



HELIPORT HELMholtz Scientific
Project WORKflow PlaTform

Research Data Lifecycle

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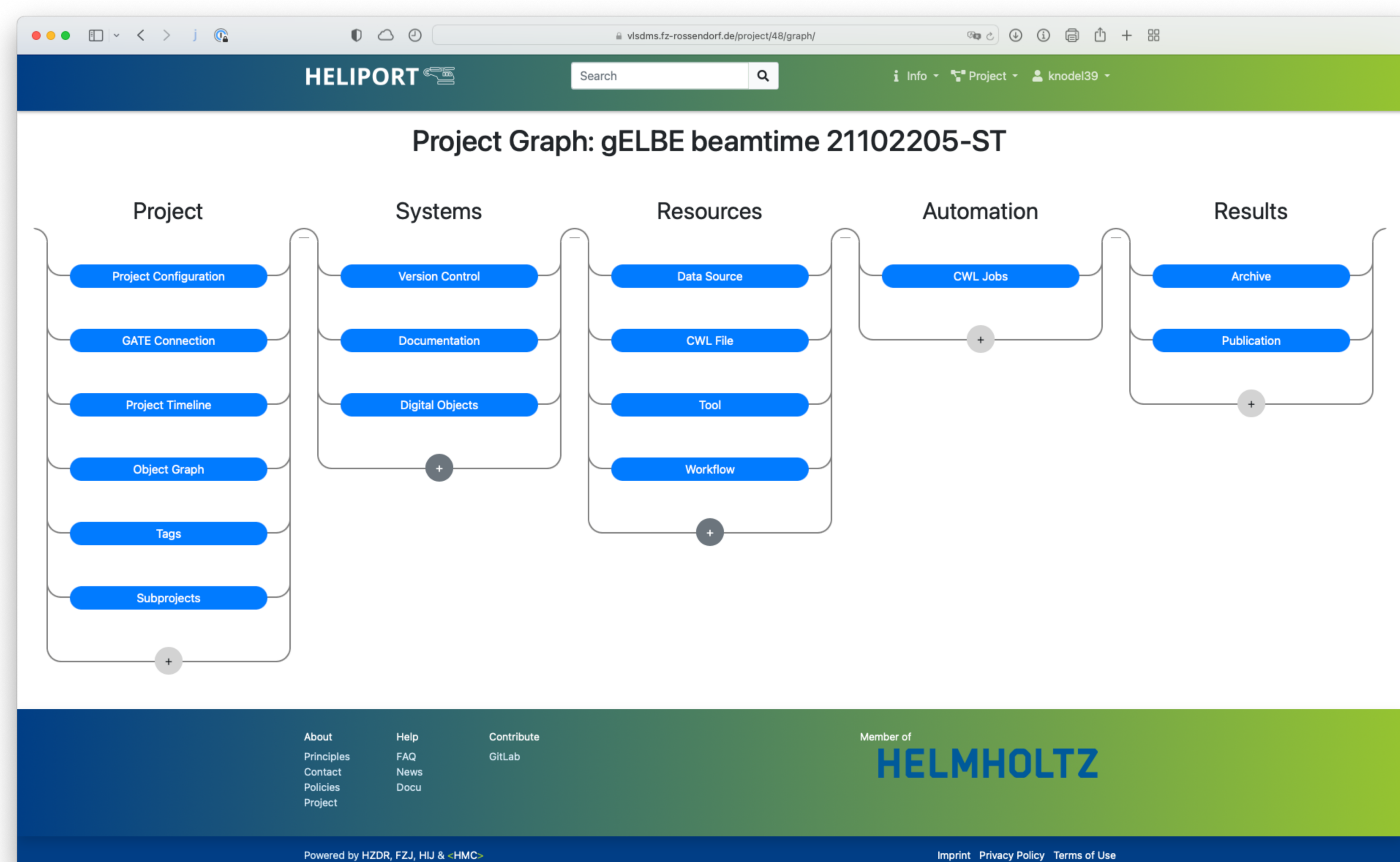
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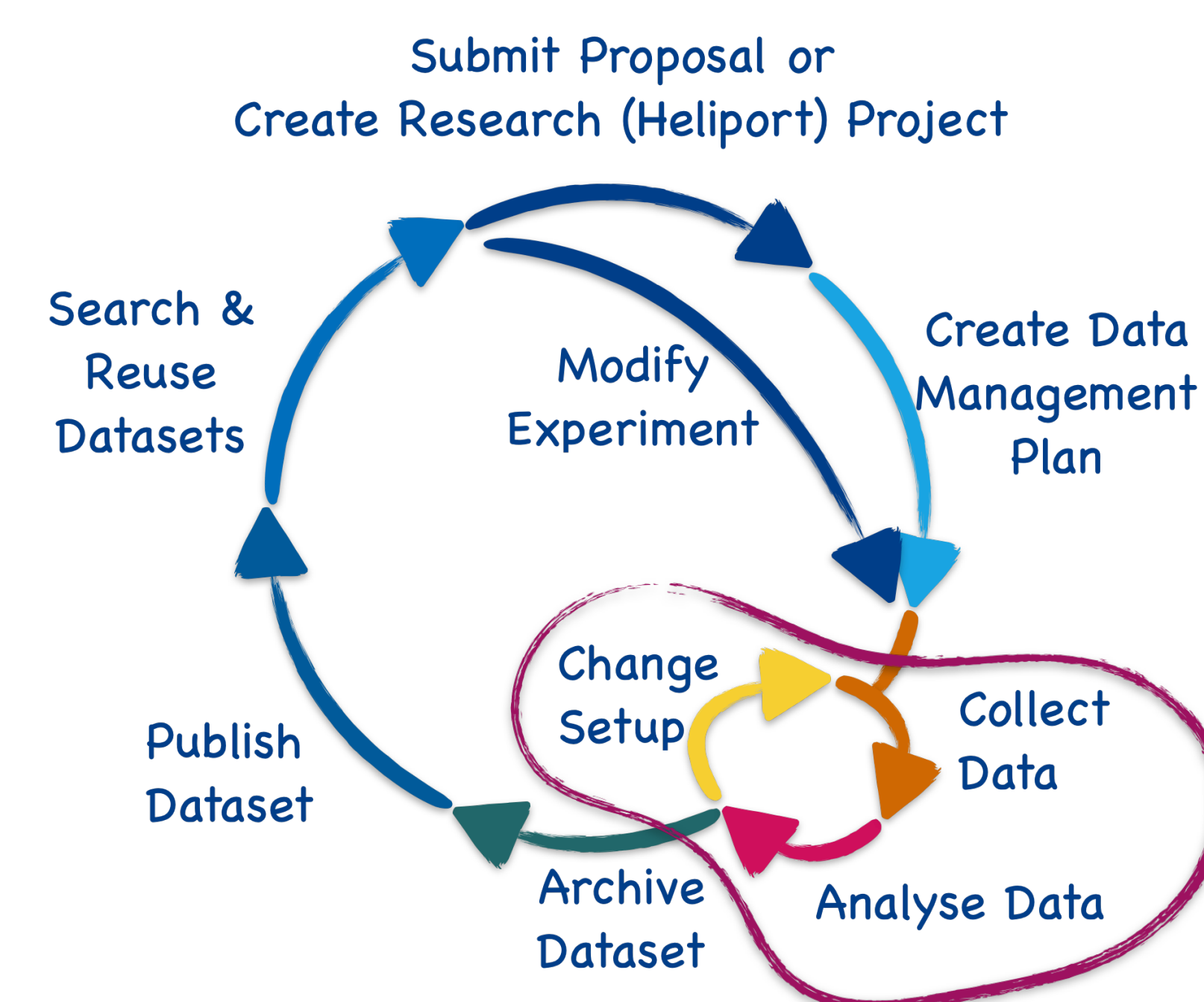
“The HELIPORT project aims at developing a platform which accommodates the **complete life cycle** of a scientific project and links all corresponding programs, systems and workflows to create a more Findable Accessible Interoperable Reusable and comprehensible project description.



