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ENGINEERS AUSTRALIA

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## from the chair

### ITEE College Board Report

by Peter Hitchiner



The College Board met on 7 and 8 May 2010. The Board recognises that there is a wide range of activities of interest to members across the discipline. This is reflected in the diversity of programs in each Division. While resources available to the Board are limited (reflected in its priorities), acknowledgement has been given to other activities where resources allow and volunteers have come forward to support those initiatives. I encourage ITEE College Members

in Divisions to become involved in College activities by contributing to Division groups and perhaps by responding to this column.

The Board discussed an Operational Plan, which will form the basis for the 2011/12 plan due for consideration at the Board's October meeting. If you feel the College needs greater involvement in some areas, for instance broadcast engineering, please let me know. The ITEE group in WA has

formed a software engineering forum to address the needs in this area; others may wish to consider similar initiatives.

Changes to the method of delivery of *Monitor* were agreed by the College Board. *eMonitor* will be distributed in a similar manner to Engineers Australia's *eNews*. Archive copies will be held for all non-current issues. A [link to archives](#) will be provided with each issue of *eMonitor*. It is hoped that the new format might encourage Division groups to submit regular short items relating to their activities.

The Board is seeking nominations from Northern, Newcastle and Tasmanian Divisions for membership of the Board. If you are interested in filling one of these positions, please contact your Division president or executive director.

The Board agreed to develop guidelines for a new award in which technologists and associates would be eligible, utilising funds available from the IREE Foundation. This award would complement the existing IREE Neville Thiele Award. The award guidelines will be considered at the Board's October meeting.

The College Board confirmed the importance of facilitating conferences in relevant areas and the importance of local ITEE Membership involvement. In particular, see the [Space Engineering Symposium](#) (Adelaide, July); [EMC Symposium 2010](#) (Melbourne, September); and the [35th Australian Conference on Optical Fibre Technology \(ACOFT\)](#). There was discussion about the absence of general conferences covering ITEE matters and this will be further discussed at a future Board meeting.

The Board noted the new College Regulations approved by Council on 5 May 2010. In particular, the Board noted its responsibilities under those regulations. One of the Board's roles is to undertake periodic reviews of competency standards. The area of Software Engineering competency standards needs particular attention and encouragement of the importance of the engineering approach in software projects. The National Committee on Software Engineering will lead consideration on this.

The Board agreed that the opportunity presented by the [Asia-Pacific Software Engineering Conference](#) in Sydney in November should be used as a launch pad for a "Software Engineering Forum" in the Sydney Division modelled on a successful group running in WA Division. Software engineers interested in the formation of this group should contact me. The Board aims to have a significant ITEE College presence at this EA sponsored conference.

Plans are advancing for presentations in the second half of 2010 by Eminent Speaker Terry Stephenson of Raytheon. More details will be provided soon.

The Board elected Jennifer Murray, chair of the National Committee on Software Engineering as the second deputy chair of the College Board. Congratulations Jennifer!

The Board discussed various other matters including the proposed Royal Charter and By-law changes  
This column also appears in the [ITEE College Board Chair blog](#). Please post your feedback.

*Peter Hitchiner is the ITEE College Chair 2010*

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## news

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### **Electrical engineer receives medal**

The Electrical College and the ITEE College have jointly awarded the M A Sargent Medal to Dr David Skellern at the Electrical College's Annual Awards Dinner on 21 May in Perth.

The M A Sargent Medal is named in honour of Dr Michael Anthony (Mike) Sargent, an outstanding Australian electrical engineer and former president of Engineers Australia. Sargent has previously said that creativity and a disciplined approach to problem solving are the hallmarks of a great engineer.

Skellern received the medal "for the breadth and depth of his contribution to technical innovation, his eminence in the practice of electrical engineering and his exceptional management and leadership in Information and Communications Technology", the citation said.

Highlights of his career include co-founding Radiata in 1997, which built wireless LAN chips in collaboration with CSIRO, and then went on to develop the world's first IEEE 802.11a chip-set in 2000 after which it was acquired by Cisco Systems.

Skellern has been CEO of National ICT Australia (NICTA) since 2005.

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### **Update on broadband network**

Speaking at the CeBIT National Broadband Network Conference in May in Sydney, NBN Co CEO Mike Quigley provided an update of NBN Co's progress and outlined details of the planned national broadband network.

