

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

IEEE Australia Council

The Information Theory Chapter (Alex Grant) is now a joint Chapter of ACT/SA/VIC/NSW Sections.

Northern Territory IEEE members (~35) do not appear to be attached to any of the existing Sections. Following the break up of the IEEE Australia Section (many years ago) it seems that somehow NT was overlooked. Tasmania attached to Victoria and North Queensland includes parts of New Guinea. At this stage IEEE SA does not include NT and IEEE NSW continues to send its newsletters to NT members.

Asian Control Conference, AsCC 2004

IEEE NSW, and IEEE QLD have joined IEEE SA in the underwriting group of this event to be held 20-23 July, Melbourne. This is the first time that 3 IEEE Sections in Australia have combined in this way. The IEAust Electrical College Board has also agreed to participate, and this again is a first. The U. of Melbourne is the 5th co-sponsor.

IEEE ISSSTA 2004, Sydney, 30 Aug - 2 Sep 2004

IEEE ComSoc has withdrawn from the underwriting of this event and IEEE NSW has invited IEEE SA (and IEEE SA has agreed) to co-sponsor this event. Prof. Lars Rasmussen, ITR, is the Finance Chair.

Standards Australia / SNZ CT/1

The IEEE Australia Council has endorsed Barney Tomasich as the IEEE representative on the "Communications Cabling" Committee. Many of the IEEE standards (esp IEEE 802.3) have a big impact on the work of SA/SNZ CT/1, so IEEE representation makes sense. On the ISO/IEC JTC1/SC25/WG3 "Customer Premises Cabling Committee on which Barney represents Australia, there are always IEEE representatives. [Barney.Tomasich@anixter.com]

Newsletter

We need a Newsletter Editor! The primary requirement is to edit material, which comes from a variety of sources. If you have an interest in this area (and are available!) please advise.

Dr Michael E. Evans

Chair, IEEE South Australia Section

June, 2003

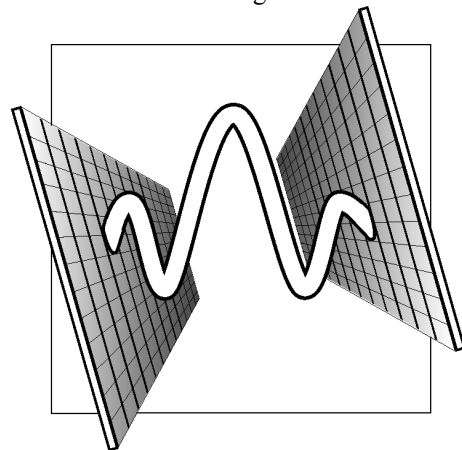
IEEE International Symposium on Circuits and Systems (ISCAS) in Bangkok, 25-28 May 2003.

Report by Peter Celinski

The conference was attended by over 1200 delegates from around the world, and provided an opportunity to have discussions with internationally recognised researchers, as a result of which I have been offered free space for one of my designs on an upcoming test-chip scheduled for August by the Microelectronic Circuits and Analogue Devices Group, University of Oxford. This will not only save my groups in Adelaide and in Delft considerable expense, but will hopefully lead to increased future collaborations between our groups.

I have also been invited to visit the Microelectronic Systems Group, University of Oslo, to give a presentation on my research and to visit the laboratory facilities at the Department of Computer and Information Science, University of Science and Technology in Trondheim, Norway.

At present I am undertaking a 12 months research fellowship in the Computer Engineering Group at the Delft University of Technology in the Netherlands. I am working on a project as part of my PhD at Adelaide University, in the area of high speed arithmetic circuit design based on Threshold Logic.



