

The newsletter of Engineers Australia's College of Information Telecommunications & Electronics Engineers



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from the chair

Addressing College Member needs

by Peter Hitchiner

College Board chairs were reminded at a recent meeting that the member survey conducted in 2010 by Beaton indicated that membership should receive,



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Engineers Australia's careers website provides extensive career information.



among other things:

- support for the development of knowledge and skills
- provision of access to information
- the sense of belonging to a community
- the standing of the member being enhanced
- regularly being kept up to date.



I expect that ITEE College members have similar needs and hopefully they are being met at least in part. The College Board meets this month and if you have any comments or suggestions about what can be done better please let your representative know or provide feedback to the blog link below. In any case, the ITEE College Board will be working to improve performance in all these areas in the interests of College members. The larger we can build our community the greater our ability to address these needs.

Unfortunately our College membership currently represents only a small portion of the ITEE community. It is a matter of some disappointment for instance that we seem to offer nothing for the broadcasting engineers who were so well served by our predecessor organisation, IREE. The pervasiveness of ICT means that ICT practitioners do not always associate themselves with ITEE because their work is directed within another discipline. This may also reduce the apparent significance of ICT practice in the economy as a whole. This challenge impacts the funding of ICT courses in universities where the classification of ICT work under other disciplines may be leading to a reduction in overall funding for ICT courses.

With the increasing importance of the digital economy (including health, education and security sectors with the convergence of art, entertainment and culture through digital media), engineering skills development in the ITEE practice area is becoming increasingly important, whereas it seems that skills supply is set to diminish. As a community we should be working to reverse this trend and promote careers and skills development increasingly in ITEE practice and with the necessary levels of competency. The ITEE College Board has a responsibility to provide leadership in this area and is doing so but needs support across the ITEE community. There are opportunities to serve your profession through your local ITEE community which will be strengthened as more participate and we can then better meet College member needs.

This column also appears in the ITEE College Board Chair [blog](#): please post your feedback.

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Smart security system designed and developed in Australia

Founder and CEO of iOmniscient Dr Rustom Kanga delivered a presentation to a joint institutions meeting in Sydney on the company's technologies, which specialise in artificial intelligence-based video analysis systems. Its customers include China's fast train system and the technology's applications range from city surveillance systems in Khazakstan and pipeline protection systems in Mexico; to airports in Abu Dhabi and museums in Sydney.

Kanga explained that with most large CCTV installations, there is no monitoring of the surveillance footage, which is just recorded for action post-events. iOmniscient has developed artificial intelligence technology that allows the operator to be advised when an unusual event takes place (eg someone falling down on Camera 20, someone abandoning a bag in a crowd on Camera 200 or a wanted person appearing on Camera 600).

The [presentation included numerous examples](#) of applications which are enabled by the patented technology including use in crowded places where it can identify individuals of interest. It can also be used for crowd counting and for traffic management.

iOmniscient won Sydney Division and National Engineering Excellence Awards in 2010 for the safety system used by some of China's high speed trains. Its technology has been adopted worldwide for sophisticated security systems. Yet again, one is left wondering why customers and in particular Australian government customers are not using more domestic technology such as that developed by iOmniscient.

Peter Hitchiner is the ITEE College Chair 2011.

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news

First stage of NBN service begins

The use of commercial services over the fibre network in the NBN's mainland First Release Sites was launched in October, following the conclusion of the NBN trial. In response, a number of service providers have released broadband and telephone pricing plans, with more expected to be released in the near future. NBN Co head of product development and

sales Jim Hassell said the released plans offer different price points and service levels for broadband, voice and bundled services.

"Some of the NBN service plans so far released by service providers include free local and national calls for a flat monthly fee," he said. "For heavy internet users, there is a range of speed and usage allowances to choose from – so the message is, shop around and make sure you compare both price and service."

Hassell also advised consumers to consider external factors when selecting their service.

"Consumers need to consider their existing telephone and broadband contract arrangements before looking to switch services. People living in rented accommodation and/or apartment blocks will also need to consider their lease conditions and what approval is needed from bodies corporate and/or landlords."

