



Issue 2 | March 2007

## CEO's Message

Welcome to the second edition of AutoCRC Updates.

It seems only a short time ago that AutoCRC commenced and we have completed our first year of operation. I am pleased to report progress across a broad range of AutoCRC activities.

This has included the first year visit to AutoCRC by the CRC Committee which was held at the Port Melbourne headquarters in late 2006. All stakeholders will be pleased to note that AutoCRC has earned a positive response from this review.

The visiting panel consisted of CRC Committee Chair Dr Peter Jonson and DEST Program representative Mr Philip Hodgson. Its report noted that AutoCRC "presented to the visiting panel as a strong management team with effective

governance arrangements" and further that the panel "felt enthusiastic about AutoCRC's prospects for achieving its objectives".

Phase 1 of the high performance computing (HPC) and visualization facility, funded by a grant from the Victorian State Government, has been successfully installed and commissioned. The facility was formally opened by then Victorian Minister André Haermeyer on 30 October 2006. The opening event was well attended, and feedback from visitors was very positive.

The new HPC facility for AutoCRC will overcome the difficulty of sharing and manipulating the huge data sets needed for 3D visualisation and will be valuable in ensuring we have the computing power needed to give us an edge in a competitive global market.

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*Photo (left to right): Dr Matthew Cuthbertson, CEO AutoCRC, the Rt.Hon. André Haermeyer MP and Barry Comben, AutoCRC Chairman, at the launch of AutoCRC's new high performance computer facility in Melbourne.*

## CEO's Message (continued)

Work is almost complete on a project management web portal to handle definition, budgeting, approval and monitoring of all project work. This development is being undertaken by the Victorian Partnership for Advanced Computing.

The portal will constitute a fundamental management tool for AutoCRC, and a beta version has already been launched – for project tracking and invoicing for completed milestones. We expect that the fully-debugged version will be ready for launch during March 2007.

I am also pleased to report that there has been a rapid ramping-up of AutoCRC research activity. We now have 23 active projects at 11 locations across 5 states, with more projects coming on stream all the time. One very exciting new project is an LPG conversion system for heavy trucks. This Project brings 5 new companies into the AutoCRC research program.

Another important element of AutoCRC's mission is developing a new generation of talented automotive engineers, and we have committed to an investment of in excess of \$6 million in education and training over the life of the centre.

For example over the next few months, we shall roll out 50 final-year student projects within the AutoCRC companies – giving around 100 students a first-hand look at the challenges of working life in the automotive sector.

There is more on our education program in the following pages of AutoCRC Updates.

A belated Happy New Year to you all, as we move into the next exciting phase of the AutoCRC story.

**Dr Matthew Cuthbertson**  
**CEO**

## AutoCRC delegation visits Hong Kong & Guangzhou

Matthew Cuthbertson, AutoCRC CEO and Gary White, Research Program Manager recently visited the China High Tech Fair (Shenzhen) and a number of organizations in Guangdong Province, as part of AutoCRC's business development effort. The visit was organized by Austrade and the Hong Kong Automotive Parts and Accessories Systems R&D Centre (APAS). It provided many insights into the breathtaking quality and pace of manufacturing development in China. The visit also highlighted a number of opportunities for collaboration with AutoCRC universities on education programs, to help satisfy the huge demand for skilled automotive workers in the Chinese market.



*Pictured at Guangzhou Honda from left to right are: Dr Gary White, Matthew Cuthbertson CEO, QingHong Wu (GM of Honda Guangzhou R & D, and Dr Antony Lee (CEO of APAS R & D Centre).*

## Focus on Projects

*AutoCRC Updates* will have a regular feature focusing on some of the work and the challenges facing Projects underway at AutoCRC.

In this edition we take a brief look at the Voice Recognition & Noise Suppression Project at the Queensland University of Technology (QUT) and La Trobe University in collaboration with General Motors–Holden.

### **VOICE RECOGNITION & VOICE SUPPRESSION — AutoCRC PROJECT**

As motor vehicles grow more complex with growing numbers of in-vehicle systems, distracting motorists from the job of safe driving, the need has grown for voice recognition technology to control those in-vehicle systems without requiring hands on or visual attention.

Voice recognition is not new but the technology that can overcome the challenges of a high noise environment would be a significant step forward.

The implementation of a voice recognition system in a car is even more challenging than we originally envisaged as we find that we have to combat 20 different audio noise sources which arise from inside and outside of the car and adversely affect the recognizer performance.

In addition to suppressing all these noise sources, the success of the project will also very much depend on the collection of an "in-car" speech data base which will enable us to build a recognition system that can "hear" the Aussie accent. The other major challenge that we face in the project is ensuring versatility of the system by providing:

- Speaker independence
- Car Model independence and
- Invariance to driving conditions

Project Leader Professor Sridha Sridharan of QUT says, "All this coupled with the requirement to deliver high performance at low cost add to the challenge".

