

AARNetNews



The Chairman's Dozen

After 12 years as Chair of the AARNet Board, Professor Deane Terrell will retire from the position at the end of this year. Previously Vice Chancellor at the Australian National University, Deane became Chair of the Board following incorporation of AARNet in 1998. During his period as Chair, he steered the successful transition from AARNet2 to AARNet3, was involved in the planning of AARNet4, and saw the company grow from less than 10 staff to over 50. While Deane will continue to remain active in a number of areas, not least being wine-making, the staff of AARNet and the members of the Board all wish Deane a very happy 'retirement'.

Also retiring from the AARNet Board (and positions at their respective universities) will be Professors Alan Robson from the University of Western Australia and Ian Goulter from Charles Sturt University. We wish them all the best, and thank them both for their dedicated and enthusiastic service to AARNet.

The new Chair of the AARNet Board will be Professor Gerard Sutton, retiring Vice Chancellor of the University of Wollongong. He will take up his position from January 2012. Professors Robson and Goulter will be replaced by Professors Ian Young from the Australian National University and Linda Kristjanson from Swinburne University of Technology. They will also join the Board in January.

CEO's Report

As our outgoing Chairman, Professor Deane Terrell, will retire from the AARNet Board at the end of the year, I would like to extend a significant vote of thanks to Deane for helping to drive the AARNet story for almost half of its 22 year history. Deane's contribution has been nothing short of outstanding and the Board and management of AARNet will sincerely miss his drive and direction, which has been one of the key factors in allowing AARNet to grow and develop into a significant contributor to

the progress of the internet in this country. On a personal note, Deane has not only performed the role of a highly astute Chairman to me as a CEO who joined AARNet, new to the higher education sector, but he provided me with significant personal mentorship that has allowed me to grow and develop in the role of CEO.

Chris Hancock
Chief Executive Officer

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FOCUS ON...



Brett Rosolen (AARNet) and Colin Carati (Flinders University) at eResearch Australasia

eResearch Australasia

This 5th annual eResearch Australasia Conference took place in Melbourne from 6-11 November, this year having over 500 delegates, making it the largest ever. Delegates came from a range of institutions in Australia and New Zealand, and covered a broad spectrum from Deputy Vice-Chancellors to software developers. Participating institutions covered three tiers of support, including:

- national – ARCS (now closed down), ANDS, NCI, NeCTAR, RDSI, AAF (these were all initiated and funded by DIISR under NCRIS PfC and its successor, though AAF has now moved to a subscription basis for ongoing funding), and AARNet;
- state – QCIF (Qld), Intersect (NSW), VeRSI & VPAC (Vic), TPAC (Tas), eRSA (SA), iVEC (WA); and
- institutional – eg. Monash University's eResearch Centre.

The Conference followed closely on the release of the 2011 Strategic Roadmap for Australian Research Infrastructure, which updated the

2006 and 2008 editions. A key element of this Roadmap is the enabling capability, eResearch Infrastructure (previously called Platforms for Collaboration). So the Conference included a couple of timely sessions dealing with its content.

Apart from the keynote addresses, much of the Conference comprised presentations covering progress in implementing various aspects of the Research e-Infrastructure agenda. For instance, there were informative sessions about NeCTAR (National eResearch Collaboration Tools and Resources), which aims to build a "Research Cloud". This will allow very rapid initiation of research projects, which won't have to acquire and deploy expensive hardware and software, enabling them to scale up and down as the project unfolds.

ANDS (the Australian National Data Service) figured in many presentations, as we move progressively to the "Fourth Paradigm" in scientific research – first Empirical, then Theoretical, then Computational, and now Data Intensive. It's all about capturing the data, storing it, making it discoverable and accessible, ensuring it survives technological change, and processing and analysing it. ANDS has been working with

a range of agencies to help them realise the potential of this Fourth Paradigm.

The Research Data Storage Infrastructure (RDSI) project gave updates on progress in implementing their goal of establishing a network of Data Stores, driven primarily by the needs of the holders/owners of key datasets. AARNet is working with RDSI to ensure that each site chosen through the current bidding process can be connected seamlessly and at high speed to its backbone.