Overview Guides Scientists through Project Phases



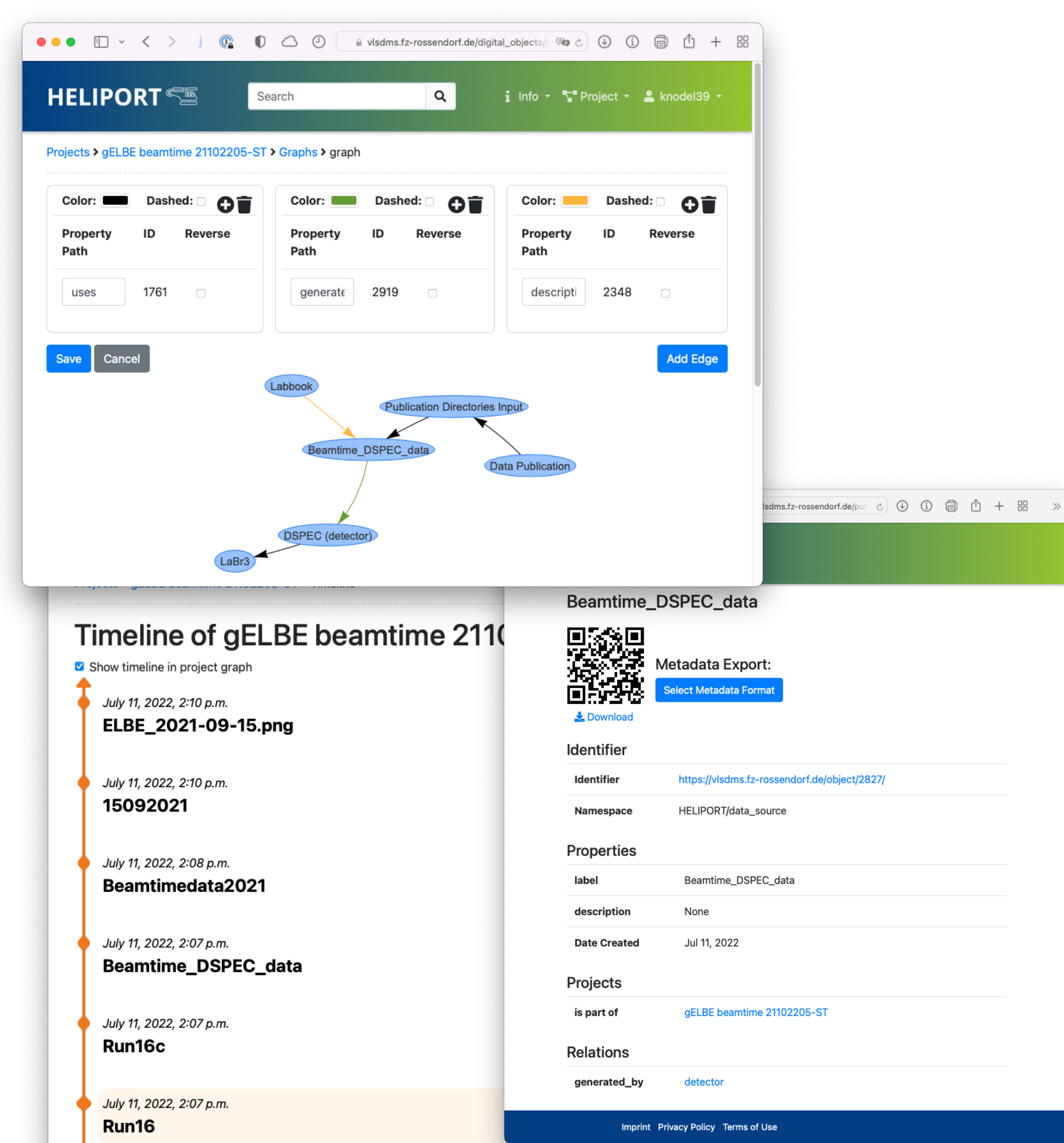
Full Lifecycle Management



- In modern scientific experiments, a wide variety of appropriate software tools is used:
 - electronic lab books,
 - interactive analysis,
 - publication repositories for code and data,
 - scientific workflow management,
 - various databases and storages,
 - and many more.
- Uniform and smooth access to and between all services and systems in the IT ecosystem is necessary to ensure:
 - comprehensibility,
 - machine-actionability and
 - collaborative teamwork.
- HELIPORT is designed to be configurable and adaptable for the IT infrastructure of a research center to offer a holistic view of an experiment.

