

SPITZENFORSCHUNG FÜR GROSSE HERAUSFORDERUNGEN

Using HELIPORT in the HMC Project ALAMEDA

HELIPORT Workshop 2023 (HZDR) Speaker: Gunnar Pruß

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What is ALAMEDA?

- <u>"A scalable multi-domain metadata management platform"</u>
- Funded by the Helmholtz Metadata Collaboration (HMC)
- Launched in March 2022
- Duration: 2 years
- Focus: Earth System Sciences (Topic 5 of the Helmholtz Research Program "Changing Earth – Sustaining Our Future")
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Who is involved in ALAMEDA?

German Research Centre for Geosciences GFZ (Potsdam)

5.2 eScience Centre

- Martin Hammitzsch
- Marc Hanisch
- Felix Mühlbauer
- Tobias Weiß
- Rainer Häner

- 4.6 Geomorphology
- Oliver Rach
 - Jens Turowski
- Dirk Sachse
- Gunnar Pruß

Helmholtz Centre for Environmental Research UFZ (Leipzig-Halle)

Department of Monitoring- and Exploration Technologies

- Peter Dietrich
- Uta Ködel

Department of Computational Hydrosystems

- Claudia Schütze

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Helmholtz Centre for Environmental Research UFZ (Leipzig-Halle)

Monitoring- and Exploration Technologies

Department Computational Hydrosystems

Digital Transformation Lab environment: Stable Isotope Geochemistry

Field environment: Soil Moisture

ALAMEDA: The Fundamentals

Why do we need metadata in the first place?

- Findability
- Accessibility
- Interoperability
- Reusability

ALAMEDA: The Objectives

- 1) Adoption of well established standards, describing proprietary data
- 2) Use of domain controlled vocabularies for content related comparability
- 3) Metadata curation with intuitive graphical user interfaces
- 4) Integration into the DataHub
- 5) Provision of interfaces for a standards-based dissemination of aggregated information as network metadata

ALAMEDA: Metadata Categories

- **Observations & Measurements**: Information that directly pertains to the data
- Samples & Data: Sample information and provenance
- Sensors & Devices: Information on measuring devices and analyzing processes, such as the instrument type, manufacturer, and the physical principles behind the measurement
- **Methods & Processing**: Information on the methods & settings (e.g. sample preparation, instrument and software settings) and post-processings procedures
- **Spatio-temporal characteristics**: 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)
- **Operators**: institution (e.g. Centre), facility (e.g. Lab) and person (e.g. scientist, technician)

ALAMEDA: Pilot Architecture



ALAMEDA: Pilot Architecture



ALAMEDA: Pilot Example



ALAMEDA: Pilot Example - LI2

Geo X The Research Network for Geosciences in Berlin and Potsdam

Research Network for Geosciences in Berlin and Potsdam Geo.X / LabInfrastructure@Geo.X / Laboratory Search / Organic Surface Geochemistry Laboratory

last updated: May 10, 202
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Description

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ALAMEDA: Pilot Example - LI2

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ALAMEDA: Pilot Example - SMS

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ALAMEDA: Pilot Example - SMS

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ALAMEDA: Pilot Example – mDIS (work in progress)

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ALAMEDA: Pilot Example – BPMN (work in progress)



ALAMEDA: Pilot Example – BPMN (work in progress)



ALAMEDA: Pilot Example – BPMN (work in progress)



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