

## **MEDIA Release**

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### **Cooperative driverless vehicles ready to roll**

Griffith University (Queensland, Australia) researchers have developed technology which could lead to cooperative driverless vehicles being on our roads in the near future.

Microelectronic Engineering researchers from the University's Intelligent Control Systems Laboratory (ICSL) have developed hardware and software which enables vehicles to undertake everyday driving manoeuvres in cooperation with each other independent of humans.

Project leader Associate Professor Ljubo Vlacic said his team had just completed what was believed to be the world's first on-road demonstration of a cooperative driving solution for unsignalised intersection traversal and an overtaking manoeuvre by autonomous road vehicles designed for cities.

"The aim of our research is to revolutionise the transport industry sector by deploying in-car cooperative autonomous driving systems capable of not just overriding but entirely replacing human drivers," Associate Professor Vlacic said.

"In late December we successfully tested our technology in Rocquencourt, France, using three computer-assisted experimental vehicle platforms developed by the French scientific organisation INRIA and their industry partner ROBOSOFT. The tests were undertaken in an outdoor environment in cooperation with researchers from INRIA's IMARA laboratory led by Dr Michel Parent.

"We interfaced Griffith University's hardware and software modules with their onboard computers allowing the vehicles to simultaneously perform a variety of cooperative autonomous driving manoeuvres in real-time."

The vehicles undertook several manoeuvres without any human interaction including an unsignalised intersection manoeuvre, a cooperative overtaking manoeuvre, and a manoeuvre requiring the vehicles to drive one behind each other while maintaining distance and track control.

Associate Professor Vlacic said the ability of driverless vehicles to interact via direct communication as well as act autonomously was vital to the successful implementation of a citywide transportation system.

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“The technology we have developed will enable a plethora of autonomous vehicles to coexist on the roads and drive in cooperation with each other and even simultaneously with road vehicles driven by humans,” he said.

“In addition to the positive effect this system could have for the community by reducing road congestion, traffic noise and energy consumption, a key advantage of the technology is its ability to improve road safety by reducing the risk of driver error.”

The ICSL Cooperative Autonomous Driving technology was initially tested successfully in an indoor research laboratory environment at Griffith University in 1999. The technology was then deployed on Griffith University’s mobile-robot based platforms, before being tested in the computer-assisted vehicles in December 2002.

Associate Professor Vlacic said the technology was now ready for deployment in low-traffic areas such as resorts and retirement villages.

He said the technology could also be used on suburban streets in the near future for a door-to-door service designed to complement existing public transport means by moving people to and from bus and railway stations.

“To take our research to the next stage or commercially implement some of the existing solutions, we would need to secure significant funding.”

Associate Professor Vlacic was invited by European Union researchers to join them in developing a novel urban transportation system based on automated vehicles.

He is currently involved in three European Union research projects – *CyberCars*, *CyberMove* and *NetMobil*.

The research project being undertaken by Griffith University’s Intelligent Control Systems Laboratory is funded by Griffith University, the Australian Government’s Innovation Access Program – International Science & Technology (DEST, AusIndustry), the Australian Academy of Science, the Australian Research Council, and the French Embassy in Australia.

*Video footage and photos of the recently completed research demonstration are available upon request. For further information, please contact Anthony Coates, Griffith University, +61 (0)7 5552 8654.*

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