The Conference provided plenty of opportunities for sharing experiences in promoting and supporting eResearch. One particularly enlightening session had some (especially brave) delegates recounting their "epic failures" in eResearch projects. You frequently learn more from your failures than from your successes, but people are often reluctant to share their failures with others. Chatham House Rules prevents me "naming and shaming" any such brave delegates...

One session firmly in the "successes" category was presented by Guido Aben (AARNet) and Wendy Mason (Monash). It described the process of bringing CloudStor to market as a vital tool for researchers needing to move large files around.

Some delegates voted it as one of the best presentations of the Conference.

As usual, the plenary sessions were eclectic but stimulating. The first, given by Professor Bryan Heidorn from the University of Arizona, highlighted the problem of "dark data", which was something of a theme for many sessions – the problem of discovering, identifying and making accessible the great wealth of data that researchers have accumulated but not made public.

Peter Fox from Rensselaer Polytechnic described the changing face of visualisation in a world of intensive data science. Data intensive science is very challenging because of the volume, complexity, mode, scale, heterogeneity of data. He described the need for tools that let you explore the data in a multi-media, multi-modal, interactive, dynamic, rapid, at-scale, and collaborative way.

Paul Walk from UKOLN (the UK Office for Library and Information Networking), which advises in a wide range of fields connected with digital information management, spoke about the dynamic nature of our understanding of managing digital resources. He expressed concern that the voice of the technologist is lost at the strategic level within institutions, and appealed for those involved in developing the tools and services (developers) to be involved at higher levels within institutions.

The final plenary session was given by Jan Brase from DataCite, who spoke about the paradigm shifts in information access, caused by moving to data-intensive science. He appealed for data to be citable, in the same way that written publications are.

One sobering but heartfelt announcement was made at the Conference – that DIISR is to sponsor a James Tizard Memorial Prize (see <http://conference.eresearch.edu.au/james-tizard-memorial-prize/>). James was the head of SABRENet in South Australia, and Director of the NRN Project, and was much admired for his wisdom and equanimity, but died of cancer earlier this year. The Prize is aimed at teasing out from researchers just how e-Infrastructure has helped with their research.



Tim Williams and the Telepresence Exchange

AARNet hosted its first Telepresence event in September. The event showcased an Australian first for multi-vendor multi-site Telepresence interoperability. AARNet CEO Chris Hancock hosted CAUDIT members and colleagues from the AARNet Telepresence room in Sydney to AARNet's Melbourne and Canberra Telepresence rooms.

In conjunction with Huawei, AARNet connected a Huawei Telepresence suite in Melbourne with AARNet's existing Polycom Telepresence suites in Sydney and Canberra and a Cisco Telepresence suite at IBES (Institute for Broadband Enabled Society) at University of Melbourne Campus.

The demonstration also marked the launch of Huawei's first Telepresence system in Australia – AARNet's new Huawei TP3006 TelePresence system, which is now located in the AARNet Melbourne office. The session was recorded using AARNet's Recording and Streaming solution and streamed to those who could not make the event via AARNet Video Media Centre. The presentation included an insight by Dr Tim Williams from Huawei on how broadband will redefine the way Australian's work and interact.

In November the AARNet Cisco Telepresence Exchange (TPX) was launched. The TPX provides connectivity for AARNet customers to



Top: View from AARNet Melbourne office to Canberra and Sydney offices; Above: Web Stream of 3 Telepresence sites (Huawei and Polycom)

collaborate via immersive high definition video to other Australian and international academic and education institutions. The AARNet TPX will peer with other exchanges such as the National Lambda Rail in the US which opens the door to approximately 150 higher educational Cisco Telepresence endpoints in the US. Initial connections have been established to NLR (National Lambda Rail), Monash University, IBES and the Centre for Health Innovation sites back to an AARNet Brisbane based test site.

AARNet has taken a leadership role in driving interoperability for video and unified communications systems and is now seeking to develop interoperable Telepresence systems across the national research and education sector, ensuring an easy-to-use and consistent Telepresence experience.

Ageing Well at Home with Broadband

The project is developing a broadband-enabled exercise program that will promote health and wellbeing among older people, enabling them to stay in their homes longer and promote social inclusion. The project features strong community development principles and local engagement.