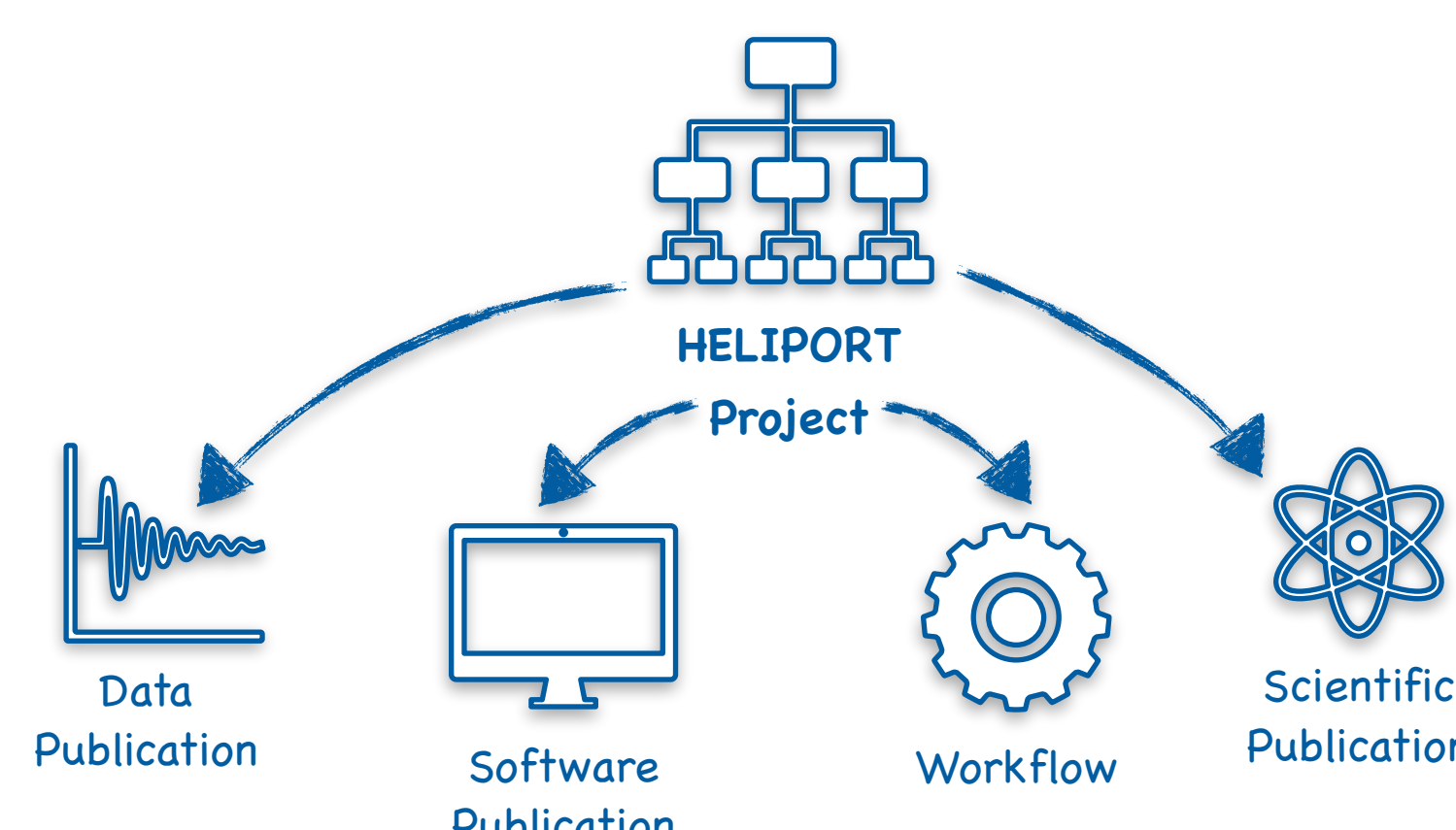
Digital Object and Handles

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- HELIPORT interfaces with local [handle.net](https://handle.hzdr.de/) instances (e.g. handle.hzdr.de) to enable sustainability.
 - Automated generation of uniform, globally unique PIDs for digital objects of all systems, jobs, services, ...
 - With digital objects, object relations and landing pages, HELIPORT improves **Provenance** and **Comprehensibility**.



