



# Middleware Action Plan & Strategy for Australia

21st APAN meeting, January 2006

[James.Sankar@aarnet.edu.au](mailto:James.Sankar@aarnet.edu.au)

Project Leader – Applications & Services

AARNet

## About this talk

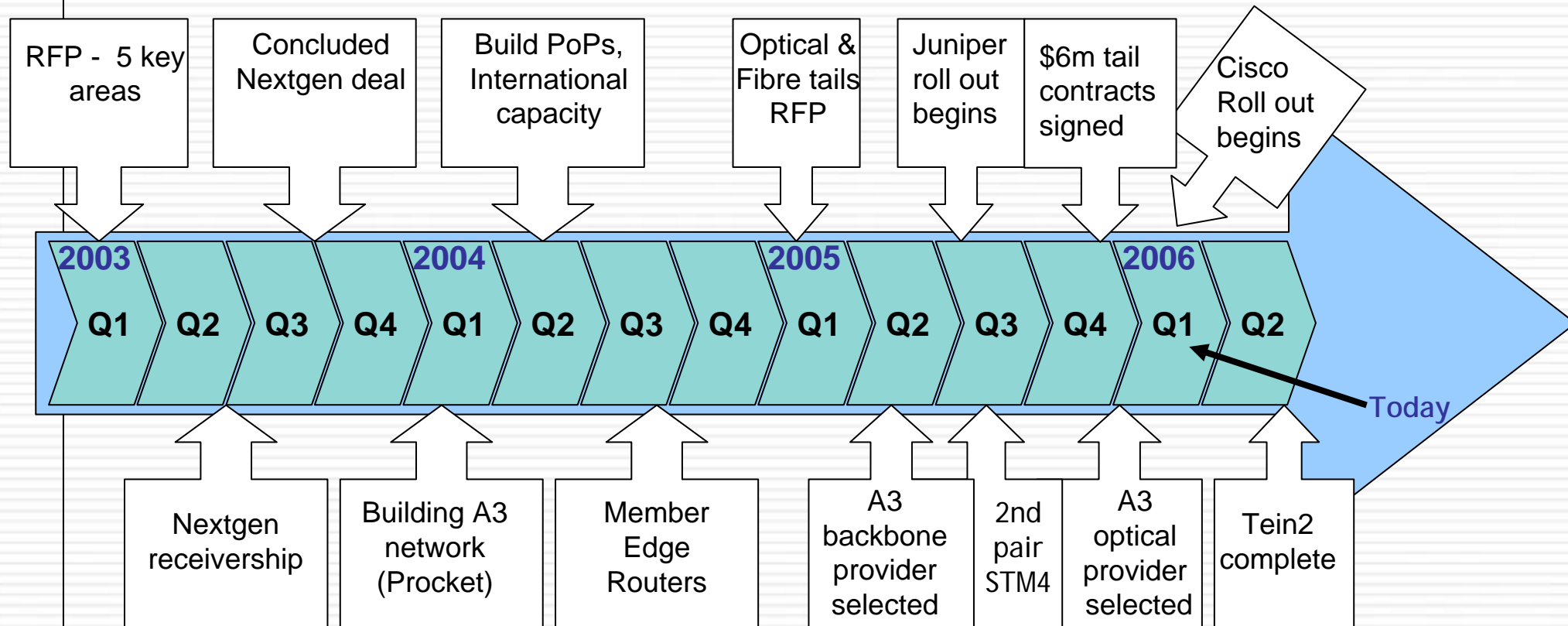
- AARNet update
  - AARNet 3 update
  - AARNet work plan 2006
- Middleware update
  - Middleware Action Plan update
  - Middleware Action Plan & Strategy (MAPS) 05/06



