



Technology Minister Senator Stephen Conroy (right), getting the lowdown at TechFest 08, is hoping for smoother traffic flows.

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For city drivers, there's perhaps nothing more frustrating than waiting at traffic lights. And waiting at an empty intersection for lights to change is particularly irritating.

This is just one of the problems being tackled by various research teams at National ICT Australia.

Recently the organisation included several of the projects it is funding in its TechFest 08.

And some of these projects could drastically alter Australia's road transport system.

They include Smart Transport and Roads, a camera system that can be integrated into traffic lights.

The system would be able to see traffic coming from a distance using image-recognition technology, and if the road is clear, turn the lights green for approaching traffic.

Senator Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, is clearly excited about the possibilities of the technology, saying it would "lead to more efficient operation of roads, more reliable travel times, and fuel savings for drivers, and more reliable, and therefore more attractive public transport".

The system's developers hope it will be able to reduce congestion by about 5% Australia-wide, saving time and money.

A live test of the system is a few months away, and will be carried out at Albion Park, in South Wollongong.

The researchers believe they can have the system ready by about 2015.

Another NICTA project, the Autonomous Urban Vehicle, is fully automated, and theoretically able to operate on any road or highway in the country.

According to research team member Will Uther, one of the obstacles the project faces is that no car manufacturer will build a commercially-available automated car without extensive testing because of the risk of massive lawsuits.

"In the long term, I believe it would be a great thing to get fully autonomous vehicles, but for legal reasons, that's a long-term deal," he says.

But there are applications for the project, he says. New technologies such as adaptive cruise control are proof of this.

Adaptive cruise control is already available in the top-end Mercedes model. This technology varies the speed of the cruise control setting depending on traffic in front and behind.

For example, if the Mercedes driver changes lanes behind a slow-moving truck, the system will automatically slow the car to match the speed of the vehicle in front of it.

And in the long term, if legislation changes to allow autonomous vehicles, they could prove a life-saver. "More people die on US roads every month than died in September 11," Uther says. "So if we can get this working, the potential there is enormous."

To operate effectively country-wide, the vehicle will need access to detailed, up-to-date maps for its GPS system. However, many GPS maps are out of date.

The AutoMap project is an attempt to solve the problem by having GPS users help create their own maps.

The system will include an image-recognition camera able to detect road shapes, as well as new road markers such as stop signs or traffic lights. It sends this data back to the GPS map providers, who can use it to quickly and easily update their maps.

GPS vendors could then begin providing updates as they become necessary.

If the autonomous vehicle and traffic light system projects are any indication, there will soon be big changes in road transport.

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