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From the Editor

Welcome to the second IEEE Queensland Section Newsletter for 2004. The aim of this newsletter is to provide a means of keeping IEEE Members in Queensland abreast of any events in the IEEE. There will be one more newsletter this year. I hope you find them useful and informative.

If you have any comments on the content of the newsletter or suggestions for improvements, please feel free to e-mail me at: j.birt@griffith.edu.au.

James Birt
Newsletter Editor IEEE
Queensland Section

From the Chair - Queensland Section

Again we are sending to you a newsletter with a range of interesting events that are coming up, and with more to come later on. We hope that many of you find the presentations of guest speakers, workshops and conferences useful and inspirational. Behind the scenes, we have our committed volunteers who organize these events. Likewise we have a range of other volunteers who are engaged in other IEEE activities. Again we would like you to consider becoming a volunteer for the IEEE. It is a good experience and for a good cause. In particular, for the sake of a balanced Committee we need more volunteers from the industry. So, please consider becoming a volunteer. Some of them will be voted in the election at the end of the year.

Soon the call for nominations will be sent out to you. Please do not hesitate to send me an email at r.sitte@griffith.edu.au if you wish to have further information about it.

Dr. Renate Sitte
Chair IEEE
Queensland Section

IEEE News

For a report on news around the IEEE, you can check out *The Institute*. The most current version can be found at ***http://www.ieee.org/theinstitute***

From the Chair of the Control Systems/Robotics and Automation Joint Societies Chapter

Thanks to Craig Mills, the Chapter's web site is being designed and published. The site features the Chapter News, List of the current and past technical sessions, Links to related sites and many other features. Please visit the site at http://www.ewh.ieee.org/r10/queensland/chapters.html and let us know how to further improve it to better serve the members needs.

WORKSHOP ON NON-LINEAR CONTROL

It is with great pride that we announce the Chapters success in bringing the world authorities in Non-linear Control, Professor Kokotovic, Professor Krstic, and Professor Mareels, to Brisbane. They will conduct a ½ day long Non-linear Control Systems Workshop in Brisbane on 01 November. Thereafter, the Workshop will be held in Newcastle and Canberra.

The purpose of the Workshop is to present in a tutorial fashion a selection of recently developed user-friendly tools for nonlinear control design, accessible to practicing engineers. The tools for both finite and infinite dimensional (distributed) systems will be illustrated by typical applications such as: a stall stabilization design for an axial compressor; a turbo-charged diesel engine controller design; control of fluid flows in new generation of micro-electromechanical (MEMS) actuators and sensors; and, communications and satellite tracking.

The Workshop has also secured its place on the list of EA's Continuing Professional Development courses. For details, please visit the Chapters web site or contact Chapter Chair.

THE 2004 R&A CHAPTER OF THE YEAR AWARD

The Award Certificate (see below) was presented to the Chapter at the Robotics & Automation Societies premier conference, ICRA 2004, held in New Orleans in late May 2004.

Prof. Ljubo Vlacic
Chair IEEE Control Systems/Robotics & Automation Joint Societies Chapter
Queensland Section

Visit the section website

http://www.ieee.org/queensland

From the Chair of the Joint Microwave Theory and Techniques and Antennas and Propagation Chapter

ANTENNAS AND PROPAGATION SYMPOSIUM

Januar Janapsatya from the University of Queensland, School of ITEE, attended the Antennas and Propagation Symposium in Monterey, California. On the 24 June he also attended the AP-S Chapter Chair's meeting on behalf of the Queensland Chapter of MTT/AP. The chapter chairs meeting was attended by 20 chapter chairs. Dr. Trevor Bird (from CSIRO ICT Centre in Sydney) presided the meeting. He delivered a presentation during the meeting highlighting the importance of submitting the annual report for each chapter. Other matters discussed were elevations of current IEEE members to senior members, funding for chapter chairs to attend the AP-S symposia, and treasury matters. At the end of the meeting, Dr. Bird resigned from the Chapter Activities Coordinator position and introduced Prof. Jeffrey Young to be the new Chapter Activities Coordinator.

UPCOMING SEMINAR

Topic:	Improving Australia's commercialisation performance
Presenter:	Dr. Rowan Gilmore Chief Executive Officer Australian Institute for Commercialisation
Date:	Tuesday 10 August
Time:	6pm for 6:30 start
Venue:	University of Queensland, Room 420, GP South Building (number 78)

Abstract:
Innovation and industry-related R&D can be a significant contributor to a country's economic growth. While Australia is generally acknowledged as being productive at 'turning dollars into R&D', it is less efficient at 'turning R&D back into dollars'. This presentation compares Australia's commercialisation performance over the past three years against international benchmarks, and investigates local variations in commercialisation performance. The presentation will discuss the difficulties of commercialisation in Australia, and suggest possible solutions that are being facilitated by the Australian Institute for Commercialisation, founded in 2002 as a Smart-State initiative of the Queensland Government. In particular, while Australia has in place many of the assets and building blocks that are necessary for commercialisation, it generally lacks the 'soft infrastructure' that allows these elements to interact smoothly and efficiently. The presentation will also talk about other State and Commonwealth initiatives intended to foster the growth of small start up companies and assist the formation of clusters and economic growth.