"We are however confident that we will overcome these challenges and in the three year life of the project we will have a proven in-car demonstration system up-and-running."

Low cost voice recognition hardware is expected to have wide ranging applications outside the immediate use in motor vehicles:

- Control of home appliances by voice (eg: light switches, TV/Radio/DVD)
- Control of equipment in factories
- Aids for people with disabilities (eg. wheel chair control)
- Intelligent toys
- Domestic and Industrial Robots

The project is scheduled to run until December 2008.

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## Quantum Advances for Auto Industry supported by \$6m Education Investment

AutoCRC has committed to an investment in postgraduate education in excess of \$6 million, to return what it describes as “quantum advances” in new technologies for the automotive industry.

A focus of the AutoCRC education program is training for up to 80 postgraduate students over the AutoCRC’s seven year funding life.

An attractive undergraduate program is also in full swing, offering final year student projects.

In order to deliver industry-ready graduates, AutoCRC core research Projects already have PhD students working with

industry partners to ensure appropriate and immediately applicable research outcomes.

To attract additional numbers of exceptional students AutoCRC is offering a second funding stream for top-up scholarships for students who hold Australian Postgraduate Awards or University scholarships. These scholarships will enable AutoCRC to engage with students and academics conducting exploratory or applied research that is likely to have long term value for the automotive industry.

More details of the AutoCRC Education Program are outlined on the following page.

## Meeting AutoCRC Postgraduates

Postgraduate participants in the AutoCRC research program recently met AutoCRC CEO Matthew Cuthbertson and Research Program Manager Gary White for lunch and informal two-way briefings.

First the postgraduates heard an overview of AutoCRC and the international automotive industry from Matthew and Gary, followed by a lively question and answer session.

Each of the seven postgraduate students attending the lunch then gave a short but enthusiastic preview of their own research and likewise fielded curly questions from their colleagues.

Education Coordinator Kate Neely then outlined AutoCRC’s exciting research education programs (See “AutoCRC \$4 million Education Program”) and plans for professional development opportunities in 2007.

The lunch was generously hosted by the Victorian Government’s Department of Innovation, Industry and Regional Development.



*From left to right: Tam Cao, Natalie Michael, Dr Matthew Cuthbertson, Kate Neely, Vu Ngoc Vinh, Faisal Mufti, Trieu Hoang, Dr Gary White, Xuan Zhi Wang, Yogen Padayatchy, Lina Reyes, KN Ahsan Noman.*

## Undergraduate Final Year Projects

AutoCRC aims to increase the numbers of undergraduate students who engage with the automotive industry during their degree studies through its sponsorship of industry focused final year student projects. AutoCRC Industry Participants put forward over 70 projects for consideration by the universities. Fifty projects have now been selected and some of those are already underway. This program will run until November 2007. Each project is supported by an AutoCRC grant of \$5,000.

In preparation for the undergraduate program 26 university participants attended the workshop, "Mentoring Generation Y".

## Postgraduate Students

The postgraduate student program is currently focused on research which is strongly linked to core projects. AutoCRC is funding scholarships for 12 students who are in the early stages of research degrees at ANU, Monash, La Trobe, QUT, RMIT, Swinburne and UniSA.

In order to enhance students' experience and their understanding of the automotive industry, AutoCRC will provide a program of professional development including workshops on the design and manufacturing of vehicles and components and on the political and policy environment within the automotive sector.

Current budget for AutoCRC postgraduate scholarships is \$4m over 7 years.

Student research needs to be immediately applicable to industry.

This model currently supplies a student stipend of \$28,000 pa and project support of \$5,000 pa, and it is available to both Australian and International students.

## Post Graduate Exploratory Research Scholarships

AutoCRC is also sponsoring a pure-research stream for students, by way of 40 additional postgraduate top-up scholarships.

These scholarships will be seen as attractive to potential students as they would increase student living allowance to the same as an AutoCRC full scholarship holder—\$28,000.

## New AutoCRC People

### Lina Reyes — Accountant



Lina was previously employed in a global transport shipping company in Manila as Senior Accounting Manager and was seconded to the Melbourne office in February 2004.

She has extensive exposure in financial and management accounting roles as she handled the day-to-day financial, accounting and treasury operations of three Australian companies prior to joining with AutoCRC. She is a CPA in the Philippines and has plans of undertaking CPA Australia studies in the near future.

### Kate Neely — Education Coordinator



Before joining AutoCRC Kate was a lecturer at Charles Darwin University (Northern Territory) and also served as a volunteer science/computing teacher in the Kingdom of Tonga in 2004. Kate has a Bachelor of Applied Science and has graduate diplomas in Environmental Chemistry and Education, and holds a masters in Adult Education.

## New Publications from AutoCRC

- The AutoCRC Annual Report 2006 – reports on the first year of AutoCRC operation
- AutoCRC flyers & presentation folder – feature AutoCRC participants and research and education programs.
- A set of posters illustrating AutoCRCs four research themes
- Posters for student recruitment and undergraduate projects.

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