In terms of the NBN's structure, Quigley said that there would be fixed wireless networks to cover those areas outside of fibre deployment. These wireless networks would have a committed capacity of 12Mbit/s (as opposed to a peak capacity) and would emulate a layer 2 network. Adaptive coding modulation would be used as a measure against poor reception due to rainfall patterns.

In addressing speed concerns, Quigley showed that following the current trend for internet speeds, 100Mbit/s would be required by 2015-2020 and 1Gbit/s by 2020-2025. In the case of insufficient capacity in the future, he said that the slowest point of interconnect would be the electronics at either end of the fibre, which could be upgraded, but the fibre infrastructure would always be required.

Quigley stated that long term evolution (LTE) wireless technology should be used in conjunction with fibre to provide the network, rather than alone due to its non-ideal scaling properties. A greater number of users and interference would reduce capacity to inadequate levels. Fibre, on the other hand, would provide set capacities at any distance from a point of interconnect.

"We're planning to have reaches of at least 15km and the

network will be designed so that if you subscribe, for example, to a 20Mbit/s service, you'll get that 20Mbit/s whether you are right at the centre of the node, or at the furthest reaches," he said.

In providing a comparison between the top countries with fibre to the home, Australia did not even make the list, with less than 1% of premises connected via fibre. Japan, in comparison, had more than 20%.

The conference was part of the CeBIT Australia 2010 expo, which had 605 exhibitors.



**Mike Quigley believes the fibre infrastructure will allow internet speeds limited only by the electronics at the end points.**

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## **Video receives an open-source alternative codec**

On2 Technologies has developed a video codec called VP8 which, after the company was purchased by Google, has been released as an open-source and royalty-free alternative to existing video codecs.

Until now there has been no open-source video codecs available to content distributors and developers. This is in contrast to images and audio, which have at least one alternative format such as PNG (Portable Network Graphics) or Ogg Vorbis.

One of the more common video codecs, H.264 does not currently charge royalties for its use, but owners MPEG-LA will begin to do so beginning 2015.

In order to make use of the codec, Google has developed WebM, a new container file format based on the open-source multimedia container Matroska. The WebM format (.webm files) would only support the VP8 video format and the Vorbis audio format.

While the VP8 codec could be incorporated into other container file formats, including Matroska itself, the WebM project team's decision to limit codecs to VP8 and Vorbis

ensures that no confusion exists as to what codecs are required to view a .webm file.

Android will receive support for WebM by the end of the year and Adobe has pledged support for the format in Flash. A number of high-profile companies are also collaborating on the WebM project such as hardware manufacturers Nvidia, Qualcomm and AMD. WebM will benefit from any hardware acceleration these manufacturers may implement as part of their support for the format.

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## **NBN: New possibilities for consumers and businesses**

The National Broadband Network will introduce new possibilities for Australian consumers and businesses, according to Sydney research and consultancy firm Telsyte.

In its April 2010 white paper titled "Australia's National Broadband Network: Possibilities Abound", sponsored by ECI Telecom, Telsyte believes IPTV will become widespread, our health system will change and businesses will adopt cloud computing as the prevalent way to run their IT systems. The paper envisions offerings that include fixed voice, mobile, broadband, and subscription-based television as a means for telecommunications operators to increase revenue streams and maintain loyalty of their subscriber base for some time.

Telsyte consider the uptake of IPTV in countries where fibre-to-the-home is more readily available an indicator for the demand of similar services in Australia once the NBN is established. Examples of where IPTV has firmly taken root include Japan, Korea, and parts of the United States. In April this year, Australia's third-largest ISP iiNet has announced its intention to enter the IPTV market with its FetchTV offering.

Operators aiming to increase consumer spending following deployment of the NBN may take advantage of IPTV entertainment services such as interactive television, on-demand movies, and on-demand games.

The paper also predicts that self-managed aged care, through such solutions as telemetry, remote video cameras, movement sensors and vital sign monitoring, may change the way healthcare is delivered and health information is managed.

Patient and medical records, and images such as x-rays and ultrasounds, could be delivered in a seamless manner, the paper pointing towards how the UK Department of Health has migrated the National Health Service to a single, electronic care record for patients and connected 30,000 general practitioners to 300 hospitals.