Speaker Biography:

Dr Rowan Gilmore has a wealth of international marketplace experience, with a focus on high-technology industries in various design, engineering, product development and support roles. Specifically, Dr. Gilmore's career includes: Eight years with international aeronautic info-tech company SITA, servicing airlines, airports and aerospace companies. His postings included Geneva, London, Sydney and Atlanta; Three years with Telstra in the early 1990s as R&D manager, Advanced Global Networks; and, Three years in New Jersey heading the engineering division of Compact Software (now Ansoft), which is a leading vendor of RF and microwave computer-aided circuit design. Prior to this his work experiences included Schlumberger Well Services (Houston) and Central Microwave (St Louis). He completed his University of Queensland electrical engineering degree with first-class honours in 1976, before "heading bush" to manage field operations (wireline logging) in Malaysia, Papua New Guinea, Indonesia and India. Next, the university medalist completed an electrical engineering doctorate at Washington University, Missouri, ahead of further worldwide postings.

Ashley Robinson
Chair of MTT/AP
Queensland Section

From the Chair of the Joint Communications and Signal Processing Chapter

IEEE DISTINGUISHED LECTURE

Topic:	Next-Generation Networking: Solutions and Challenges
Lecturer:	Professor Andrzej Jajszczyk, Fellow IEEE
	AGH University of Science and Technology, Krakow, Poland.
Date:	Wednesday 18th August 2004
Time:	10.30 AM to 12 Noon
Venue:	D101, QUT, Gardens Point Campus, 2, George St, Brisbane

Abstract:
The lecture presents possible evolution paths for core and metropolitan networks taking into account the current slowdown of the world economy as well as the changing telecommunications environment. First, the current status of core and metropolitan networks is presented, including a brief presentation of such networking technologies as: SDH/SONET, Ethernet, MPLS and Resilient Packet Ring (RPR). Then, the evolution scenarios are discussed that involve the introduction of reconfigurable WDM networks, the Generic Framing Procedure (GFP), enhanced SDH/SONET, Optical Transport Network (OTN), as well as all-optical networking technologies. Second part of the lecture deals with the intelligence of optical networks based on either ASON or GMPLS control planes. The lecture is concluded by presenting current standardization activities, open issues and perspectives of intelligent optical networking.

Speaker Biography:
Andrzej Jajszczyk is a Professor at AGH University of Science and Technology in Krakow, Poland. He received M.S., Ph.D., and Dr Hab. degrees from Poznan University of Technology in 1974, 1979 and 1986, respectively. He spent a year at the University of Adelaide in Australia and two years at Queen's University in Kingston, Ontario, Canada as a visiting scientist. He is the author or co-author of six books and more than 180 scientific papers, as well as 19 patents in the areas of telecommunications switching, high-speed networking, and network management. His current research interests focus on control plane architectures for transport networks, quality of service and network reliability. He has been a consultant to industry, telecommunications operators, and government agencies in Poland, Australia, Canada, France, Germany, and the USA. He was the founding editor of the IEEE Global Communications Newsletter, editor of IEEE Transactions on Communications, and editor-in-chief of! IEEE Communications Magazine. Since January 2004 he is Director of Magazines of IEEE Communications Society. He has been involved in organization of numerous technical and scientific conferences. He is an IEEE Communications Society Distinguished Lecturer. He is a member of the Association of Polish Electrical Engineers and a Fellow Member of IEEE. Professor Andrzej Jajszczyk is Vice-President of the Kyoto-Krakow Foundation, fostering cultural and technical relations between Asia and Poland.

Prof Sridha Sridharan
Chair, IEEE Communications and Signal Processing Chapter
Queensland Section

Event Notification

Are you organising an event that is relevant to the IEEE Queensland Section? If so, e-mail the editor (*j.birt@griffith.edu.au*) and let us know! We might be able to advertise it in the newsletter for extra exposure.

From the Chair of the Power Engineering Society Chapter

The Power Engineering Society Chapter is currently reviewing the full papers submitted to the IEEE Queensland Section and IEEE PES technically co-sponsored AUPEC04 conference:

Australasian Universities Power Engineering Conference
26–29 September 2004
The University of Queensland
St. Lucia, Brisbane, Australia
www.itee.uq.edu.au/~aupec04

This conference is a major event for academics and professionals from industry in power engineering to share the recent advances in power engineering research and development. The authors are from many countries including Australia, New Zealand, South East Asian countries, China, India, Iran, European Union and America.