Radar 2003

**Australian International Conference on Radar
Adelaide, Australia, 3-5 September 2003
Sponsored by CSSIP and IEEE SA Section**

www.plevin.com.au/radar

Section Committee Officers for 2003

Chair:	Dr Michael Evans michael.evans@ieee.org
Vice Chair:	Dr Zia Ahmed Zia.ahmed@ieee.org
Secretary:	Dr Tim Ferris timferris@ieee.org
Treasurer:	Dr Andrew Piotrowski andrew.piotrowski@ieee.org
IP Chair	Dr Bevan Bates bevan.bates@ieee.org
Membership Development	Andrew Udina andrew.udina@dsto.defence.gov.au
Professional Activities	Bruce Vyden Bruce.vyden@dsto.defence.gov.au
Awards	Dr Zia Ahmed
Educational Activities	<i>vacant</i>
Publications	Dr Andrew Piotrowski
Chair SP/Comms Chapter:	Dr Peter Shoubridge peter.shoubridge@dsto.defence.gov.au
Chair AP/MTT Chapter:	Dr Hedley Hansen hedley.hansen@dsto.defence.gov.au
Chair C/AES Chapter:	Dr Mark Pszczel mark.pszczel@dsto.defence.gov.au
Chair Computer Chapter:	Dr Fred Brown fred@cs.adelaide.edu.au
Chair IT Chapter (SA/ACT)	Dr Alex Grant alex.grant@unisa.edu.au
UofSA Student Branch:	Nimrod Lilith nimrod.lilith@postgrads.unisa.edu.au
Branch Counsellor	Dr Kutlu Dogancay kutluyil.dogancay@unisa.edu.au
UofAdelaide Student Branch:	Leonard Hall lhall@eleceng.adelaide.edu.au
Branch Cousellor:	Brian Ng bwng@eleceng.adelaide.edu.au

Membership

Congratulations to Prof. Chris Marlin from Flinders University who was recently elevated to SMIEEE (Computer Society).

	30 May 02	30 May 03
Members	264	274
Senior Members	28	28
Fellows	1	2
Affiliates/Others	51	42
Students	57	82
TOTAL	401	428

Congratulations also to Hedley Hanson and Bevan Bates on their appointments as adjunct Assoc. Professors at the University of Adelaide.

As was read in the last newsletter, the late payment grace period had distorted the membership stats. This period has now passed and the statistical comparisons are returning to normal. We are up by 10 ordinary members for the same time last year.

It is well known that the best form of advertisement is by word of mouth. Therefore when you attend any IEEE sponsored event see if you have any colleagues or friends that my like to come along. By them taking part is the best way to enthuse their interest in membership.

Andrew Udina, Membership Development

IEEE GOLD - Young Professionals

If you are an IEEE member who graduated with your first professional degree within the last ten years, you are automatically part of **IEEE GOLD**!

IEEE recognizes that you are a key to the future of the technical profession. IEEE GOLD can empower you to make the most of your developing career and to help you find your place in the world of technology. Make a connection with your peers and colleagues - a GOLDen opportunity awaits you!

To promote the GOLD Program IEEE SA Section organized a talk by Dr Tony Lindsay (MIEEE) titled *Actively Managing Your Career* on 6 June 2003. The presentation was open to all DSTO staff and was followed by pizza and drinks. The event attracted a crowd of 20 people

IEEE SA section wants to establish an IEEE **GOLD** Group in DSTO Edinburgh. Currently we are looking for people to support this effort as either the **GOLD** group secretary or treasurer. If you want to be actively involved in the GOLD group please contact:
Andrew.Piotrowski@ieee.org, or
Sebastien.Wong@dsto.defence.gov.au.

*Sebastien Wong and Andrew Piotrowski
IEEE SA GOLD Initiative Panel*

Chapter News

Information Theory Chapter

Multiple antenna transmission and reception: Capacity considerations, signal processing, and space-time code design

Prof. Ezio Biglieri

Dipartimento di Elettronica, Politecnico di Torino

Wednesday 16th July 2003 1.00pm

Room 1-6 Building W (SPRI)

University of South Australia, Mawson Lakes

Abstract

Multiple transmit and receive antenna techniques have been shown to increase the channel capacity in wireless communications to an extent that cannot be matched by any other feasible technique. Recent developments of transmit diversity combined with error-control coding and signal processing techniques have introduced new space-time coding schemes and layered space-time architectures that approach capacity and the performance of optimum interfaces with a manageable complexity. This talk describes the state-of-the-art in multiple-

antenna transmission, coding, and signal-processing techniques.