The National Broadband Network is planned to roll out fibre to 93% of Australian premises, with satellite and fixed wireless to serve the final 7%.

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New bank office goes wireless

The Commonwealth Bank has opened a new office which uses premises-wide wireless technology and widely available MacBook laptops to reduce the necessity for paper consumption. The new Commonwealth Bank Place, situated in Darling Harbour in Sydney, occupies two eight-storey buildings and houses 6200 employees.

The wireless connection is delivered by more than 300 wireless access points across the two buildings. To encourage a reduction in printing, each staff member has been provided with a laptop for wireless access anywhere in the office. Using the wireless network, staff members are able to use their laptops in conjunction with LCD collaboration screens in meetings, in addition to connecting their laptops to large-screen smart boards to project information onto a larger viewing platform. Staff can also dock their MacBook Air at adjustable docking stations that have a keyboard, mouse and a 24-inch LCD screen, enabling dual-screen working. In terms of software, the Microsoft Lync program has been installed to integrate phone calls, video calls, instant messaging and contacts.

In an effort to minimise carbon emissions and paper usage, the sustainability ratings at the office will be captured on data

screens throughout the buildings to increase visibility and accountability for staff.

Commonwealth Bank Place is a joint venture between Lend Lease and Sydney Harbour Foreshore Authority, with the Commonwealth Bank leasing the space on an average 13 year term.

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Telecoms team Flexes its muscles for Excellence Award

Telecommunications support company Finisar Australia won the J.J.C. Bradfield Award at Sydney Division's Engineering Excellence Awards held in September. The award is presented to the overall winner of the event, and recognises an accomplishment of exceptional engineering merit. Finisar Australia was given the award for its development of [the FlexGrid](#), a software enhancement which allows telecommunications carriers to reroute signals through their network.

According to the company, FlexGrid has the capacity for both everyday usage and the augmentation of communication during disasters such as floods, earthquakes and bushfires.

"It can be used, for instance, if someone digs up a cable by accident," said Finisar Australia's Dr Steve Winnall. "The telecommunication provider can use it to re-route traffic of phone and internet so phones don't drop out. It can also be used on occasions like Mother's Day when demand goes up. Carriers can use the Flexgrid to add more capacity to their network. "There are problems with the current legacy system which telecommunication providers now use. For example, in the City-to-Surf running race in Sydney people couldn't make a mobile call because there were so many people in one location. Our product helps to alleviate that. "The Bradfield Award judges selected the Flexgrid for its ability to "overcome the current constraint associated with fixed channel plans used in current optical networks. It is a unique and world leading product in optical fibre telecommunications."

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More efficiency, less heat for adapters

An information and electrical engineering expert from the University of Sydney is delving into research which could extend the lifespan of electronic devices and preserve electricity networks. Dr Dylan Lu, who was awarded the university's 2011 Faculty of Engineering and Information

Technologies' Dean's Award for research, is working on improving the efficiency of power conversion of AC adapters for consumer electronics and photovoltaic power systems to increase their longevity.

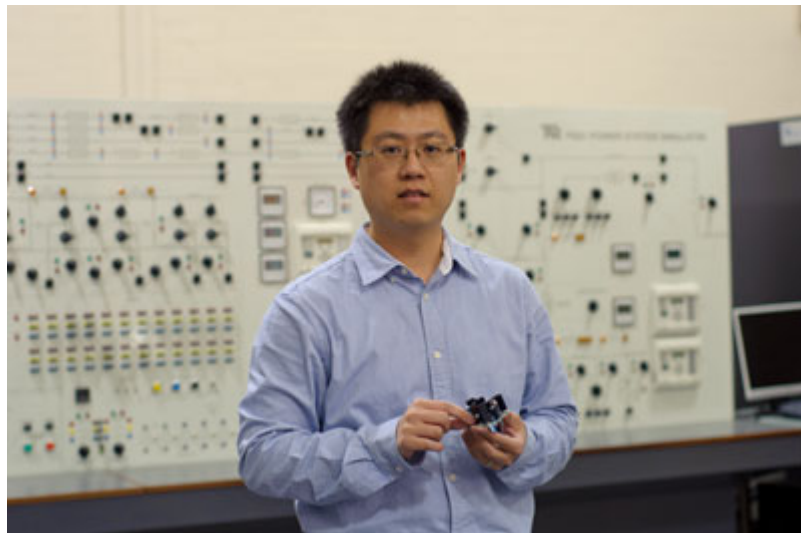
"AC adapters are typically 88% efficient, which means 12 per cent of the electricity travelling through an adapter is typically lost as heat," said Lu. "I want to lift this efficiency rate to around 95% to reduce overheating in appliances and improve their longevity."

