KAREN

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connecting KAREN communities

KIWI ADVANCED RESEARCH AND EDUCATION NETWORK

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Mark Davies and Roger Cliffe (Victoria University of Wellington) and Nathan Gardiner (HIT Lab NZ) at the July KAREN forum.

Roadmap directs fund for KAREN bullet train

The second round of the REANNZ Capability Build Project fund is now open for applications.

The aim of the fund is to build institutional capability across KAREN's foundation members; to assist first off the block projects building skills and technologies needed to move in the direction of collaborative network-enabled research and education.

The criteria underpinning this fund have been sharpened through priorities identified in the recently released Advanced Network Capability Building Roadmap 2007 – 2009. The roadmap provides a broad understanding of the changes needed through workforce, technological and sector capability to work in the new environment provided by KAREN.

The priorities identified in the roadmap for the Capability Build Fund centre around the:

- adoption and implementation of real-time collaboration technologies for teaching and research
- adoption and implementation of middleware – specifically enabling sharing of data and/or information or computational resources, scientific equipment or facilitating national or international collaboration, and
- coordination of standards-based novel methods of data collection and analysis eg tele-instrumentation, visualisation and simulation, data and text mining.

The Royal Society is administering the fund and application forms can be found at **www.rsnz.org** The fund closes on 30 November 2007. If you are interested in discussing the roadmap or would like a copy it is available on **www.karen.net.nz**

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KAREN's dual roles – an Advanced Network and a National Research and Education Network

Our role as New Zealand's Advanced Network is to constantly push the envelope in terms of network architecture, operations and commercial models. Innovations in all these areas are usually spear-headed by national advanced networks and filter down to business and consumer services over the course of five to ten years. It is typically a small group of users with the leading edge bandwidth applications that drive our advanced network goals - genomics, astronomy, high performance computing, physics, digital design and media. But where they go today, most of our community goes within a few years - and most of the country a few years after that.

Being a National Research and Education Network requires a different - but equally important - set of capabilities. These users require dependable, easy to use network services, great content and value the neutral catalytic role provided by the national network. Providing access to advanced video conferencing services, application hosting, commodity internet traffic and security products are all important. In recognition of this we have just introduced a Service & Content Partner policy that allows innovative companies to service our membership over the KAREN connection. KAREN is also playing an important role in stimulating equal access last mile infrastructure through its core and aggregator connection requirements. Knowing that KAREN provides all you can eat bandwidth for a set annual fee allows researchers, educators and students to explore the New Zealand and international knowledge landscapes without worrying about charges.

For a glimpse of the future of broadband networks and services - take a look at KAREN.

Donald Clark
Chief Executive

Relive the KAREN forum

Imagine over 150 people from across disciplines and organisations exploring the potential of advanced networks in fostering faster, better and new research – this was the KAREN forum.

Held 2 -4 July at the University of Auckland, the forum brought together national and international experts to present and discuss the latest developments in eResearch across a range of disciplines.

The event has been hailed a resounding success by all who attended. This success is attributed in no small way to the wide range of applications and issues covered and the high quality of presentations.

Thank you to everyone who participated for your support of our first major KAREN event.

Presentations and recordings from the forum are now available on the KAREN website at http://www.karen.net.nz/forum-programme/

(Top) Bill Choquette (REANNZ), Andrey Kharuk (University of Auckland) and Zhiyi Huang (University of Otago). (Bottom) Panel discussion on KAREN success strategies in action.

(Top) Michael Uddstrom (NIWA) and Sam Searle (Victoria University of Wellington). (Bottom) Rick Pridmore (REANNZ Director) and Charles Jarvie (Telecom International).

KAREN's next big gig

The first national KAREN forum held at the University of Auckland in July has stimulated appetites for the next big gig – 26th APAN in Queenstown 2008.

REANNZ belongs to Asia-Pacific Advanced Network (APAN), an international consortium of advanced networks aimed at furthering the cause of adoption and research into advanced network applications and technologies.

APAN hold two meetings per year – with the next being in Hawaii – which usually attract up to 400 delegates from the Asia-Pacific region and the US. The meetings are week long intensive showcases of up to five streams of advanced network applications, services and technologies across a range of areas, including:

- High definition video technology
- Earth monitoring: exploring the use of earth observations in the Asia Pacific region to achieve societal benefits
- Sensor data: producing and collecting sensor data in the area of natural resources
- eCulture: digital archiving through case studies and technologies
- Global collaboration sessions across a range of disciplines
- Medical workshops: advanced network resources applied to health care, remote surgery, long distance diagnostics
- Middleware: identity management, workflow software.

Planning is under way for the 26th APAN meeting, 'Sustainable Networking', being hosted by REANNZ in Queenstown, 4 – 8 August 2008. Streams on the first two days will focus on cases studies from New Zealand and demonstrations by application, service and technology providers alongside the regular programme.

Hosting APAN in New Zealand provides local researchers, scientists, IT and networking specialists, and educationalists an amazing opportunity to view demonstrations of applications that are leading the way in global collaborations over advanced networks.

