EROAD founder Brian Michie, chief executive Steven Newman and chief technology officer Bruce Wilson

DISRUPTION

Road warriors

Never mind Rome—with rising petrol prices and biofuel issues, these days all roads lead to a headache. And with road wear, traffic congestion and carbon dioxide emissions, calculating Road User Charges (RUC) in the freighting industry moves things firmly into migraine territory.

New Zealand became a world leader in transport policy in the 70s with the RUC system of charging heavy vehicles on weight and distance travelled. Now that carbon-conscious governments everywhere are planning similar systems, ambitious Auckland company EROAD may have picked the perfect time to roll out its eight-years-in-the-making high-tech replacement for the venerable hubometer.

Under the present system, trucks are required to calculate their travelled distance using a hubodometer, a mechanical device mounted on the vehicle's axle that monitors wheel rotation. This method can be inaccurate, it's vulnerable to damage and illegal interference, and the paper-based administration and compliance costs of enforcing it are high—an estimated $100 million annually. So EROAD has developed a fully electronic system named eHubo. It will use a small On Board Unit (OBU) that sits on a truck's dashboard, with an outward-facing display that can be seen by compliance officers.

But it's what's unseen that makes the difference. The OBU uses GPS for position location and uploads and downloads data using a mobile phone network. It's linked directly to websites where road charges can be monitored, purchased and refunded.

Unlike most computer-based technology, EROAD's OBU needs to be more than just smart—it needs to be exceptionally tough to survive the rigours of life on the road. "The main challenges were the temperature requirements: the OBU can operate in conditions from minus 20 degrees Celsius to 120 degrees," says EROAD chief executive Steven Newman, a former CEO of Navman. "It operates on a low power source, and has tamper-proof architecture so it's difficult to interfere with. On the Internet side it needs to be highly secure because we're dealing with public money, so it really is diverse and utilises a lot of different technology."

As EROAD's domestic success depends on growing demand for their technology, a risk remains that the Ministry of Transport will be slow in implementing an electronic RUC system. Newman shows little concern: "The long-term opportunities of moving to electronic RUC are better facilitation of the roads, stronger contribution to greenhouse gas targets and better community outcomes by incentivising vehicles to travel at different times on different routes."

EROAD's technology is not confined to improving current RUC systems—there is a wide range of future applications for all road vehicles. With an increasing number of highly fuel-efficient and hybrid vehicles on the road and an increase in rail and sea freight costs, fuel taxation is gradually becoming undermined. Combine this with the development of new technologies like eHubo, and governments worldwide will make radical changes to transport taxation systems. Whatever the future holds, EROAD won't be jumping on any bandwagon—it plans to be in the driver's seat.

—Adam Mamo