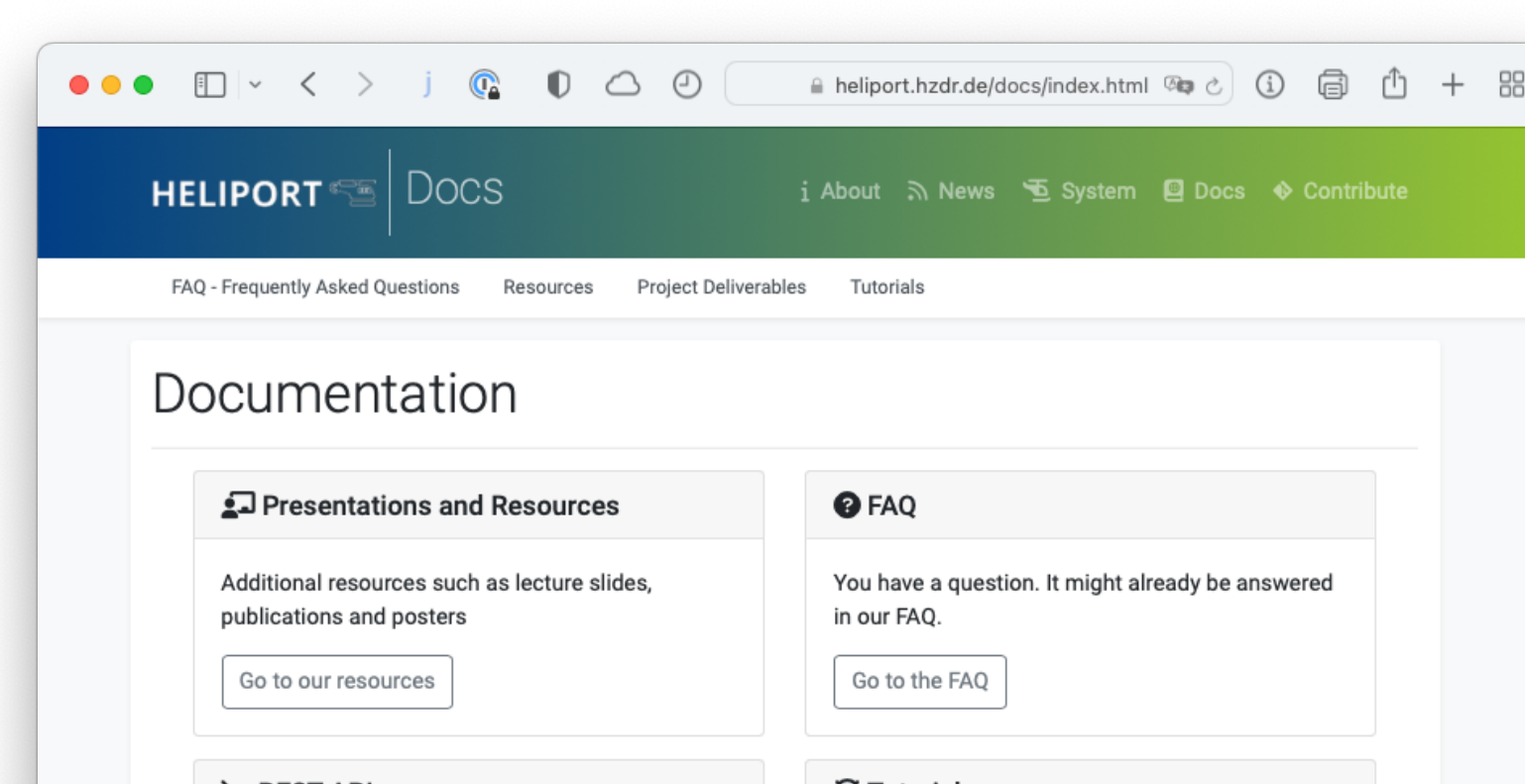
Project Metadata

- In all stages of an experiment, HELIPORT combines information about involved services with PIDs.
- Metadata (stored *near* the PID) is used to transfer information between different systems.
- Metadata export in standardized formats and schemas (DataCite JSON/XML, RDF, JSON-LD, Turtle, ...).
- The project metadata is distributed over all relevant linked systems:



