CDGP: The data center of deep geothermal energy in Alsace

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The CDGP

The CDGP (Centre de Données de Géothermie Profonde, deep geothermal data center, https://cdgp.u-strasbg.fr/) has been set up by the LabEx G-EAU-THERMIE PROFONDE (http://labex-geothermie.unistra.fr/) since 2012 to preserve, archive and diffuse data acquired on the geothermal sites of the Upper Rhine Graben (and possibly elsewhere).

It is a local node for the EPOS Anthropic Hazards platform.

Main Actions of the CDGP

- Retrieving and collecting historical data
- Converting them into standardized format
- Documenting them with metadata: new tools to create ISO 19115/19139 metadata have been developed.
- Handling Intellectual Property Rights
- Managing distribution of the data to the scientific community for R&D activities: a Spatial Data Infrastructure (SDI) based on GeOrchestra has been set up.
- Setting up workflows for data management: procedures are documented within a Data Management Plan (DMP) and the requirements of the DSA/WDS (Data Seal of Approval / World Data System) partnership are followed for a future certification. The goal is to make data FAIR: Findable, Accessible, Interoperable and Re-usable.

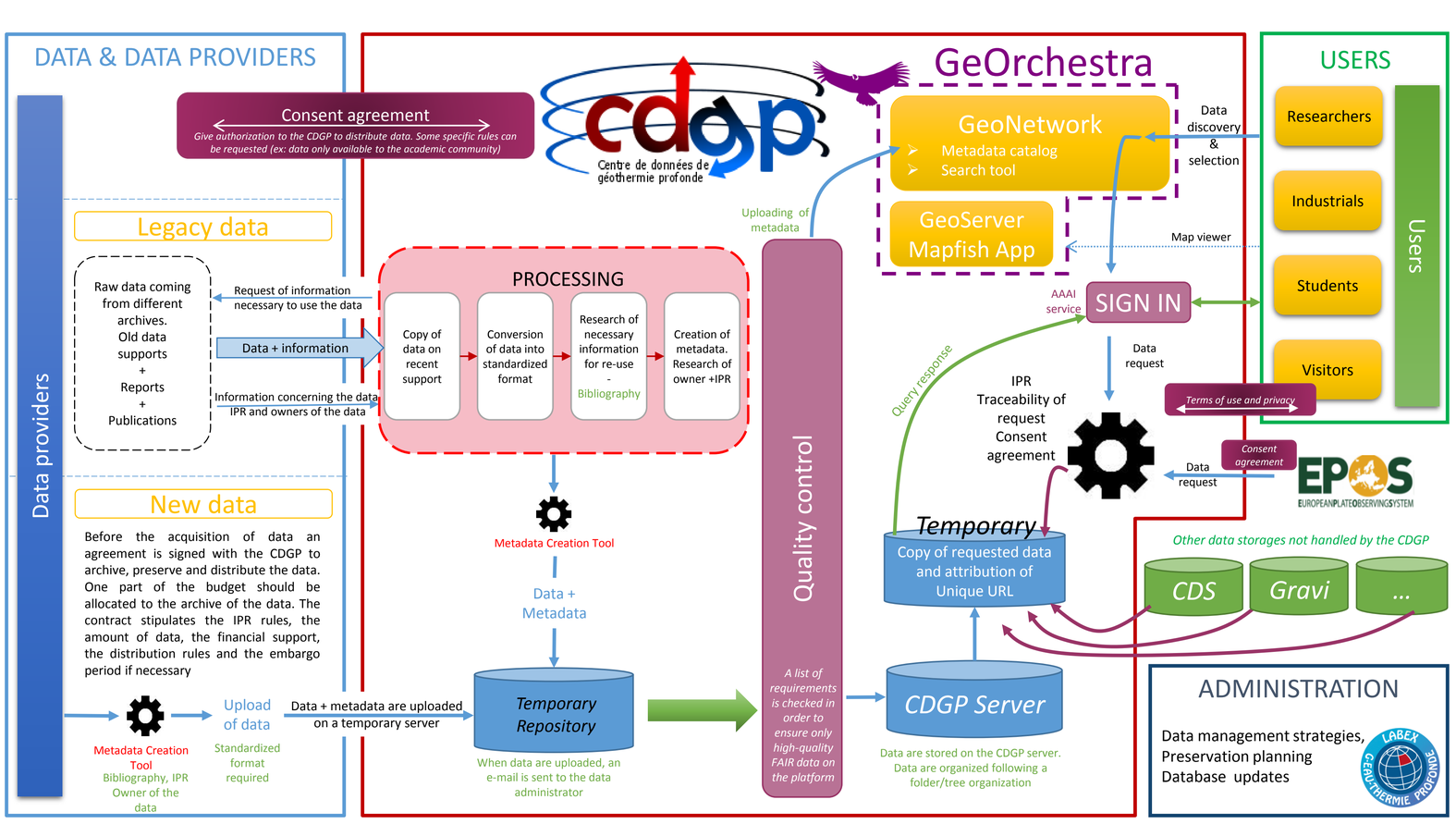

Figure 1: Functional diagram showing the CDGP infrastructure

The data

