

WHAT'S HAPPENING IN THE IEEE



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THE NEWSLETTER OF
THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC
SOUTH AUSTRALIA SECTION
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Chairman's Column

Dear Colleagues

The incoming Section Executive officers are:

Chair: Michael Evans, michael.evans@ieee.org

Vice Chair: Zia Ahmed, zia.ahmed@ieee.org

Secretary: Tim Ferris, timferris@ieee.org

Treasurer: Andrew Piotrowski, andrew.piotrowski@ieee.org

The Chapter officers elected at the AGM are:

Chair SP/Comms Chapter: Arek Dadej
arek.dadej@unisa.edu.au

Chair C/AES Chapter: Mark Pszczel
mark.pszczel@dsto.defence.gov.au

Chair AP/MTT Chapter: Hedley Hansen
hedley.hansen@dsto.defence.gov.au

The Section maintains a number of other portfolios and the following portfolios have been filled for 2004:

Membership Development	Andrew Udina
Education	Harry Green
Technical Activities /JTP	Bruce Vyden
Student Activities	Steven Gordon
Awards	Zia Ahmed
Publications	vacant

If you are interested in serving on the committee, please don't hesitate to contact me. The Section Committee relies on new volunteers, and new ideas to keep IEEE in South Australia moving forward.

Membership Development - (A.Udina)

	31 Dec 02	31 Dec 03
Members	307	339
Senior Members	32	30
Fellows	1	2
Affiliates/Others	54	22
Students	81	56
Other	1	1
TOTAL	476	450

Membership in the senior member grades (plus affiliates) has remained static over the year but there has been a sizeable movement from affiliate to member status.

The decline of student member numbers that has been felt generally in IEEE (and in Region 10 in particular) as a result of the jump in the cost of student membership has now appeared in the SA Section statistics. This is a matter for concern for the viability of the 3 student branches.

Educational Activities - (H.Green)

Harry Green (Chair 1989-91) accepted the Education portfolio. This activity is one with which the Section has struggled for a number of years, and with Harry's great experience and continuing interest, this is an area where the Section can show significant development. Harry has emphasised "continuing education" (CPD - continuing professional development) and his first initiative is to investigate the requirements of the NPER (National Professional Engineers Register). This is an important step towards identifying where IEEE members can use their skills to contribute to the wider profession.

Professional Development - (B.Vyden)

Joint Technical Program - (A.Udina, B.Vyden)

The supporting group comprises, IEEE, IEE, IEAust, TSA. The ITEES has withdrawn from the group because its member support base no longer justifies their involvement.

The 2003 program scheduled 11 technical meetings including 3 site visits and the 2004 program will be available in late December. It will be distributed in January 2004 with the first issue of the IEEE SA newsletter.

Information Decision and Control, IDC 2002, Adelaide, 11-13 Feb 2002 - (M.Evans)

IDC was wound up and returned a surplus of ~\$16.5K to IEEE SA. Considering that registration was down 25% on that anticipated (because of Sep 11) the final result is a great credit to the work of the committee.

RADAR 2003, Adelaide, 3-5 Sep 03 - (D. Sinnott)

RADAR 2003 exceeded all expectations. Total registration exceeded 300 and was comparable to that of the previous event held in 2002 in the UK. The tutorial program was strongly supported. Overseas participation was 36% of the total attendance, a very pleasing result considering the SARS scare and some reluctance to travel from US delegates. IEEE SA co-sponsored (50%) this event with CSSIP.

It was an excellent event against all measures of performance and Don Sinnott and his committee are to be congratulated for their work.

5th Biennial Asian Control Conference, Melbourne, 20-23 July, 2004 - (I.Mareels/M.Evans)

<http://ascc2004.ee.mu.oz.au/>

Preparations are progressing satisfactorily. The co-sponsor group includes IEEE QLD, IEEE NSW and IEAust in addition to IEEE SA and U of Melbourne.

8th IEEE International Symposium on Spread Spectrum Techniques, Applications (ISSSTA) Sydney, 30 August - 2 September, 2004 - (Lars Rasmussen)

<http://www.isssta2004.org/>

Preparations are progressing satisfactorily. This event is co-sponsored (50%) with IEEE NSW who invited IEEE SA to assist when ComSoc withdrew.

IEEE International Symposium on Information Theory (ISIT), Adelaide, 4-9 September, 2005

This event is the major annual event (600 delegate) of the IEEE Information Theory Society and is scheduled for Adelaide.

Student Activities

This portfolio was not filled in 2003 but there has been significant activity nonetheless.