# AARNet Update

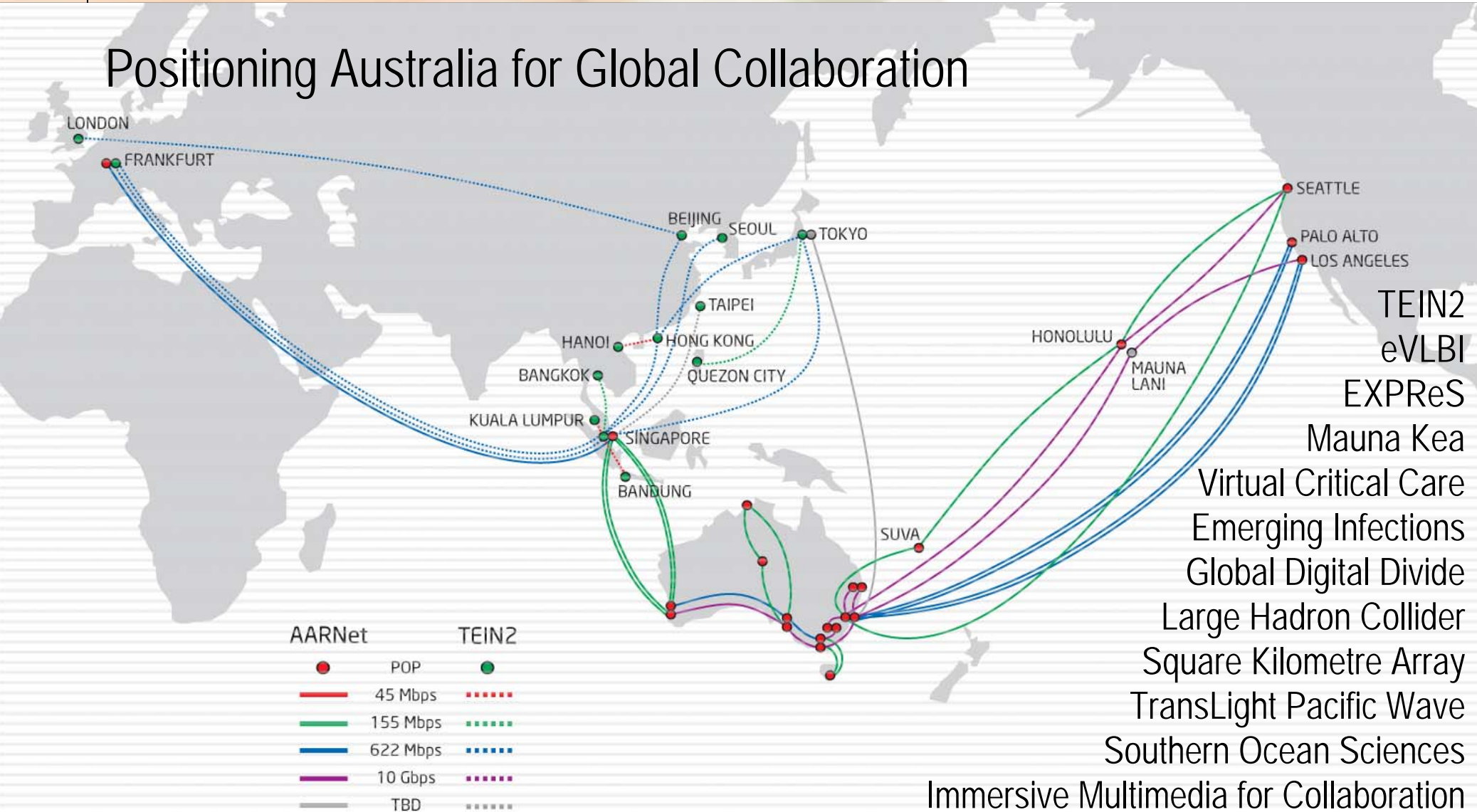
# AARNet3: The Network Goes Live

**AARNet 3 national & international backbone fully rolled out and redundant on schedule for Q1 2006**



# AARNet and TEIN2 combined reach

## Positioning Australia for Global Collaboration



# AARNET work plan 2006 (beyond the network)

- To complete the AARNet 3 roll out.
- To connect and extend network access to rural areas.
- To participate in national and regional activities and develop a range of applications and services that use the network.
  - Engage with education community and their end users
  - Engage with the research community and their end users – e.g. Astronomers, Physicists etc
- To develop international links and actively participate in international projects.