Data consist of seismological and hydraulic data that have been acquired during stimulation or circulation phases at Soultz-sous-Forêts pilot plant. They are gathered into "episodes": time-correlated collections of geophysical, technological and other relevant geo-data over a geothermal area. Other geophysical data (gravimetric, magnetic, InSAR) will be also inserted into the datastore in the future.

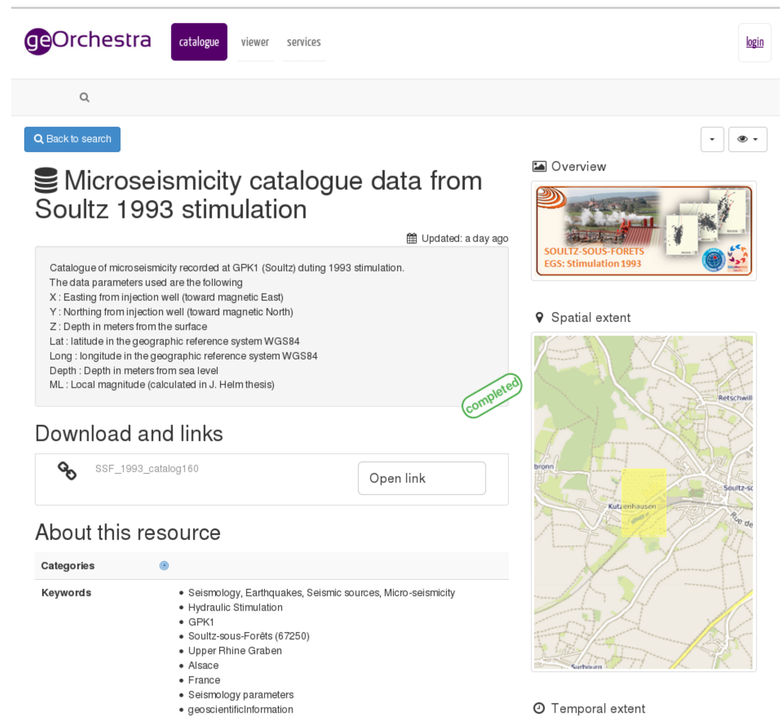

Figure 2: Example of metadata within the GeOrchestra platform

Data are distributed through a web platform based on GeOrchestra, an interoperable SDI composed of independent modules that provides metadata editing, data search functions and enables to edit, extract and visualize maps. An Authentication, Authorization and Accounting Infrastructure (AAAI) ensures their good distribution according to Intellectual Property Rights (IPR), user's affiliation (i.e. academic, industrial, ...) and distribution rules, either automatically or after approval from the data owner.

EPOS - IP - Anthropogenic Hazards

The CDGP is a node for EPOS-IP Anthropogenic Hazards platform that provides an environment and facilities for conducting research onto anthropogenic hazards, especially related to the exploration and exploitation of geo-resources. Access to "episodes" data will also be granted via the EPOS-IP Anthropogenic Hazards platform (https://tcs.ah-epos.eu).

Figure 3: Example of seismological data from 1993 Stimulation of Soultz-sous-Forêts available within EPOS AH platform