Underpinning this project is a high-speed broadband capability provided by AARNet. AARNet will connect the 20 homes involved in the trial to the Australian Broadband Applications Laboratory at IBES over the AARNet3 network and the NBN.

The technology will be developed for the Microsoft Kinect platform and will be initially trialled with 20 older residents in Brunswick - Victoria's first NBN release site. An 18 month trial will assess the effectiveness of broadband-enabled interactive gaming technology to assist older people to maintain independence in their home through improved social connectedness, and physical and mental wellbeing.

The project collaborators are: Moreland City Council, the University of Melbourne's Institute for a Broadband-Enabled Society (IBES), National Ageing Research Institute (NARI), Infoxchange, Microsoft, Council on the Ageing (COTA), Merri Community Health Services, NBN Co, and AARNet.



Ken Clarke - Lead Researcher at IBES

Uni TV

Uni TV will showcase the use of Internet Protocol Television to deliver educational content to students and clinicians, including trial delivery over the NBN. The project will demonstrate the potential of broadband technologies to support education and continuing professional development throughout Victoria.

The technology, based on Ericsson's existing IPTV platform, will enable users located across the state to connect to innovative educational content from the University of Melbourne. The initial trial draws on the expertise of the University of Melbourne's Dental School to provide dental education to students and clinicians in regional Victoria.

The project collaborators are: The University of Melbourne, Ericsson Australia, AARNet, and Panasonic Australia.

Optical Network Enhancements

Planning is well underway on a series of upgrades to the East Coast optical network that will see optical circuits become available at the second major PoP sites in Melbourne, Sydney and Canberra. Maintenance windows will be scheduled in coming months to upgrade equipment at Melbourne, Sydney, Parkes, Milvale and Canberra. The result will be that customer optical circuits, and AARNet backbone circuits can have increased diversity - allowing some to continue to perform - even if there are outages at critical points in the network.

In other optical network news, the network to link the ASKAP Telescope site to Perth via Geraldton has been bench tested in AARNet's Sydney office, and installation will have commenced as we go to press. This network spans 820km from Perth to the ASKAP site at Boolardy Station, and makes use of 40 Gbps wavelengths with coherent detection - technologies that were trialled on the East Coast network during April 2011. The network will be capable of supporting 80 channels, each of 100Gbps wavelengths in future, making available an aggregate bandwidth of 8 Tbps.

TEDx Canberra

On Saturday 24 September, the second TEDx Canberra was hosted at the National Library of Australia. An inspirational and insightful day comprising stories, powerful messages, big ideas, theatrical and musical performances from a range of local Canberra luminaries.

AARNet for the first time supported this year's event in providing a high speed optical connection that was put to good use by the organisers in broadcasting the live video stream throughout the day.

Created in the spirit of TED's mission, 'ideas worth spreading', the TEDx program is designed to give communities, organisations and individuals the opportunity to stimulate dialogue through TED-like experiences at the local level. TEDx events are fully planned and coordinated independently, on a community-by-community basis.

AARNet and TEDx is a natural complement and there is no greater use of the network than to spread innovative thinking far afield.



