

June 02, 2020

## Press Release

### Evaluating the effectiveness of emerging autonomous safety technologies.

**maxon motor are pleased to be a supplier to the University of Adelaide's Centre for Automotive Safety Research (CASR) to develop equipment to test the safety of autonomous vehicles.**

With funding from the South Australian Government's Future Mobility Lab Fund the team at the University of Adelaide's CASR have developed a Mobile Testing & Research Laboratory to evaluate the effectiveness of emerging safety technologies including in autonomous vehicles. The focus of CASR is to conduct comprehensive research to understand how road crashes and the resulting injuries are caused, thus recommending ways to prevent crashes and injuries.

CASR operates its own advanced equipment that can perform a wide range of standard and non-standard tests for advanced driver assistance systems (ADAS) and connected and automated vehicles scenarios. The equipment developed or purchased for testing Connected and Autonomous Vehicle Technologies included:

- Pedal robots
- Steering robots
- Vulnerable road user targets including a child, adult and cyclist
- Autonomous, over runnable platform with vehicle target
- High accuracy GPS/IMU positioning equipment.

This specialised equipment used maxon brushless DC motors, specifically the EC90 pancake motors combined with an encoder. The flat brushless DC motor has open rotor technology thus supporting cooling during operation, which permits greater continuous torques. The motor has a nominal speed of 1600rpm at 48V and maximum speed of 5,000rpm. The flat and simple design of the DC motor assists with applications space constraints and the manufacturing process of the DC motors is largely automated allowing for an economical price. The encoder complements maxon's flat DC motors and is integrated directly into the motor. It is selected for its high resolution and high accuracy, with inverse signals and is extremely resistant against magnetic and electric fields, as well as against soiling. The Compact EPOS 50/5 CAN motor controller is a dynamic, ready-to-connect positioning controller with a very compressed design.

The equipment can be transported to field testing sites, allowing CASR to immediately evaluate the effectiveness of emerging safety technologies. Having developed the equipment in-house, it can be readily adapted to future emerging technologies.

The specialist equipment can also be developed to support education and demonstration activities regarding new vehicle safety technology. CASR is internationally recognised as a leading research organisation,

providing advice on road safety matters to both Government and Corporate business in Australia and overseas. Conducting high quality independent research leading to a reduction in human and fiscal losses from road crashes.

For more information [watch the technology in action here](#) and contact the CASR lab [lab@casr.adelaide.edu.au](mailto:lab@casr.adelaide.edu.au)

For more information brushless DC motor technology and positioning systems contact maxon motor Australia tel. +61 2 9457 7477.

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Length of this update: 428 words

The press release is available on the internet at: [www.maxongroup.net.au](http://www.maxongroup.net.au)



*Maxon DC motor attached to the steering wheel of autonomous car © CASR and maxon Group*



*Autonomous testing systems at the CASR testing centre © CASR and maxon Group*



*Robotic steering and pedal system © CASR and maxon Group*

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maxon is a developer and manufacturer of brushed and brushless DC motors, as well as gearheads, encoders, controllers, and entire mechatronic systems. maxon drives are used wherever the requirements are particularly high: in NASA's Mars rovers, in surgical power tools, in humanoid robots and in precision industrial applications, for example. To maintain its leadership in this demanding market, the company invests a considerable share of its annual revenue in research and development. Worldwide, maxon has more than 3000 employees at nine production sites and is represented by sales companies in more than 30 countries.