Contact REANNZ if you would like to be involved in the 26th APAN Sustainable Network meeting as either a presenter or sponsor.

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Video conferencing bridge demonstration

Members of the KAREN community recently took part in an evaluation and demonstration of a high definition voice and video bridge.

The Codian 4505 MCU supports up to 12 simultaneous video conference sessions, which was well tested by the 11 participants. Participants included:

- University of Auckland
- HIT Lab NZ
- Victoria University of Wellington
- Simon Fraser University of Vancouver, Canada
- Agile New Zealand Limited
- REANNZ
- Ministry of Education

A number of the organisations provided more than one video conferencing site and covered a wide spectrum of video conferencing equipment and tools to thoroughly test the functionality of the unit.

The overall result was excellent, with a range of possible scenarios being played out. The unit performed well under the load registering a 2% CPU load and approximately 32% of its multimedia capability used.

The Codian bridge was provided by Agile New Zealand Limited. Further information on the units can be found at **http://www.codian.com/downloads/Codian-MCU4500-Datasheet.pdf** or by contacting Ian Darby of Agile. Agile have a unit available via the Internet for evaluations if required.

Screen shot of the Codian bridge management device and participating sites.

New additions

The new look REANNZ team (minus Clayton Ejiofor and Martha Bouterey): Julie Watson, David Brownlie, Donald Clark, Caroline de Jong, Bill Choquette, Mark Cordy, Vicki Lindsay, Elaine Mosley.

REANNZ has recently welcomed new staff to respond to the changing needs of our members and the organisation.

Now in our second year of operations, we have evolved the structure of REANNZ to better align with the company's mission to make KAREN essential infrastructure for an innovative New Zealand.

In July, we welcomed Bill Choquette as our Development Coordinator. As part of the Communities team, Bill will focus on expanding the reach of KAREN into new communities. Bill will also be working alongside our current members to promote the many opportunities KAREN offers and encourage capability development to ensure members are able to take full advantage of their connection. You will have a chance to meet Bill while he is visiting members over the next few months.

Andrew McKegg joins the Operations team as a Services Specialist. Andrew will lead the charge in enriching the KAREN experience of members by turning successful trials and evaluations into desirable and viable content and services available over KAREN.

Change has also been afoot in the corporate services area, with the creation of a new three person Corporate Services team. The team will be led by Corporate Services Manager, Elaine Mosley.

Hailing from Christchurch, Elaine has previously worked as the Company Secretary of Bank of New Zealand and Head of the Legal Section at the AMP Society. More recently, she has been in the printing and marketing businesses with her husband Tony. Elaine will be a valuable addition to the management team, making a real impact on both the day-to-day management and strategic direction of REANNZ.

Elaine is joined by Caroline de Jong. As our Accounting Technician, Caroline is responsible for all company financial processing and reporting.

We will also soon be welcoming the new Personal Assistant to the Chief Executive, Martha Bouterey. Martha will take up this role later this month.

See http://www.karen.net.nz/reannz-team/

Pepping up performance

The REANNZ Operations Team continue to support members and make improvements to network performance.

The first KAREN Member's Report released in July provides an overview of activities supporting members and useful information on network performance for six months to 30 June 2007.

Connecting members to KAREN has been one of the top priorities for the team, with 35 connections supporting 15 Members and 1 Associate Member being made to the network. Planning is also well on the way for connecting two further members.

In June the maximum data packet size that can be used across the network was increased. This means larger chunks of information can now flow through the network, creating the capability to move greater amounts of data at higher speeds.

Individual network streams of over 300Mbps and greater have been recorded recently as KAREN members really start to take advantage of the network.

KAREN has peering arrangements in place with 16 international networks, the most recent being the University of California at San Diego, Google (excluding You Tube) and NASA.

We have also recently revamped the technical section of our website. The Technical Centre will be the first port of call for IT specialists for detailed information on how to connect to and tune for KAREN, and features a user support guide, standards, specifications and protocols, technical FAQs, and technical documents.

Further information on network performance and activities can be found in the Member's Report.

See http://www.karen.net.nz/publications/

Profile: Carol Moffatt, REANNZ Director

Carol Moffatt.

For Carol KAREN's potential for revolutionising teaching and learning makes connecting to KAREN a must do for New Zealand schools.

Carol is a founding director of REANNZ, having come on board when the company was first formed in 2005.

Based in North Canterbury, Carol has more than 40 years experience at all levels of the education sector. She holds directorships with Multiserve Education Trust Ltd and Core Education Ltd (formerly Ultralab South). She was the Manager, ICT Strategy for Schools for the Ministry of Education between 1998 and 2003, and has more recently worked on the development of an early childhood education, information and communication technology framework for New Zealand.

Vicki Lindsay caught up with Carol following her attendance at the official launch of the Nelson Loop on 23 August.

VL: What are the key challenges for schools in taking advantage of KAREN?