Tedx Canberra
Foyer of the National Library of Australia

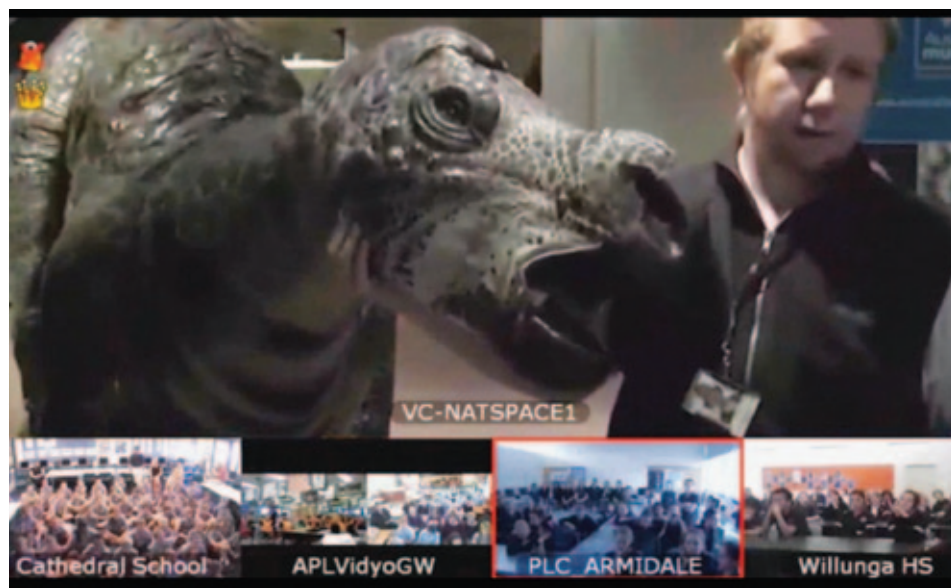
AARNet Anywhere Self Registration

AARNet has built a portal that allows you to self-register your account for our AARNet Anywhere desktop collaboration platform (<http://anywhere.aarnet.edu.au>).

The portal lives here: <https://vivureg.aarnet.edu.au>.

Give it a try and tell your colleagues; if you're eligible (all uni staff and students are!), you'll get instantaneous access. To make this work, we use the Australian Access Federation (<http://www.aaf.edu.au/>) to determine whether you hold university affiliation. The portal lets you self-manage your account as well; so from now on, if you want to change accounts on the fly or if you want to help a colleague set up their own account from scratch - you can do all of that through the portal, any time!

It's a new development, so it's sure to have quirks. Please tell us about them; we really appreciate feedback, criticism and bug reports. Simply send them to eresearch@aarnet.edu.au.



NBN connected schools in Townsville, Armidale and Willunga interact with a model dinosaur at the Australian Museum.

Clickfest

Clickfest is designed to connect regional schools throughout Australia with specialists in various fields of study using high definition videoconferencing. This immersive technology enables students to learn from experts across Australia as if they were in the same room. As part of the Clickfest program, AARNet partnered with the NSW Department of Education and Training (NSW DET) and the Australian Museum to deliver interactive video content to schools.

To mark the official launch of Clickfest, AARNet hosted a national videoconferencing session which engaged students in sessions involving explosive science experiments, talking to Dinosaurs and contributing to a discussion with researchers on the problem of the Tasmanian Devil Facial Tumour Disease (DFTD). The interactive lesson was streamed simultaneously to remote schools throughout the country. The launch event signified the inaugural collaboration of the first four schools connected to the National Broadband Network (NBN).

Running throughout November, the Clickfest videoconferencing program is an initiative from Distance and Rural Technologies Connections (DART Connections), a division of NSW DET dedicated to delivering programs that enrich the learning curriculum. AARNet utilised its national research and education collaboration infrastructure to deliver interactive sessions to schools in remote areas, utilising its high capacity network and National Video Conferencing Service to connect students to a wealth of learning experiences from high profile organisations such as the Australian Museum, Powerhouse Museum and the Historic Houses Trust.

The Clickfest launch was attended by regional schools located throughout Australia including some already connected to the AARNet network via the National Broadband Network (NBN) including Presbyterian Ladies College (Armidale, NSW), The Cathedral School (Townsville, QLD), Willunga High School (SA), Circular Head Christian School (Smithtown, TAS) and Bees Creek Primary School (NT).

Researcher Partnership to Explore NBN Opportunities

AARNet has partnered with researchers at the University of Melbourne's Institute for a Broadband-Enabled Society (IBES) to explore opportunities presented by the National Broadband Network in Health and Education.

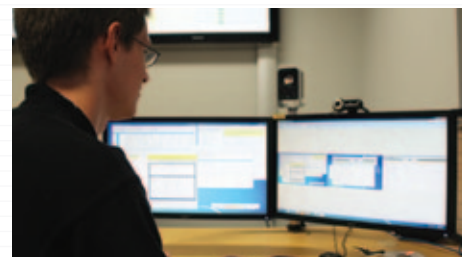
For two recently announced research projects, AARNet will connect a number of homes using the NBN, back to the Australian Broadband Applications Laboratory at IBES across the AARNet3 network.

AARNet Customer Forums

AARNet conducts a number of Customer Forums each year. The objective of the Forums is to provide feedback for AARNet's management and it's Board in relation to the performance of products and services. Usually the Forums bring together customers from a state or territory, but recently we have held forums at individual universities.

