



CEO's Message

Welcome to this latest AutoCRC Updates

AutoCRC has now completed its second year and I am very pleased to report that we have maintained the rapid progress of our start-up year.

Many thanks for this go to the small hardworking team we have at AutoCRC and our industry and university participants.

A great deal of effort has gone into ensuring AutoCRC will be a major CRC success story. There is every indication we are on track to do this and achieve our ambitious goal of introducing a suite of new technologies into Australian automobiles starting as soon as next year with a new LPG gas conversion and engine management technology for heavy trucks. This has worldwide marketing opportunities and will help position Australia as a leader in alternative fuel technology.

It is with much excitement that we can also announce the start of a project of national importance to the automotive industry.

The Automotive Supplier Excellence Australia (ASEA) project has the full support and commitment of all four Australian motor vehicle producers, Ford, Toyota, Mitsubishi and GM Holden and the Federation of Automotive Products Manufacturers (FAPM).

The significance of the project to the future global competitiveness of the Australian automotive industry has been recognised by the Government with glowing endorsement of the project by The Minister for Industry Tourism and Resources, the Hon Ian McFarlane.

Very significant productivity improvements have resulted where schemes similar to ASEA have been implemented in the UK, USA and elsewhere.

First stage outcomes from this project will be announced at the FAPM convention in July (see feature).

Special thanks are due to Dr Laurie Sparke who has resigned from the AutoCRC board following his retirement as GM Holden's Director of Innovation.

Dr Sparke was instrumental in building up industry and university enthusiasm for AutoCRC and was central to the successful bid for its establishment.

His vision for the automotive industry saw him champion AutoCRC to potential industry and university participants and helped ensure the development of the exciting project portfolio we have embarked on.

We'll miss Laurie's drive, dedication and mentoring and we wish him well in his retirement.

On an operations front I am pleased to note that the task of putting our project management infrastructure systems in place has been successfully completed.

Effective project management, particularly the complex task of getting new projects up and running, has been an important focus of our effort and a streamlined process is now operational.

AutoCRC has launched its Centralised Automotive Research System (CARS) web portal in May and a workshop saw more than 35 attendees from 16 organisations trained in the new system (see CARS feature).



*Dr Matthew Cuthbertson,
CEO AutoCRC*

"It is with much excitement that we can also announce the start of a project of national importance to the automotive industry."

CEO's Message (continued)

Our commitment to ensuring the best protection and leverage for our intellectual property has resulted in the appointment of Philips Ormonde & Fitzpatrick as AutoCRC's patent attorneys. This will include a part time secondment for Daniel McKinley to help develop systems for intellectual property capture and portfolio management and strategic work, with our researchers.

Two new AutoCRC projects have commenced, one with the University of South Australia and GM Holden, to model the way people enter and exit their vehicles to aid improved design. Agreement has been reached with Schefenacker for development of a new automotive powerfold mirror. We are also close to agreement on another project with a national freight company.

Recently I joined a South Australia Government trade mission led by the Deputy Premier of South Australia, the Hon Kevin Foley to look at the developing automotive industry in China. The industry's speed, its flexibility and its sheer size is astonishing and illustrates the pressure on Australia to meet the demand of a global economy.

Our important education program is continuing at full swing with more than 42 final year undergraduate projects underway involving six companies with projects at seven universities. The AutoCRC Postgraduate Program is now already well established with 12 full scholarships awarded (see education feature).

Dr Matthew Cuthbertson
CEO

Dr Laurie Sparke OAM Retires

Dr Laurie Sparke has announced his retirement from the Board of AutoCRC following his retirement as the Director of Innovation of GM Holden.

