

WHAT'S HAPPENING IN THE IEEE



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THE NEWSLETTER OF
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SOUTH AUSTRALIA SECTION
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Chairman's Column

IEEE South Australia Section 2001 Annual Report

As reported in the April newsletter, the SA Section began the year with a strategic planning meeting to consider the direction of local IEEE activities and establish some goals for 2001. As the year ends, it is timely to examine those goals to see how we fared.

- (1) *Establish a Student Branch at Flinders University:* Although a Branch has not yet been established, steps have been taken to boost the level of student memberships at Flinders in preparation. A meeting will be called early next year, which should lead to a Branch being established.
- (2) *Update the Section web page at least monthly:* The Web page has been rehosted to the IEEE entity web site (http://ewh.ieee.org/r10/s_australia/) and is updated regularly as information about events becomes available.
- (3) *Hold at least 4 joint events with Defence/DSTO:* Four Chapter events have been held either at DSTO or with DSTO involvement. The speakers were: Rod Bryant (CAES), Ljubo Vlacic (CAES), Paul Coddington (Computer), Yupo Chan (C&SP)
- (4) *Do something to retain new graduates (e.g. establish a GOLD program):* Elsewhere in the newsletter you will find a notice inviting eligible members to express their interest in establishing a GOLD Affinity Group. As with the Student Branch, it is now unlikely it will be set up this year but background work has been done which should result in a Group being established next year.
- (5) *Develop synergies with IEE/IEAust:* Consideration was given to expanding the role of the Joint Technical Program Committee but this does not now seem likely to occur due to lack of support from the current committee. Links with other organisations have been forged or strengthened, most notably with the AIAA and the RAeroSoc by the CAES Chapter.
- (6) *Invite at least four IEEE Distinguished Lecturers to SA:* Dr Salah Aidarous (ComSoc) has given a lecture and talks by Fazal Ali (AP/MTT) and David Fogel (ANN) are planned. In addition CAES supported the AIAA DL Dava Newman and underwrote (with RAeroSoc assistance) the Bill Schofield lecture.

Other Happenings: The SA Section has agreed to be the host for the Australian Information Theory Chapter. Details of this and reports of other Chapter and Student Branch Activities are given elsewhere in the newsletter.

On the conference scene, preparations for Information, Decision and Control conference (IDC 2002) are well advanced while the books of APMC 2000 have been finalised with a surplus of around \$16k being returned to SA. Special thanks go to Michael Evans for his efforts in support of both of these events. The SA Section Bylaws have been updated and discussions over changed IEEE banking requirements have led to a satisfactory outcome.

Membership: Overall membership has showed a slight decline although much of this has been in student member numbers and this does not include recent recruitment of students at Flinders University. Encouraging students to retain their membership after graduation is still a major issue for the IEEE and this is part of the reason for establishing a GOLD program. We have "lost" three regular members through their elevation to Senior Member status – may this trend continue!

As this is my last year as Section Chair, I would especially like to thank all the members of the Section Committee for their support and commitment to the IEEE in South Australia over the past three years. I wish the Section (including its constituent Chapters and Branches) every success for the future.

Dr Bevan D. Bates
Chair, IEEE SA Section
October, 2001

Annual General Meeting of IEEE South Australia Section and Chapters

Will be held on Monday 3rd December 2001

At Motorola Australia Software Centre, Second Avenue,
Mawson Lakes.

Light tea at 5:30 for 6:15 meeting start.

It is important that anyone intending to be there let us know in advance so that we can arrange the appropriate security clearances and catering level.

Please contact IEEE SA Section on
E-mail: Michael.Liebelt@ieee.org
or Mr. Michael Liebelt,
Tel: 08 8303 5114 Fax: 08 8303 4360

2000 IEEE-SA Student Award Presentation

The 2000 IEEE Student Awards were presented during the Student Paper Night on, Tuesday 23 October 2001, by Chairman, Dr Bevan Bates.

The IEEE Student Awards were established in 1992 to recognise and encourage excellence in the study of electrical and electronic engineering, and are awarded annually on the basis of academic performance during the second year of study at each of the universities in South Australia. In addition to the certificate and cheque for \$300, the IEEE student award carries with it student membership of IEEE.

In selecting the recipient of the IEEE Student Award it is interesting to note that each of the three universities has chosen a different approach, but in each case the practical and professional side of electrical/electronic engineering is emphasised.

The 2000 IEEE Student Award recipients were:

1. Darren Freeman, School of Informative and Engineering, The Flinders University, for outstanding performance in the overall experimental engineering components of second year topics 'Electrical Networks', 'Signals and Linear Systems', 'Analogue Signal Processing', 'Electronic Circuits', and 'Digital Circuits and Microprocessors'
2. Ms Preethi Chandrasekar, Department of Electrical and Electronic Engineering, shared The University of Adelaide award, for distinction in the degree course 'Experimental Electrical Engineering II'
3. Edward Stokes, The University of South Australia, based on overall examinations in 2000.

It was an excellent and well attended evening, of student papers and student awards.

