

CHAIRMAN'S COLUMN

Dear IEEE members,

This year's Region 10 meeting was held at Chiang Mai, Thailand on 26 and 27 March, and was attended by 89 delegates representing 47 Sections from the Asia Pacific region. The senior leadership of IEEE present at the R10 meeting included IEEE President Dr Michael Lightner, IEEE Past President Mr Cleon Anderson, and the two candidates for President Elect (2007) Mr John Vig and Lewis Terman. Also present were: IEEE Executive Director, MD for Regional Activities, and IEEE Staff Director (Corporate Strategy and Communication).

After formalities and speeches in the morning session the parallel sessions for presentation of programs for 2006 by various committee chairs were held in the afternoon on the first day. These sessions covered Student Activities, Regional GOLD and Technical Activities, Membership Development, Regional Conferences, Strategic Planning and Women in Engineering, R10 Awards, and Education Activities. These sessions are always useful to exchange new ideas to keep R10 a vibrant community and to promote activities of interest to members in the region such as TENCON, Students Congress and schemes for membership development, and to recognise IEEE volunteers. On the second day the R10 finance report was presented and the budget for 2006 was approved. In the afternoon the delegates were taken for a visit to see tribal life in the north of Thailand and an archaeological site.

Like at every R10 meeting, the Australia Council avail the opportunity to hold its meeting prior to the R10 meet. Some of the issues discussed at the AC meeting included the progress on MOU between IEEE, Engineers Australia and IET (previously IEE), mechanisms for forming joint chapters, and establishment of an award for the best Student Branch in Australia. The meeting also approved the AC budget for 2006. As you may know all Sections in Australia pay a levy of 50c per member annually to the AC and SA Section payment is usually around \$250 each year.

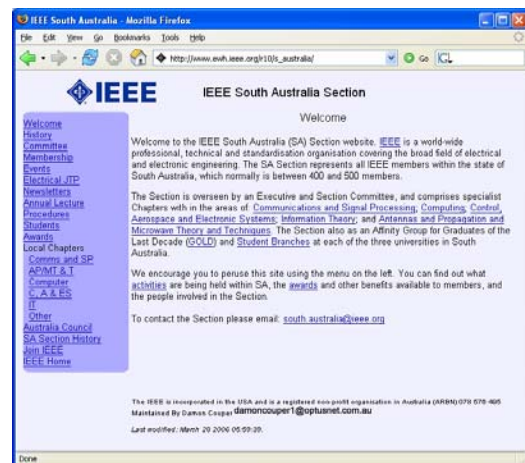
I am also pleased to report that the Section Committee in its April meeting approved to send a student representative to the R10 Students Congress to be held in mid July in Shanghai, China. All three Student Branch chairs in South Australia were invited to submit an expression of interest to attend the SC'06 and the

Section's Excom selected Sherry Randhawa, Chair Students Branch at the Flinders University, to represent all three Students Branches in SA. This will be the third Students Congress organised by R10. The first one was held in Singapore and the second was in Hong Kong.

Dr Zia Ahmed
Chair, IEEE South Australia Section

IEEE SA SECTION WEBSITE

In recent months the IEEE SA Section website has had various updates on the content, including details on membership, the annual dinner (e.g. photos), list of past award recipients, and local and IEEE-wide policies and procedures.



Please visit the site and browse through some of the new material. Suggestions for new content are always welcome!

http://www.ewh.ieee.org/r10/s_australia/

Damon Couper
IEEE SA Section Website Editor

MEMBERSHIP DETAILS AS AT JUNE 2006

Grade	Number
Fellow	3
Senior Member	36
Member	297
Affiliate	29
Students	81
TOTAL	446

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COMPUTER CHAPTER AGM

The IEEE SA Computer Chapter held their AGM at the The Robin Hood Hotel in Norwood on Thursday 29 June. Based on the responses received earlier from members of the Chapter, the turn out was surprisingly good for a winter event with new faces and new affiliations being brought to the meeting. The following officers were elected:

Chair: Robert Rowe

Vice-chair: Jill Slay

Treasurer: Seth Thuraingham

Secretary: Lingxue Kong

After post election discussions, the forward work focus for the new Chapter Committee will be based on the database of responses received from the 2005 survey outlining the needs and wants of the members.

The new Committee expressed its appreciation to Dr Sanjay Mazumdar (retiring Treasurer) for his endeavours for the Chapter over the years and wished him and his wife well for their expectancy.

Robert Rowe

Chair, IEEE SA Computer Chapter

EEESAU, INCORPORATING THE UNIVERSITY OF ADELAIDE IEEE STUDENT BRANCH

Here at EEESAU we had a pretty busy start to 2006. This year we welcomed three new members to our executive committee: Dan Kelly, Zhining Lim and Ben Ung, as well as Dr. Bevan Bates as our new SB Counsellor.