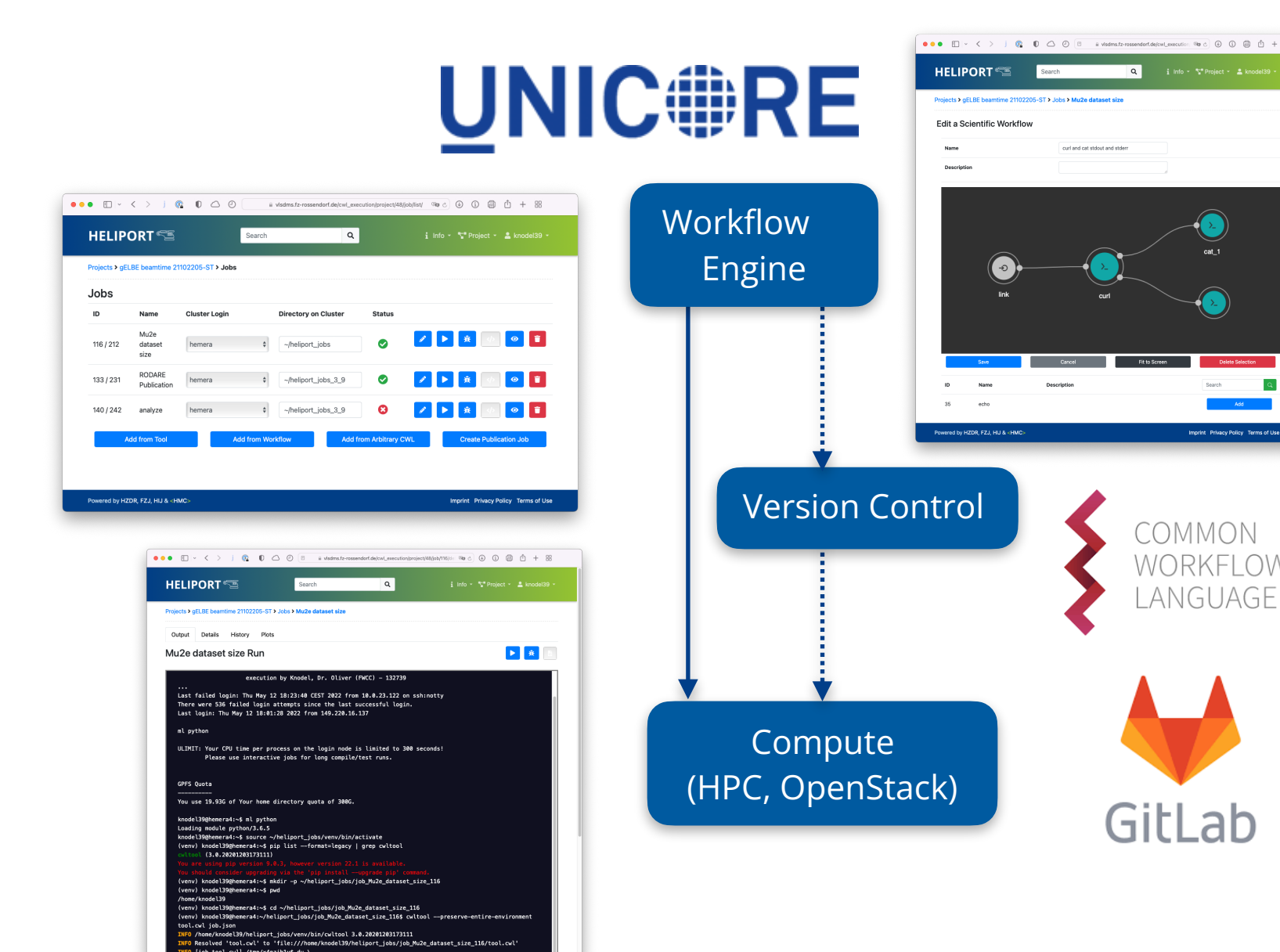
Project Resources

- Public available documents at heliport.hzdr.de including tutorials and presentations.
- Deployment guide of the HELIPORT prototype with UNICORE integration and first system plugins.
- Software and data publications of [prototype](#) and [project metadata](#) for an example project.