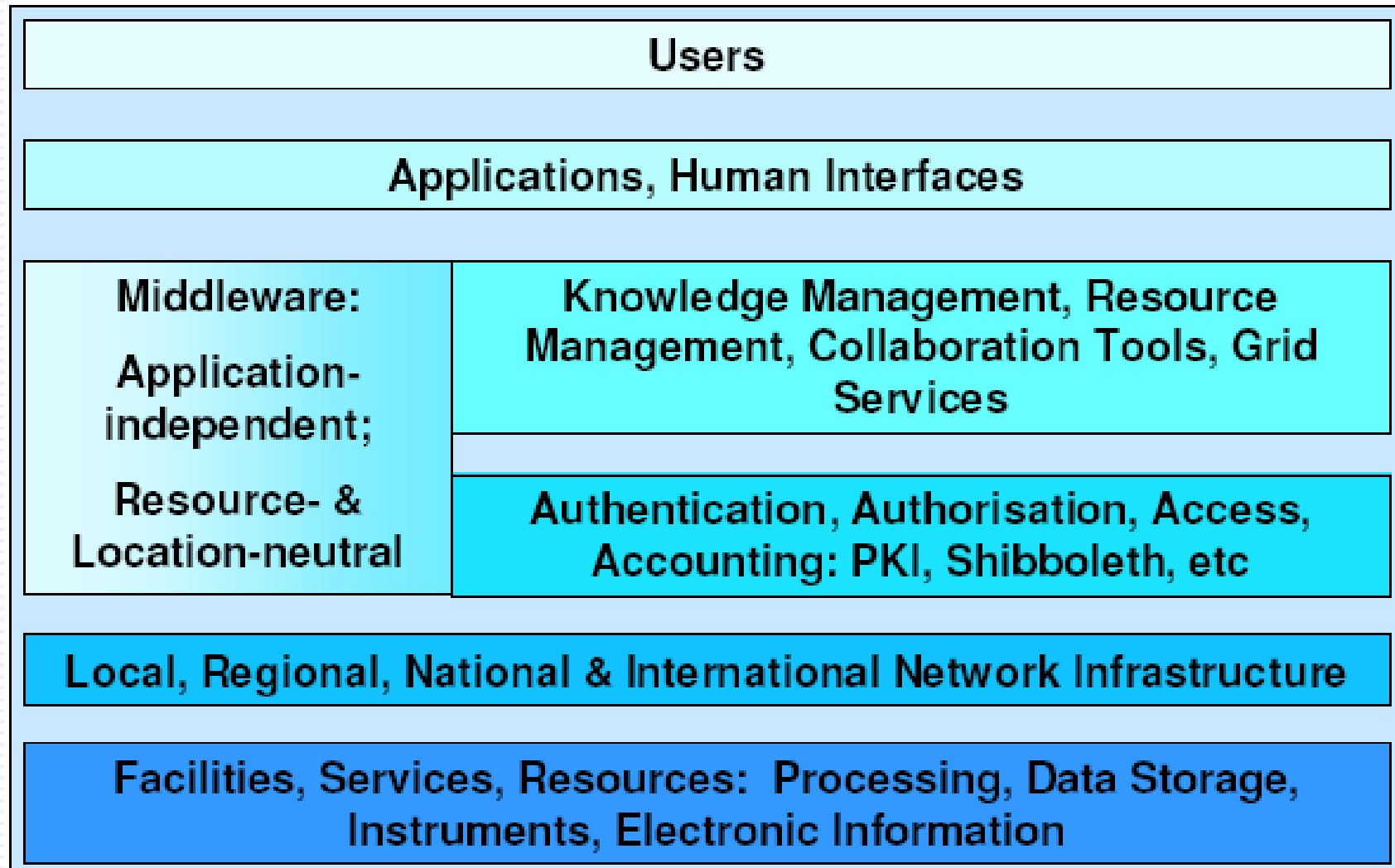
# Middleware Update







# Middleware

- Connecting people to resources
  - Understanding user/communities issues/needs to develop solutions;
  - Leveraging investments made in single sign on technologies;
  - Aggregating deals with content providers for more securer finer grained access controls to more content for more end users.
- Connecting applications to the network
  - Communities to develop applications for their specific needs;
  - Applications developed to “plug” into a middleware layer.
- Pervasive, ubiquitous computing (anytime, anyplace, anywhere)
  - Access via the Internet (24x7x365) to a PC, laptop, mobile phone....

# Where is Middleware?



# AARNet middleware activities

	<ul style="list-style-type: none"> <li>• Developing a middleware framework/focus for apps/services dev.</li> </ul>
	<ul style="list-style-type: none"> <li>• Rolling out eduroam to AARNet offices and staff &amp; participation with GrangeNet on eduroam deployments (tech/policy) internationally.</li> </ul>
	<ul style="list-style-type: none"> <li>• Support &amp; participation in the Australian test bed federation.</li> <li>• Enhance Shibboleth IDP for AARNet staff (user attributes etc.)</li> <li>• Shibbolise access to content services (RETAIN, ResearchChannel, ENUM, SMS services, internal APL services (e.g. MS Exchange)).</li> </ul>
	<ul style="list-style-type: none"> <li>• Further development AARNet's middleware website to generate awareness and assist in MAPS activities.</li> <li>• Participate with APAN on middleware initiatives.</li> </ul>