CAREERS FAIR DRINKS: Coinciding with the Uni careers fair, the careers fair drinks was held on the 24th of March with an attendance of around 40 members. It was in a relax setting where our members were able to chat with industry representatives about working in the real world. Dr Bevan Bates and Dr. Derek Abbott were kind enough to share their valuable experience as an engineer, and some sound advice on how to tackle job interviews! Next year we are looking to organise an even better event.

If anyone is interested in getting involved then please let us know.

INTRO TO MATLAB: Our Intro to MATLAB course has once again brought many new users to the wonderful world of MATLAB! However this semester it was the case of wrong timing. We must remember to organise the course to be before an assignment is due, not after! In any case we had a handful of members attending the course. A new advance MATLAB course is now in the planning stage.

EEESAU BBQ: The EEESAU BBQ has become a tradition here in the School of EEE. Besides the all-you-can eat food and all-you-can drink beverages, it is THE place to be for our members to mingle with the academic staff and the post-grads. This time we attracted 30 new EEESAU members, despite the fact that there was a competing BBQ for the Anti-VSU campaign.

EEESAU LETTERS: An online collection of student papers from the final year honours projects. It is envisaged that this will become a valuable resources for current and future students, as well as a show-case of the many amazing projects that our final year students are involved with.

FINAL YEAR DINNER: EEESAU has been a proud sponsor of the EEE final year dinner for many years, and this year it is no exception! A celebration of the achievements of our final year students, it will be an evening of fine dining and great entertainment.

So this is it for now, from us in EEESAU. If you would like to know more about us, or interested in any of our past and future activities, email us at eesau@eleceng.adelaide.edu.au.

Kin Shing (Bobby) Yau

EEESAU Chair

IEEE SA TRAVEL AWARDS

RECIPIENTS. There were seven applicants for the Round 1 of the 2006 IEEE SA Travel Awards, and due to the limited budget, two successful recipients:

Adriel Cheng – Attended 10th Annual High Level Design Validation and Test Workshop in California, USA.

Nghia Ngo – Attended 4th International Symposium on Turbo Codes in Munich, Germany.

Congratulations to Adriel and Nghia, and thanks to all applicants.

SUBMISSION GUIDELINES. Round 2 for 2006 will be decided after 31 August. The Section accepts applications for events that will be held before 31 August. However, in these cases applications must be submitted *before* the applicant attends the event. For example, if you missed Round 1, and want to apply to attend a conference at the end of July, your application will be considered as long as it is received before you attend the conference. So please submit your application as soon as possible (for conference attendance, it is best to submit as soon as your paper is accepted). Details can be found on the [SA Section web site](#).

ANNOUNCEMENTS AND UPCOMING EVENTS

INFORMATION, DECISION AND CONTROL 2007 SYMPOSIUM

HILTON, ADELAIDE

12-14 February 2007

IDC 2007 aims to bring together scientists, engineers and mathematicians working across the disciplines of signal processing and communications, decision and control, and data and information fusion. Progress in these disciplines is critical to the successful implementation of large interconnected and distributed systems such as military C4I systems, communication networks, distributed sensor networks, large scale distributed control systems, and multi-platform autonomous vehicle applications.

Papers can be submitted up until 14 August 2006. Visit the website for details:

<http://www.plevin.com.au/idc2007/>

WORKSHOP ON INTERNET, TELECOMMUNICATIONS AND SIGNAL PROCESSING HOBART

11-13 December 2006

WITSP provides a forum for exchange of ideas between researchers including postgraduate research students and practicing engineers on all aspects related to the Internet and Telecommunication Systems. The main emphasis, is on the use of signal processing as a tool to make the Internet operate better and more efficiently. However, the scope also includes topics in networking, multimedia processing and advanced data processing algorithms.

Papers can be submitted up until 30 July 2006. Visit the website for details:

http://www.dsps-witsp.com/WITSP_06/WITSP2006.html

2006 IEEE KEYNOTE SPEAKERS WORKSHOP ON SYSTEMS OF SYSTEMS DEAKIN UNIVERSITY, GEELONG

11 August 2006

We can describe SoS as being far more than a system where its parts, acting as autonomous systems, form their own connections and rejoice in their diversity leading to enhanced emergence. According to Prof. Sage SoS exist when there is a presence of a majority of the following five characteristics: operational and managerial independence, geographic distribution, emergent behaviour, and evolutionary development.

Attendance is FREE and the programme consists of all keynote speakers including: Professors Mo Jamshidi, Brian Anderson and Rob Evans, and Air Commodore John Harvey.