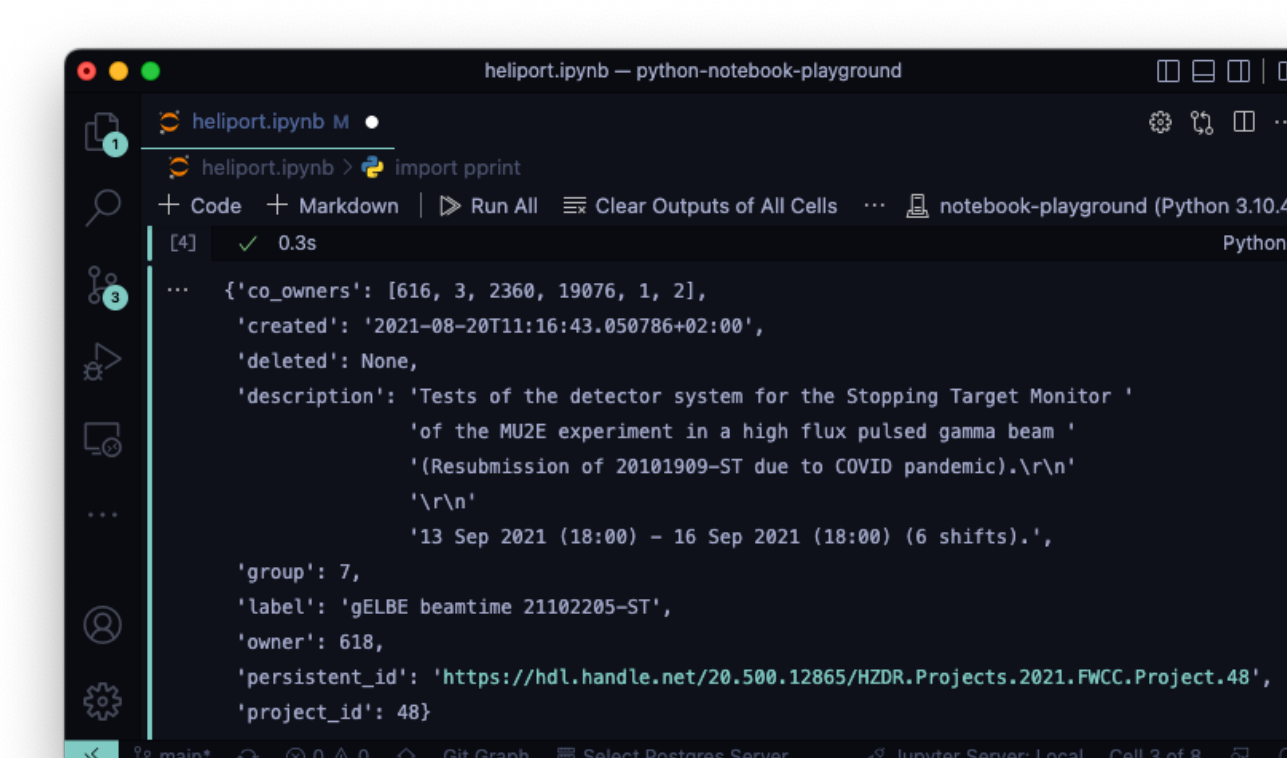
CWL Execution and Monitoring

- HELIPORT's encapsulation of individual steps in a computational workflow follows the FAIR principles and enables reusability.
- Analysis and pre-/post-processing steps can be documented and reproduced.



Programatic Access via API

- The HELIPORT API provides full access to the underlying HELIPORT infrastructure and third-party systems or services.
- An API is essential to use and integrate the HELIPORT infrastructure in experiments:



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