At the Australian Telecommunications User Group conference NBN Co chief Mike Quigley said that in the short term, businesses had the most to gain and that NBN Co intends to provide speeds of up to 1Gb/s for certain corporate and government users.

Telsyte believes that an ubiquitous high-speed network will accelerate the adoption of cloud services by Australian businesses and become the dominant way to run IT systems. The paper states that it will provide capital savings by

eliminating cyclical hardware replacement and operational cost savings through reduced project implementation, support and maintenance costs.

The full report can be viewed at:

<http://img.en25.com/Web/ECI/100mbps-whitepaper.pdf>.

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## **Triple Zero to track mobile location**

The Australian Communications and Media Authority (ACMA) has put forth a proposal to amend the emergency call service rules and require mobile carriers to provide caller location information during an emergency call to emergency service organisations.

According to ACMA chairman Chris Chapman, 63% of all calls made to Triple Zero are made from a mobile phone, but unlike landline phones, emergency operators are not automatically given accurate details about the caller's location.

"This is not an issue for the vast majority of mobile calls made to Triple Zero as in most cases the caller can tell the emergency operator where they are located. But there are times—estimated at less than one per cent of calls—when people are too distressed or unfamiliar with their environment to report their location. It is in such instances where access to enhanced location information will assist emergency service organisations locate callers," he said

In addition, the ACMA is concerned that the community may have unrealistic expectations about the current ability of mobile technology to help them in an emergency situation. A recent ACMA survey found that 52% of people believed they could be located automatically via mobile phone.

"This is not the case. There is currently no single and widely-available method that can accurately pinpoint a mobile phone user's location and then pass the information to emergency operators. Such accuracy is not expected to be made available on a reasonable cost basis for some years to come and will always be difficult in a country with the land mass and sparse population of Australia," Chapman said.

The ACMA previously released a discussion paper on its proposal, addressing four key issues:

- Mandating the provision of best available location information about a mobile emergency call upon request from an emergency service organisation.
- Identifying the operational arrangements for implementing an enhanced mobile location solution.
- Managing unrealistic expectations of the provision of mobile location information in an effort to correct the belief some people have that current mobile location identification techniques can provide 'pinpoint' accuracy anywhere in Australia.
- Determining a temporary exemption process to give carriers reasonable time to upgrade their technology where required.

A copy of the mobile location information study and consultation paper can be found at [www.acma.gov.au](http://www.acma.gov.au).

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## Hotline to report SMS spammers

The Australian Communications and Media Authority (ACMA) has launched a new tool to combat spam received via text message.

Launched in June this year, "Spam SMS" provides Australians with a convenient way to report text spam message by forwarding them to 0429 999 888. The new method of reporting is in response to concerns that web-forms or telephone reporting may discourage the community from alerting the correct authorities due to the time and inconvenience necessary to do so.

Users do not need to register to use the service, but doing so will help the ACMA if it needs to contact users for more information.

The ACMA received 3947 reports and complaints in the 2008/09 financial year, a 71% increase on the previous year.

The tool will assist the ACMA in its investigations into breaches of the Spam Act. To comply with the Spam Act, text messages must be sent with the recipient's consent, identify the sender and how they can be contacted, and include an unsubscribe option.

A third of SMS spam reports received by the ACMA are about scam activity, indicating that scammers are increasingly using SMS to contact potential targets.

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## Framework for NBN telephony access

Communications Alliance has released a draft framework for wholesale telephony services that are expected to be available via the National Broadband Network (NBN).

The National Broadband Network Wholesale Service Definition Framework – Telephony Access Service is anticipated to be used by wholesale and retail service providers as well as suppliers of telephony and network equipment.

The paper considers architecture options for telephony, signalling protocols, telephony features, and codecs for telephony services. It specifies the telephony features that will need to be supported by the NBN wholesale service, including Calling Line Identification, the National Relay Service, TTY (teletype) services, and Calling Number Display.

Communications Alliance CEO John Stanton said: "This paper will help define the telephony services to be offered to end users and ensure that consumers can be confident that their telephone services will migrate smoothly to the NBN. It sets the scene for the transformation of Australia's telephony environment from copper wire to fibre."