# Middleware Action Plan – update 1

Action items	Current status
1) Undertake an environmental scan of Australian middleware strengths and global gaps to enable the development of a coherent and appropriate strategy.	In progress (MAPS)
2) Establish a single PKI Certification Authority for the whole education and research community in Australia, and implement mutual recognition with peer R&E CAs internationally.	In progress (CAUDIT PKI Project) – this will specifically comply with the APAN PMA
3) Establish a sound basis for federated security systems in Australia that will scale to international federations.	In progress (MAPS)
4) Establish appropriate mechanisms to coordinate all R&E Middleware initiatives in Australia;	In progress (MAPS)
5) Agree to investigate adopting Shibboleth as the primary federated security technology for use within the R&E sector in Australia	Australian Shibboleth test bed federation

# Middleware Action Plan – update 2

Action items	Current status
6) Establish and sustain strong connections with Australian initiatives/entities	In progress (MAPS)
7) Establish and strengthen links with similar programmes of work in other countries, (Internet2/NSF National Middleware Initiative, UK's JISC Core Middleware and e-Science Core Programmes).	CAUDIT undertook a study tour in 2005 to the USA & UK. AARNet has also been active with APAN/UK/USA peers
8) Promote the swift implementation of enterprise directory services at all Australian education and research institutions	Identity & Access Mgt survey completed, MAMS workshops completed
9) Develop strong visibility for and marketing of the Middleware agenda in Australia	In progress (MAPS)



# Middleware Action Plan & Strategy

# MAPS - Middleware Action Plan & Strategy

- A consortia of stakeholders from Research, Education and Government sectors.



**CAUDIT**



an initiative of

**Backing**

**Australia's**

**Ability**

The Australian Government's  
Commitment to Innovation



Australian Government  
Department of Education,  
Science and Training



MONASH University

# Key objectives

- To identify and remove current or potential barriers (common/unique) to advancing research and education objectives based on current and scalable, secure, easy to deploy, maintainable and are reusable middleware.
- To provide an overall middleware framework that encompasses both Researchers/Grid users and Higher Education needs
- To agree what middleware to deploy, and what further R&D to undertake within Australia.
- To advance the progress of delivering a more inclusive, supportive, dynamic and flexible environment that can add value to current and advanced research and education activities.



# Investigation areas

To engage with the community to help solve current & future problems that are likely to be

- **infrastructure related** (network connectivity, bandwidth, computational processing power, storage, sensors),
- **data related** (data curation, management, preservation, access),
- **application related** (interface, ease of use of functionality),
- **service related** (common services, federated AAI, registries etc)
- **support related** (ease of deployment, maintenance, plug in, reusable etc).

# Different approaches for different communities

- Where existing work in middleware is known amongst established communities,
  - Papers written by relevant experts
  - Funds provided for international visits (to add value to the papers themselves as opposed to separate unrelated activities).
- Where communities were less well defined or where middleware work is less well known, a stock take may be preferred prior to commissioning papers.

# Community engagement / outreach

- Targeting areas and activities (middleware/underwear)
- Setting a suitable middleware definition for others to challenge
- Identifying barriers to collaboration, federations and distributed infrastructures that need to be removed
- Identifying common services to develop within a framework.
- Undertaking a stock take (what's happening in Australia)
- Undertaking an international scan (what are others doing?)
- Issuing calls for papers from experts in R&E sectors
- Developing use cases (current > 2008-2010)

# Consolidation, Review and Recommendations

- Experts papers & use cases to be reviewed.
- Common services and framework designed.
- Capital city workshops to present findings and solicit feedback.
- Refinement of design (framework/process).
- Best practice disseminated.
- Middleware gaps identified for further work.
- Report and recommendations (end of 2006/early 2007).

# Useful links

- Identity & Access Management Survey 2005
  - [http://www.aarnet.edu.au/engineering/middleware/id\\_access\\_mgt\\_survey.html](http://www.aarnet.edu.au/engineering/middleware/id_access_mgt_survey.html)
- CAUDIT Study tour US/UK 2005 notes
  - [http://www.aarnet.edu.au/engineering/middleware/middleware\\_library.html#general](http://www.aarnet.edu.au/engineering/middleware/middleware_library.html#general)
- MAPS
  - <http://www.middleware.edu.au>
- APAN Middleware
  - <http://www.apan.net/wg/middleware.htm>
- Eduroam Australia <http://www.eduroam.edu.au>
- Shibboleth Australia  
<https://mams.melcoe.mq.edu.au/zope/mams/events/FedLaunch>



Thank You