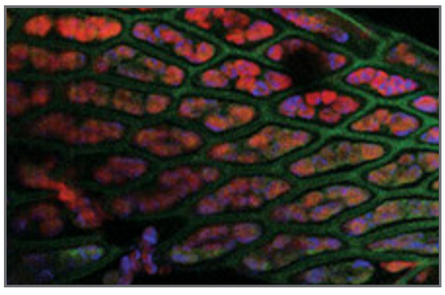
INTERSECT

AMMRF Project

Platforms for collaboration

The Platforms for Collaboration Project at AMMRF addresses data management needs for the data-intensive imaging community and provides a tool for AMMRF users to access services.



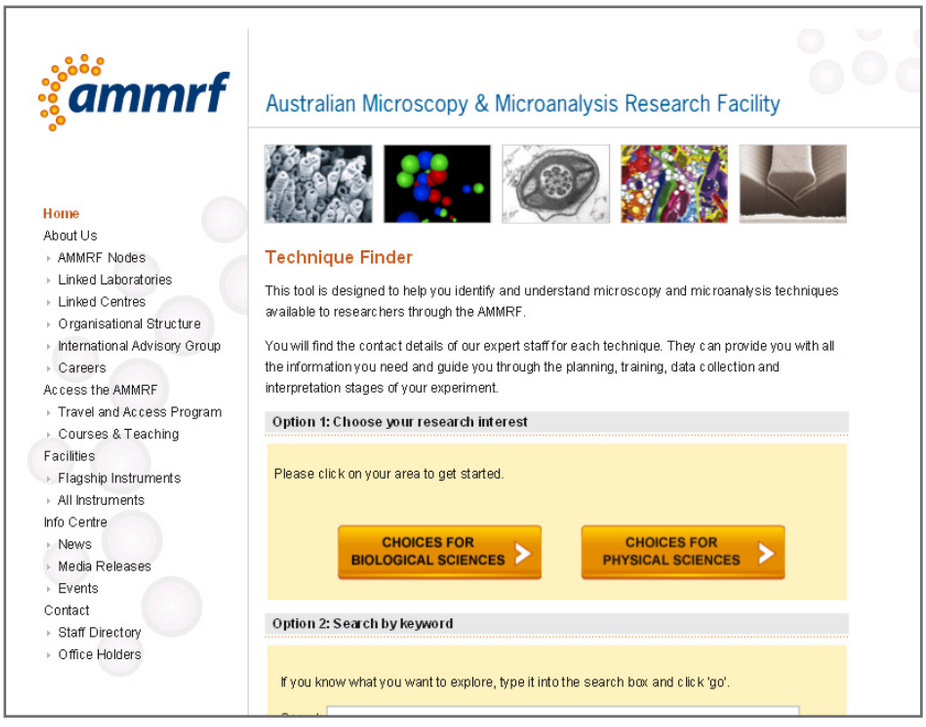
The Australian Microscopy and Microanalysis Research Facility (AMMRF) is a national grid of Australian university-based microscopy and microanalysis centres. It operates a facility formed by six core nodes with links to smaller units.

AMMRF identified the need for an improved online tool for researchers to identify the AMMRF services they need.

The users of the AMMRF also need to easily and reliably transfer experimental data from the facility to remote data storage or data repositories, while automating capture and storage of associated metadata, and be able to publish or share data with colleagues.

To meet these needs, the AMMRF-PFC project delivered:

- a web based Technique Finder (TF) that enables users to find the most appropriate technique to assist their research and obtain access information.
- a Data Management System (DMS) that supports data and metadata capture (with associated metadata catalogue) from instruments, data transfer between nodes and to federated data repositories.



"The AMMRF offers a complete user experience involving the stages of project registration, planning and training followed by data gathering, analysis, management and publication. Intersect is enabling improvement of the user experience through the development of tools that enable researchers to identify and apply the appropriate technology quickly, and manage the storage and use of large data sets."

Professor Simon Ringer
Executive Director AMMRF

The Technique Finder

The Technique Finder (TF) is a web application that enables prospective AMMRF users to identify the techniques most suited to their research, based on a researcher-centric approach and terminology as opposed to instrument oriented jargon. Specifically, it offers two areas, one for biological scientists and another for researchers in physical sciences, which allow them to identify techniques based on research dimensions in corresponding fields.

In addition, it offers a term search based on a comprehensive term index created for each technique including all the directly and indirectly linked information available in the application. The techniques themselves display a full description with sample examples, key reviews, case studies and links. Locations and contact details to each of the AMMRF nodes invite users to get started immediately.

From a eResearch perspective, the TF is an example of an IT development that lowers barriers to research infrastructure. It does that by:

- using a consistent and easy to use web interface;
- adhering to a researcher-based language instead of instrument specifications;
- providing two complementary search functions: one based on a high level view of research approaches, and one based on the ubiquitous keyword Internet search;
- an administration interface that allows AMMRF staff to customise several key aspects of the way techniques are searched and displayed.

The underlying technology used, Grails, enables a prototyping to production continuum in the development of the product that allows key AMMRF staff to provide input as the product is developed.

The Data Management System

The Data Management System (DMS) addresses the needs of an increasing number of AMMRF users who are using high-end instruments to produce large datasets. Those users are facing the demands of a new wave of data intensive instruments and software.

The DMS offers several key features:

- it is web-based and offers a uniform user interface to access remote or local data and metadata resources, effectively leveraging the web as Software as a Service platform for data management;
- it offers basic protocol interfaces enabling ftp, local and cifs/smb access, allowing AMMRF users to leverage common storage infrastructure;
- it is scalable, so it can be deployed in a single or multi-server setup;
- it is firewall friendly, enabling data access to resources in private sub-networks without compromising security;
- it optimises band-width by allowing on-line harvesting, that is, it performs simultaneous data copy and metadata extraction without having to read the source twice;
- it leverages existing information systems to incorporate metadata from external sources;
- it scores a pluggable schema API, so researchers can choose metadata elements they are interested in storing, displaying, indexing and searching;
- it comes with native support for ANDS' RIF-CS schema and metadata publishing to ANDS' Research Data Australia;

AMMRF supports over 3,000 users per year, and although just a small percentage currently use high throughput instruments, it is expected that the DMS user base will grow considerably over time. An extension project is underway to include three more instruments as the platform extends.

This project is funded by the National eResearch Architecture Taskforce.

Reusability: Moderate

applicable across many domains where locating experts is an issue

Project Details
Start Date: March 2010
Client(s): USYD, UNSW, AMMRF, NeAT (ANDS, ARCS)
Technologies used: Grails and Spring frameworks, Groovy and Java, JQuery-UI.
Link: www.ammrf.org.au/techniquefinder

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