In 2011, Forums were held in Adelaide (University of Adelaide, Flinders University and University of South Australia participated), and at the University of Newcastle, James Cook University and Central Queensland University. These were all very successful, and the feedback we obtained has been invaluable. We would like to thank all of those who participated for their contributions.

We plan to expand the Customer Forum program in 2012, under the auspices of the AARNet Advisory Committee. In particular, there will now be monthly Forums from February through to November, some state based and some university.



Adam Binneweg – NOC Operator in Perth

AARNet NOC Services Update

Since the launch of AARNet NOC Services in July 2011, two universities have committed to take-on the service and a number of others are in active discussions. The Australian Catholic University and Charles Darwin University both experienced successful trials and have decided to continue with NOC Services as a production service.

AARNet NOC Services provides:

- 24x7 event monitoring of your critical infrastructure and applications.
- Professionally managed response and escalation of incidents.
- Independent reporting.

The growing Network Operations Centre (NOC) team consists of 8 dedicated staff, based in both Sydney and Perth.

To register your interest, or for more information, contact Doug Farmer: doug.farmer@arnet.edu.au.

BITS & BYTES

The AARNet Unified Communications eXchange (AUC-X) Update

AARNet is continuing to develop, test and deploy AUC-X. As at the end of October, there were seven connected Australian Institutions, together with international peering to the APAN SIP peering service (<http://www.apan.net/wg/sip-peering.php>) and Monash University Malaysia campus.

More production calls are traversing the eXchange and it is expected that participating members will begin to seek greater utilisation of the service in coming months. Backend management and reporting systems to assist in managing the AUC-X are also being established, this includes basic Call Detail Record reporting to enable actual usage reports to AARNet and participating customers.

For more information visit <https://wiki.aarnet.edu.au/display/UCX/Home> or contact Bill Efthimiou (bill.efthimiou@aarnet.edu.au; ph: +61 2 97796952) or Leon Li (leon.li@aarnet.edu.au; ph: +61 2 97796937).

AARNet/QCIF workshops completed

AARNet (in partnership with QCIF) has completed a series of three half-day video strategy workshops in Melbourne, Perth and Brisbane. The workshops were attended by approximately 70 participants who were from research, education and video service support. The outcomes from the workshop are to (1) validate the awareness and value of current and future collaboration services use cases; (2) investigate the barriers to the adoption of video based services and (3) develop a collective road map for the delivery and development of video conferencing services for the sector.

AARNet Joins to Open Visual Communications Consortium

AARNet recently joined the Open Visual Communications Consortium which is the first global visual communication exchange based on open standards linking service provider networks globally to deliver breakthrough video connectivity and interoperability, driving business-to-business (B2B) applications, and ushering in a new era of consumer visual communications.

Current partners include Airtel, AT&T, BCS Global, BT Conferencing, Cable & Wireless worldwide, Global Crossing, Glowpoint, iFormata Communications, Masergy, Orange Business Systems, PCCW Global, Telefonica, Telstra and Verizon.

For more about the OVCC see http://www.polycom.com/company/industry_affiliations/ovcc/index.html.

Polycom's RealPresence Mobile Application

Polycom has released a free mobile/tablet application that works well with the AARNet Gatekeepers and SIP servers to join AARNet video conferences on both the Codian and Polycom MCUs. Although just released, AARNet has been working closely with Polycom to enable the full potential of the application to support those who wish to join a conference without needing to book a room. The application works over wifi and 3G networks with the option to restrict data rates. It also is able to connect individuals to AARNet's Polycom and Huawei Telepresence suites via AARNet's conferencing servers.

To find out more see http://support.polycom.com/PolycomService/support/cn/support/video/realpresence_mobile/realpresence_mobile.html or contact a member of the AARNet NVCS team (support@nvcs.edu.au) today.

Telepresence Services Update

AARNet has been working closely with Cisco to install, build and configure a TelePresence eXchange facility for Australian Academic and Research use. The equipment is located at AARNet's Point of Presence in Sydney UTS and is expected to go live in early November with connections to 4 AARNet customers. In parallel, work has already begun to evaluate different technical solutions to support interoperability to open standards based H.323/SIP video endpoints using a combination of SIP and Cisco's Telepresence Interoperability Protocol.