The Student Branch (Len Hall Chair, Brian Ng Counsellor) at the University of Adelaide continues to be active. The Branch is affiliated with the University's Clubs' Association.

The Student Branch (Nimrod Lilith Chair, Kutlu Dogancay Counsellor) at the University of South Australia continues to operate successfully a Centre of Excellence established with funds from the IEEE Foundation, the Section and the University.

Students at Flinders University successfully petitioned to form a student branch and their constitution has now been accepted. Congratulations are due to Sherry Randhawa (Jimmy Li, Counsellor) for seeing this through.

Student Subject Prizes (Zia Ahmed)

The Section annually presents an award (a certificate and cheque) to a student from each university who has demonstrated outstanding performance at second-year level in a practical subject relevant to IEEE fields of interest. This program was established in 1992 and three awards are made annually. The prize amount was raised to \$500 in 2002. The recipients of the 2002 IEEE SA Student Subject Prizes (presented in 2003) were:

Jennifer McIntosh (Department of Electrical and Electronic Engineering, The University of Adelaide)

Andrew Lammas (School of Informatics and Engineering, The Flinders University)

Scott Richard Carr (School of Electrical and Information Engineering, University of South Australia)

Student Travel Awards

The Section has established a "Travel Award" intended to assist students and others to deliver conference publications at interstate (\$300) or overseas (\$1000) venues. Awards totalling \$3,300 were made in 2003.

Wei Xiang, ITR, University of South Australia

Peter Pham, ITR, University of South Australia

Peter Celinski, (CHiPTec), University of Adelaide

Matthew Tetlow, University of Adelaide



Jennifer McIntosh, Andrew Lammas, Scott Richard Carr

Awards - (Zia Ahmed)

IEEE SA Section Distinguished Service Award

IEEE South Australia Section established a Distinguished Service Award in 1999. The award comprises an IEEE plaque suitably inscribed.

The fourth *IEEE South Australia Distinguished Service Plaque* was presented to **Em. Prof. Bob Bogner** for his significant contributions to the Section and the IEEE Signal Processing Society over a period of many years. In addition to his service on the Section Committee for more than a decade, Bob chaired ICASSP 94 and served on the IEEE Signal Processing Society Board of Governors and several of its standing committees.

Dr Andrew Parfitt (Chair 1998), our inaugural recipient of this award in 1999, made the presentation to Bob Bogner at the *2003 IEEE South Australia Section Distinguished Lecture*.

IEEE South Australia Section Distinguished Lecture

The inaugural *IEEE South Australia Section Distinguished Lecture* was delivered in 2002 by Prof. Brian Anderson AO, FIEEE.

The *2003 IEEE South Australia Section Distinguished Lecture* was delivered by Ric Smith AO PSM, Secretary of The Department of Defence, who addressed the topic "*Defence Challenges for the Future*". The lecture and dinner were held 21 Nov 03, *Lyrics Room*, Festival Centre, with an audience of nearly 100 attendees.

Chapters/Branches/Affiliates

Information Theory Chapter (Alex Grant)

With the agreement of IEEE NSW, the Chapter is now a joint Chapter of the **ACT/SA/VIC/NSW** Sections. It is hoped that the remaining Sections will join the sponsor group so that the Chapter, led by Dr Alex Grant, can represent the interests of all IEEE members of the Information Theory Society within Australia.

Graduates of the last Decade (GOLD)

(Andrew Piotrowski, Sebastien Wong)

GOLD is a peer group of members formed to help bridge the transition from student to career professional and to pursue activities of interest that are not necessarily covered by the technical society chapters.

IEEE South Australia has ~120 members whom IEEE designates as GOLD, and a petition to form a GOLD group initially at DSTO has been successful. Congratulations to Andrew Piotrowski, Sebastien Wong for their efforts.

Retired Engineers Group (Bob Bogner)

Considerable progress has been made towards the formation of a Retired Engineers Group (REG), Joint Technical Program, in the mould of the existing Electrical JTP. This is being driven by Em. Prof. Bob Bogner who established the IEE REG about 25 years ago. The recent experience of the current IEE REG is that the attendance (and mailing list) comprises a substantial number of IEEE and IEAust members.

IEEE SA is strongly supportive of this development and has offered financial support to the group as well as advertising space in the IEEE SA Newsletter. The number of IEEE REG members (on the mailing list) is ~80 and an offer to add these to the IEEE SA Newsletter mailing list (at no charge) has been made.

IEEE /Region 10/ Australia Council/Section

IEEE Region 10

The annual IEEE Region 10 Meeting was held in Penang, Malaysia, but was delayed this year until October because of SARS. This attendance is fully paid for by IEEE Region 10. The main issue was the reporting of Student Branch activities and their financing.

