



Australia's National Society  
for Telecommunications People



ENGINEERS  
AUSTRALIA  
South Australia Division



Collective inspiration

## JOINT TECHNICAL PROGRAM 2011

### Electrical and Electronic Engineering

A program of general interest talks and visits, and a chance to network with people in your industry

(last updated 11 January 2011)

- 15<sup>th</sup> Feb  
Host EA  
**\*\* VISIT to NewSat's satellite ground station at Mawson Lake**  
*Paul Prosser, Regional Sales Manager, NewSat Ltd.*  
NewSat is Australia's largest independently operated Satellite Communications Company. NewSat provide a full range of managed satellite communication services including Telemetry Tracking & Control (TT&C) and Carrier Service Monitoring (CSM). They have the ability to reach 75% of the globe including: Australia, Asia, the Middle East, Africa, across the Indian Ocean extending into Europe and across the Pacific Ocean, reaching into the West Coast of the USA. The company intends to launch Australia's first non-foreign owned satellite to be named Jabiru-1. More details about NewSat are at: <http://www.newsat.com.au>
- 15<sup>th</sup> Mar  
Host EA  
**Office of the Technical Regulator – Who/What/Where/How?**  
*Dave Schrapel, Senior Electrical Officer, Office of the Technical Regulator, Department of Transport, Energy & Infrastructure*  
The Office of the Technical Regulator was established under the Electricity Act 1996 and the Gas Act 1997. The primary role of the Technical Regulator is to ensure the safety of workers, consumers and property, and to ensure compliance with legislation and technical standards and codes throughout the electricity and gas industries.
- 19<sup>th</sup> April  
Host EA  
**Engineering for Replacement – the Impact of IEC 61850 in Electrical Facilities Now and in 15-Years Time**  
*Rodney Hughes, Rodney Hughes, Managing Director, Rod Hughes Consulting Pty Ltd*  
This topic explores how IEC 61850 simplifies substation protection and control system engineering but most importantly eliminates huge amounts of engineering when equipment next needs to be replaced.
- 17<sup>th</sup> May  
Host EA,  
EESA  
**Boosting Energy to our City - Adelaide Central Reinforcement Program**  
*Hamish McCarter, ElectraNet Pty Ltd*  
ElectraNet is undertaking a major expansion of the high voltage electricity supply to the Adelaide CBD. This program will ensure continued security and reliability of supply and facilitate the long-term growth and development of Adelaide and the South Australian economy through the development of a high voltage underground electricity transmission line from Torrens Island to a new electricity substation at Keswick Terminal.
- 14<sup>th</sup> June  
Host EA  
**Mechatronics (Joint Event with the Mechanical JTP)**  
*Dr Tien-Fu Lu, University of Adelaide*  
An abstract will be provided in a flyer before the event.
- 26<sup>th</sup> July  
Host TSA  
**Trev: Around the world for \$400**  
*Dr Peter Pudney, Senior Research Fellow, Institute for Sustainable Systems and Technologies, University of South Australia*  
In 2010, Team Trev drove Uni SA's small electric car, Trev, around the world. The energy for the trip was generated by a wind turbine in one hour, and cost less than \$400. Trev was really designed for city commuting. It uses clean energy, but it also uses a lot less energy than conventional cars. Peter will talk about the impact that electric vehicles will have on emissions and on electricity infrastructure, and show how to build a car that uses a lot less energy.
- 16<sup>th</sup> Aug  
Host IEEE  
**\*\* VISIT to Institute for Photonics and Advanced Sensing, University of Adelaide**  
*Prof Tanya Monro, ARC Federation Fellow, Director of the Institute for Photonics & Advanced Sensing (IPAS)*  
IPAS research teams are developing new photonics and advanced sensing technologies that underpin many applied research programs; fibres that will detect corrosion with aircraft, fibres and lasers for missile countermeasures, new chemical sensors to help wine producers monitor the maturation of wine and agricultural producers to monitor the quality of the soil, new biological sensing technologies for the rapid detection of viruses and early detection of cancer biomarkers, luminescence techniques for dating archaeological sites, as well as laser radar systems for monitoring wind, moisture and pollution in the atmosphere. **This visit will include a tour of the fibre optic production laboratories and the sensing laboratories.**
- 20<sup>th</sup> Sep  
Host IET  
**Mixing genes and X-rays: Developing therapies for and understanding cystic fibrosis airway disease**  
*Dr Martin Donnelly, Department of Respiratory and Sleep Medicine, Women's and Children's Hospital*  
Cystic fibrosis (CF) results in extensive morbidity and early mortality in young people. A genetic therapy for CF lung disease has the potential to substantially lengthen and improve the quality of life of patients with this insidious disease. This presentation will cover the development status of our gene treatment and explain how synchrotron X-rays have improved our understanding of CF and its therapies.
- 18<sup>th</sup> Oct  
Host IEEE  
**Cyberspace is different**  
*Dr Tony Zyweck, Electronic Warfare and Radar Division, DSTO*  
Cyberspace is a relatively new domain when compared to the existing domains of land, sea, air and space. To date the existing knowledge from the Electronic Warfare community has not transitioned successfully to the cyber community. This talk will outline some of the key characteristics of cyberspace and what sets it apart from the other warfighting domains.
- 25<sup>th</sup> Oct  
Host IET  
**STUDENT PAPERS NIGHT**  
Students from our three universities present their final year projects whilst competing in the IET Rex Jones Student Presentation Prize. IEEE Student Subject prizes will also be presented at this meeting.
- 15<sup>th</sup> Nov  
Host TSA  
**The National Broadband Network – Why are we doing this and where is it up to?**  
*Prof. Reg Coutts, Director ACS Telecommunications Board*  
In April 2009 the Government announced a \$43 billion plan to build a National Broadband Network taking Fibre to 90% of premises in Australia with the remainder being served by advanced satellite and wireless. Professor Coutts was a key member of the Government Expert Panel who recommended this approach and he will explain why this 'courageous decision' by the Government was in fact 'well informed' going on to discuss the realisation of the NBN technical, industry, political, regulatory and policy implementation points of view!