Polycom 2011 Schools Events Close on a High

The last schools event of 2011 (A Polycom APAC event) supported by AARNet took place on 26 September involving three schools from Yasawa Elementary School (in the Tsunami and Earthquake affected region of Japan), Cashmere Primary (Christchurch) and Milton Primary School (Brisbane) where students shared their stories on this years' devastating events plus the opportunity to meet Ranger Stacey from Channel 10's Totally Wild, and share their Green Lane Diaries (via Green Cross Japan and Green Cross Australia). AARNet's partnership with Polycom has enabled APAC events to connect with seven countries; Australia, New Zealand, Japan, Taiwan, China, Canada and Singapore, with a grand total of 3,883 participants in attendance. A new schedule of events is being organised for 2012.

Conference Reports

APAN32

The Asia Pacific Advanced Networking conference took place in Delhi India hosted by India's Education and Research Network operator (ERNET) and India's National Knowledge Network (NKN). Over 450 delegates from across the Asia Pacific region met to discuss networking, services and application matters.

Brent Sweeney provided an update of National Lambda Rail's (NLR) Cisco based Telepresence services and revealed support for 230 rooms (most are small single or single screen) with TPX peering to other exchanges underway with Australia and China. NLR services include testing coordination, centralised site directory management, community engagement and standards setting to be able to scale the service.

A multi-user visual collaboration system was presented by Andrew Howard (Australian National University) aimed supporting "collaboration" beyond point-to-point using iMatte for multiple user collaboration beyond desktop screen sharing.

The APAN SIP Working group discussed AARNet's Unified Communications Exchange and SIP Peering services with interest in leveraging SIP for regional zero cost VoIP and Video calls. Attendees also reported back on the AARNet led TEIN funded SIP workshop in Penang Malaysia which is expected to drive the deployment of SIP servers and services across the TEIN network.

ERNET expressed interest in becoming the eduoam operator for India, detailed discussions on what was involved to create a test and development environment and applied to act as the operator via TERENA.

An interesting session on researching analysis and filtering of NOAA satellite data on visible light in the night sky was presented to determine possible correlations between lit areas of India and improvements in the standard of living. There was considerable detail on how the data is analysed and captured and discussion afterwards led to agreement on easier more cost effective ways to deliver data on a regular basis over partner research and education networks to and from the USA.

Cisco Optical Conference

Tim Rayner – AARNet's Optical Engineer recently attended the Cisco Packet Optical Networking Conference in Monza, Italy. Tim's presentation covered the 40Gbps and 100Gbps trials that AARNet conducted with Cisco this year. Tim also met with peers, and received an update on the future direction of Cisco's optical networking product line.



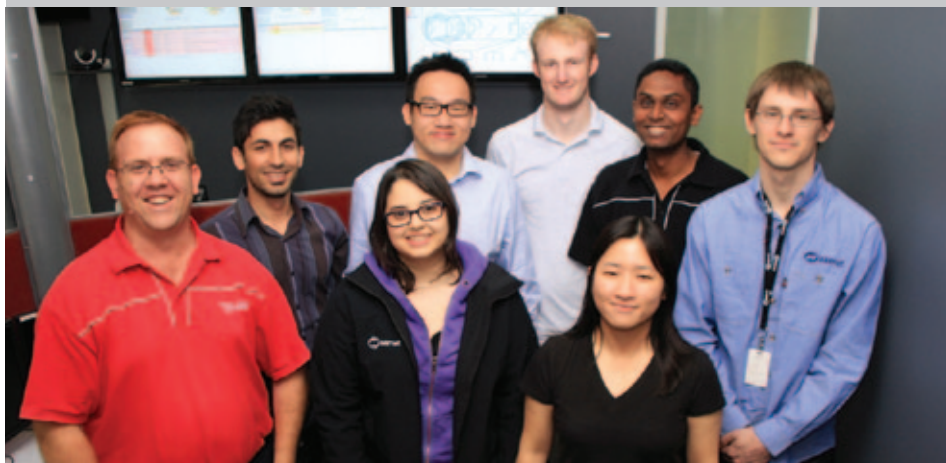
Tim Rayner indulging his passion for opera outside La Scala (Milan) during a break in the conference

STAFF PROFILE

Network Operations Centre (NOC) Team

The team monitors the AARNet network from Singapore, through the Australian backbone, and on to our Pacific connections on the West Coast of the USA. In addition to the IP routing backbone and CPE equipment, they are also monitoring our extensive optical network.

