



The Australian Research and Education Network (AREN): *its critical role in Australia's e-Research Infrastructure Strategy*

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The Talk will:

- outline policy context of initiatives associated with the Government's agenda for strengthening Australian research capacity;
- focus on e-Research Infrastructure



The Policy Context

- The Australian Government's goal is to build a world-class innovation system.
- This ambitious agenda depends on **effective partnerships** between governments at all levels, researchers and business
 - to share the substantial financial investment necessary; and
 - to ensure that ideas move smoothly from generation to end use.



Key Policy Priorities

- **Better collaboration and co-ordination**
 - collaboration within the Australian research community and between it and the global research community;
 - providing a solid infrastructure to enable them to reach out to each other anytime and anywhere



Strategic Investments through

Backing Australia's Ability (BAA) Initiatives

Building Our Future through Science and Innovation



An Australian Government Initiative

Backing Australia's Ability

Building Our Future through Science and Innovation

<http://backingaus.innovation.gov.au/>





Three themes

- **Backing Research**
(http://backingaus.innovation.gov.au/back_res2004.htm);
- **Backing Commercialisation**
(http://backingaus.innovation.gov.au/back_com2004.htm); and
- **Backing Skills**
(http://backingaus.innovation.gov.au/back_skills2004.htm).



The importance of infrastructure

- **National Collaborative Research Infrastructure Strategy (NCRIS)**
 - \$542 million over 2004-05 to 2010-11
 - Provide access to major infrastructure
 - Foster greater research collaboration and the collaborative use of infrastructure



Importance of e-infrastructure

- High end research increasingly does not happen if the appropriate electronic infrastructure is not in place
- The Government has accepted this reality
 - a key objective of the NCRIS will be to build a world class electronic infrastructure for research
 - see http://www.dest.gov.au/highered/ri_taskforce/documents/pub.pdf, page 28



Requirements for e-Research Infrastructure

- Advanced broadband network infrastructure
- Distributed high performance computing
- Accessible data and information repositories
- Accessible research facilities and instruments
- agreed ICT standards and coordinated middleware development.



Strategic Investments in e-Research Infrastructure

- \$120 million over 2003-06 for world class infrastructure in super-computing and high-speed communications
- NCRIS provides the funding base for ongoing investment in this key element of research infrastructure from 2006-07 to 2010-11



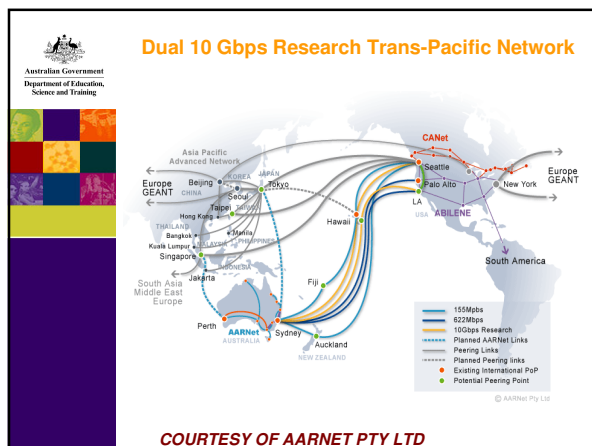
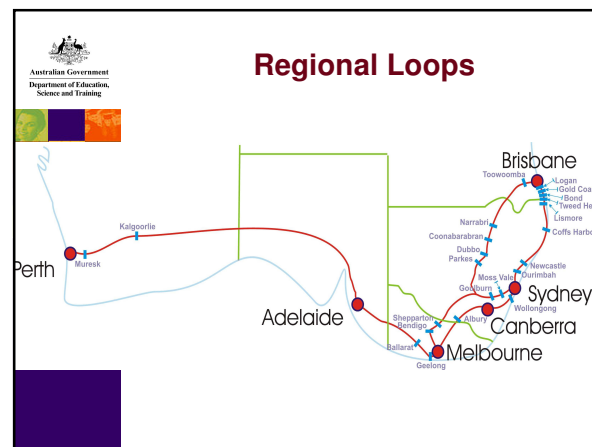
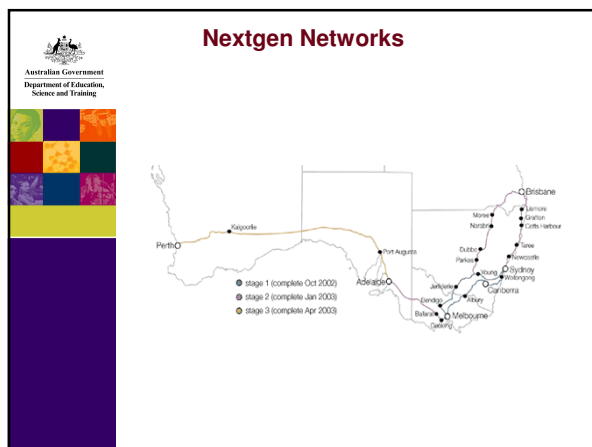
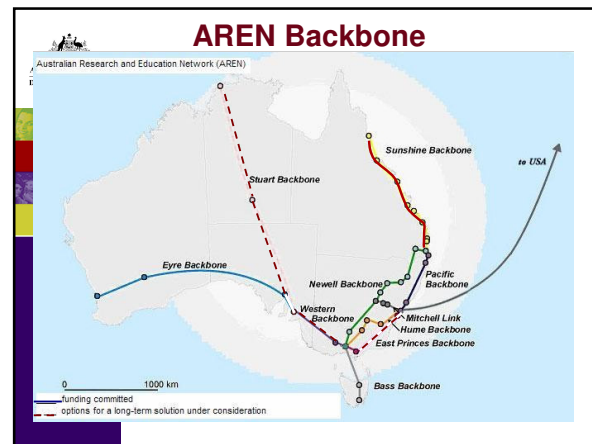
Securing e-Research Infrastructure