<http://www.informationtheory.net/Seminars/biglieri.html>

Dr Alex Grant, Chair, IT Chapter

Control, Aerospace and Electronic Systems Chapter

National Experimental Supersonic Transport (NEXST1) of Japan – Launch Incident Investigation
Dr Takeshi Ohnuki, NAL, Japan
Peter Nikoloff, Nova Aerospace

Monday, 30 June 2003, 5:30pm for 6:00pm
S127, Engineering South, U. of Adelaide

This meeting is jointly sponsored with AIAA Adelaide Section and precedes the AIAA Adelaide Section AGM.

Dr Mark Pszczel, Chair, CAES Chapter

Computer Society Chapter

High Confidence Security Engineering
Dr Alex Farkas

Tuesday 22nd July, 6pm
Honours Lecture Theatre, School of Computer Science
University of Adelaide, North Terrace Campus
Refreshments will be served from 5.30pm.

To assist with catering please email fred@cs.adelaide.edu.au if you will be attending. All are welcome.

Dr Fred Brown, Chair, CS Chapter

AP/MTT Society Chapter

A meeting was held on 10 June at which the offices of the chapter were filled.

Critical for the health of the chapter is for engineers to pursue careers in RF microtechnology and antenna development. Consequently the committee concentrated on discussing strategies to attract undergraduate students to RF engineering activity.

It was decided that the upcoming international Radar 2003 conference in Adelaide provides an opportunity for profiling research relevant to the chapter. To this end, the chapter is to attempt to arrange an exhibition of antennas from DSTO, BAE, CSIRO etc that will coincide with the Radar forum. This is to be planned in cooperation with the University of Adelaide Student branch.

The chapter is also to seek to provide a level of tutorial sponsorship for students at this radar meeting and is to endeavour to provide further support for South Australian students to attend future national MTT and AP forums eg., the biennial Australian Symposia on Antennas (CSIRO) and Workshops in Applications in Radio Science (WARS).

Further details of the chapter's plans are yet to be finalised

Dr Hedley Hansen, Chair, APMTT Chapter

IEEE SA Travel Grants

The Section provides awards under the "Travel Grant" program to assist students to deliver conference publications. Three post-graduate students have already

benefited from this program in 2003, and the Section has recently provided support for attendance at a conference in Australia.

Matthew Tetlow, University of Adelaide
"Predictive guidance for booster flyback",
Australian International Aerospace Congress,
Brisbane, 29 Jul–01 Aug 2003

All recipients are required to present their papers to an IEEE audience on their return at a mutually convenient time.

Zia Ahmed, Awards Convenor

NEWS

RAB Awards

The strength of IEEE is the work of the volunteer at the local level. Without the efforts of the local volunteer, IEEE would not be able to promote the understanding of the influence of technology on the public welfare. These volunteers need to be recognized for their efforts, we don't recognize the local volunteers enough for their work or the impact they have on society.

The RAB Awards and Recognition Program seeks to honor the outstanding efforts of some of the most invaluable IEEE Volunteers who have made substantial Regional contributions through innovative projects, exemplary leadership, service, and by fulfilling the goals as related to Transnational Activities. Each prestigious award has a unique mission and criteria, and offers the opportunity to honor distinguished colleagues, inspiring teachers and corporate leaders. We are currently accepting nominations for the following RAB Awards:

- * RAB Achievement Award
- * RAB Innovation Award
- * RAB Leadership Award
- * RAB Larry K. Wilson Transnational Award

These awards, the most prestigious RAB has to offer, are designed to recognize outstanding efforts by IEEE volunteers. These are NOT technical achievement awards. The deadline for nominations is 15 October 2003. You can submit award nominations online by visiting the following web page: <http://www.ieee.org/rabawards.html>.