The 2004 IEEE Region 10 meeting will be held in Adelaide, 16-17 April. This is the first time the meeting will be held in Adelaide and it is some years since the R10 meeting has been held in Australia.

IEEE Australia Council

The IEEE Australia Council met several times this year by telephone. It proved to be a very successful innovation and a great deal of business was transacted. The Tripartite agreement between the IEEE, IEE and IEAust. continues to be a topic of discussion. At a recent IEAust Electrical College Board meeting, in Adelaide, the ECB continued to query the value of the agreement.

IEEE South Australia Section

The Section Committee voted this year to amend the By-laws to return to the 3 year maximum term of continuous service in any office position. At the request of the RAB (about three years ago) the Section reduced this term from 3 years to 2 years. After further consideration the Section Committee has decided that the 2 year term

- a. puts the Section Officer cycle out of step with the Sections' Congress triennial cycle
- b. reduces the opportunity for volunteers to become both confident and competent in any office
- c. is disadvantageous to small Sections (like SA) where maintaining continuity is more difficult than in larger Sections.

Correspondence with the Region 10 Director has occurred and it would appear that other Sections in Region 10 have expressed identical concerns.

The AGM voted unanimously to support the Section Committee's decision. The matter is unresolved and further negotiations with Region 10 and the RAB are in progress.

South Australia is not alone in this situation in Region 10, and we look forward to a satisfactory resolution of the situation.

Finally, I would like to express my sincere thanks to the Section Committee (and the committees of the various Section entities) for their work during 2003. The IEEE depends heavily on volunteers to make things happen and their efforts on behalf of IEEE members in South Australia are warmly appreciated.

Dr Michael E. Evans
Chair, IEEE South Australia Section
January, 2004

Chapter Reports to the AGM, 2 Dec 03

Communications & Signal Processing Chapter

In 2003 the C&SP Chapter was engaged in three technical activities.

Thursday 5 December 2002, Professor Albert Zomaya, CISCO Systems Chair Professor of Internetworking at the University of Sydney, presented a seminar at DSTO Edinburgh. The seminar was titled, "Modelling Networks Behaviour By Using Partial Information." The seminar proposed a method for the modelling of network connectivity by using passive information gathering, and attracted a good audience.

On Friday 24 October 2003, Allan Jeffs and Peter Kerr from Information Networks Division, Defence Science Technology Organisation, presented a two part seminar on the "Australian Defence Satellite Communications Capability." The first part of the seminar by Allan Jeffs gave an overview of the C1 satellite. The second part by Peter Kerr described the existing and planned Defence ground segment that will use C1. This seminar attracted around 100 people from DSTO, academia and many from Defence industry.

The Chapter was involved with sponsoring the 7th International Symposium on DSP and Communications Systems, 8-11 December 2003, Coolangatta, Qld. Our sponsorship was in the form of a \$1000 contribution. We are listed as sponsors on the workshop website <http://www.elec.uow.edu.au/secte/DSPCS2003/>.

Peter Shoubridge
Chair, Communications and Signal Processing Chapter

AP/MTT Chapter

The following officers to the chapter were elected in July this year.

Chair: Dr. H. J. Hansen, DSTO
Vice-Chair: B. Bates
Secretary/Treasurer: Zia Ahmed
University PR Chris Coleman University of Adelaide

The activities of the chapter were focussed on the five-nation series RADAR 2003 conference in Adelaide of which the IEEE SA section played a leading organisational role.

The chapter also sponsored a free one-day course on modelling and simulation, delivered by Prof. Levent Sevgi from T. C. Dogus University, Istanbul, Turkey at

the University of Adelaide in September. There were 25 attendees associated with DSTO, Adelaide University, or Industry.

Dr Hedley Hansen
Chair, AP/MTT Chapter

Control, Aerospace and Electronic Systems Chapter

In 2003 CAES focused on organisation of seminars, often jointly with the local AIAA chapter. Australian visits by IEEE and AIAA distinguished lecturers were excellent examples when cooperations of local Australian IEEE chapters brings benefit to overall membership if IEEE and other professional organisations.