The paper is focused on the access link from the end user premises to a point of interconnect, with the retail service provider taking responsibility for long haul transport from the point of interconnect and the switching of calls.

The draft paper is available from the Communications Alliance website at: <http://commsalliance.com.au/Documents/public-comment>

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## **Search engine receives overhaul**

Google has updated its web indexing system to provide faster and fresher results for web searches than its old indexing system.

According to software engineer Carrie Grimes on the official Google blog, the new system, dubbed Caffeine, was developed in response to the growth of rich webpages that incorporate video, images, news and real-time updates.

Google's previous indexing system was built on several layers, each of which could take a significant amount of time to be updated at the search engine analysed content on the web. Caffeine on the other hand does this analysis in smaller portions and updates the global index on a continual basis to provide results that are 50% fresher.

In her keynote speech on day two of the Search Engine Strategies conference in Toronto in early June, Google senior developer programs engineer Maile Ohye compared the old index as having to do an entire load of laundry and caffeine as having the ability to wash a single article of clothing.

The new index processes so many pages in parallel that it can add several hundred terabytes of data to the massive caffeine databases each day. The size of a single database is currently about 100 petabytes, or 100 million gigabytes.

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## **new products**

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### **Portable 3G wifi router**

Broadband technology developer NetComm has launched a mobile 3G wifi router called MyZone.

The MyZone fills the grey area between 3G USB modems and 3G routers. It performs as a traditional USB modem, but has the ability to connect multiple devices, supporting up to ten wireless devices concurrently such as the iPad, notebooks, smartphones, cameras and gaming consoles.

Netcomm claims to have concentrated the development of the MyZone around maximising its battery life. It has an integrated lithium-ion battery to provide power for up to six hours of operation and 40 hours whilst idle. Users can charge the MyZone via the included micro USB cable and continue using its wireless function at the same time.

It is compatible with all Australian 3G networks and approximately 150 global 3G networks, users can move their Internet connection anywhere there is mobile network coverage. The MyZone comes pre-loaded with carrier connection information to reduce configuration.

The MyZone is capable of delivering download speeds of up to 7.2Mbps and upload speeds of 5.76Mbps and supports 3G Tri-band 850MHz, 1900MHz, and 2100MHz.

[myzone.netcomm.com.au](http://myzone.netcomm.com.au)



**The NetComm MyZone allows users to connect mobile wifi devices to a 3G connection.**

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### **Portable hard drive adapts to interfaces**

Hard drive manufacturer Seagate has introduced a new portable drive that is able to adapt to different interfaces or devices.

The FreeAgent GoFlex storage family has an array of interchangeable cables and desktop adapters that allow users to operate the same drive across different interfaces.

The GoFlex cable system enables GoFlex and GoFlex Pro drives to be upgraded to USB 3.0, eSATA or FireWire 800 connections by switching out the cable adapter.

Additionally, certain GoFlex upgrade cables provide more applications for usage, for example as a continuous full-system backup.

The FreeAgent GoFlex is available in capacities ranging from 320GB to 2TB.

[www.seagate.com](http://www.seagate.com)



**The FreeAgent GoFlex has interchangeable cables to adapt to interfaces including USB 3.0, eSATA and FireWire 800 (pictured).**

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### **Productivity software updated for 2010**

Microsoft has released the next version of its productivity software suite, Office 2010.

Some of the more notable improvements over the previous version of Office are:

- PowerPoint 2010 has received new video and photo editing features and the ability to deliver presentations over the internet with PowerPoint Broadcast Slideshow.
- Word 2010 has received new text effects and table formatting options.
- Outlook 2010 features a new Social Connector function.