<http://www.deakin.edu.au/ISR/SoS>

ELECTRICAL JOINT TECHNICAL PROGRAM

The Electrical JTP Program between IEEE, IEE, Engineers Australia and Telecommunications Society of Australia (TSA) includes the following upcoming talks:

18 Jul: Visit to the Royal Society of the Blind

22 Aug: Beyond Solar Racing Cars – Dr Peter Pudney

19 Sep: Eight Ways to Have Fun with Your HF Skywave Radio – Dr Stuart Anderson

17 Oct: Visit to Aeronautical Research Australia, Parafield Airport

24 Oct: Student Papers Night

21 Nov: The Internet: Ready for Prime Time or Defining Prime Time? – Dr Michael Rumsewicz

See the [SA Section web site](#) for full details.

DEVELOPMENTS IN WELDING

**WELDING TECHNOLOGY INSTITUTE OF AUSTRALIA,
CSIRO**

Wed 2 August 2006, 11:45am

The IEE Retired Engineers Group is organised a visit to the Welding Technology Institute of Australia, CSIRO - Manufacturing, Infrastructure and Technology Division, Woodville. The Guest Speaker, Greg Terrell, will demonstrate and discuss the latest welding technologies. Laser cutting, welding and cladding will be shown and discussed, including a new world first laser cladding process for refurbishing steam turbine blades in situ at a power station. Other processes to be shown include keyhole gas tungsten arc welding of titanium pipe, friction stir welding of aluminium for the aircraft industry along with many more applications. Micro-joining and machining of electronics and medical devices will be presented along with other general welding processes and robotics.

More details are available on the [SA Section web site](#). To register your interest, please contact the IEE REG Secretary, Prof Bob Bogner (r.bogner@ieee.org).

MORE EVENTS ...

For upcoming events relevant to the SA Section, see the Events list on our [website](#). For upcoming IEEE conferences (dates and CFP deadlines), go to:

www.ieee.org/web/conferences/home/

If you want an event advertised in this newsletter or on the website, send details in an email to south.australia@ieee.org

THE IEEE AP/MTT CHAPTER IN CONJUNCTION WITH THE DSTO RF HUB PRESENTS

THE DESIGN OF DIRECT COUPLED TRANSMISSION LINE RESONATOR FILTERS

C. J. (KEITH) KIKKERT

0930 25th July at DSTO Edinburgh (180 Labs Conference Room)

[Visitors requiring passes please contact Stephen.Mills@dsto.defence.gov.au at least 24 hours in advance of the meeting]

Conventional RF filter designs using microstripline technology are normally realised using either Parallel Coupled Line Filters or Interdigital filters. These filters rely on electromagnetic coupling between closely spaced resonators. These filter designs have two limitations: 1. The design equations and simulation at present are not sufficiently accurate and typically a 2% error in centre frequency results when the filters are made. 2. Wide bandwidths require very small coupling gaps, which are difficult to produce accurately and which result in larger errors between the computer simulation and the filter that is built. The result of these design inaccuracies are that 2 or three filter iterations are required before the filter meets the specifications. Practical coupling gaps can only be obtained for filters with a bandwidth of less than 20% of the centre frequency.

The seminar describes a procedure for the design of Direct Coupled Transmission Line Resonator Filters, where the coupling is obtained by a transmission line between the resonators. This results in circuit simulations of the filter that give very good agreements with the resulting hardware, so that the required filter can be produced in one iteration. This is very good for filters used in R&D since often only a small number of filters are required. In addition these filters have a very good stop-band attenuation, so that filters of a reduced order can be used to meet typical specifications. The Direct Coupled Transmission Line Resonator Filters have a lower insertion loss than Parallel Coupled Line Filters or Interdigital filters. The disadvantage of these filters are that they are slightly larger.

The seminar illustrates the design technique on a 500 MHz bandwidth filter with a centre frequency of 1 GHz and also compares the designs of a 5% bandwidth filter at 810 MHz using an interdigital filter, hairpin filter and a direct coupled resonator filter.

Cornelis Jan (Keith) Kikkert is an Associate Professor in Electrical and Computer Engineering at James Cook University where he has been since 1973. He is currently Chairman of the IEEE North Queensland Section and a Member of the Academic Board at JCU. He was head of Electrical and Computer Engineering at James Cook University from 1999 – 2005 when he stepped down to spend more time on research. He is a Fellow of IEAust and a Senior Member IEEE with more than 20-years experience in the design of RF electronics for Communication Equipment, Broadcast Transmitters, Satellite Beacon Receivers and Weather Satellite Receivers and is author of about 70 papers and inventor on 8 patents. His present research includes RF and digital electronic design, electronic instrumentation, land-mine detection and the protection of orchards by scaring away fruit bats.