SECTIONS' CONGRESS 2002 REPORT

The final report from Sections Congress 2002 is now available at <http://www.ieee.org/sc>. To view the document, click on "2002" and then "Final Report" in the left menu bar. Visitors who experience difficulties accessing the large PDF file may request a print copy by contacting Donna McClelland at d.mclelland@ieee.org.

Additionally, Regional Activities is soliciting ideas for a theme for the next Sections Congress to be held 14-17 October 2005 in Tampa, Florida USA. To submit topics and participate in the theme discussion, visit the IEEE Section/Chapter Volunteer Virtual Community at http://www.ieee.org/section-chapter_vol or send ideas to Tracy Hawkins at t.hawkins@ieee.org.



Eighth IEEE International Symposium on Spread Spectrum Techniques and Applications
30 August - 2 September, 2004, Sydney

Call for Papers

With new developments in wireless technology, the scope of spread spectrum (SS) application has expanded to include new and unexpected areas. Developments in 3G systems based on SS / CDMA have reached a level of maturity where commercial products and operational networks are in place. WLAN systems based on SS have exhibited enormous growth in popularity even during a period of slow acceptance of other technology. Newer areas such as MIMO systems and, Ultra wideband systems herald impressive performance improvements for the future.

ISSSTA 2004 will highlight theoretical performance of existing and future systems, as well as novel applications and implementations of spread spectrum technology. **MIMO systems** and **Ultra wideband** will join the list of topics, which will include: Information theory of SS, MIMO channels, Performance bounds, capacity limits, SS signal processing including Ultra wideband, Sequence and waveform design, Signal acquisition and tracking, Coding and modulation for SS and multi-user systems, Information security LPI, LPD Receivers and diversity techniques, Space-Time coding for SS systems, Adaptive equalization, channel estimation and SS signal, detection, Interference suppression and cancellation, Multiple access techniques and capacity analysis, Antenna arrays, multi-sensor

JOINT TECHNICAL PROGRAM 2003 - Electrical and Electronic Engineering

- 19th August THE DEFENCE PAYLOAD ON THE OPTUS C1 SATELLITE
 Host IEEE Mr Allan Jeffs and Mr Peter Kerr, Information Networks Division, DSTO.
 Hear about the Defence communication capabilities offered by Australia's newest satellite and DSTO's research program into advanced satellite ground terminals.
- 16th September WIND GENERATION IN SOUTH AUSTRALIA
 Host IEE Mr Paul Driver, Customer Development Manager, and Mr Mark Denton, Project Manager Starfish Hill Project, ETSA Utilities. A look at the new Starfish Hill wind generation plant on the Fleurieu Peninsula and associated connection to the SA electricity system.

Chapman Hall, Engineering House, 11 Bagot Street, North Adelaide, Light tea commences at 5:30 pm and the meeting at 6:15 pm

Conference Schedule

Date	Conference	City	Website
3-5 September, 2003	Australian International Conference on Radar (RADAR 2003)	Adelaide	http://www.plevin.com.au/radar
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

channels, Remote sensing, radar, sonar and positioning system performance, Multicarrier CDMA, Performance of SS/CDMA MIMO and multi-sensor systems, Ultra wideband (UWB) systems, Resource allocation, power control, Ad-hoc SS/CDMA networks, Performance of SS/CDMA satellite systems, 4G System concepts, Quantum applications, Tools for system analysis, Integrated circuit design and implementation Communications using chaos

Submission Deadlines

The deadline for submission is **1 February 2004**, with notification of decisions by **1 April 2004**. Camera ready copies must be submitted by **1 June 2004**. Information for electronic submission of papers will be posted at a later date. Inquiries to paper submissions should contact the chairs or <http://www.isssta2004.org>

General Enquiries

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5th Biennial Asian Control Conference
Melbourne, 20-23 July 2004
Sponsored by IEEE (SA, NSW, QLD),
IEAust, U. of Melbourne
<http://ascc2004.ee.mu.oz.au>