Power engineering society has also successfully organised two IEEE seminars in Brisbane:

Ecogeneration in Australia
presented by
Professor Akhtar Kalam, Victoria University
jointly sponsored by Engineers Australia and IEEE PES QLD Section

Abstract:
In many businesses, the purchase of electricity and fuel for use of boiler plant is often regarded as a fairly unglamorous subject. The boiler house, transformers and switchgear are seen as a necessary evil, which merely detracts from an organisation mainstream activity; whether that be brewing beer, making cars, paper or chemicals. Heat and power are the life-blood of any industry; essential for the operation of everything from the lowly light bulb and radiator to the most complex process technology. A secure supply of power and heat is therefore of paramount importance, and it must be provided at the lowest possible cost. Obtaining these vital commodities at the lowest cost is traditionally the duty of the management. The privatisation of the electricity supply industry has brought competition in to the market place for electricity supply and buyers. As well as the institutional changes in the electricity supply industry, there is also now an opportunity of reducing overall costs of energy supply by using cogeneration technology.

The engineering principles behind integrating electricity and heat supply have long been understood, and the technology has been refined and developed over the years, so that now, modern cogeneration systems can achieve very high fuel utilisation efficiencies. When fuel is burned in a conventional power station, much of the energy in the fuel is converted to heat, only a fraction of which is converted to electricity. In brown coal and gas-fired power stations, 28% to 35% of the energy in the fuel is converted to electricity; the other 65% to 72% becomes heat that must be disposed of.

Speaker Biography:
Professor Akhtar Kalam has been at Victoria University of Technology, Melbourne since 1985 and is currently Deputy Dean of the Faculty of Science, Engineering & Technology and Head of Werribee Group of Campuses. Professor Kalam is regularly invited to deliver lectures, work on industrial projects and examine external thesis overseas. His major areas of interests are power system analysis, control, protection and cogeneration systems. He has been actively engaged in the teaching of Energy Systems to undergraduates, postgraduates and providing professional courses to the industry both in Australia and overseas. He regularly offers professional development courses on Power System Protection and Cogeneration & Gas Turbine Operation to the Electricity Supply Association of Australia (ESAA). He also runs postgraduate distance education programme on Power System Protection for the ESAA. He has conducted research, provided industrial consultancy and published over two hundred thirty four publications on power system protection and independent power generation and written over 15 books in the area. Professor Kalam is a Fellow of IEAust, IEE and a member of IEEE.

New Tools for Analyzing Power System Dynamics
presented by
A/Prof Ian Hiskens, University of Wisconsin-Madison, USA

Abstract:
Power system design and operating decisions are often influenced by simulation of system dynamic response. Ideally the effects of parameter inaccuracy should be taken into account, but that is computationally intractable using traditional simulation techniques. The seminar will present a feasible approach to assessing and visualizing the influence of parameter uncertainty. The relative importance of parameters can be determined, and attention focused on those that are more influential. In a general sense, the aim of dynamic analysis is to ensure that system performance specifications are satisfied. (For example, post-fault voltages should remain within certain bounds.) Ad hoc approaches to achieving those performance requirements are common. The seminar will show that such system design questions can be formulated as "inverse problems", and analyzed systematically using iterative techniques.

Speaker Biography:
Ian A. Hiskens is an Associate Professor of Electrical and Computer Engineering at the University of Wisconsin-Madison. He received the B.Eng.(Elec.) and B.App.Sc.(Math.) degrees from the Central Queensland University, Rockhampton, Australia in 1980 and 1983 respectively, and the PhD degree from the University of Newcastle, Australia in 1991. He has held prior appointments with the Queensland Electricity Supply Industry from 1980 to 1992, the University of Newcastle from 1992 to 1999, and the University of Illinois at Urbana-Champaign from 1999 to 2002. His major research interests lie in the area of power system analysis, in particular system dynamics, security, and numerical techniques. Other research interests include nonlinear and hybrid systems.

Dr Zhao Yang Dong
Chair of Power Engineering Society Chapter
Queensland Section

From the Gold Coast Student Chapter

COMPETITIONS GALORE

As an IEEE Student Member there are often competitions you can enter for fame, glory, kudos or cash. Be sure to regularly check the "Scholarships and Awards" section of the IEEE Student Concourse: http://www.ieee.org/membership/students/index.html

For Queensland students:

Honours thesis competition: Student members in Queensland (CQU, GU, QUT, UQ, USQ) should submit their Honours thesis to their Branch Counsellor for a chance at a $500 cash prize and certificate. Micro/Electronics students in final year studying dielectrics: The Mat Darvienza Student Prize for Properties and Applications of Dielectric Materials also has a first prize of $500 and a certificate.

Stuart Bain
Gold Coast Student Chapter
Queensland Section

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