

CHAIRMAN'S COLUMN

Dear IEEE members,

The year 2005 is almost over and it seems like yesterday when I introduced myself as the new Section Chair. It has been a very busy year for me. I would like to talk about some of the main activities for the last few months here.

A meeting of Chapter Chairs was held on 14th September 05. The main aims of the meetings were to:

1. Explore ways to enhance relationship between Section and Chapters
2. Revisit some of our responsibilities for reporting to the IEEE HQ and
3. Discuss available and potential opportunities

The meeting was seen as a useful exercise by all participants and it was decided to hold two such meetings each year; one at the beginning of the year, before finalising the Section's budget and second around mid September. I am hoping that this will allow the Section and Chapters to bring more interesting programs to IEEE members in South Australia.

In October I attended the IEEE Sections Congress 2005 in Florida, USA. IEEE Section Congress is a triennial gathering of Section leadership to network and share knowledge and to gain working knowledge of IEEE. This year's theme was "Promoting a World Class Volunteer Community. Australia was well represented with the attendance of almost all Section chairs and Australia Council chair, Dr Michael Evans. Section Congress also provides a forum to express opinions and concerns through recommendations for actions, which is used by the IEEE Board of Directors to guide the IEEE into the future. The top ten recommendations this time can be viewed at the IEEE Section Congress'05 website.

The gathering of all Section chair from Australia at the Section Congress provided an opportunity to hold an Australia Council meeting, which was also joined by our friends from New Zealand Council and Region-10 Director-elect Professor Janina Mazierska. One of the main topics for discussion was the visit by the IEEE RAB/TAB delegation to Australia in December. You will find more information about the visit in this newsletter.

In October a bid to hold an International Engineering Management Conference in Adelaide in 2008 was

submitted to the Engineering Management Society (EMS). At the Section Congress, I held a meeting with the EMS President Prof. Irving Engelson and Vice-President Prof. Charles Rubenstein to answer questions about the bid and discuss issues relevant to the conference administration. Dr Michael Evans also attended the meeting. I am confident that we will be successful in our bid to bring this conference to Adelaide. I hope that IEMC'08 will provide a focus to form an EM Chapter in South Australia. However at this stage there are not enough members to form a chapter and hence IEEE Vic Section has been contacted to form a joint Chapter. IEEE Vic has an EM Chapter, which has not been very active lately. If you are a member of the EMS and would like to help us in setting up an Engineering Management Chapter, please do get in touch with me or Dr Tim Ferris at UniSA.

We are now in the final stages to arrange this year's Distinguish Lecture and annual dinner at the Adelaide Museum on Wednesday, 7th December 05. Professor Max Brennan, Chief Scientist of South Australia, has very kindly accepted the invitation to deliver this year's distinguish lecture. As mentioned in the earlier issues of this newsletter, IEEE South Australia has completed 20 years in 2005 and we will be celebrating this milestone at the dinner night. Members of the Section Committee and I invite you and your partner to join us on this occasion, which we are doing our best to be an enjoyable evening. The dinner night will also provide you an opportunity to meet some of the senior IEEE officials from the US. So please do send the registration slip to the Secretary, Dr Steven Gordon as soon as possible. The dinner registration slip can be printed from the IEEE-SA website or by contacting Dr Steven Gordon by email or phone.

Dr Zia Ahmed

Chair, IEEE South Australia Section

IEEE SA Section AGM

(as well as AGM's for Comms and SP, CAES, and AP/MTT Chapters)

Tuesday 13 December 2005, 6:00pm

SPRI Building
Mawson Lakes

Drinks and nibbles provided. See page 3 for details

IEEE SA ANNUAL LECTURE AND DINNER

The IEEE SA Annual Dinner and Distinguished Lecture is confirmed for 7th December at the South Australian Museum on North Terrace. The Lecture will be presented by South Australia's Chief Scientist, Emeritus Professor Max Brennan. A delegation from the IEEE Regional Activities Board (RAB) and Technical Activities Board (TAB) will also be in attendance. We encourage all members to support this high profile event for SA. Members will have received a flyer via email or post. For further information please contact Steven Gordon or Zia Ahmed at south.australia@ieee.org.



