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NCACI Committee Member Profile: Michael Lees

Michael is currently the Systems and Technology Manager at Foster's Yatala brewery in Queensland. Having been in this role since 2003 he is responsible for (among other things) the production information systems. He has also been the project manager for a number of interesting Engineering projects at this site. The most significant being the implementation of the G2 real-time intelligent system platform. This is an intelligent monitoring and decision



support system that is used for a wide range of functions including energy management, process optimisation, maintenance, automated reporting and alarming and escalation. It is a sophisticated system that contributes to the Yatala brewery maintaining its place as one of the most energy efficient breweries in the world. Michael is also a member of the Foster's Energy Management Leadership Team (EMLT) and the Systems and Technology Leadership Team (STLT) both of which are national groups with the purpose of maximising value through knowledge sharing and providing leadership across the company in the respective areas.

Prior to his current position Michael worked as a project leader for the New Technology Applications team at the then Carlton & United Breweries (CUB) in Melbourne. He has worked with the company since late 1997. Some of the earlier project that he has worked on included: real-time process control, development of diagnostic, predictive and fuzzy logic based expert systems and the capture and preservation of tacit knowledge in multi-dimensional fuzzy systems.

Michael graduated from the University of Ballarat with BEng (hons) in 1994. He then went to Melbourne to undertake a Master of Engineering by research degree at La Trobe University part time. He graduated in 1998 with his thesis "A Reconfigurable Parallel

architecture for a High-Performance Fuzzy Logic Processor". He is currently completing his PhD (part time) through the University of Melbourne in the field of networked control systems. He has co-authored a book chapter, a journal paper (which received 1st place in the 2001 Presidential award for outstanding papers presented at the 1999 Convention held in Keystone Colorado), over 16 Conference papers and a patent.

He first joined Engineers Australia in 1990, has been on the NCACI committee since August 2005 and is now a member of the Queensland ITEE committee. He is a senior member of the IEEE and is currently the chair of the joint chapter on Control Systems and Robotics & Automation for the IEEE Queensland section. He is also a member of the Institute of Brewing and Distilling. His current interests include networked control systems, real-time intelligent systems and high performance fuzzy logic hardware. Michael is currently your NCACI newsletter editor.

NCACI Visibility: Possibility of a Regular National Australian Conference

As a part of our strategic plan we need to consider the visibility of the NCACI in Australia. The possibility of hosting a regular Australian conference in the NCACI arena is still under discussion. As mentioned previously, one approach would be through a similar style to the Control'95 and Control'97 Conferences. Some concerns have been raised as to whether we could attract enough authors and delegates on a regular basis to host such a conference series. Although we have received some input on this topic, further suggestions, ideas and feedback on this topic are most welcome. NCACI would particularly welcome the input from industry based colleagues as to the need/usefulness of having a regular conference forum to discuss the practice of control and automation projects in Australia.

Achieving the Benefits of Improved Control in Australian Process and Manufacturing Industries

The National Committee on Automation Control and Instrumentation (NCACI) is part of the Electrical College of Engineers Australia. The National Committee's mission is to contribute to the growth of the Australian economy, protection of the natural environment, and improvement in the quality of life in Australia by advancing effectiveness and technical excellence in the theory and practice of Automation, Control and Instrumentation.

As part of its charter, the NCACI initiated in February 2004 a benchmarking survey of the use of control technology by the process and the manufacturing industries in Australia, with particular focus on the extent to which these industries are, or are not, achieving the economic benefits which the effective use of control can provide.

The whole study was to include both the process and manufacturing industries, acknowledging that the distinction between control applications in process and manufacturing industries has blurred as the technology has developed, particularly at the higher levels of integration of control with information systems.

The project received support from a variety of sponsors in addition to funds earmarked by the NCACI. Financial support was provided by: Rio Tinto; The Centre for Complex Dynamic Systems and Control, University of Newcastle; The Cooperative Research Centre for Sensor Signal and Information Processing, University of Melbourne; and The Process Control Society of Engineers Australia. In-kind support (access to their mail-out lists) was secured from The Intelligent Manufacturing Systems Secretariat, Australia; The Warren Centre for Advanced Engineering, University of Sydney; Matrikon Pty Ltd; and IChemE in Australia.

The project report will soon be made available for downloading from the NCACI web site.

NCACI would like to take this opportunity to extend its gratitude to Professor Mike Brisk and Mr John Edwards for successful management and conduct of the Project, and prolific contributions to the Project. The Committee would also like to thank all who responded and provided data.