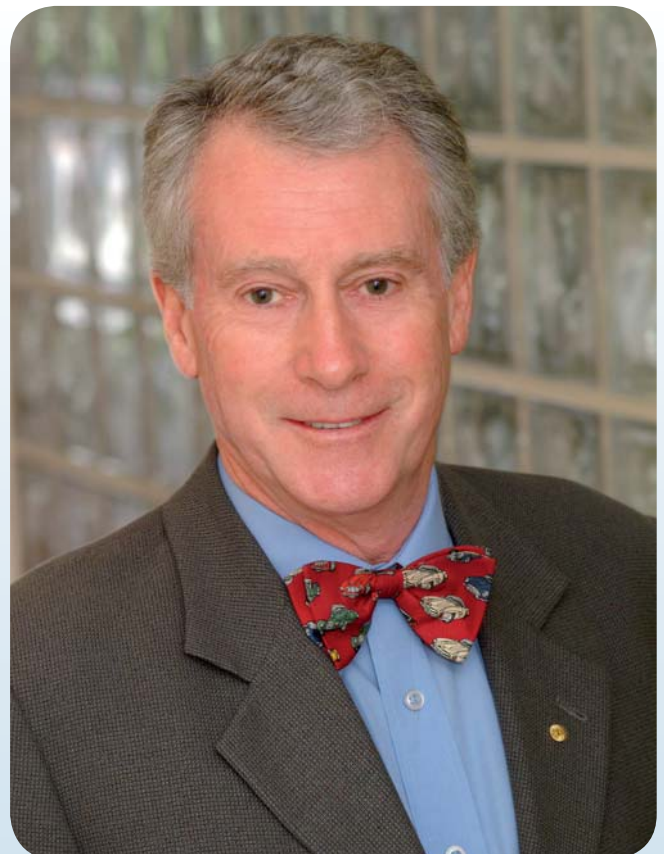
Dr Sparke has served the automotive industry in Australia for more than forty years which he spent with Holden. Dr Sparke was instrumental in the formation of AutoCRC and his connections in industry and academia ensured the development of a successful portfolio and key participants to take innovation in the Australian automotive industry to its next level.

He served as a director on the Board of AutoCRC since its inception where his dedication to innovation and industry knowledge and contacts helped ensure a smooth transition through its formative stage.

Among key achievements, Laurie was instrumental in the introduction of the first airbags into an Australian car, changes in air bag regulations in the USA, and the establishment of a transport safety institute in the Middle East. He also founded GM Holden's relationship with Monash University Accident Research Centre.

He has won a host of awards including the Professional Engineer of the Year, 1996, and the Society of Automotive Engineers Australasia Hartnett Award for original contribution to engineering, 1996 and an OAM in 2000 for services to automotive engineering particularly for occupant safety.

We wish Laurie a long and productive retirement.



Dr Laurie Sparke

Automotive Supplier Excellence Project – New Productivity for Industry Supply Chains



The inaugural meeting of the ASEA participants representing, Ford, GM Holden, Mitsubishi, Toyota, FAPM and AutoCRC

The project also has the enthusiastic endorsement of the Government. The Minister for Industry Tourism & Resources, the Hon Ian McFarlane MP has congratulated the industry on working together and working with the Government to develop this program.

The Commonwealth, the Governments of South Australia and Victoria, Australia's four major motor vehicle manufacturers, the Federation of Automotive Products Manufacturers (FAPM), and AutoCRC have embarked on this major benchmarking process.

The Automotive Supplier Excellence Australia (ASEA) project will help assist the more than 100 specialist local component suppliers to the automotive industry achieve international competitiveness and sustainability.

It is a continuation of a long term commitment by motor vehicle producers in Australia to assist in the continuation of a healthy component supplier network in Australia.

AutoCRC CEO, Dr Matthew Cuthbertson says, "AutoCRC is the facilitator and project manager for this initiative which is of national importance and will significantly assist the continuation and growth of a strong, efficient component supply base for Australia".

ASEA means industry suppliers will now be able to clearly identify areas of their businesses activity which can be improved and will receive specialist help in undertaking the changes required.

The project has received the unanimous support of all four Australian motor vehicle producers, Ford, Toyota, Mitsubishi and GM Holden. This unprecedented cooperation underlines the importance of efficient components suppliers to the industry in Australia.

Dr Cuthbertson says "At the end of the day the industry and government is making a large investment to help ensure Australia's automotive suppliers can survive at a time when there is already considerable pressure being exerted by overseas competitors".

The improvements possible have been identified by a similar project in the UK and include a host of productivity gains. These include:

- In-line rejects reduced by 75%
- Scrap costs reduced by 50%
- Changeover times reduced by 49%-72%
- Downtime reduced by 37%
- Output per operator hours increased by 41%
- Reduction in direct labour costs of 65%
- Process times reduced by 92%

You may have already heard about the ASEA project from an on-line survey being conducted to determine key measurables of world class supplier competency and key areas of supply base potential and critical need.

The results of this survey will be delivered in a report to the 2007 FAPM Convention on 19 July 2007.

As Project Facilitator AutoCRC is also central to the success of ASEA. For further information or questions please contact the Project Leader, Victor Pantano at AutoCRC. Victor can be contacted on 0406 422 074 (www.asea.net.au).

