

Every ITSWorld Congress has had its 'surprise package'. One company that until then had gone about its business quietly and efficiently but then appears, as if by magic, with a revolutionary product that sets the whole industry talking. Stockholm 2009's 'hidden gem' was undoubtedly New Zealand's EROAD, and they didn't even have a stand on the exhibition floor. But, as CEO Steven Newman tells *Thinking Highways*, the company hasn't exactly 'come from nowhere'...

**Can you provide our readers with a bit of background on your company?**

Our participation at the recent World ITS Congress in Stockholm probably came as a bit of surprise to some in the tolling industry, but New Zealand was actually the first country to introduce a system of user pays for charging heavy trucks (HGVs) way back in 1978. Under the Road User Charge (RUC) regime the cost for HGVs of using the roads is recovered through weight and distance charges which vary according to axle configurations. To ensure compliance all HGVs over 3.5 tonnes must fit an approved hubodometer to provide a reliable and tamper-proof record of distance travelled.

Although the RUC system is well founded, the paper-based and manual compliance system is now well past its use-by-date, and reliability issues with mechanical hubodometers are a constant source of aggravation for both operators and enforcement agencies. EROAD was created to resolve and exploit the commercial opportunity to modernise the RUC system, enabling cost savings for both transport operators and the government. But like all technology projects this was easier said than done!

**What's your background - where did you work before you joined EROAD?**

I'd been at Navman but I left after 13 years as CEO/COO when it was sold in 2003 to Brunswick Corporation. After a couple of years of semi-retirement I began to look for another project and was introduced to EROAD founder Brian Michie. I was excited by the international

# USER FRIENDLY

Left to right: Brian Michie (Founder/Business Development); Steven Newman (CEO); Bruce Wilson (CTO).

**LUCY CONE talks to STEVEN NEWMAN, CEO of the New Zealand-based company that was the talk of the 2009 ITS World Congress in Sweden**

potential of the product, and importantly, by the fact that there was an opportunity to build a New Zealand business with a strong domestic market. Like Kapsch and TollCollect, you need a successful home market if you expect to have any chance of developing an international market.

**How does your technology work?**

At the core of EROAD's eRUC system is our OBU, the 'eHubo', which has been approved by the New Zealand Government as an electronic replacement for mechanical hubodometers. The eHubo reliably measures distance travelled with high accuracy, using internal and external sensors including the vehicle's odometer pulse, GPS satellites and accelerometers. Road trials consistently demonstrate we are achieving an accuracy of ±0.5 per cent, and the unit constantly recalibrates for temperature, and tyre wear and inflation.

The other part of our system consists of an eRUC web application that has been created to provide operators with a user friendly system to pay and manage their RUC. Vehicle and RUC licence information is transferred between the eHubo via a secure wireless link, and the EROAD server, which interfaces with the government RUC system, payment facilities and digital map provider.

Overall I would describe our system as browser based with map and tariff data held at the server.

Our system was subject to extensive independent trials and testing, as part of the New Zealand approval and certification process. Enforcement is done via simple visual inspection of the OBU which is mounted on the windscreen, supplemented by an audit process.

**What particular technical challenges did you face?**

The entire system had to be designed and built to meet strict performance requirements around security and reliability. When combined with harsh operating and environmental conditions, this created numerous technical headaches for our engineering team. Although we were able to draw on our Navman experience, we faced particular challenges around high temperatures and power management. Our display faces outwards so that the RUC License can be read from outside the vehicle by enforcement officers. As you will appreciate it was a real pain to find a display that could withstand high dashboard temperatures and also operate with a minimum power draw. Last summer one of our units recorded 95°C!

