



Australian Government

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Super Science (Future Industries) – Research Network funding

In the 2009-2010 Budget, the Government announced the allocation of \$37 million to extend and upgrade the Australian Research and Education Network (AREN) to meet growing research needs. The funds were provided under the Super Science initiative which provides \$906.9 million over 5 years to support a range of projects to strengthen Australia's research infrastructure.

The Australian Research and Education Network (AREN) forms the networking backbone of Australian research collaboration infrastructure. The AREN is based around AARNet's access to fibre and Indefeasible Rights to Use (IRUs) which have been financed in part by the Commonwealth under previous programs.

The *Strategic Roadmap for Australian Research Infrastructure*, developed during 2008, outlined several development objectives for the AREN (See Attachment 1).

Consistent with these objectives, the Commonwealth has allocated a further \$37 million to support an extension of the AREN over the next three years to include some of the following capabilities as foreshadowed in the NCRIS Roadmap:

- (a) A high bandwidth 'data channel' between all data intensive research facilities;
- (b) A very high capacity link between national HPC sites including the Pawsey Centre, VLSCI, and the three NCI investments including the NCI National Facility;
- (c) Extension of the AREN to non Higher Education or PFRA research sites with a focus on national collaborative infrastructure, such as ABIN, TERN, AuScope and disciplines such as climate and life sciences;
- (d) A national collaboration network including production and experimental capabilities.
- (e) Enhanced connectivity between Australian research centres and similar overseas centres

The current extent and location of demand for these capabilities can best be ascertained from direct discussion with a broad set of sector participants. To facilitate this process, Mr Steve Black has been engaged as a consultant. Mr Black has extensive experience in telecommunications network planning and development, including senior strategic roles in Telstra, AAPT Corporate and UE Telecommunications, and extensive executive and board level experience in government investment activities, including as Deputy Director General, Victorian Ministry of Finance. Steve also is familiar with eResearch issues from his involvement with the Victorian eResearch Strategic Initiative (VeRSI). We propose that he meet with you either directly or in conjunction with other research interests to identify and document your high priority research requirements from the AREN.

This Project aims to provide the Commonwealth, particularly the Department of Innovation, Industry, Science and Research, with a consolidated report on:

- The overall demand for the extension of AREN, including capacity and location;
- The supply options that exist to deliver against that demand including an estimated aggregate cost; and
- A set of recommendations based around the Department's priorities in light of likely network developments over the next 5 years and the urgency of the various requirements.

The reports from the project will provide the basis for further discussion with AARNet and others.

As you would be aware the development of the National Broadband Network may provide opportunities to synergistically meet research network development needs but will also introduce some uncertainties into network investment at this time. In general, the capability to be delivered by the NBN is out of scope for consideration under the Super Science funding. Internal institutional network enhancement to improve general academic desk-to-desk and desk-to-world connectivity is also out of scope.

The proposed schedule to be completed by Mr Black by the end of March includes the following:

- Interviews with major national research collaboration capabilities, including those supported through NCRIS and the Super Science budget measures; climate and bioscience research centres and HASS related institutions and collaborations.
- Interviews with major eResearch resource providers, especially including data sources such as the synchrotron and ASKAP, capability HPC centres, and prospective research data centres.
- Workshops held on a regional basis to review and consolidate regional requirements and with CAUDIT on a national basis.
- Interviews with institutions including the research intensive universities,

CSIRO, Bureau of Meteorology, Geoscience Australia, the Australian Archives, the Australian Bureau of Statistics and other research data intensive institutions.

- Reviews and discussions with AARNet and the regional network operators.

Meetings will be planned for February and March and your assistance in making time available during this busy period would be appreciated. Your requirements will be gathered through group workshops as well as direct interviews as outlined above. There will also be an opportunity for you to submit written material to support your requirements.

Identification of the considered views of your organisation and research community on high priority requirements that can be met from the extension of AREN infrastructure is an important element in the development of the national research infrastructure, and is vital to the achievement of the objectives from this important Budget allocation.

You will be contacted shortly as the detailed schedule of meetings is prepared, to arrange a time and venue for meeting. Steve is contactable by email: steveblack48@primusonline.com.au or phone: 0414 777 858.

If you have any questions or suggestions regarding this project, please contact the Manager, eResearch in the Research Infrastructure Branch, Ms Clare McLaughlin, by email: clare.mclaughlin@innovation.gov.au or phone: 02 6213 6375.

Yours sincerely

Anne-Marie Lansdown
Head of Division
Science and Infrastructure Division

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Attachment 1

The following text has been extracted from the NCRIS Roadmap.

See https://www.pfc.org.au/pub/Main/WebHome/Strategic_Roadmap_Aug_2008.pdf, page 22.

High Capacity Communication Networks: to enable effective research and research collaboration by connecting research organisations, research activities and researchers. Future development will build on the investment in the Australian Research and Education Network (AREN), managed by AARNet Pty Ltd, that provides a high-speed core network between capital cities, interconnecting Australian universities, some research institutions, and regional and international research networks.

Future strategic development of the AREN should focus on:

- The continued extension of the reach and capacity of the underlying national backbone;
- Provision of ad-hoc dedicated circuits configured on demand to support advanced experiments, computing grids and machine-to-machine interactions;
- Extension of the AREN to government researchers and for research access to resources that governments hold and agree to share for research use;
- Enhanced network capacity to international research organisations;
- An enhancement strategy to improve network performance ahead of, rather than in response to, needs. This would be aided by a national coordination and investment management process that is independent of specific providers but takes account of research sector, state and territory government and overall provider interests; and
- A strategic design activity to scope and align investments in backbone, regional and institutional network capabilities and to more fully develop the demand for advanced research network services in preparation for significant additional investment.