In tandem with this research Lu is looking at how AC adapters draw power from an electricity network. Presently they do this in a distorted and erratic fashion which harms electricity grid components such as cables, connectors and power lines and interferes with other electrical equipment on the grid, he said.

The efficiency of AC adapters and their impact on the electricity grid can be improved by reducing the number of components used to build them and employing power quality improvement control.

Lu's work to date has seen adapter efficiency increase to about 92%. He hopes to get efficiency levels to 95% before exploring his research's commercial potential.

Lu's research is currently being explored under license by electronics companies in Australia and offshore.



Dr Dylan Lu was the recipient of the University of Sydney's 2011 Faculty of Engineering and Information Technologies' Dean's Award for research.

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Telecom providers need to lift their game, says report

The Australian Communications and Media Authority (ACMA) Annual 2010/11 report was tabled in federal parliament in October. The report, which was part of ACMA's *Reconnecting the Customer* public inquiry, highlights the authority's recent focus on issues facing telecommunications consumers.

The public inquiry was launched in early 2010 and culminated in the release of the draft inquiry report in June this year, ahead of its presentation to parliament. The [final version of the report](#) is now available online.

"The report delivered a multi-layered plan to improve customer service for Australia's long-suffering telecommunications consumers – a plan to put customers first and, in no uncertain terms, the telecommunications industry on notice to lift its game," said ACMA deputy chair Richard Bean.

Under the *Reconnecting the Customer* proposals, more than 1000 Australian telecommunications providers and ISPs will need to deliver on five major consumer protection measures.

ACMA also participated in the review of the Telecommunications Consumer Protection Code, being undertaken by Communications Alliance. Consultation drafts of the revised code should be released to the public and provided to the ACMA for registration by the end of the year.

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Winners at internet awards

The winners of the 2011 Australian and New Zealand Internet Awards (ANZIAs) were announced in a ceremony in October. They are Telstra, the Cisco Academy for the Vision Impaired (CAVI) project, the Australian Lions Drug Awareness Foundation, DTS Ltd and Australian Indigenous Healthinfonet.

The awards, now in their third year, celebrate exceptional contributions by businesses, organisations and individuals to the development and use of the internet in Australia and New Zealand. The event is hosted by the .au Domain Administration (auDA) and Internet NZ.

The ANZIAs are adjudicated by an independent panel of experts from both countries. Winners are identified in six categories: Information; Diversity; Innovation; Security and Privacy; Internet Access and Digital Skills; and IPv6. Internet NZ CEO Vikram Kumar said this year's awards attracted twice the number of entries received in 2010.

The winners were presented at a gala dinner in Melbourne, which featured a keynote speech by former High Court Judge

Michael Kirby.

A full description of the winners and highly commended entries can be viewed at the ANZIA [website](#).

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More capabilities for fibre network

Telecommunications carrier Primus Australia has completed the first stage of its fibre network transformation, introducing Optical Transport Network (OTN) capabilities to its existing fibre rings in Australia.

The enhancements, which are initially focused in Sydney and Melbourne, include the implementation of a next-generation OTN/DWDM (dense wavelength division multiplexing) network to aggregate lower bandwidth services.

Primus Australia aims to expand its transformation beyond Sydney and Melbourne into the five largest capital cities in the country.

