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Towards FAIR digital objects for Heritage science data

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Heritage science is an interdisciplinary field that involves the scientific study of cultural and natural heritage. It entails collecting and producing a wide variety of data, including descriptions of objects and sites, samples, sampling locations, scientific instrumentation, analytical methods, conservation and restoration records, environmental monitoring data, documentation, and digital representations. E-RIHS (European Research Infrastructure for Heritage Science) is a collaborative effort among key players in Europe and beyond, on the verge of becoming an operational European Research Infrastructure Consortium (ERIC). The focus is on cooperation, for which interoperability of processes and the need for FAIR and linked data are indispensable prerequisites.

This presentation will cover ongoing efforts to advance the realisation of digital objects for encapsulating and describing data collected in E-RIHS and may serve as a framework for heritage science data in general. The work was carried out within the scope of IPERION HS, the last of the past projects building towards E-RIHS. The focus is on minimising documentation burden while enhancing interoperability through the creation of reusable, linkable digital objects.

A systematic, bottom-up methodology is employed to break down the entire metadata environment of heritage science into accessible individual digital objects. These objects are semantically consistent and correspond to separate entities that are linked together to form the data flow involved in a research project. The models are meticulously modelled, taking into account all essential metadata associated with them. Existing data and metadata gathered during previous and current E-RIHS-related projects, as well as similar models and standards defined in other research domains, were studied wherever possible.

The Simple Dynamic Modelling tool, developed by the National Gallery, was extensively used to facilitate the development of the models and their visualisation. The models can be found in the E-RIHS organisation on GitHub. They are revised frequently as related models evolve, ensuring efficient linking between the models and avoiding duplication of metadata.

The models are then converted into JSON Schema, which after validation, can be visualized and evaluated using commonly used software libraries that generate web-forms from JSON schema documents. An instance of Cordra, open source software for managing digital objects instance and implementing the Digital Object Interface Protocol (DOIP), was created for E-RIHS to serve as a searchable database and metadata repository for heritage science digital objects. The ultimate goal is to pave the way for a future where information is not only preserved but also effortlessly navigable and actionable within the broader heritage scientific landscape.

Please specify ”other”

In addition, please add 3 to 5 keywords.

Heritage Science, Data Modelling, JSON Schema, Digital Objects

Please specify ”other”

For whom will your contribution be of most interest?

Researchers

Please assign yourself (presenting author) to one of the following groups.

Researchers

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