- The Australian Research and Education Network (AREN)
- The Australian Partnership for Advanced Computing (APAC)
- The Australian Research Information Infrastructure Committee (ARIIC) and
- Collaboration in middleware development



Australian Research and Education Network (AREN)

- Provides a high bandwidth communications network to enable researchers to access remote instruments and data repositories and opportunities for collaborative research.
- \$69 million provided to date for:
 - a *multiple gigabit fibre network* connecting all Australian universities and major research facilities;
 - the *NextGen network*; and
 - dual 10 Gbps fibre trans-Pacific network* connections to the US.





AREN and its role

- A solid infrastructure to enable collaboration within the Australian research community and between it and the global research community
- Conduit to the world, placing researchers and students within reach of the top research facilities and repositories around the world

High Performance Computing

- In April 2004, the Government announced \$29m in new funding for the Australian Partnership for Advanced Computing (APAC)
- APAC is a collaboration between organisations from every Australian State and the ACT, the majority of Australian universities and the CSIRO
- A major focus of APAC will be in the Grid Computing area

Access to information

- Researchers need information to carry out their research
- This includes everything from raw data organised in research data sets
 - through to highly processed information in the form of scholarly articles
 - and everything in between

Australian Research Information Infrastructure Committee

- Provides advice on ways to improve information access and data sharing
 - A priority for ARIIC is the creation of a coherent approach to the development of institutional data and information repositories, including issues such as standards, authentication and interoperability
 - \$22m committed over 2003-2006

ARIIC Projects

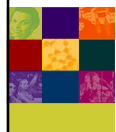
- Meta Access Management System, *Macquarie University*;
- Towards an Australian Partnership for Sustainable Repositories, *Australian National University*;
- The Australian Research Repositories Online to the World (ARROW), *Monash University*; and
- Australian Digital Thesis Program Expansion and Redevelopment, *University of New South Wales*.

Collaborative Middleware Development

- Encourage collaborative and coordinated development and use of middleware within Australia
- Promote collaboration with overseas partners
- The Australian Government is keen to play a helpful role, while recognising the actual work will be done by others

Connections between e-research and e-learning

- We have an overall objective to facilitate the development of standard community tools and services for knowledge management, knowledge sharing, collaboration and interoperability
- The same issues arise in the e-learning area
- We are keen to facilitate conversations across the boundaries



Conclusions

- The Australian Government accepts that building a high quality electronic infrastructure for research is essential
- We also agree that e-research is itself an important area for research projects
- We welcome the recent initiatives in the ARC in this area
- We look forward to working with key Australian and International experts and agencies to further this agenda



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<http://www.dest.gov.au/>

<http://backingaus.innovation.gov.au/default2004.htm>