

RFID, Inc. creates collision prevention system for the mining industry

RFID Inc. is the oldest actively run RFID company in the world, having a vast array of RFID products to stay diversified in many markets and thus survive not only differing economic eras, but the vast technology changes that have occurred since 1984.”



These underground brutes, when equipped with RFID Inc.'s new Collision Alert System, can now run safely through mine tunnels without fear of colliding into other moving equipment in these rough and tumble environments.

In the mining industry, specifically in Australia, there are underground vehicles, which can be tractors or transport vehicles, are known as boggers. Now imagine driving through tunnels, not always well lit and with sight further limited by no rear or side view mirrors, where intersections provide no visibility as to what is traveling on the cross road. Mines have anywhere from a handful to dozens of boggers careening through their dark shafts.

Each of these vehicles is a major capital investment. If boggers collide, costs can be measured not only in the damage to the vehicles, but also in the downtime of

an idle asset, to say nothing of the human safety element. In the Telfer Gold Mine three Landcruisers squashed by boggers over the past two years were written off at \$80,000 (US) each. The Nifty Copper Mine had a Landcruiser squashed by a bogger, also costing \$80K.

The problem: how to keep boggers from colliding. RFID, Inc., teamed with Pacific Automation, their longtime Australian distributor and technology partner located in Perth, Western Australia, to create a new product that solves this. The new Collision Alert System “sees around corners,” a feature that took a good deal of

time to develop. The solution is a highly customized, 433 MHz, long range active tag system.

“In this rough and tumble underground world, mirrors would be ripped off in short order,” says Richard de Jong of Pacific Automation. “You’ve got to keep in mind these vehicles are bouncing off walls, boring into walls to load ore. We’ve even had extrusions mounted on top of the boggers ripped off straight away. It’s a rough world down there.”

The right frequency for the job

Why 433 MHz “Active?” Obviously the range, which can extend to hundreds of feet, but is limited to tens of meters in this application since that is all that is necessary. Also, this frequency has been accepted by most governments throughout the world as standard without need of site licensing.

By placing both an RFID tag and reader on each vehicle, the reader will alert the operator as to when another vehicle is within a predefined range. The reader is located in the cab of the vehicle visible to the operator and contains LED’s as well as an audible horn.

One might ask, if each bogger has its own RFID tag as well, wouldn’t that tag be read by the reader and a false alarm be set off constantly? To avoid that issue, RFID, Inc. added a function to the reader whereby it can be set to ignore a specific

tag. This feature is also alterable in the field if necessary, to assign new tags to be ignored.

The Collision Alert System is actually a line extension of RFID, Inc.’s “Extend-a-Read” product line. These products include both RFID tags and readers, active and semi-active, operating at 433.92MHz. These products are used for applications such as truck and vehicle ID; gated community access; employee access and tracking; and parking facilities, among others.

In fact, the first Collision Alert System in the United States was just installed by RFID, Inc. partner Midwest Engineering, of Cleveland, Ohio, to help client Timken avoid forklift collisions in their warehouses.

Gaining safety while saving money

The key remains for the mining contractor, or bogger operator, to demonstrate safe operation of equipment and the Collision Alert overcomes the visibility issue. Several other features were added as well, like a self test button that can be depressed by the operator to ensure the system is in good operating order.

The desired range of the overall system is customizable as required, since ranges differ from mine site to mine site. One set of circumstances might require 10 meters of range while another might require 20 meters. The rock walls do not present problems for the 433 MHz. Metals will certainly interfere, since RF transmission through metal cannot occur. With this product, though, the boggers do not pose a problem because the RF transmission is strong enough to go around the metal.

By placing a Master Range Programming Tag (MRPT) X meters away from a reader and depressing an Automatic Tuning button, the reader will step out one meter at a time searching for the MRBT. Once the RFID tag is found, the reader will set itself for that attenuation (range). The tags also contain low battery

This 433 MHz Active solution can extend to hundreds of feet. It now helps Midwestern warehouses manage use and safety of forklifts.

indicators. Although tags can last as long as five years, the battery indicator assists site managers in replacing a tag before its battery dies.

“You have to keep in mind, this world is not the most automated given its rugged nature, so basically we needed to come up with a solution that is simple to use, a self contained solution not requiring laptops or onboard computers, and no operator interaction necessary so as to not place a burden on or hinder the operator’s time and operations,” adds Dzung Pham, CTO and VP of RFID, Inc. The first shipments commenced in Q4 2008, with 200 readers to Byrnegut Mines.

RFID, Inc. is the world’s oldest active RFID company, formerly The Telsor Corporation, and while their mainstay market is factory automation and industrial identification, “we’ve maintained a focus on having a vast array of RFID products to stay diversified in many markets and thus survive not only differing economic eras but the vast technology changes that have occurred since 1984 as well, providing solutions ranging from manufacturers like Kellogg’s cereal to auto companies, to the medical sciences industry or retail giants like Blockbuster or Hollywood Video”, adds James Heurich, President & CEO of RFID, Inc.

