

AVI solutions for access control and truck tolling

Truck tolling is of growing interest for recycling sites, bridge owners and toll-road operators, who can all derive revenue from levies on commercial vehicles. Systems to collect entry fees need to be efficient so as not to impede commercial activity and also auditable to ensure that system integrity is maintained. Electronic tolling systems using active or passive transponders provide high-efficiency access control, while complementary ITS technologies enable special requirements to be met.

International Road Dynamics (IRD) has supplied systems for weighstation preclearance and toll collection for many years, and recent projects have enabled the company to leverage this expertise to provide systems for fee collection.

Intelligent solutions

Haya Water's waste water treatment facility in Oman charges tanker trucks a fee for entry. This is a high-volume facility and manual collection of fees was creating long lines of vehicles at the gate. With a large number of returning vehicles, it needed a fast, automated system that would optimize operations at the plant entrance.

The site integrator selected IRD iToll software and lane hardware as the solution: passive RFID is used for electronic fee collection for vehicles entering the facility.

All waste water vehicles are equipped with RFID tags, which allow entry only to registered vehicles that have a valid account and sufficient funds. The RFID tags are tamper-proof and attached to the windshield.

Meanwhile, at the Deh Cho Bridge, near Fort Providence in Northwest Territories, Canada, tolls are charged only to



Photo: NWT DOT

Need to know

Combined expertise can provide a highly effective tolling solution for large vehicles

- > The Deh Cho bridge toll system makes use of 915MHz active transponder technology that is commonly used in North American CVO preclearance systems for interoperability, while the systems in Oman and Mongolia use passive 18000-6C RFID tags
- > Vehicle operators in the PIC Program can enroll to use their existing AVI transponders for identification to remit tolls at the Deh Cho Bridge



(Above main) Deh Cho Bridge gantry (Above) RFID reader and camera; AVI reader, lane signals and VMS (Left) Mongolia toll plaza (Bottom) Queuing at the waste water site

commercial vehicles weighing more than 4,500kg that are traveling northbound.

The local government recently signed an agreement with the Province of Alberta to be part of its Partners in Compliance (PIC) program – an electronic screening program using AVI technologies in 25 weighstations at 16 locations across the province.

At the site, transponders are read by automatic vehicle identification (AVI) readers on an overhead gantry. Cameras and weigh-in-motion (WIM) sensors are also in place.

Those without a transponder can purchase single-use permits and an additional service charge is levied. Cameras record license plates for payment verification.

IRD has also supplied toll collection and access control systems along the Tavan Tolgoi-

Gashuun Sukhait toll road in Mongolia. The road is a crucial route being used to enhance mining development and expansion in the Gobi region.

The system uses passive RFID tags to collect tolls from the 1,000 heavy trucks that use the road every day to transport coal from Tavan Tolgoi to the Gashuun Sukhait border point.

AVI in toll systems includes auditing against authorized user lists. License plate readings may not provide enough accuracy on their own, but camera systems can be a valuable addition to a truck tolling system. ○

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