Zia Ahmed
Convenor, IEEE Student Awards IEEE South Australia Section



Edward Stokes of the University of South Australia (right) being congratulated on his award by Chair of IEEE SA Section Dr Bevan Bates

Nomination for Section Committee for 2002

The following members have been nominated to the South Australia Section Committee for year 2002:

Chair: Dr. Michael Evans
Vice chair: Dr. Miro Kraetzl
Secretary: Dr Timothy Ferris
Treasurer: Dr. Andrew Piotrowski

ANN RIG chair:

AP/MTT chapter chair:

CAES chapter chair:

C&SP chair:

Computer chapter chair:

Returning Officer

Dr Bevan Bates at Bevan.Bates@ieee.org

For all positions in section and chapters except for AP/MTT chapter positions for which

Mr Mike Liebelt (Michael.Liebelt@ieee.org) is the returning officer

GOLD GOLD GOLD RUSH IN

Get involved and participate in the new IEEE GOLD Program. It is for you.

What is the GOLD Program?

GOLD was designed to meet the professional needs of members with 0 - 10 year experience as an Engineer. It encourages this affinity group to form an IEEE Group to foster networking between members with similar interests and concerns.

The GOLD program is geared toward professional development, while emphasising current issues.

We can help you to find fellow engineers who can share their experience. We organise professional and social meetings on the following topics:

- Talks and help on career planning, developing leadership skills, interviewing workshops, Balancing personal and professional life, job hunting, purchasing your first home and financial planning.
- Tours local industries, DSTO, Motorola, universities.
- Social events

Please come and see us at the annual general meeting of IEEE South Australian Section on

Monday 3rd December 2001

at Motorola Australia Software Centre,
Second Avenue, Mawson Lakes.

or contact andrew.piotrowski@ieee.org or Andrew Piotrowski on 8259 6635.

See you there.

It is your chance to get involved.

REPORTS FROM THE CHAPTERS

Control/Aerospace and Electronic Systems Chapter

REPORT OF THE CHAIRMAN OF THE CONTROL, AEROSPACE AND ELECTRONIC

SYSTEMS CHAPTER OF THE IEEE SOUTH AUSTRALIA SECTION, 2001.

The Chapter's AGM and the election of office bearers for 2001 were held, along with the AGM of the IEEE SA Section, on December 2000 at the Defence Science and Technology Organisation's Salisbury premises.

There were a number of technical activities organised by the Control, Aerospace and Electronic Systems (CAES) Chapter this year.

In December, the CAES Chapter and the Adelaide University's Department of Electrical and Electronic Engineering organised a technical seminar on *Active Antenna Array Activities at FOA Linkoping*. Dr Sven Hagelin and Dr Borje Carlegrim of the FOA Defence Research Establishment in Sweden gave a presentation of FOA and its research activities.

In April, the Chapter, the Adelaide University, the AIAA (American Institute of Aeronautics & Astronautics) and the DSTO's Weapon Systems Division organised two technical meetings on *Evolution of GPS - The Technology and the Market*. Dr Rod Bryant of Sigtec Navigation Pty Ltd, Australia gave an overview of GPS satellite navigation system technology. The meeting was very well attended at both venues.

On 17 May, a joint seminar with AIAA on *The Hysht Flight Program* delivered by Dr Allan Paull of the University of Queensland, was held at Adelaide University. It was unexpectedly well attended despite the foul wet weather!

A week later, a seminar *Human Space Exploration from MIR to Mars* was held at Adelaide University. The speaker, Professor Dava Newman of MIT, an AIAA Distinguished Lecturer, gave an informative lecture on astronaut activities on space station MIR and preparations for a human mission to Mars, and presented some challenging issues to a very well attended audience.

Dr Ljubo Vlacic, Griffith University, provided two seminars in June (one at DSTO and the other at Adelaide University) entitled *Intelligent Vehicles - Cooperative Driving*. The meetings were also co-sponsored by AIAA. We were pleased to be able to join with AIAA and the Adelaide branch of the Royal Aeronautical Society to co-sponsor in October a repeat of the 11th Dr. Henry K. Millicer Lecture (an annual lecture sponsored by RMIT). The speaker was Dr Bill Schofield, Director of the DSTO Aeronautical and Maritime Research Laboratory. His presentation *Research and Development for Military Aviation - Past, Present and Future* covered Australian R & D work in aeronautics since it began in 1939 and provided an interesting glimpse of the next era of air warfare.

Excellent progress has been made on the organisation of IDC 2002, (Information Decision and Control, to be held in 11-13 February 2002 in Adelaide).

I would like to thank the 2001 CAES committee for their support and assistance in organising the technical meetings and activities.

Dr Cheng-Chew Lim
Chair, CAES Chapter

Communications/Signal Processing Chapter

The major achievements of the C&SP Chapter in the year 2001 comprise technical activities (two seminars and one DLT lecture), interaction with other chapters (esp. the Baltimore, MD ComSoc Chapter), attendance of the ComSoc Global Chapter Chair Conference (San Antonio, TX), and general IEEE promotional activities. The well attended technical seminars were as follows: Prof. Yupo Chan (Department of Systems Engineering, University of Arkansas, Little Rock) "Game-Theoretic Model for Secure International Communications", Dr Salah Aidarous (ComSoc DLT, Director of Product Planning, NEC, Dallas) "IP Impact on the Evolution of Telecommunications Networks", and Prof. Joachim Hagenauer (Department for Communications Sciences, Technical University, Munich) "New Developments in Joint Source and Channel Coding". The first event was hosted by CD/DSTO, the second by the ITR, and the third by the University of Adelaide.

