eFAIRs

enhancing **FAIR**ness in **s**eismological data management

Partners: **GFZ**, **AWI**, **GEOMAR** (and other international links within FDSN, ORFEUS(IPGP), EPOS/EMSO, RDA, EOSC)

People: *L. Hillmann, S. Hemmleb, A. Strollo, J. Quinteros, A. Heinloo, C. Haberland, M. Haxter, M. Schmidt-Aursch, L. Ulmer, A. Dannowski, H. Kopp.*

Duration: 05.2021 – 04.2023

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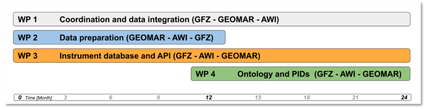
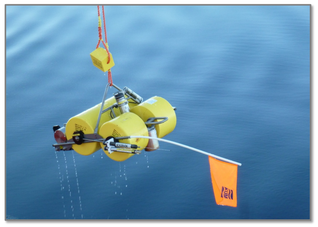




Objectives

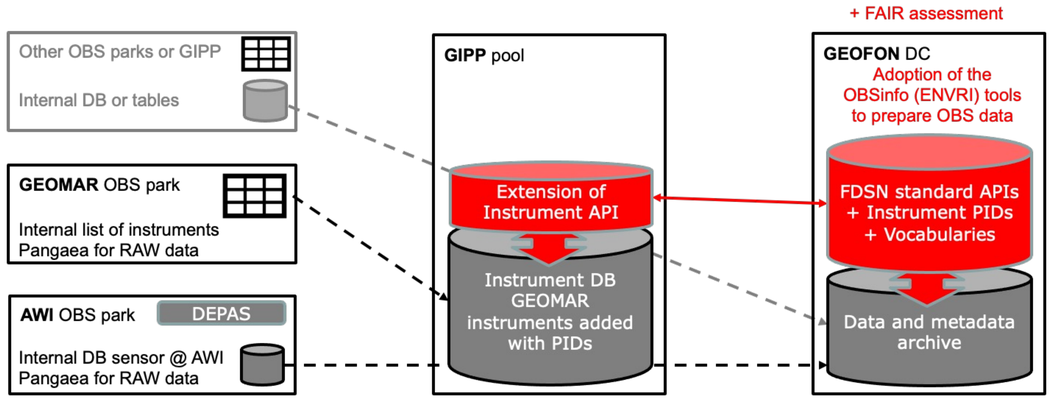
- automate the integration of instrument PIDs in the standard metadata generation workflow;
- adoption of standard and interoperable vocabularies in metadata and tailored metadata consistency/quality checks;
- harmonised integration of OBS data sets in the routine seismological data management workflow for long term archival;
- foster adoption and usage of these fully FAIR data management policies within the community to enable data provenance from the derived products to the instrument producing the initial bit of data and vice versa.

Interaction/support within HMC

- Support for interoperability: vocabularies and ontology;
- Usage of Helmholtz federated services: AAI, Storage, PIDs;
- FAIR assessment of data and metadata;
- Bottom-up approach, community driven in synergy with Institutional, National, European and Global initiatives.

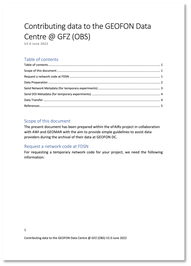
Activities carried out so far

- Data and metadata preparation and validation;
- Evaluation of various sensor libraries and formats import/export;
- Testing the usage of OBSinfo tools (developed by IPGP);
- Preparation of guidelines to aid data and preparation and metadata ingestions;
- Ingestion of new data from AWI and GEOMAR at GFZ EIDA node;
- Automated FAIR data assessment with F-UJI.



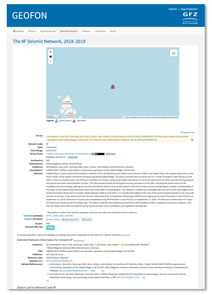
Data-workflow being implemented: in black/grey existing components, in red the components developed within this project.

Snippet of stationXML metadata with keywords and PID of the instruments



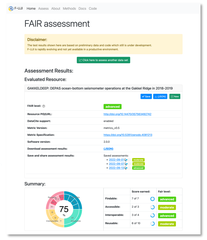
Guidelines for data contributors

a) guidelines



b) reach metadata

c) FAIR assessment



Summary of the F-UJI automated assessment

Example of data set prepared and archived during the eFAIRs project: (Schlindwein, Vera; Kirk, Henning; Hiller, Marc; Scholz, John-Robert; Schmidt-Aursch, Mechita (2022): GAKKELDEEP: DEPAS ocean-bottom seismometer operations at the Gakkel Ridge in 2018-2019. GFZ Data Services. Other/Seismic Network. doi:10.14470/3S7563492742.)

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