**CPD Points : It is recommended that attendance at each of these presentations be counted as one CPD point under *Engineers Australia* guidelines**

**Venue:** Engineers Australia, Sir Robert Chapman Theatre, Level 11, 108 King William St., Adelaide (except visits).

**Dates:** Meetings are generally held on the third Tuesday of each month.

**Time:** Light refreshments commence at 5:30 PM and the meeting at 6:15PM (except site visits).

For each event, a flyer presenting details of the event will be posted on the websites of EA, IEEE, IET and TSA (see the details overleaf). These websites will also inform about any changes to the above program. Bookings to the visits should be made using the EA's website. Numbers for visits are normally limited so book early - preference will be given to EA, IEEE, IET and TSA members.

**ALL VISITORS ARE WELCOME!**



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The TELECOMMUNICATION SOCIETY OF AUSTRALIA (TSA) is Australia's national society for the people and organisations involved or interested in telecommunications and related industries. The Society's objective is to advance the level of knowledge and understanding in the Australian telecommunications industry of the issues, trends, developments and new directions in telecommunications and related areas. The TSA presents free lectures/briefings to members and publishes the Telecommunication Journal of Australia (issued free to members). The Society also plays a major role in collecting, preserving and exhibiting artefacts from Australia's telecommunications history. Individuals and organisations involved or interested in telecommunications and related industries are welcome to join the TSA. The TSA is now part of the Australian Computer Society (ACS) <http://www.acs.org.au> as a National SIG under the ACS Telecommunications Board chaired by Professor Reg Coutts.

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Website: <http://www.tsa.org.au>



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**ENGINEERS AUSTRALIA** is the national professional body for engineers, technologists and associates and with over 90,000 members is the country's largest and most diverse engineering association. Engineers Australia promotes the science and practice of engineering and represents public policy in engineering. Engineers Australia assists members to achieve their personal and professional goals by providing an extensive range of benefits, facilities and services at all stages of their careers. This is accomplished through graduate development programs, publications, presentations, workshops, site visits, technical presentations and career services. Engineers Australia defines the critical competencies required by professional engineers and engineering technologists in Australia, determines whether individual practitioners have demonstrated their capacity to deliver engineering services at these levels and administers the National Professional Engineers Register. Engineers Australia also accredits courses offered by tertiary education providers, under the Washington Accord, for international recognition and facilitates reciprocal membership of overseas institutions through Mutual Recognition Agreements.

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The **INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)** has over 360,000 members in about 175 countries worldwide, with nearly 40% of the membership outside the USA. IEEE's technical activity is managed under the TAB (Technical Advisory Board) by 37 Societies and 4 Technical Councils, all of which have world coverage, and geographically under the RAB (Regional Activities Board) in 10 regions. Region 10, which includes Australia, is the last region formed, covers the Asia-Pacific, about half of the world's population, and has been the fastest growing IEEE region in recent years. All Australian states except Tasmania and the Northern Territory have at least one section (Queensland has two), and these sections form the IEEE Australia Council. The IEEE South Australia Section has about 450 active members, with 5 technical society chapters, a GOLD affinity group and 3 Student Branches. The Section has staged a number of major international conferences in Adelaide and elsewhere including ICASSP 94, APMC 2000, RADAR 2003 and ASCC 2004. For further information contact: The Secretary, IEEE SA Section, PO Box 53, Elizabeth SA 5112.

Website: [http://ewh.ieee.org/r10/s\\_australia/](http://ewh.ieee.org/r10/s_australia/)



The **INSTITUTION OF ENGINEERING AND TECHNOLOGY (IET)** is an international organisation with over 130,000 members throughout the world who have joined together to promote the advancement of electrical and electronic science and engineering. It concerns itself with management, design, science, education and the many fields of technology related to the profession. Following the merger with the Institution of Manufacturing Engineers, the IET is particularly well placed to serve the manufacturing industry and the professional engineers who work in it. One of the functions of the IET is that of a learned society and as such it publishes material on a wide range of related fields. The IET hosts a suite of virtual Professional Networks that link engineers and scientists with a common interest and circumvent many of the issues involved with time and distance. Additional details are available on the IET's local web page home page (see below). Local contact details: Mr Ashley Keep, Honorary Secretary, The IET SA & NT Local Network, PO Box 992, Kensington Gardens, SA 5068

Email: [honsec.sa&nt@theiet.org](mailto:honsec.sa&nt@theiet.org)

Website: <http://sant.theiet.org.au/>