IEEE SA TRAVEL AWARDS

Four IEEE SA Travel Awards have been granted for Round 2 this year:

1. Chi Wah Yung from The University of Adelaide was awarded \$1000 to present a paper at the 4G Mobile Forum in San Diego in July.
2. Kin Shing (Bobby) Yau from The University of Adelaide was awarded \$1000 to present a paper at the URSI General Assembly in New Delhi in October.
3. Suresh Sankaranarayanan from UniSA was awarded \$300 to present a paper at the Asia Pacific Communications Conference in Perth in October.
4. Martin Donnelley from Flinders University was awarded \$300 to present a paper at the 8th IEEE International Symposium on Signal Processing and its Applications in Sydney in August.

Congratulations to all the winners! The deadline for the next round of awards is February 28 2006.



Suresh Sankaranarayanan attended APCC in Perth with support from IEEE SA

IEEE RAB/TAB VISIT IN DEC 2005

INCLUDING DISTINGUISHED LECTURES

From the 6th to 8th December this year a high-profile delegation from the IEEE Regional Activities Board (RAB) and Technical Activities Board (TAB) will be visiting Adelaide as part of a tour around Australia and New Zealand. The RAB coordinates administrative activities amongst all 10 IEEE Regions, while the TAB manages technical activities, mainly through the IEEE Societies. This is a unique opportunity for IEEE SA members to raise issues directly with leaders of IEEE. A tentative itinerary of the visit, which includes several technical presentations from Distinguished Lecturers, is below. If you have any issues that you would like presented to the delegation, please contact Steven Gordon on (08) 8302 3606 or south.australia@ieee.org

Time	Activity	Location
<i>Wednesday 7th December 2005</i>		
8-9am	Discussion with IEEE SA Section Committee	Mawson Lakes
9:30-10:30am	Computer Security by Marc Apter	Mawson Lakes
9:30-10:30am	Trends in the Telecommunications Industry by Celia Desmond	Mawson Lakes
11-12am	Overview of IEEE by Arthur Winston	DSTO
	High Accuracy Clocks by John Vig	DSTO
	Discussion with DSTO Library Execs	DSTO Library
7pm	IEEE SA Dinner	SA Museum
<i>Thursday 8th December 2005</i>		
9 - 12am	Visit to Flinders University	Flinders Uni
	Visit to University of Adelaide	Uni of Adelaide

ISIT IN ADELAIDE

CONFERENCE REPORT FROM THE IT CHAPTER

The IEEE International Symposium on Information Theory (ISIT) was held in the Adelaide Convention Centre on September 4-9. The General Co-Chairs were Alex Grant (UniSA) and Rod Kennedy (NICTA), supported by a team of ACoRN Members. The Technical Program Co-Chairs were Stephen Hanly (Uni Melbourne) and Christian Schlegel (Uni Alberta, Canada).

It was the first time the ISIT was held in the southern hemisphere and it was a great success with close to 650 of the top researchers in information and communications theory from around the world attending. A significant change was introduced at ISIT this year, extending the Symposium proceedings to include five-page manuscripts distributed on CDROM and available online on IEEE Explorer. A total of 798 papers were submitted for review from 47 countries, with an acceptance rate of 62%. An inspiring program, featuring 500 paper presentations

organised into seven parallel sessions was put together by the technical program chairs.

They were also able to four world-class plenary speakers to complement the 2005 Shannon Lecturer, Prof. Richard Blahut (Uni. Illinois, USA). In addition to the Shannon Lecturer, the plenary speakers were Prof. Benjamin Schumacher (Kenyon College, USA) lecturing on quantum and information theory, Prof. David Mackay (Cambridge University, UK) lecturing on hands-free writing, Prof. P. R. Kumar (Uni. Illinois, USA) lecturing on theoretical foundations for wireless and sensor networks, and finally, Prof. Terry Speed (U.C. Berkeley, USA and Eliza Hall Inst. Medical Research, Melbourne) lecturing on information theory and bioinformatics.

The attendees at the ISIT had only good things to say about the venue and the organisation. The technical quality was high and the social events exposed the international visitors to some Australian experiences, such as koalas and Australian snakes at the welcome reception and aboriginal dancing at the banquet. Insights into some of the Australian initiatives in the ICT area were provided by the Honourable Karlene Maywald (MP in South Australia, among other portfolio - Minister for Science and Information Economy) as the awards luncheon speaker and by Prof. Bob Williamson (National ICT Australia) as the banquet speaker.

In summary, the ISIT in Adelaide was a memorable event, promoting Australia and Australian research. The ARC Communications Research Network (ACoRN) was a proud major sponsor of the ISIT and enjoyed significant exposure to the international community. General Co-Chair Alex Grant is to be congratulated on his hard for making the ISIT in Adelaide the great success that it was.