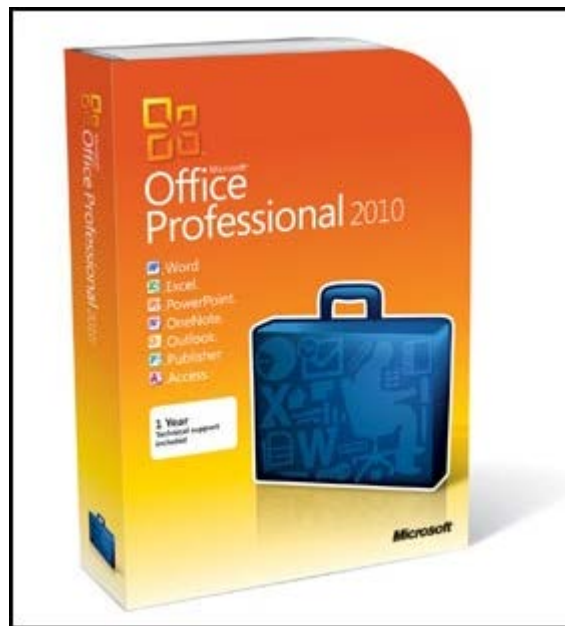
Microsoft appears to have acknowledged the trend of users to shift to cloud services and an increasing amount of collaborative work. Word, PowerPoint and OneNote now have co-authoring features and their files can be uploaded to Windows Live SkyDrive.

Users that have grown to hate the controversial “ribbon” introduced in the 2007 version of Office may be disappointed to find that this feature is still being used to organise commands for working in a document (eg changing fonts and margins). However, Microsoft has replaced the Office Button with a new feature – Office Backstage, which in contrast to the ribbon, organises commands applied to the document as a whole (eg printing and saving).

Also updated for 2010 and now available are Visio 2010 and Project 2010.

Trials of Office 2010 are available from Microsoft’s website.

[www.office.com](http://www.office.com)



**Microsoft Office receives an update for 2010.**

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## calendar

### Engineering Education Australia

- **Contract management** (2 days) Gladstone 24 Jun, Newcastle 19 Jul, Hobart 26 Jul, Canberra 9 Aug, Sydney 16 Aug. Darwin 8 Nov
- **Slide rule thinking in the internet age** (half day) Perth 27 Jul, Hobart 13 Sep
- **Project management practice - module 2 implementing projects** (2 days) Melbourne 27 Jul, Perth 29 Jul

- **Finite element analysis for success** (1 day) Perth 28 Jul
- **Mentoring skills** (1 day) Melbourne 10 Aug
- **Asset management** (2 days) Brisbane 24 Aug
- **Engineering planning and design** (1 day) Melbourne 9 Sep, Adelaide 20 Oct, Perth 11 Nov
- **Fear free presentations** (1 day) Brisbane 25 Nov

For further information on these and other events organised by Engineering Education Australia go to [www.eeaust.com.au](http://www.eeaust.com.au).

## Engineers Australia conferences

**The 86th National EESA Conference and Trade Exhibition** will be held in Sydney 1-3 Sep. Inquiries: [www.eesa.asn.au/events](http://www.eesa.asn.au/events).

**The 17th Asia Pacific software engineering conference** will be held in Sydney 30 Nov to 3 Dec. Inquiries: [www.apsec2010.com](http://www.apsec2010.com).

**The 19th Australian Institute of Physics Congress** incorporating the **35th Australian Conference on Optical Fibre Technology (AIP/ACOFT 2010)** will be held in Melbourne on 5-9 December. Inquiries: [www.aip2010.org.au](http://www.aip2010.org.au). The deadline for submission of abstracts is 9 July.

**The 15th International conference for women engineers and scientists** will be hosted by Engineers Australia's National Committee for Women in Engineering and the International Network for Women Engineers and Scientists in Adelaide 19-22 Jul 2011. Inquiries: [www.icwes15.org](http://www.icwes15.org). The deadline for submission of abstracts is 1 December 2010.

For a more comprehensive list of Engineers Australia's conferences, visit [www.engineersaustralia.org.au/conferences](http://www.engineersaustralia.org.au/conferences).

## Other events

The Electromagnetic Compatibility Society of Australia in conjunction with the IEEE EMC Society Victorian Chapter will hold its **9th Annual Symposium on EMC** in Melbourne on 8-10 Sep. Full details are on [www.emcsa.org.au](http://www.emcsa.org.au).

**The 2011 World Engineers' Convention** will be held on 4-9 Sep 2011 in Geneva, Switzerland. Titled "Engineers power the world - Facing the global energy challenge", the convention seeks to encourage innovative engineering aimed at solving the problem of globally sustainable use of energy. For more information go to [www.wec2011.org](http://www.wec2011.org) or contact [info@wec2011.org](mailto:info@wec2011.org).

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