HELIPORT HELmholtz Scientific Project W ORkflow PlaTform — An Integrated **Research Data Lifecycle** heliport@hzdr.de heliport.hzdr.de

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S 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 00 comprehensible project description. \mathcal{O}

Overview Guides Scientists through Project Phases

Full Lifecycle Management

Bernd Schuller

Forschungszentrum Jülich

Submit Proposal or Create Research (Heliport) Project

10.14278/rodare.947

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10.5281/zenodo.7104942





- 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,
 - varius 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



- HELIPORT interfaces with local handle.net 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:



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.



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.

Programatic Access via API

- The HELIPORT API provides full access to the ____ underlying HELIPORT infrastructure and thirdparty systems or services.
- Software and data publications of prototype and project metadata for an example project.

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	>_ REST API	🕲 Tutorial	

— An API is essential to use and integrate the HELIPORT infrastructure in experiments:

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RESEARCH FOR GRAND CHALLENGES