HELMHOLTZ

SPITZENFORSCHUNG FÜR
GROSSE HERAUSFORDERUNGEN

ALAMEDA

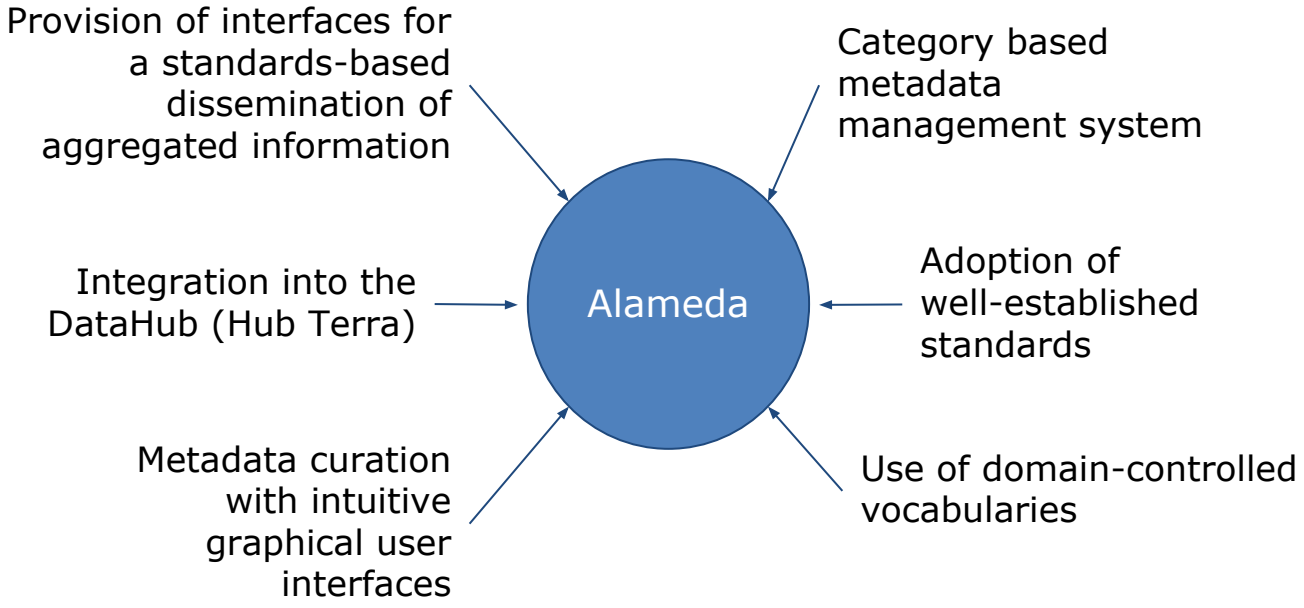
A scalable multi-domain metadata management platform

HMC project, March 2022 - February 2024

March 30, 2022

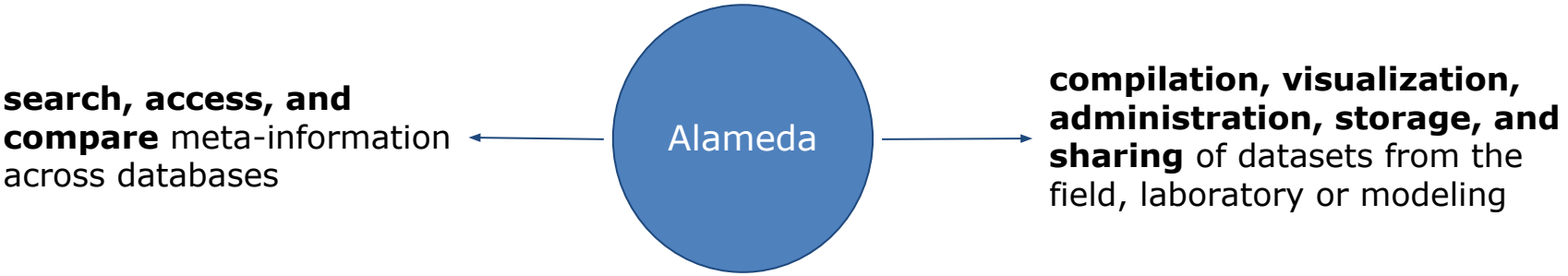
Vision: *Features*

A pilot application to manage *measurement* and *sampling related* metadata for *soil moisture* and *stable isotope geochemistry.*



Vision: *Application*

Use across organization-, system- and domain-boundaries



Categories

- **Observations & Measurements**
  Includes information that directly pertains to the data
- **Samples & Data**
  Covers sample information and provenance, in compliance with IGSN
- **Sensors & Devices**
  Includes information on measuring devices and analyzing processes, such as the instrument type, manufacturer, and the physical principles behind the measurement
- **Methods & Processing**
  Includes information on the methods & settings (e.g. sample preparation, instrument and software settings) and post-processings procedures
- **Spatio-temporal characteristics**
  Includes information on spatial and temporal content of a sample or datapoint (e.g. age range of a sediment, catchment area/size of a river system)
- **Operator**
  Includes information on the institution (e.g. Centre), facility (e.g. Lab) and person (e.g. scientist, technician)

Communities

- Pilot will involve researchers of the target communities to evaluate its operational readiness, to identify gaps and needs.
  - GFZ Section Geomorphology (GM) with its Organic Surface Geochemistry Lab
  - UFZ Departments Monitoring and Exploration Technologies (MET), Computational Hydrosystems (CHS) and Remote Sensing
  - Remote Sensing Centre for Earth System Research at Leipzig University
  - …

Project Partners

- **Helmholtz Centre Potsdam -
  German Research Centre for Geosciences (GFZ)**
  - Geomorphology
    (Oliver Rach, Jens Turowski, Dirk Sachse, Gunnar Pruß)
  - eScience Centre
    (Tobias Weiß, Martin Hammitzsch, Rainer Häner)
- **Helmholtz Centre for Environmental Research (UFZ)**
  - Monitoring- and Exploration
    (Peter Dietrich)
  - Computational Hydrosystems
    (Claudia Schütze)

HMC Linkage and Integration

- ALAMEDA will act as an *example implementation* that can be adopted, further developed, and re-used by other domains.
- The main benefits of the implementation can result in establishing …
  - interactive processing of information,
  - seamless integration of new resources,
  - composability and re-use of functionalities,
  - scalability in terms of systems and domains.
- ALAMEDA will be implemented at the DataHub (Hub Terra)
- Software code will be open source