CM: I see two key challenges for schools. The first is simply about connecting to KAREN – both getting a high speed connection to the school and the internal network within the school itself. This is where the Aggregator Policy comes into play. Organisations can act as aggregators to facilitate access to KAREN for smaller groups, like schools, reducing both the administration burden and connection costs of a core KAREN connection.

"Technology is increasingly being used to support teaching and learning. When integrated well into the classroom, technology becomes a transparent but powerful tool in the educator's belt for teaching and learning."

The Nelson Loop is a perfect example of what can be achieved when schools and businesses (and government) act in partnership to address infrastructure needs. However, this is to some extent a one-off and not an easily replicable situation. There needs to be a much more consistent and coordinated approach to school connectivity for us to achieve the widest possible uptake of KAREN.

The second challenge is about availability and organisation of curriculum resources. Teachers need to have easy and reliable access to digital content and resources that are connected into the New Zealand curriculum. There is potential here for Te Kete Ipurangi – The Online Learning Centre to act as the central point of access, providing quality assured digital educational material.

VL: What is the potential for KAREN in education?

CM: Technology is increasingly being used to support teaching and learning. When integrated well into the classroom, technology becomes a transparent but powerful tool in the educator's belt for teaching and learning.

We need to think creatively about what KAREN can enable. The benefits of the 'low hanging fruit' such as video conferencing are well known. What we need to focus on is using the technology in novel and creative ways to make learning exciting and challenging for students.

The majority of today's young people have high levels of understanding and engagement with digital technologies and participation in virtual worlds. KAREN will enable us to tap into digital tools and to engage meaningfully with young people for the purpose of education.

VL: How do you see KAREN being used in the classroom?

CM: Fantastic opportunities exist around immersive environments, Web 2.0 applications and virtual worlds such as Second Life. For example, senior geography students could be immersed in a digital simulation of the highlands of New Guinea, enabling them to explore and interact with the geography of the environment, rather than simply viewing it through static images. Or senior English students could recreate in Second Life a scene from a novel using avatars and an environment they have formulated and constructed themselves.

"Technology also has the potential to make education that much more relevant and exciting to students, including those who may have otherwise disengaged from education."

KAREN enables these technologies which in turn can unleash a whole new dimension of creativity, while at the same time respond to students' different learning styles. Technology also has the potential to make education that much more relevant and exciting to students, including those who may have otherwise disengaged from education.

Learning through play

Students in the UK are using gaming technology to support the development of scientific enquiry and collaboration skills.

Astroversity is a 3D game for students that uses scenario, content, and puzzle techniques to encourage cooperation, problem solving and information analysis, and is an exciting example of the types of innovative teaching and learning applications that are available in an environment of advanced digital technologies and networks such as KAREN.

The scenario

Astroversity is a virtual 3D space academy providing students with search and rescue training to become space explorers. While at the academy disaster strikes – an alien vessel has crashed into the station releasing toxic substances and injuring people.

Students put their recently acquired skills into practice to rescue their fellow crew members. Teams of students explore the scene for hazards and the injured using a robotic probe and work together to plan a safe rescue route.

The outcomes

In Astroversity, the virtual is mixed with the real. The activity uses a simulated situation to encourage students to collaborate in the real world to solve problems through information gathering, sharing and analysis and hypothesis generation and testing. Students also switch between the virtual online world and paper maps to record their observations and interactions while exploring this world.

Team work and real world application are essential skills in today's science teaching. Astroversity supports students to develop these key skills through an engaging and familiar platform.

The Astroversity project was created by the International Centre for Digital Content, in partnership with Futurelab.

See http://www.futurelab.org.uk/projects/astroversity

Events 2007/08

September

9 – 13 September
High Performance Computing Asia 2007, Seoul, Korea

10 – 13 September
UK eScience All Hands Meeting, Nottingham, UK

23 – 25 September
Pacific Rim Application and Grid Middleware Assembly (PRAGMA) 13, Illinois, USA

25 September
Otago KAREN in your community, University of Otago

October

7 – 9 October
Third International Conference on eSocial Science, Michigan, USA

8 – 12 October
Australian Partnership for Advanced Computing (APAC) 07 Conference, Perth, Western Australia

8 – 11 October
Internet2's Fall Member Meeting, San Diego, California, USA

17 – 19 October
GridNets 2007, First International Conference on Networks for Grid Applications, Lyon, France

November

8 – 9 November
IMS Global Learning Consortium, Queenstown

15 – 16 November
Humanities Futures – new methods and technologies for humanities research, Brisbane, Australia

28 – 29 November
Digital Future Summit 2.0, Auckland

December

2 – 5 December
Australasian Telecommunication Networks & Applications Conference, Christchurch

3 – 6 December
International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP) 2007, Melbourne, Australia

10 – 13 December
MODSIM 2007, International Congress on Modelling and Simulation, Christchurch

10 – 13 December
IEEE International Conference on e-Science and Grid Computing, Bangalore, India

11 – 13 December
Digital Curation Conference, Washington, USA

January

20 – 25 January
25th APAN meeting, Hawaii

22 – 25 January
AusGrid 2008, Australasian Symposium on Grid Computing and e-Research, Wollongong, Australia