Professor Lars Rasmussen

Chair, IEEE SA/NSW/Vic/ACT Joint IT Chapter

SA SECTION AND CHAPTERS AGM

TUESDAY 13 DECEMBER 2005

The SA Section as well as several Chapters will be holding their Annual General Meeting on Tuesday 13 December 2005, 6:00pm for 6:30pm start at:

SPRI Building
University of South Australia
Mawson Lakes SA 5095

The following nominations have been received:

Section Executive

Chair: Zia Ahmed
Vice Chair: Arek Dadej
Treasurer: Mark Pszczel
Secretary: Steven Gordon

Communications and Signal Processing Chapter

Chair: John Asenstorfer
Vice Chair: -
Treasurer: Mark Ho
Secretary: Gareth Parker

Antennas and Propagation and Microwave Theory and Techniques Chapter

Chair: -
Vice Chair: -
Treasurer: -
Secretary: -

Control, Aerospace and Electronic Systems Chapter

Chair: Michael Evans
Vice Chair: -
Treasurer: Michael Evans
Secretary: Mark Pszczel

Please send any further nominations to the appropriate Returning Officer by 5pm Tuesday 13 December 2005. The returning officer for the Section Executive positions is:

Michael Evans
Michael.Evans@ieee.org
PO Box 53, Elizabeth SA 5112.

The returning officer for all the Chapter positions is:

Steven Gordon
Steven.Gordon@unisa.edu.au
Ph 8302 3606
SPRI Building, Mawson Lakes SA 5095.

SPACE, FOR THE REST OF US

SEMINAR REPORT FROM THE CAES CHAPTER

Approximately 350 attended "Space, for the Rest of Us" delivered by Burt Rutan, the designer of Space Ship One which won the \$10M Ansari X-Prize in 2004. The presentation was held in Union Hall at the University of Adelaide.



Burt Rutan is a giant amongst aircraft designers of

the last 40 years as can be seen immediately from the Scaled Composites website <http://www.scaled.com/>. This was the more strongly supported technical lecture that IEEE C/AES has mounted in conjunction with the AIAA Adelaide Section, with financial support from AIAA and the Sir Ross and Sir Keith Smith Fund, and assistance from the Royal Aeronautical Society.

Visiting Australia on a golfing holiday (and to deliver the Sir Reg Ansett Lecture at the Safeski's Conference in Canberra!) IEEE/AIAA were pleased to be able to bring Burt and his wife Tonya to Adelaide and to host them at the Royal Adelaide Golf Course.

Michael Evans
Chair C/AES Chapter

SpaceShipOne glides down for approach to the Mojave airport. Photo credit: Courtesy of Scaled Composites, LLC

IEEE STUDENT SUBJECT PRIZES

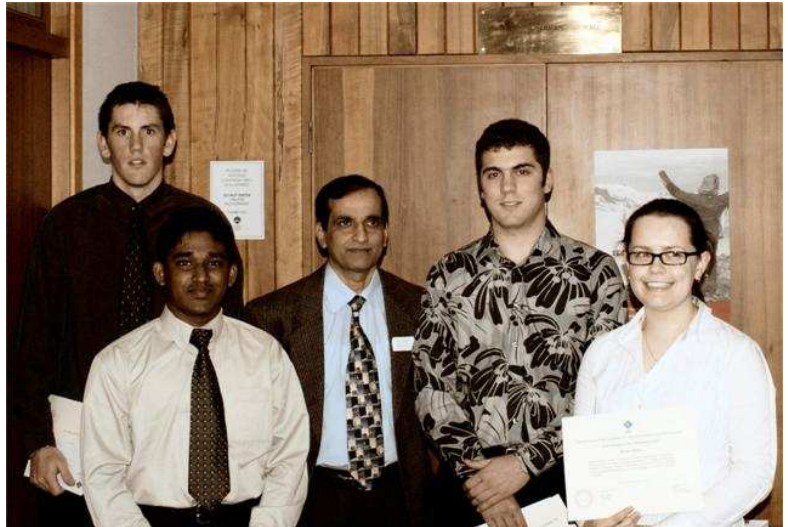
On 25 October this year, the IEE hosted the Student Papers Night as part of the IEEE/IEE/IEAust/TSA Joint Technical Program (JTP) in Electrical and Electronic Engineering. As part of the night, the IEEE Student Subject prizes were awarded to recipients at each of the 3 SA universities. The awardees, who received a certificate, two years free membership to IEEE and a cheque, were:

Flinders University: **Miriam Whitten** for excellence in the overall experimental engineering components of the second year topics Circuits and Devices 2, Signals and Linear Systems, Analogue Signal Processing, Electronic Circuits, Digital Systems and Microprocessors

University of Adelaide: **Sandun Viraj Wimalaguna Kodituwakku, Stephen Joseph Migliore, James Tisato** for excellence in the course Practical Electronic Design II

University of South Australia: **David Kinnaird** for excellence in the course Signals and Systems

Congratulations to all prize winners!