Process Industries Survey 2004 – 2005

A particular feature of the survey was an attempt to estimate the economic value of current control applications, and the potential benefits remaining to be tapped. These data were planned to provide enlightening comparisons with the estimates made in the 1987 University of Sydney Warren Centre for Advanced Engineering study on Advanced Process Control, and the 1992 Advanced Process Control Trends Survey carried out by the Process Control Society of Engineers Australia. However, this new survey was not restricted to advanced process control, seeking to address in addition trends in the application and performance of basic controls. Hence its aim was to provide a picture of the current status of control utilisation in the process industries, as well as what progress had been achieved in more than a decade.

A total of 27 PI responses were received, of which 20 came from industry users of process control. Because of the small number of responses, it is clear that one must not be too hasty in drawing general conclusions from the outcomes of the survey. The details of the survey results are presented in the report which will be made available for download from NCACI web site soon.

Manufacturing Industries Survey 2004 - 2005

A separate survey questionnaire was drafted for the Manufacturing Industries. It was similar to the Process Industries Survey in most respects so that comparable conclusions could be generated at the end of the analysis phase.

After a review of the initial poor response it was agreed that a second attempt to solicit responses should take place with a simplified survey format. In the case of the Manufacturing Industries survey this was spearheaded through the manufacturing roundtable organization. Whilst this generated some responses they were all from process industries and were therefore included in that group for analysis. No Manufacturing Industries analysis was possible.

The Health of Process Control Systems in Australian Process Industries: A Report Card for 2005

At the end of 2005, the National Committee on Automation Control and Instrumentation of the Electrical College of Engineers Australia completed a benchmarking survey of the use of control technology by Australian process industries. The results obtained lead to two credible conclusions.

- Australian process industries are achieving significant economic benefits from the use of process control.
- Yet, despite this, industry by and large is failing to ensure its control systems are maintained at peak performance.

This “report card” presents some results from the survey, and highlights the NCACI’s concern that industry is frequently neglecting to apply world best practice support levels to the technology that makes a major contribution to their success.

The report card will soon be made available through EA’s publication channels.

The 2006 ACI Undergraduate Thesis Prize

The Engineers Australia undergraduate thesis prize in Automation, Control and Instrumentation was inaugurated in 1995 to recognise individual excellence achieved in undergraduate work across the breadth of A, C & I. The quality of work presented has been such that the prize has been awarded each year since then. The award includes a certificate and a cheque for \$2000.

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2006 National ACI Project Excellence Awards

The National Project Excellence Awards is run biennially and aims to recognise outstanding applications of Automation, Control & Instrumentation. The objectives of the Awards include the promotion of better engineering through encouraging applications of ACI, which are cost effective, commercially viable while providing demonstrable environmental, safety and social benefits to Australia.

The 2004 National Project Excellence Award was awarded to Industrial Automation Services and BlueScope Steel for the Hot Finishing Mill Upgrade Project.

The National Committee for Automation, Control and Instrumentation will be seeking submissions for the 2006 Awards from the 11th of December 2006 with close of submissions on the 31st March 2007. The application form and entry details are available on the NCACI website at <http://www.engineersaustralia.org.au/ncaci/>

There are two categories for entry:

Category 1: Major Projects – Team projects where person time required for the project is larger than 10 person years (\$1000 application fee)

Category 2: Regular Projects – Smaller team projects or individual projects where person time required for the project involves less than 10 person years of effort (\$200 application fee)

Young engineers are especially encouraged to submit applications under this category.

To register your interest or for any enquiries, please contact Mrs Aylwen Gardiner-Garden, the NCACI Committee Administrator via email at agarden@engineersaustralia.org.au

Upcoming conferences

13th Conference on Mechatronics and Machine Vision in Practice

December 5-7 2006

Toowoomba Qld

<http://www.m2vip.com>

(This conference is supported by Engineers Australia)

Information Decision and Control (IDC 2007)

February 11-14 2007

Adelaide Australia

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

Further conference information is available on the EA website at:

<http://www.engineersaustralia.org.au/ncaci/>

Committee Membership

Call for volunteers for the NCACI committee (particularly from instrumentation & biotechnology). Please forward expressions of interest to Prof. Iven Mareels (NCACI Chair) email: i.mareels@unimelb.edu.au

Editor's Post-script

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