TruckOn
overhead collision prevention

test & measurement

custom electronics

engineering software

data management

defence & aerospace

consumer goods

environment

mining

ICT

energy

agriculture

biotechnology

transport & automotive

Challenge

New South Wales roads experience three cases per month of a large vehicle getting stuck in a tunnel or colliding with the underside of a bridge, resulting in major traffic disruption, and millions of dollars worth of damage to road infrastructure.

CPE Systems, along with a number of enterprising Australian SMEs, collaborated with NICTA (National ICT Australia) and the NSW Roads and Traffic Authority to develop and trial a wireless crash-avoidance technology designed to help prevent 'over-height' vehicles colliding with tunnels and enclosed bridges.

Embedded Systems Australia industry cluster with NICTA's support, made this project possible by arranging a grant from Industry & Investment NSW, workshops, and project discussions with the RTA. The project was delivered by ESA members NICTA, Braetec, Cohda Wireless, CPE Systems and ResTech, all of whom contributed substantial in-kind resources.

Solution

When an over-height vehicle breaks a height detection beam, the road side control system transmits the GPS location and time of the event to all vehicles in the vicinity. It also sends the distance to the overhead infrastructure and location of a possible diversion to the driver. Each vehicle processes this information to determine if it was the guilty vehicle, and if so, begins transmitting its identity, speed and other tracking information to the road side controller.

If a driver ignores advice to take a diversion or pull over, then a speed control system progressively slows the vehicle until it halts short of danger. The speed controller is reset automatically by the driver taking a diversion, or by a remote command from the Transport Management Centre, who also keep information on vehicles that don't regularly comply with instructions or that need assistance to safely clear the area.

This project has been supported by a $100,000 grant from Industry and Investment NSW matched by cash and in-kind resources of the RTA. Microsoft provided $11,000 sponsorship, and The Warren Centre assisted during the project's inception.
For more information refer to the TruckOn project page:

www.embeddedsystemsaustralia.com.au/truckon

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