

Backgrounder

What is KAREN?

KAREN is the Kiwi Advanced Research and Education Network. It provides high speed networking to New Zealand's research, education and innovation sectors. Data can be transferred through KAREN at up to 10 Gigabits a second – at least 10,000 times the speed of a standard broadband connection.

KAREN delivers 100Mbit/sec or more to the desktop of an individual researcher, allowing much faster performance than achievable via the commercial Internet.

Why was KAREN established?

KAREN was established by the government through the Ministry of Research Science and Technology (MoRST) to meet the needs of the research, education and innovation sectors in New Zealand to enhance collaboration on initiatives, both nationally and internationally.

KAREN is fundamental to New Zealand's vision of being world class in using information and technology to realise economic and cultural goals.

The benefits include large increases in both the peak capacity and the total computing power delivered to research projects (in the sciences, arts and humanities), as well as new ways for research communities to share and analyse very large data sets.

These benefits will translate into an increase of both the quality and quantity of research output in a broad spectrum of ICT-intensive fields ranging from bio-informatics and climate simulation, to the nano-scale design of new materials, and distribution of rich media content between museums, libraries and archives.

What is the cost?

An initial \$43m funding to build and run the network for the member institutions which will be expected to take over the cost of using and maintaining the network over time. The initial funding includes \$5m for developing the capability of research and educators to use KAREN.

Who can use KAREN?

KAREN can be accessed by academics, researchers and educators at 18 member sites across New Zealand. These include universities and other tertiary education institutions, Crown research institutes and the National Library. KAREN's associate members comprise agencies providing specialised research or specialised social services (such as health and education).

Who administers KAREN?

KAREN is administered by the Research and Education Advanced Network New Zealand Ltd, (REANNZ) a Crown-owned company established for that purpose. REANNZ was set up to establish, own and operate a high-speed telecommunications network for the research and education sectors.

Its objectives are to run the company in such a way that it: enables leading edge e-research; facilitates universal connectivity throughout the New Zealand and international research and education community; encourages broad participation by the research and education sector in New Zealand through accessible technology and reasonable pricing; and connects research and education sector to the broader innovation community for pre-commercial, R&D based collaboration

REANNZ's performance is monitored by CCMAU, in conjunction with MoRST and Treasury.

Ownership of REANNZ is intended within time to transfer to Tertiary Education Institutes and Crown research institutes.

KAREN in Action

"It's the way the research scene is moving. It's not enough to do isolated experiments anymore," said Quincy Ma from the University of Auckland's Faculty of Engineering.

In its testing phase, KAREN was used by earthquake engineers at the University of Auckland to participate in earthquake simulation and research being conducted by the USA-based George E Brown Jr Network of Earthquake Engineering Simulation (NEES).

As collaboration in research, education and innovation becomes more global, it is increasingly common for researchers in different continents to collaborate on research projects, sharing research facilities, computational resources, datasets, and results. To do this, they need to be able to share data and applications easily via high speed communications channels.

More than 40 countries now have Advanced Research, Education and Innovation Networks like KAREN.

KAREN will enable New Zealand geologists and geophysicists to access sensor data from fault lines in the United States; 3D modellers to collaborate on international mapping projects; and students in New Zealand lecture theatres to participate in interactive video lectures with experts anywhere in the world.

University of Canterbury Deputy Vice Chancellor IanTown, said the case for KAREN has growing for some years, as other countries built theirs.

"KAREN is a logical and necessary part of our infrastructure in New Zealand and gives us the ability to make high performance computing resources available to colleagues throughout New Zealand," he said.

As well, University of Canterbury researchers are planning to use KAREN and their University's new Supercomputer to collaborate on oceanography and marine biology studies with researchers in Korea.