The full list of 2003 seminars is as follows:

1) *Determination of the Operational Effectiveness of UAVs for Mining Exploration*, Warren Williams and Michael Harris, (5th May 2003)

2) *National Experimental Supersonic Transport (NEXST1) of Japan - Launch Incident Investigation*, Dr Takeshi Ohnuki, NAL, Japan and Peter Nikoloff, Nova Aerospace, (30th June 2003)

3) *Plasma Thrusters a NASA - ANU Collaboration*, Dr Franklin Chang-Diaz, Director, NASA Advanced Space Propulsion Laboratory, Johnson Space Center, Houston (21st August 2003)

4) *The Future of U.S. Planetary Exploration*, AIAA Distinguished Lecturer Randii Wessen, California Institute of Technology, NASA Jet Propulsion Laboratory (4 September 2003)

5) *Predictive Guidance for Launch Vehicles*, Dr Matthew Tetlow, University of Adelaide, (8th October, 2003)

6) *Model Predictive Control, State Estimation and Coordinated Vehicles*, Professor Bob Bitmead Mechanical and Aerospace Engineering, UC San Diego, 2003 IEEE Control Systems Society Distinguished Lecturer, (29th October 2003)

7) a) *Research activities at TU/e* - Nico Rademakers, Eindhoven University of Technology (TU/e), The Netherlands, and RMIT University

b) *Radio direction finding for Maritime search and rescue*, Kerrin Pine, Flinders University (9th December, 2003)

The attendance at the above varied from 27 to around 80, depending on venue and time. Whenever circumstances allowed the seminars were presented both at the University of Adelaide and at DSTO.

I wish to thank Dr Michael Evans for his involvement in organisation of seminars.

Dr Mark Pszczel
Chair, CAES Chapter

EDUCATIONAL ACTIVITIES

One of the portfolio positions on the Section Committee is "Education". Despite best past efforts, the portfolio seems to have had something of a chequered history. Perhaps the problem has been in finding a focus. Just what can or should a trans-national organisation do at the sectional or

national (Council) level that will add value for members? Several things come to mind and maybe there are others which readers of this column may like to suggest.

However before discussing any of them, a matter that needs to be fully appreciated is that there is in this country a national organisation, the Institution of Engineers, Australia (IEAust), that already has a large role in this area. It is the signatory to the Washington Accord under which there is mutual recognition of engineering qualifications between member countries, including the United States, home base of IEEE. Within Australia it supervises the accreditation process whereby qualifications granted by individual schools are certified and so brought within the framework of the Accord. Hence whatever IEEE does locally needs to complement this framework. With these boundary conditions, how then is its role to be defined and at what levels is it to operate?

At the undergraduate level opportunities are probably limited, but not absent. It might, for example, work more closely with student branches to connect them into the itineraries of visiting lecturers. Individual sub-disciplinary streams within existing engineering faculties frequently have organized external lecturer seminar programs for senior students and maybe there is an honest broker role in helping locate appropriate lecturers. Another might be in facilitating service by those who have something to contribute as external members of faculty committees.

There is probably no longer any need to convince engineering practitioners already in the workplace of the need for continuing professional development (CPD). Technology continues to advance apace and simply maintaining continuing employability, which in more recent times has become much more an individual than an employer responsibility, is enough to fuel a need to keep current. Many technologies once important have been abolished by either new ways to generate their functions or by the disappearance of any need for them altogether. In a working lifetime, careers can perhaps be destroyed and remade several times over. Moreover in an era of globalisation, where many engineers will work within more than one set of national borders, keeping current means doing so in an international context.

IEEE already does a lot to help here. It produces by far the most comprehensive collection of professional journals spanning the whole of electro-technology, a subset of which is compulsory reading for almost all practitioners in the specialty that it addresses. Various of the Societies too sponsor Distinguished Lecturers, some of whom are brought to this country under Council auspices. The central IEEE organisation at Piscataway itself produces a range of educational materials (e.g. books, tutorial DVD's etc) that can be accessed by financial members at privileged rates. None of this though need involve the Section education portfolio – what then is there left to do?

Two things spring to mind. One is to identify local niche needs that complement these initiatives. Although

this too will often involve local Society chapters, where a local need is identified amongst a group of practitioners, IEEE at the section level has a role in filling it. This may involve support of a locally based person to prepare appropriate course material and/or to provide the necessary administrative support, or to run with unsolicited proposals from the membership at large. As important as actual participation in CPD is, to receive appropriate and portable recognition for it is no less so. Here the National Professional Engineers' Register (NPER) would seem to provide the benchmark.

The NPER in this country is set up under the supervision of the National Engineers' Registration Board (NERB) a body that includes nominees from the various levels of government, the community and the profession. IEAust administers the Register as service provider to the Board and is specifically excluded from any monopoly role over who may be registered. Important in this context is that to remain registered requires a commitment, subject to audit, to a minimum of 150 weighted hours of CPD in any three year period. Satisfying the audit requires keeping proper records and the accumulation of appropriate credentials. Credentialing provides a role for IEEE at the sectional and national level; IEEE needs to ensure that CPD initiatives in which it is involved are brought within this framework and receive the proper level of credit.