The enhanced OTN network will use the Huawei OSN 8800 platform which will allow the delivery of high speed, low latency inter-capital bandwidth built on the shortest routes available, tying the entire network together on a single transport platform. When completed, the OTN will enable Point-to-Point intercity service offerings, including SDH/SONET (synchronous digital hierarchy/synchronous optical network), ethernet, and low-latency ethernet (layer 1) services.

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Bus journey planner goes online

A new online journey planner which is designed to facilitate the use of Canberra's ACTION Bus network has gone live. The Google Transit journey planner, which is being provided to the public as a free service, allows users to submit the starting and destination point of their journey into the planner, after which they are provided with a list of relevant bus services and scheduling times. PCs will be able to access the planner via the [ACTION website](#), while smartphones can use the Get Directions feature within the Maps application provided by Google.

"The Google Transit journey planner is the latest tool to help ACTION customers use the public transport system with greater ease," minister for territory and municipal services Simon Corbell said.

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new products

DataTaker DT80M Intelligent Data Logger

TechRentals has introduced the DataTaker DT80M Intelligent Data Logger into their test and measurement rental fleet.

The DataTaker DT80M's in-built 2G/3G modem emails data directly to your inbox with automatic settings and alarms. View real-time measurements or logged data on the in-built web interface, and connect to sensors which support measurement of temperature, voltage, current, 4-20mA loops, frequency, digital and SDI-12. It features 18-bit resolution, dEX operator interface, internal FTP server and both analogue and digital channels.

www.techrentals.com.au



The DataTaker DT80M's in-built 2G/3G modem emails data directly to your inbox to facilitate field work.

Broadband solutions

A new range of broadband connectivity products available from Belden include coaxial cable drop connectors, pole line hardware and telecom enclosures sold under the Snap-N-Seal LRC, Diamond and Kold-N-Klose brand names.

The Snap-N-Seal compression drop connectors are a line of coaxial cable compression connectors for broadband and television connections. The range now includes a full line of LRC trunk and distribution connectors and adaptors for cable TV

hardline applications. 709 splice connectors provide pair-at-a-time splicing for telephone applications.

Premium Diamond hardware is used for communications applications including drop line and construction hardware, grounding and bonding products, and signal security hardware.

The Kold-N-Klose system is a torch-free system for sheath repair and encapsulation of buried or aerial splices. It is suitable for use on filled or aircore, plastic or lead and pressurised cable.

www.belden.com



A selection of Belden's new broadband connectors.

9-Port OCTOPUS switch

The Hirschmann product range has been extended to include a 9-port version of its OCTOPUS OS20 series.

The Hirschmann basic software is installed on this layer-2 switch, which meets the requirements of protection class IP67. This software supports both various management and security functions and fast redundancy methods such as HIPER-Ring, MRP and RSTP.

The new Fast Ethernet ports (10/100 BASE-TX) have vibration-resistant M12 connections in D-coding. Further features include a metal housing and an extended temperature range from -40°C to +70°C.

RMON, port mirroring and LLDP (Topology Discovery 802.1ab) are provided for diagnostics. A floating signal contact signals independently of the data network alarms, which can be defined individually. The switch also has LEDs on the front that display both the device and network status, and the data transfer and power supply.

Detailed information can be retrieved via a serial V.24 interface

or the Ethernet ports. The switch is monitored and configured via SNMP, a standard web browser or the Hirschmann's Industrial HiVision high performance network management software.

www.beldensolutions.com



The 9-port OCTOPUS switch is a new version of the Hirschmann range OS20 series.

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calendar

The inaugural NBN Realised Forum 2011 will be hosted on 23 November in Melbourne. The forum will aim to give existing and potential stakeholders in the NBN an insight into the project's challenges and successes to date and the industry's vision for the future. It will focus on the building and design of the NBN, and will elaborate on early NBN experiences, opportunities for industry collaboration and how products and players will fit into the new NBN landscape.

Register for the event [online](#) or learn more [here](#).

The [2011 Asia-Pacific Microwave Conference](#) will be held on 5-8 December in Melbourne. The 3rd Asia-Pacific Optical Sensors Conference ([APOS2012](#)) will be held on 31 January–3 February 2012 in Sydney.

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