IEEE GRADUATES OF THE LAST DECADE (GOLD) AFFINITY GROUP

Andrew Piotrowski (andrew.piotrowski@ieee.org) has been re-elected as Chair of the IEEE GOLD Group for 2007, and Sebastian Wong as the Secretary. The group has a base at DSTO, and holds several technical and professional seminars each year. If you want to find out more or get involved, then please contact Andrew or Sebastian.



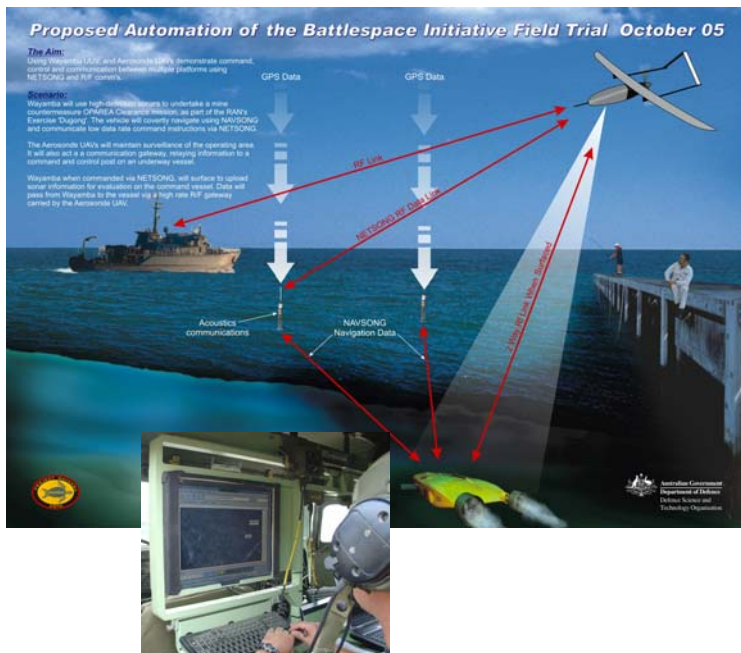
IEEE Control, Aerospace and Electronic Systems Chapter



The University of Adelaide
Faculty of Engineering,
Computer and Mathematical
Sciences



Adelaide Section,
American Institute of Aeronautics
and Astronautics



Automation of the Battlespace

Dr. Anthony Finn
Defence Science and Technology
Organisation

Room S112, (Level 1)
Mechanical Engineering South Building
The University of Adelaide

Tuesday 15th August 2006
5:30pm for 6:00pm
Refreshments provided from 5:30pm
Frank Bull Design Suite, S127

Abstract

Described by the Chief Defence Scientist as “Press the button. Fight the war” and Aviation and Space Weekly as “One-Man Armies,” Automation of the Battlespace is the largest of DSTO’s Flagship programs. It brings together disparate technologies such as miniaturised sensors, communications technologies, internet protocols, UAV’s (Unmanned Aerial Vehicles), UUV’s (Unmanned Underwater Vehicles), UGV’s (Unmanned Ground Vehicles), robotics, and Intelligent Agents to integrate and deploy them in the minimum time with minimal cost. It uses networking, integration, and automation to develop and explore the use of new, intelligent systems that can carry out hazardous tasks traditionally reserved for warfighters, thereby reducing their exposure to enemy attack. These systems also have the potential to increase the coherency of effort and operational tempo of the Australian Defence Force (ADF) and offer potentially higher operational effectiveness per warfighter with lower casualty levels.

Speaker

Dr Anthony Finn is Head of DSTO’s Automation of the Battlespace Initiative, with broad responsibility for the coordination and leadership of a team of about fifty scientists and engineers. Dr Finn graduated from Cambridge University with a PhD in 1989. Before moving to South Australia he worked as a research consultant for a number of organisations in Europe. Dr Finn has published around 70 journal and research papers and has a world-leading reputation in the field of autonomous navigation and unmanned vehicle systems.

All Welcome

For further information, contact Leigh.Powis@dsto.defence.gov.au

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The Section Committee also includes Chairs of Chapters/Affinity Groups/Student Branches.

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* Committees for 2005. These groups have not yet held their 2006 AGM.

VOLUNTEERING FOR IEEE SA

Note there are vacant positions on several committees, and upcoming AGMs for others. If you are interested in volunteering for IEEE, get in touch with the appropriate contact. Even if there is not a vacant position, all committees can make use of additional volunteers. And remember, all positions are officially recognised by IEEE (e.g. included in your membership records) and look good on your CV!