

Safer Level Crossings With Scanning Technology

Level crossing accidents cost Transnet around R150 million annually, with injuries and fatalities taking a terrible human toll. Now TeleEye SA, a CCTV remote monitoring firm, has engineered a solution that could improve safety at South Africa's 7 500 rail network level crossings.

Accidents involving pedestrians or vehicles and trains almost invariably involve fatalities because of the forces involved. For example, A widely-publicised accident at Hectorspruit in Mpumalanga, saw 25 farm workers killed when the vehicle carrying them was hit by a train at a level crossing.

“Trains are very large and they can take more than a kilometre to stop. To reduce the number of unnecessary deaths at level crossings, we have to do more to ensure that vehicles and people are kept clear of danger,” says Philip Smerkowitz, managing director of TeleEye South Africa.

As the notorious Blackheath disaster showed, even the presence of booms is not 100 percent effective. Technology that warns rail traffic of obstacles on the line in time is the logical answer to this problem.

Smerkowitz and his team set out to find a suitable technology solution. They found the ideal solution in the United Kingdom which uses advanced scanning to detect whether a level crossing is clear of vehicles and pedestrians. This technology has received full approval from Network Rail, the authority responsible for maintaining the United Kingdom's rail infrastructure.

The level-crossing obstacle detector uses Redscan technology to detect whether any vehicles or pedestrians are using the crossing. Redscan uses laser technology to detect a moving object's position,

size and speed and can be programmed to only go into alarm mode when intruders enter specific areas.

Maximum capture rates are delivered with minimum false alarms. Other components of the solution include radar and CCTV, which allow the information to be relayed back to the railway signalling system. This allows a train to be halted in time if there is an obstacle on the crossing.

“South Africa is making good progress in bringing level crossing fatalities down through educational initiatives, but more is needed,” explains Smerkowitz. “Reckless and uninformed road users are a perennial problem in this country and we believe that technology has a key role to play in changing things. This fully automated solution offers a practical, reliable component of the total solution to unnecessary fatalities where our rail and road networks intersect.”