Dr Miro Kraetzl
Chairman, C&SP Chapter

Computer Chapter

It is my pleasure to report to members of the IEEE Computer Chapter of the IEEE SA Section and colleagues on what we have achieved during the course of 2001 so far.

According to our plan at the beginning of 2001 (IEEE SA Newsletter April issue), we firstly organised a successful technical seminar on "**Cluster Computing: Architecture and Applications**" on 5 June 2001 at DSTO. The speaker was Dr Paul Coddington of the Distributed & High Performance Computing Group, Department of Computer Science, the Adelaide University. Dr Coddington shared with the audience of more than 50 attendees his excitement, passion, and experience on Cluster Computing that he has gathered from his research at the Distributed & High Performance Computing Group and at other overseas research organizations.

Dr Coddington presented a historical overview and described the challenges of cluster computing, and described the architecture of the two machines at Adelaide: a home-made commodity PC (or Beowulf) cluster, and a commercial cluster from Sun Microsystems. Paul discussed work on benchmarking of the machines, and the porting and performance of some parallel application codes. The seminar was well received and the audience enthusiastically further discussed with the speaker over the refreshment provided by the courtesy of DSTO.

Secondly, the IEEE Computer Chapter and CHIPTec at the Adelaide University jointly organised a technical seminar on "**Future Junction Technologies for Sub 0.1 Micron Silicon Based Devices**" given by Prof Kevin Jones of the University of Florida on 2nd July. Prof Jones explored changes in the processing methodology required to reduce the depth and resistance associated with shallow junction formation in the sub 0.1 micron silicon based devices. He also presented some recent work his research group has done in the area of alternative annealing approaches. This seminar was a

substitute for a planned seminar on "Intelligence Agent" that was cancelled due to the speaker's un-availability. What is left on the plan is the third technical seminar on "**System on a Chip and Embedded Systems**" given by Prof. Greg Knowles of the Flinders University. We will keep you informed in due course. Thank you for your support.

Dr Thong Nguyen
Chair of IEEE Computer Chapter, SA Section.

Artificial Neural Networks Regional Interest Group

The IEEE-SA Artificial Neural Networks Regional Interest Group has held no activities during the past year. Two meetings were planned; one did not occur because the invited speaker was unable to confirm a date, and the other has been cancelled because it is deemed that there is insufficient interest in the ANN RIG. There appears to be little interest in the continuation of the RIG, and I recommend that it be closed.

Dr. Graham L. Goodman
Chair, ANN RIG

University of South Australia Student Branch

Cisco Systems Visit

On Thursday 16th August, the University of South Australia Student Branch of IEEE organised a visit to Cisco Systems in Adelaide, which was attended by some 20 undergraduate and postgraduate students.

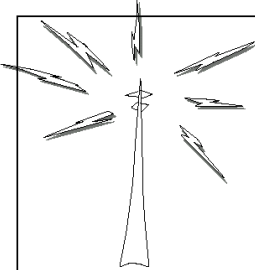
Cisco Systems are one of biggest providers of computer networking equipment in the world, and the Cisco team in Adelaide provides technical support for many of their products. Daniel Floreani, a Systems Engineer from Cisco (a previous Engineering graduate from the University of South Australia) gave a presentation to the UniSA Branch titled: 'Cisco's Architecture for Voice, Video and Integrated Data Networks'.

Included with the presentation were demonstrations of Cisco's solutions for Internet (IP) phones, unified messaging and wireless LANs, which included the Cisco Internet Mobile Office – CIMO.

The visit to Cisco Systems gave members the opportunity to gain a better understanding of the Cisco networking products; see what leading companies are heading towards and also the opportunity to network with future employers. It proved to be interesting as well as informative and the event that was well received by all.

Zhen-Dan Bao
Computer Systems Engineering Student
University of South Australia
Mawson Lakes Campus

CONFERENCE ANNOUNCEMENTS



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Useful IEEE Web Addresses

Increasingly, the IEEE is relying on the Internet to deliver services to members. Some useful web addresses are summarised below for you information

- Region 10: www.ewh.ieee.org/reg/10
- Region 10 Student branch activities: www.cairo.utm.my/ieee/r10student.htm
- IEEE Gold (graduate of the last decade) program: www.ieee.org/organisations/rab/gold/programs.html
- Educational activities: www.ieee.org/eab
- Professional development: www.ieee.org/pdi
- Career resources: www.ieee.org/eab/education.htm
- IEEE Awards programs: www.ieee.org/about/awards
- Volunteer travel accident/medical plan. This available to all IEEE volunteers and applies outside your country of residence. It starts and ends when you leave/arrive in your own country. For details see: www.ieee.org/organizations/vols.