International FAIR Convergence Symposium

Persistent identifiers for physical aspects of research

The uptake of Persistent Identifiers (PIDs) has increased in recent years and has improved the Findability, Accessibility, Interoperability and Reusability (FAIR) of various research related objects (e.g., data, software, grants, researchers and research organisations). The uptake of PIDs for physical aspects of research (such as samples, artefacts, reagents and analyses instruments) has thus far been embraced primarily for use in the fields of Earth and life Sciences. Wider adoption of PIDs for physical aspects of research can improve the findability and accessibility of these resources, which will allow for data to be put into more detailed context. By using PIDs all the information about a sample or artefact could be more easily available in a single location, allowing for persistent links to other sources of relevant information. Through the use of interoperable (metadata) standards and shared forms of documentation it will be easier to collaborate across multiple disciplines and the reusability resulting data and the physical samples and artefacts themselves will improve. Wider adoption of PIDs for physical aspects of research is challenging, as research communities will have to work together to establish relevant standards that are meaningful across multiple domains. The infrastructure for wider adoption already exists, it is now up to research communities to adopt standards and PIDs for the physical aspects of their research and up to funding and research institutes to support this broader adoption.

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Why?

» One identifier for a sample/instrument rather than unformalised naming conventions
» Findable and Accessible information
» Access to samples facilitates Reuse rather than always starting new sample campaigns
» Credit for sample collection/analysis
» Facilitates having all information available in one location and stimulates Interoperability
» This makes it easier to collaborate and verify results

Challenges

» Each discipline has its own data culture and jargon which complicates the use of shared schemas, registries and controlled vocabularies
» Meaningful core metadata is needed to be applicable across fields, with room for extension needed for disciplinary information
» Research communities need to establish their requirements and infrastructures will have to adjust to accommodate these (see the Sloan Foundation IGSN 2040 Project)

How?

» Increase awareness of existing structures by highlighting the benefits
» Publishers should implement and require PIDs for physical aspects of research
» FAIR physical data should be taken into account in promotion and tenure processes at institutes and in the assessment of research proposals
» Inclusion of physical resources in the definition of data in policies (see Beijing Declaration)
» Provide funding for infrastructures that enable FAIR physical data
» Provide access to physical samples and artefacts
» Formulate user requirements by joining initiatives (such as the Research Data Alliance)

DISSCO Distributed System of Scientific Collections · RAiD · ORCID Connecting research and researchers · RRID · ROR · Crossref Funder Registry · IGSN · RDA Research Data Alliance

» Persistent Identification of Instruments Working Group
» Physical Samples and Collections in the Research Data Ecosystem Interest Group

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