NOVEL LOW NOISE OSCILLATOR AND WIDEBAND FILTER DESIGN TECHNIQUES

JOINT SEMINAR BETWEEN IEEE AP/MTT CHAPTER AND DSTO

Presented by Prof Keith Kikkert
James Cook University

Thursday 17 November 2005, 2pm
Atrium Presentation Area
Knowledge Systems Building
DSTO Edinburgh

Summary:

Both the oscillator and the wideband filter use novel applications of coupled resonators.

Conventional Oscillators use a single resonator for the frequency selective network that determines the oscillation frequency. One of the prime factors that determine the phase noise of an oscillator is the Q of the resonator network. By using a frequency determining network consisting of two resonators that are coupled, a lower phase noise is obtained than can be achieved for the same oscillator using a single resonator. Measured and simulated results for single and a dual coupled resonator oscillator operating at 1 GHz will be presented.

Most filter design is for filters with bandwidths of up to 20% of the centre frequency. The design of wideband filters is difficult to achieve in practice. A new design technique will be presented which allows wideband filters to be easily designed. As an example a filter with a centre frequency of 1 GHz and a 500 MHz bandwidth will be discussed. The measured filter performance shows a remarkable agreement with the calculated performance.

All Welcome!

BIOLOGICAL SYSTEMS AND MODELS IN INFORMATION SECURITY

JOINT SEMINAR BETWEEN IEEE COMPUTER CHAPTER AND CISSE-AP

Presented by Prof Daniel Ryan
National Defence University

Monday 21 November 2005, 7pm

This talk will be looking at how biological models inform and guide research in information security and risk management. It is to be held as part of the dinner for CISSE-AP: <http://www.cisse-ap.org.au/>

Contact Jill Slay (Jill.Slay@unisa.edu.au) or Robert Rowe (Robert.Rowe@halliburton.com) for further information.

UPDATE YOUR CONTACT DETAILS

Login to the Membership Portal at <http://www.ieee.org/myieee/> to update your contact details. Remember, most communications from the Section and Chapters is now via email, so please make sure your email address is correct. If you have any concerns about the email delivery system or desire hardcopies of newsletters, please contact the Section Secretary.

RECENT EVENTS WITHIN THE IEEE SA SECTION

<i>Date</i>	<i>Event</i>	<i>Presenter</i>	<i>Host</i>
11 Aug	Matlab Course	-	EEESAU
16 Aug	I-Mode "Mobile Services" for Australia	Tony Bundrock	EEE JTP
4-9 Sep	Intl Symposium on Information Theory	-	IEEE IT Chapter
7 Sep	Computer Networking	Raj Jain (Distinguished Lecturer)	IEEE SA Section
13 Sep	An Advanced Correlation Tracking System	Sebastian Wong (Travel Award recipient)	IEEE C&SP
13 Sep	IEEE Flinders Uni Student Branch BBQ	-	IEEE Flinders Uni SB
17 Sep	EEE Annual Final Year Dinner	-	EEESAU
20 Sep	The Square Kilometre Array	Don Sinnott	EEE JTP
30 Sep	Ad Hoc Networks	Zygmunt Haas (Distinguished Lecturer)	IEEE C&SP
13 Oct	AI and Robotics	-	IEEE Flinders Uni SB Flinders Computer Society
14 Oct	Studies in Agent Based IP Traffic Congestion Management in DiffServ Networks	Suresh Sankaranarayanan (Travel Award recipient)	IEEE C&SP UniSA School of EIE
14 Oct	EEESAU AGM	-	EEESAU
18 Oct	Visit to the Waite Cluster	-	EEE JTP
25 Oct	Student Papers Night and IEEE Student Subject Prizes	-	EEE JTP
26 Oct	Radar Physics at the Grand Academy	Stuart Anderson	IEEE GOLD IEEE CAES
28 Oct	Space, for the Rest of Us	Burt Rutan	IEEE CAES AIAA
1 Nov	Capacity of the Relay Channel in Multihop Wireless Networks	Alex Grant	IEEE GOLD
8 Nov	Design of Distributed Agent Mobility Management Platform for IP-Based Wireless Network	Chi Wah Yung (Travel Award recipient)	IEEE C&SP Uni of Adelaide
9 Nov	Characterizing Mobility in Ad Hoc Networks	Quang-My Tran (Travel Award recipient)	IEEE UniSA SB ITR

