What is the Problem?
When working with research datasets, a common challenge is the information within them is often difficult to identify, contextualize, interpret and use due to the inconsistent approaches in applying related metadata, or metadata schemes. To fully understand the content within datasets, researchers need metadata that clearly describes, explains, and associates the dataset with various other entities.

However, metadata needs vary depending on the data type and the application. This results in the use of numerous metadata schemes and lack of interoperability. With the continued use of custom metadata schemes, and the development of rival, incompatible standards, there are now even more barriers to interoperation.

This challenge can be overcome through the implementation of one set of metadata standards, which would involve the application of the same metadata, and hence data, in multiple contexts and systems.

A collaborative, open directory of metadata standards applicable to scientific data can help address these infrastructural challenges, by allowing researchers to:

- Learn about the various metadata standards applicable to their research;
- Learn about controlled vocabularies used by their community;
- Understand the elements that comprise these standards and vocabularies;
- Map between elements when combining data from different sources.

These standards can only be successful if they are user-friendly, well promoted and widely adopted in target communities.

What were the Goals?
The goals of this group were two-fold:

1. Set up a sustainable, community-driven RDA Metadata Standards Directory, designed for users rather than automated tools, which provides brief details for common research data.
2. Compile a set of use cases that analyze and document the various ways in which metadata can be used (e.g. for discovery, exchange, re-use, etc.).
3. The intention is for this directory is to create the foundation for a future RDA Working Group to develop a machine-understandable catalogue of metadata standards.

---


What is the Solution?
The United Kingdom Digital Curation Centre (DCC) launched a Disciplinary Metadata Standards Catalogue (http://www.dcc.ac.uk/resources/metadata-standards) just before this Working Group started its activity. The DCC’s catalogue was adopted, enriched, and expanded by the Working Group.

The Working Group developed a functional prototype directory (http://rd-alliance.github.io/metadata-directory/), based around the GitHub infrastructure, that places the information from the DCC directory into an environment where it can be maintained transparently and with full version control.

Metadata use cases were also collected from Working Group members using a standard template and ultimately included in the set of use cases compiled by the RDA Metadata Interest Group.

What is the Impact?
The RDA Metadata Standards Directory has many benefits for the community:

- By guiding researchers towards the metadata standards and tools relevant to their discipline, the directory drives up adoption of those standards, improving the chances of future researchers finding, accessing, and reusing the associated data.
- By raising awareness of existing standards, the directory reduces the proliferation of ad hoc metadata formats and helps direct future standards development efforts towards those areas that most need it.
- If a topical standard is not available, the directory allows researchers to look beyond their subject boundaries for standards that are a close fit for their work.
- By raising awareness of standards among tool developers, the directory can help improve technical support for those standards.

The human-readable directory is also the first step towards a machine-understandable catalogue, which would have a significant impact on the ability of researchers and service providers to migrate metadata automatically between systems. Through this automation, services would be allowed to bring together specific data based on smart metadata selection, thereby breaking down barriers in research and opening up new possibilities for startup companies and entrepreneurs.

When Can We Use This?
As demonstrated by our first successful pilots, this approach can be applied right now.

What is the RDA?
The DCC directory has been available for use since May 2012. RDA’s prototype directory is fully functional, open to the community, and actively monitored so that contributions are fed back to the DCC version and vice versa.

For more information on the usage of this metadata standards directory, please consult the online documentation (http://rd-alliance.github.io/metadata-directory/) on GitHub or a recent article on this work.

What is the RDA?
The RDA is an international organization that was formed in 2013 through funding from the National Science Foundation, the European Commission and the Australian government, with a mission to reduce barriers to data sharing and exchange, and accelerate data driven innovation worldwide.

---