**“EROAD was created to resolve and exploit the commercial opportunity to modernise the RUC system”**

**Turning to the financial side of the company, how does your business model work?**

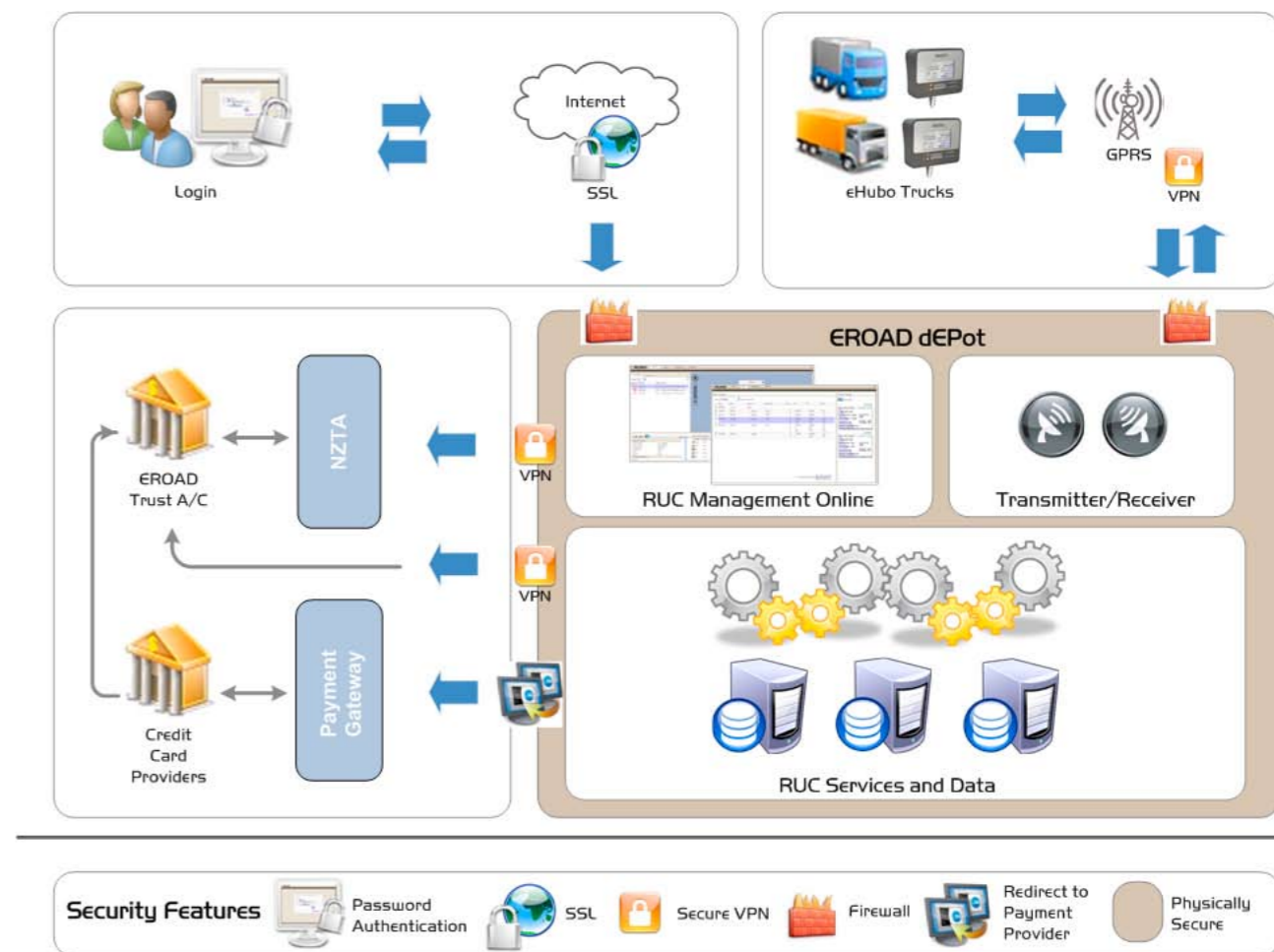
Unlike the European schemes, EROAD relies on voluntary take-up within the HGV industry. Operators continue to have a choice of staying with the paper-based RUC system, or they can switch to the EROAD online RUC system. This has huge implications for both our cost structure and culture. This model encourages an innovative

and service orientated company culture, and we provide a range of value added services in addition to eRUC. This approach also offers governments or road infrastructure funders a low risk and low cost transition to an eRUC regime capable of supporting a progressive transport reform agenda.

**Can you tell us about your involvement in the Swedish ARENA eRUC project?**

Sweden has initiated a project to develop an electronic km based RUC system for HGVs to replace fuel and registration taxes. Installations for the ARENA field trials are currently underway, with the road trials scheduled to run over the European winter. From a technology perspective EROAD is not expecting to learn much from our involvement in the ARENA trials – we already have a proven eRUC system up and running in New Zealand. What distinguishes the ARENA project is the proposed institutional model of competing private sector Toll Service Providers (TSPs). System requirements will be flexible to meet the dynamics of technical innovation and in theory provide strong incentives for innovation and lower costs. It's worth stressing that under the proposed ARENA model the TSPs meet all delivery risks, and capital and operating costs.

Swedish officials have told us they don't expect there to be a decision around the introduction of eRUC until after the elections in 2010. Over time we believe that their TSP model will become the template for countries that are looking to introduce direct charging schemes for HGVs. The Swedish approach to HGV tolling is typically smart, strategic and sustainable.



**Why do you think more jurisdictions have not implemented HGV tolling schemes? Is there one overriding factor?**

It's clear that pressures will continue to build around finding a workable replacement for excise taxes and registration charges, as well as dealing with the growing problem of transit traffic. Distance, time, location, and emission based charges are required to substantially improve the efficiency of infrastructure use, and improve community and environmental outcomes. The technology to implement direct charging is certainly available but, as numerous commentators have pointed out, the political will has to be there to implement the scheme. HGV tolling also seems an obvious technological stepping stone towards light vehicle road pricing, but in fact the two sectors seem to operate in isolation.

In addition I think that the traditional procurement model is not contributing to wider acceptance of HGV tolling schemes. Politicians and other stakeholders understandably get nervous when they are asked to approve a high cost and inflexible infrastructure based tolling scheme, as evidenced by the events surrounding the recent Slovakian eRUC tender process.

While we all understand the reasons why countries have historically chosen to select a single technology provider to control risks and manage outcomes, I think the days of the monopolistic toll provider are drawing to

a close, in line with previous trends in the telecommunications industry. This obviously has a technology dimension as it is difficult to create a competitive supplier model if you select a technology solution that relies on gantries. Likewise administration costs need to be below 5 per cent of revenue and I don't see this happening if technology providers resist the move towards wireless tolling solutions.

**“The traditional procurement model is not contributing to the wider acceptance of HGV tolling schemes”**

**Finally, what does the future hold for EROAD?**

As the world's first commercial autonomous eRUC provider, I like to think we can play a small but significant role in the growing international direct road charging market. At the moment the market is dominated by a number of large players, but over time opportunities will emerge for smaller companies like EROAD and Skymeter, also a participant in the ARENA project.

We are currently seeking a Scandinavian partner with the view to becoming one of the TSPs in the Swedish eRUC market. Likewise we would like to join a consortium looking to participate in the growing number of European HGV toll schemes. We have the technology and the track record to implement a cost effective nationwide HGV charging in virtually any jurisdiction. We now need a partner to make that happen. **TH**

For more information go to [www.eroad.co.nz](http://www.eroad.co.nz) or email [brian.michie@eroad.co.nz](mailto:brian.michie@eroad.co.nz)

