

ANDS Discovery Services and the Australian Research Data Commons

Who needs to know this?

This is a general introduction that is likely to be of interest to all users of ANDS, including researchers, their support staff, data centre and repository staff and the general public.

ANDS' Vision

ANDS has as its vision 'more researchers reusing more data more often'. There are many reasons why the sharing and re-use of data can contribute to the effectiveness of research in all disciplines:

- So that research results can be verified.
- Many of the world's biggest problems are multi-disciplinary and so can benefit from drawing data from different fields. Examples of these include issues to do with climate, water, health and energy.
- Once data is lost or destroyed it is gone forever. However, if kept, old data can contribute to new research, enabling fresh discoveries and supplementing other information.
- Some data cannot be duplicated because it relates to a particular time or event, or was difficult or expensive to collect.
- Time series can be created.
- Duplication of effort can be avoided.
- The *Australian Code for the Responsible Conduct of Research*, to which all Australian universities are signatories, states that 'Research data should be made available for use by other researchers unless this is prevented by ethical, privacy or confidentiality matters.' (Section 2.5.2)

For this to occur, people need to be able to discover the existence of data, assess its relevance for them, gain access to it, and be able to effectively reuse it.

The Australian Research Data Commons

In order to make this possible, ANDS is building the Australian Research Data Commons (ARDC). The term 'commons' traditionally refers to resources that are made available for community use. ANDS is creating a digital realisation of this concept for research data to enable greater data sharing and re-use. This will bring information about Australian research data together and place it in context. It will connect the data produced by research, as well as data needed to undertake research.

The Australian Research Data Commons is a combination of the set of shareable Australian research collections, the descriptions of those collections including the information required to support their re-use, the relationships between the various elements involved (the data, the researchers who produced it, the instruments that collected it and the institutions where they work), and the infrastructure needed to enable, populate and support the commons.

ANDS does not hold the actual data, but points to the location where the data can be accessed



Discovery

This combined information can then be used to help people discover data in context. The intention is for the ARDC to be searched, viewed and accessed in a number of ways.

The first discovery service to be delivered will leverage the power of web search engines, rather than try to be an alternative. Users will not need to change their current information seeking behaviour. Instead, ANDS will build a set of interlinked web pages and make them available for harvesting by web search engines at Research Data Australia (<http://services.ands.org.au/home/orca/rda/>). The intention is that users will discover these ANDS generated pages as part of their normal searching. Each page will provide links to relevant context to assist the users to assess the relevance of what they have discovered, and information about how gain access to the underlying data. These ANDS generated pages will become progressively more numerous and more richly interconnected over time.

It is important to note that ANDS will also not try to replace existing discipline discovery services. Instead, ANDS will seek to complement them by providing links from the data pages to these more specific discovery interfaces, and by describing discipline portals so they can also be discovered and interconnected. This will enable users to move easily to the discipline discovery services and pose detailed and advanced questions according to the requirements of their discipline and the nature of the underlying data.

Examples of such discipline discovery services are the IMOS portal at <http://imos.aodn.org.au/webportal/> and the AuScope portal at <http://portal.auscope.org/gmap.html>

Other ways to access the ARDC will be added over time, including spatial discovery services (“show me all the data available for a particular region”).

Supporting the Australian Research Data Commons

In addition to developing *Research Data Australia*, ANDS has identified elements that together will contribute to making the Australian Research Data Commons a reality. These will provide a focus for ANDS activities. Realisation of the Australian Research Data Commons will depend on:

- Sound legal, policy and regulatory frameworks,
- National services that enable research data to be published and discovered, and provide recognition for doing so: these include the ability to register data collections, collect information about collections, link the collections with people, instruments, institutions and other entities, provide persistent identifiers and publish web pages,
- National services that support and enable the exploitation of the data in the Australian Research Data Commons: examples of these include support for the annotation of electronic documents or data sets, and a means of aiding the authoritative identification of researchers,
- A concentrated effort on expediting the development of the data commons by identifying and targeting likely sources, including institutional repositories,
- Mechanisms to support automated data capture of collection metadata from high research data intensity instrumentation, such as the Australian Synchrotron and gene sequencing or astronomical instruments,
- The development of metadata stores to enable institutional level metadata management and the linking with people, instruments, institutions and other entities,
- Enhanced access to public data, which is often of great interest to researchers but may be difficult to access: examples include data from geological surveys or meteorological data,
- Improving the level of capability to support research data management and access.

For further information:

Towards the Australian Data Commons.

<http://www.pfc.org.au/pub/Main/Data/TowardstheAustralianDataCommons.pdf>



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The ANDS Guide to *Research Data Australia*. <http://ands.org.au/guides/research-data-australia.html>

Research Data Australia: <http://services.ands.org.au/>



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