An important feature of registration for IEEE members who wish to work independently as consultants or to certify engineering work is the role that it is likely to have when the present professional indemnity (PI) crisis is finally resolved. All States and Territories have undertaken to enact professional standards legislation (and the Commonwealth to amend the Trade Practices Act to allow it to be effective) under which it is expected that there will be some relief from the present unsatisfactory PI regime, particularly in relation to proportionate liability. Obtaining the relief provided by the legislation can be expected to be contingent on demonstration of CPD. This certainly gives IEEE a role on behalf of its members at section and national level.

Harry Green

Embargo

From an email from Michel Gevers, FIEEE, Former Vice-President, of the IEEE Control Systems Society.

"You may or may not know that the IEEE Board of Directors has, for the last two years, drastically restricted its services to IEEE members from countries that are embargoed by the US government. The acceptance of government interference in the running of our Institute by the present IEEE leadership has angered many members, and there have been a flurry of individual protests. However, it appears that many if not most of the members are still unaware that the IEEE has been discriminating against some of our fellow members on the basis of their nationality or country of residence."

The website and the IEEE pages to which it links, will provide full information about the embargo http://www.csam.ucl.ac.be/IEEE_Petition.pl

Technology Futures – 2004, 3 – 4 June 2004

The Electronics Industry Association (EIA) and The Australian Electrical and Electronic Manufacturers' Association (AEEMA) are delighted to announce Technology Futures – 2004, "The Second National Electronics Industry Annual Conference" to be held on 3 – 4 June 2004 at the Hilton International, Adelaide.

Forward thinking companies look to emerging technologies to expand their businesses. The conference draws its theme from this and offers a conduit to investigate these emerging technologies.

In 2004 the Conference will expand your horizons, covering topics such as:

- Future Technologies (The Future)
- Emerging Technologies (Tomorrow)
- Applications (Today)
- Commercialisation (R&D to Reality)

A wide range of sponsorship opportunities is offered within this document. To complement the Electronics Conference, an exhibition showcasing new technologies and commercialisation practitioners will be held concurrently.

For further information www.eiaa.asn.au/event.html

Conference Schedule

Date	Conference	City	Website
20-23 July, 2004	5th Biennial Asian Control Conference	Melbourne	http://ascc2004.ee.mu.oz.au/
30 August - 2 September, 2004	8th IEEE International Symposium on Spread Spectrum Techniques, Applications (ISSSTA)	Sydney	http://www.isssta2004.org/
4-9 September, 2005	IEEE International Symposium on Information Theory (ISIT)	Adelaide	http://www.informationtheory.net/conference

IEEE SOUTH AUSTRALIA SECTION INCOME/EXPENSE 2003

Income

		Budgeted	Actual
2	Program Revenue		
2.5	Conference Revenue	5,000.00	20,000.00
2.7	Professional Activities		2,430.00
3	Other Receipts		
3.1	IEEE Section Rebate	8,500.00	7,011.40
3.2	IEEE Region 10	3,000.00	1489.87
3.34	IEEE HQ & Societies		
3.4	Interest	3,000.00	2,652.47
3.7	Other Receipts		
	TOTAL	19,500.00	33,583.74

Expenditure

4	Program Expenses		
4.1	Meetings (Section Committee/AGM)	600.00	159.50
4.2	Publications		
	Newsletter	3,000.00	3,178.75
4.3	Advertising (GOLD)	200.00	0
4.6	Educational Activities		
4.7	Professional Activities (incl. chapters)	4,400.00	10,876.74
4.8	Student Activities		
	Student Recruitment	400.00	0.00
	Student Branch Support	600.00	0.00
4.85	Grants/Awards		
	IEEE SA Student Awards	1,500.00	1,000.00
	IEEE SA Travel Grants	4,000.00	4,300.00
4.90	Other Programs (GOLD)		242.10
5	Management & General		
5.2	Travel (IEEE Region 10 meeting)	3,000.00	1,629.41
5.5	Support to Chapters	1,500.00	1,500.00
5.52	Support to Regions (Aust Council)	200.00	0.00
5.6	Other Office Expenses (misc. secretarial, audit)	50.00	326.00
	Taxes	50.00	
6	Fundraising Expenses		
	TOTAL	19,500.00	23,212.50

Andrew Piotrowski
Treasurer, IEEE South Australia Section