

Summary Report

“Driving eResearch Collaboration Across the Pacific” Workshop 11-12 October 2007, Rendezvous Observation City, Scarborough Beach,

The invitation-only Workshop brought together around 40 researchers and infrastructure providers from Australia and the United States with the aim of catalysing eResearch collaboration between the two countries by deploying innovative applications over advanced cyber-infrastructure including the exchange facility of TransLight Pacific Wave, the Southern Cross Trans-Pacific Optical Research Testbed (SXTransPORT), the AARNet national network and the nation-wide grids in Australia and the US.

Intended outcome

The intended outcome was the development of action plans for the infrastructure/service providers (AARNet/ TLPW/ APAC/ NCRIS/ Teragrid) to enhance/refine their service offerings to support the emerging AU-US eResearch Collaboration requirements articulated during the workshop. However there was insufficient time to draw these action plans together during the (initial?) workshop.

Still to Do

These action plans still need to be developed for each of the research areas covered during the workshop (Earth and Marine Systems; High Energy Physics; Astronomy; Access to Remote Instruments; GeoSciences; BioSciences; Languages and Music Research).

It is envisaged that the plans to be developed would include a set of milestones that could be delivered by the service providers and trialled by the collaborating research teams during 2008, perhaps being demonstrated at international conferences.

Workshop Resources url

The url at <http://www.apac.edu.au/apac07/dercap/> has pointers to the workshop program (there were some changes on the second day); Information and Guidelines for the workshop; the attendee list; and, importantly, a complete set of the presentations given.

Wrap-up session

John O’Callaghan introduced the wrap-up session and summarised the key points that emerged during the workshop in his presentation at:

<http://www.apac.edu.au/apac07/dercap/presentations/Ocallaghan.pdf>

There was good general discussion covering the next steps to be taken for each research area. These included, identifying near term needs that the infrastructure providers would take on board to develop action plans so that the identified requirements could be demonstrated at international meetings during 2008.

Topics Raised During Wrap-up and in Subsequent Feedback

In addition to the topics covered generally in John O’Callaghan’s wrap-up presentation, there were some specific themes that recurred throughout the meeting, in the wrap-up and in subsequent feedback.

One of these was the need for easy-to-use platform for *video interaction between researchers*. A variety of platforms exist (Access Grid; H323; EVO/VRVS; ConferenceXP; QVidium; DVTS, etc) but there is little consensus on what is best with issues of support, cost,

open source, scalability, ability to support a range of definitions (dependent on application and available capacity) all being of concern. The CSIRO ICT Centre developed platform Intense+ (entirely open source, and based on a scalable AV streaming motion2000 JPEG codec) may be a promising candidate. There may be synergies in tying the evaluation of a suitable platform/environment with the efforts of Tony Williams and Paul Coddington and the Interoperation and Collaboration Infrastructure component of Platforms for Collaboration.

Rick McMullen is looking into *High Definition* gear for *videoconferencing* with JCU and Monash. Cost is the issue, rather picking the right time to buy in a falling market. Seems like a point to point codec currently costs about \$4000 but would prefer multipoint which seems to come in at about \$12K at the low end of the commercial spectrum. Rick is interested in looking at homebrew solutions that might provide multipoint capability through multicast or reflectors if the latency is not uncomfortable.

Long-distance control and transfer issues. There is a real tension between reliability and throughput that comes out in spades when going from Australia to North America. Rick McMullen would be very interested in redoing some of the performance studies related to remote access to crystallography beamlines with the folks at Adelaide using some alternative stacks. Primary problems with off the shelf linux TCP stack appeared to be slow window size ramp-up and a low rate of packet loss that turned out to be devastating.

Primary needs are for *bandwidth, low barriers to use (overcoming the perceived cost issues)*, and *end to end performance*. *Monitoring infrastructure* may help with application development. (Rick McMullen).

Template to assist in the development of Action Plans

Linda Barwick (who didn't make the workshop due to illness) has provided the attached Template for her area of Research to assist in the development of an action plan for the infrastructure providers. It would be useful to have something similar for other target research areas.

Next Steps

It was agreed that the workshop organising committee (or a successor committee) would reconvene to develop the next steps.

George McLaughlin, DeRCAP Workshop Convenor