Focus on Projects

In this edition of AutoCRC Updates we take a look at a new AutoCRC Project – the Ingress/Egress Project.

The Ingress/Egress Project.

This new AutoCRC project with GM Holden, SomaDynamics and the University of South Australia will develop a new CAD tool that will enable designers to design cars for easier ingress and egress. The first project, aims to understand the movements of individuals getting in and out of a sedan car.

Currently in automotive design no such tool exists that combines the complex pattern of human movements that is ingress/egress in a digital environment.

To complete the Ingress/Egress project an optical marker based ViconMX system was purchased. The MX system, the most advanced digital optical motion capture system available in the market today, allows for advanced object tracking in real-time with no radio frequency (RF) or metallic interference and provides a positional accuracy better than 1mm and is packaged with 12 near-infrared F20 cameras.

The system used in this study is the first known ingress/egress project of its type to accommodate the use of a full seating buck and to our knowledge this is the first time an optical system has attempted to replicate the ingress/egress environment with doors, seats and the interior roof space intact.

According to Project Leader, Bill Humphreys of Soma Dynamics, "While there have been plenty of studies done with people sitting in car seats not so much work has been done in ingress and egress from a motor vehicle".

The ultimate aim of the project is to motion capture such movements and integrate these into the well known Human Solutions software, RAMSIS, used widely in automotive design.

"The study will focus on Australians of typical age, shape and gender groupings utilising 48 subjects who will spend some time getting into and out of our motor vehicle car drivers seat".

Humphreys says, "Once all the data has been captured and integrated into RAMSIS we hope to be able to offer a CAD simulation tool to help designers and engineers to better design for the needs of a broad range of drivers.



One of the subjects fully kitted out in all the sensors needed to collect data for the AutoCRC Ingress/Egress Project.

For example a big issue of interest to the automotive industry in Europe, the US and in Australia, is the affect aging populations may have on automotive design.

The GM RAMSIS simulation may also impact on seat design and provide a virtual reality tool to replace the building of costly seating bucks which often involves several generations across a single model design.

"Once we have a pilot stage virtual reality software package we will run testing across "reality" applications and end users of the system. When it is proven we expect it to impact on Australian motor vehicle engineering and design to create more human-friendly vehicles."

This Project is scheduled for completion in December 2007.

A new Centralized Automotive Research System for AutoCRC

The CARS system has been fully implemented and road tested by AutoCRC at its recent May workshop.

More than 35 attendees represented 16 organisations at the workshop which featured an enthusiastic keynote speech delivered by Ivan Deveson AO.

CARS is part of a focus by AutoCRC on delivering a streamlined project management process and it provides a combination of project management, planning, version controlled document management and reporting capability.

Amongst the key capabilities provided are budget and forecast validation, creating or amending Project Agreements, milestone tracking and approvals, invoice triggers, project snapshot reports, and many other features to smooth the start-up and management of Projects across the diverse geographic locations of AutoCRC researchers.

AutoCRC has a growing database of researcher capability maps across its university and industry participants, related CRCs, expert consultants and overseas linkages which is also managed in CARS and will be valuable for start-up projects to match

researcher capability to needs. Our Research Program Manager Dr Gary White can help out with this for those involved.

All current projects at AutoCRC have now been uploaded and validated into CARS which provides a secure area for reports and project intellectual property.

Special thanks for the success of the launch of CARS and the workshop which saw more than 40 computers on-line simultaneously goes to the development team who selected the best package for AutoCRC and managed the implementation. The team are:

- Ryan Kelly (software architect and lead developer)
- Daphne Mok (software developer)
- Chris Seeling (Project Manager)
- Sudarshan Ramachandran (Project Leader)
- AutoCRC Staff

CARS has rationalized much of the routine work in administering projects and we expect this to free up valuable time.

Any question about CARS should be directed to acr_portal@vpac.org.

AutoCRC to Launch LPG Conversion System for Heavy Diesel Trucks

A new clean, green, technology is poised for fleet testing in an Australian national truck fleet. It will be the first market deliverable by AutoCRC only two years after its inception and is expected to help cement the value of AutoCRC to Australia.

The new technology offers a conversion from diesel fuel to clean burning 100% LPG gas (Autogas) and produces more powerful, quieter, engines in heavy trucks.

The Chief Executive of AutoCRC Dr Matthew Cuthbertson says, "It provides an opportunity for Australia to lead the world in alternative fuelled LPG heavy trucks that are fully integrated into a diagnostic and maintenance system, in a global market where there are no other known parallel technologies.