EEESAU – Electrical and Electronic Engineering Society of Adelaide University, includes the University of Adelaide IEEE Student Branch

EEE JTP – Electrical and Electronic Engineering Joint Technical Program between IEEE, IEE, IEAust and TSA

Chapters: IT – Information Theory; C&SP – Communications and Signal Processing; CAES – Control, Aerospace and Electronic Systems; AP/MTT – Antennas and Propagation and Microwave Theory and Techniques; GOLD – Graduates of the Last Decade

UPCOMING AUSTRALIAN CONFERENCES

LCN 2005

30th IEEE Conference on Local Computer Networks
Bondi Beach, 15-17 November

ISESE 2005

Intl Symp on Empirical Software Engineering
Noosa Heads, 17-18 November

CISSE-AP 2005

1st Colloquium for Information Systems Security Education
– Asia Pacific
Adelaide, 21-22 November

Technical sponsorship by IEEE SA Section

IEEE TENCON 2005 and ATNAC

IEEE Region 10 Technical Conference and Australian
Telecommunications, Networks and Applications
Conference
Melbourne, 21-24 November

ISSNIP 2005

Intl Conf on Intelligent Sensors, Sensor Networks and
Information Processing
Melbourne, 5-8 December

e-Science 2005

1st IEEE Intl Conf on e-Science and Grid Computing
Melbourne, 5-8 December

DSPCS/WITSP 2005

8th Intl Symp. on DSP and Comm Systems and 4th
Workshop on the Internet, Telecoms and Signal Proc.
Noosa Heads, 19-21 December

Technical sponsorship by IEEE SA Section

TABLETOP 2006

IEEE Intl Workshop on Horizontal Interactive Human
Computer Systems
Mawson Lakes, Adelaide, 4-6 Jan 2006

AusCTW 2006

Australian Communications Theory Workshop
Perth, 1-3 Feb 2006

AusWireless 2006

1st IEEE Intl Conf on Wireless Broadband and Ultra
Wideband Communications
Sydney 13-16 March 2006
Paper deadline: 14 November 2005

VTC Spring 2006

IEEE Vehicular Technology Conference
Melbourne, 7-10 May 2006

IEEE SA SECTION COMMITTEE 2005

Chair

Dr Zia Ahmed (zia.ahmed@ieee.org)

Vice Chair

Assoc. Prof. Arek Dadej (Arek.Dadej@unisa.edu.au)

Secretary

Dr Steven Gordon (s.gordon@ieee.org)

Treasurer

Mr. Andrew Udina (andrew.udina@ieee.org)

Immediate Past Chair

Dr Michael Evans (Michael.Evans@ieee.org)

Chapters/Affinity Groups

C&SP Chapter Chair: Dr John Asenstorfer

(John.Asenstorfer@dsto.defence.gov.au)

AP/MTT Chapter Chair: Dr Hedley Hansen

(hedley.hansen@dsto.defence.gov.au)

CAES Chapter Chair: Dr Michael Evans

(Michael.Evans@ieee.org)

Info Theory Chapter Chair: Prof. Lars Rasmussen

Lars.Rasmussen@unisa.edu.au

GOLD Chair: Dr Andrew Piotrowski

(Andrew.Piotrowski@ieee.org)

Computer Chapter Chair: Robert Rowe

(robert.rowe@halliburton.com)

Professional Activities

Joint Tech Program Mr. A. Udina & Dr Leigh Powis

Liaison (External) Zia Ahmed, Michael Evans and
Bevan Bates, Andrew Parfitt

Education Activities

Prof. Harry Green (hgreen@ieee.org)

Publications

Newsletter *Vacant*

Web site Mr. Damon Couper
(damoncouper1@optusnet.com.au)

Awards

Travel & Subject Prize: Assoc. Prof. Arek Dadej

Annual Awards/Dinner Committee: A. Dadej, A.
Parfitt, M. Evans and B. Bates

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Brian Ng (bwng@eleceng.adelaide.edu.au)

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