The NOC Team this year has also started monitoring 3rd party networks, 24 hours a day, 7 days a week. If you need to contact them, please call 1 300 APL NOC (1 300 275 662 or +61 2 6222 3555) or email them at noc@arnet.edu.au.



AARNet NOC Team in a rare moment together in the Sydney NOC Room. (Left to right: Mike Groeneweg, Bilal Waheed, Cassie Byrne-Quinn, Steven Bong, Michael Usher, Anna Van, Suneth Mendis, Adam Binneweg. Absent: Frank Hua)

Future Events

7th Annual IEEE eScience Conference
5-8 December 2011, Sweden

APAN33 13-14 February 2012, Thailand

Broadband and Beyond 2012 Conference
22 February 2012, Sydney

Spring 2012 Internet2 Member Meeting
Arlington, Virginia

TERENA 21-24 May 2012, Iceland

Contact Us

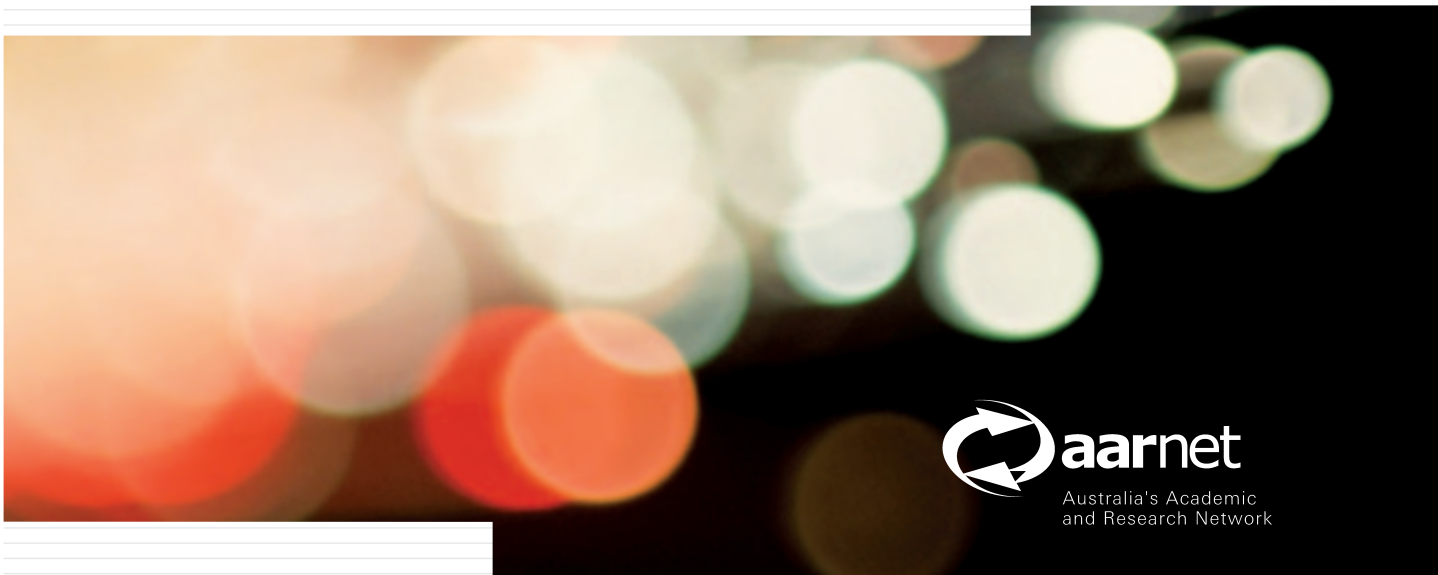
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We welcome your suggestions/feedback.

If your institution can demonstrate an interesting/innovative use of the network please contact aarnews@arnet.edu.au

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