More details will be posted at www.autocrc.com after the media announcement and launch of the new technology to market later in the year.



The Actros LPG engine conversion being run through test bed trials

AutoCRC Education Program Update

From Kate Neely – Education Coordinator

The major priority for AutoCRC during the last two months has been the roll out of the final year undergraduate research project program. These include projects as diverse as Knowledge Management Systems, Automotive Interior Design and Life Cycle Assessment of Joining Techniques used in the Automotive Industry.

AutoCRC now has 42 active final year projects underway with six companies involving 60 students at seven universities. Another 8 projects are now coming on stream and AutoCRC is currently seeking proposals for new projects for 2008.

The AutoCRC Postgraduate Program is now already well established with 12 full scholarships and 6 top-up scholarship awarded. All postgraduate students will be presented with certificates to mark their awards.

“Student projects are about innovation, new knowledge and access to new ways of thinking.”

AutoCRC student project forum — poster presentations

More than 50 students involved in AutoCRC projects “passed” on getting away early on the Easter break to attend AutoCRC’s first Student Forum. The forum was held at RMIT Bundoora East campus on the Thursday before Easter and attracted a good attendance of lecturers, from five Melbourne universities, and industry representatives. The high quality of the posters was commented on by students and visitors alike.

Three awards were presented for best poster to:

- Chris Siemens (Monash), Kate Wardley (Swinburne) and Pranavkumar Desai (Deakin)

Next Forum

All AutoCRC participants are invited to attend the next student forum (mid-project reviews) on 26th July at 5pm at Swinburne University Engineering Building (Hawthorn Campus).

AutoCRC at the CRCA Expo

AutoCRC’s public display at the recent CRC Association Conference at the Perth Exhibition Centre attracted a host of VIPs and more than 150 school students.

On show was some of the work by the Human Interface & Driver Distraction Project team. Natalie Michael and Martin Dubaj of Swinburne University set students up with electrodes and data loggers to illustrate the physiological effects of being distracted while completing a driving circuit video game.

There was a great deal of interest not only from students but from teachers, curriculum designers, parents and VIPs.

Also on show was AutoCRC Participant, Futuris Automotive Interiors demonstrating its car seat heating and cooling technology.



Some of the students taking part in AutoCRC’s driver distraction project display at the CRC Association Conference in Perth recently.

The First Undergraduate Project Completed

Prateek Puri of ANU is the first undergraduate to complete an AutoCRC industry based project. His subject was material and recycling options for car door skins for end of life vehicles. His work was presented to an audience of staff and students from RMIT and Holden at RMIT in February.



Prateek Puri

First AutoCRC Partial Fees Grant

Alec Woolley is the first recipient of the AutoCRC Partial fees grant. Congratulations to Alec who is studying a Masters of Engineering (Sustainable Energy) at RMIT University.

AutoCRC Partial Fees Grants may be awarded to students who:

- Are enrolled at an AutoCRC Participant University
- Are employed by an AutoCRC Industry Participant
- Are undertaking a higher degree by course work that is relevant to AutoCRC objectives
- Have documented evidence of concrete company support (financial and/or time), to at least the same value as the AutoCRC grant, for their course of study



Alec Woolley

AutoCRC Research Presentation Grant (up to \$4000)

Research presentation grants may be awarded to students who:

- Are part-time students enrolled in a postgraduate research degree at an AutoCRC Participant University
- Are employed by an AutoCRC Industry Participant
- Are engaged in research that is relevant to AutoCRC objectives
- Are presenting their own work as a paper at an international conference

AutoCRC Postgraduate Top-Up Scholarships have been offered to:

- Yousef Amer of UniSA who is working on "Development of Order Fulfilment Metrics for Integrated Supply Chain management"
- Hassan Khurshid of RMIT University who is working on "development of an approach for optimizing the crash-worthiness of an integrated car seat assembly"
- Mladenko Kajtaz of RMIT University who is working on "multicriterion optimization of an automotive seat adjuster mechanism"
- Sara Moridpour of Monash University who is working on "Lane Changing Behaviour of Heavy vehicles in Congested Traffic conditions"
- Soheila Maduliat Monash University who is working on "Energy absorption of cold formed open steel sections"
- Robin Hutchinson of Monash University who is working on "Optimising the interface for automotive driver support systems".

Congratulations from AutoCRC to all those above.