producers, data maintaners and data re-users and ease their handling of research data.

In HMC we plan to conduct the following actions, in order to develop the HFDS together with our scientific and technical communities:

1. Define the concept and requirements of a Helmholtz data space, which is in-line with other data spaces in preparation.
2. Establish a communication platform allowing us to define and agree upon the building blocks required to set up the data space (see above and other poster).
3. Work with data repositories and data stewards to implement and document the building blocks required to establish the data space.
4. Build a data integration system, connecting the different decentralized parts of the data space and connect it to other data spaces.

These activities will ultimately lead to the establishment of an well-formed interoperable FAIR Data Space, which anyone interested is welcome to join and shape.

(1) Nagel L., Lycklama D. (2021): Design Principles for Data Spaces. Position Paper. Version 1.0. Berlin, DOI: http://doi.org/10.5281/zenodo.5105744

Please assign your poster to one of the following keywords.

other

In addition please add keywords.

Strategy, Vision, Overview, Data Space

Please assign yourself (presenting author) to one of the stakeholders.

other (please specify)

Please specify ”other” (stakeholder)

Data Infrastructure Provider, Data Curators

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