

South Africa law signals opportunity

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The Australian-listed technology company Codan could be about to see the first significant dividends from its acquisition more than three years ago and subsequent investment in Minetec, the firm that won the right to commercialise CSIRO's WASP technology. South Africa's shifting mine safety culture is the key.

Codan produces radio communications devices for military and other applications, and high-tech metal detectors, with the underlying business model aimed at mass producing electronic hardware wrapped around proprietary technology.

Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO), which pioneered Wi-Fi and wireless local area network (LAN) technology, developed the Wireless Ad hoc System for Positioning (WASP) to enable non-satellite high-precision tracking – to accuracy levels of less than 0.5m – of people and 'assets' using "wireless localisation" technology. WASP uses small mobile tags attached to vehicles or mine workers together with a series of reference nodes placed around areas to be monitored – including underground tunnels. The nodes communicate wirelessly, calculating the arrival time of signals, allowing the system to accurately track the location and speed of objects.

Minetec, a small Perth-based firm licensed to sell WASP, has developed complementary intellectual property and a product portfolio covering mine tracking, proximity detection, collision avoidance, and reporting, with some dispatching functionality, supplemented with clever mine production management software. Its strategy is to use mine safety as a rampart to bring its productivity improvement products into play.

Long-proposed changes to South Africa's mining rules that finally seem set to bite may therefore be exceedingly helpful.

Minetec says recently legislated Department of Mineral Resources regulations for collision avoidance systems (CAS) increase the onus on operators of mine vehicle fleets to ensure they can slow down and stop "automatically" to prevent crashes. It would "soon be mandatory that every operating mine in South Africa [is] compliant" with the CAS legislation via its mine safety system. It is unclear how long mines have to become compliant, but the law change has been mooted for at least the past five years so operators have had plenty of time to get accustomed to the proposed changes.

Collisions involving vehicles and people are unfortunately too common at surface and underground mines throughout the world, causing injuries and deaths, with the latter environment presenting added technical challenges (and/or cost challenges) but also clear incentives if the technology can work reliably. Increasing mechanisation in South Africa's underground mines is boosting mine traffic levels.

“Minetec’s safety solutions are compliant with the new legislation and we are experiencing unprecedented interest in our SafeDetect product,” Minetec’s general manager commercial development, Alan Fenelon said last month when the company was announcing the formation of a new subsidiary, Minetec RSA, based in Johannesburg. It subsequently appointed an experienced general manager, Alex Gardiner to head the new business. Gardiner has worked for both mining technology suppliers and miners after starting his career as a data scientist with the British Oceanographic Data Centre.

While Minetec is not alone in promoting CAS and the potential growth of the market in South Africa (a rival claiming to have installed more than 25,000 “collision warning systems” in local mines says this “represents less than 10% of the market that will soon be required by law to install this type of technology”), the company says it is “the only systems supplier that can provide a single DMR-compliant solution for both surface and underground mining operations”.

Minetec executive general manager Rory Linehan told Mining Journal the company had just completed its first major deployment of the SafeDetect proximity detection system and CAS in South Africa, with a large mining house, giving the firm a vital reference site. It had been supplying other products to mines in the country, where maybe 60% of the 350 or so significant operating mines are underground operations. Linehan said the local office and business improved the competitiveness of Minetec’s offering.

But the real key for Minetec is that infrastructure used in deployment of its safety technologies can also be the platform for introducing productivity-enhancing elements of its ‘Unified Platform’.

“I think it [South Africa] is a pretty hot market now with the DMR legislation being enacted – that is having a direct impact on procurement programs,” Linehan said.

“It’s nice for us to be able to go to the customer with a proven DMR-compliant solution, but also to actually offer one that can provide a return on investment over the next 2-3 years, depending on how they want to deploy it. It puts a different spin on just having to absorb the cost of meeting those safety requirements.

“We’ve been dealing with one of the major miners here in South Africa for the last 2-3 years – they basically told us that we were the only vendor they could find that can accurately track and locate assets underground to an accuracy of less than 1m, and we’ve validated that now in a number of different applications ... down to around 30cm – so they’re telling us that’s a unique proposition. And that is fundamentally based on the WASP technology (picture right).

“That high-precision locating and tracking ... can form the basis of a SafeDetect proximity detection or CAS, but once the mine has made that investment it’s actually a relatively small incremental investment to get them into a proper tracking solution, with a 3D mine view, and then [the Minetec] productivity suite, the mine control, scheduling, task management and fleet management. This is where the proposition effectively begins to pay for itself, whereas all of the other vendor solutions are individual safety solutions.

“We can offer compliance with the DMR regulations and then give the mine a roadmap over the next 3-5 years where they can grow their capability, and improve and enhance their productivity, and that will more than pay for the investment in the safety system.”

Fenelon said mines could be up for A\$2-5 million (US\$1.5-3.7 million) for tracking and safety installations, depending on scale, and would then invest further in added system functionality.

“I would have said a year ago our sales pipeline over here was not more than \$4-5 million, partially qualified; I think it’s more now \$40-50 million, and very well qualified,” he said. “A number of larger mining companies are ... talking to the DMR about what they’re going to do, [and] going through procurement processes.”

Codan reported its best ever first-half sales of A\$70 million in the first six months of fiscal 2015-16. It had a market capitalisation this week of about A\$212 million (US\$154 million). Linehan said he was hopeful market traction for the Minetec safety and productivity offering would spread from South Africa to other key mining jurisdictions, even helping the company’s Australian business.

“Since Codan bought Minetec it has been investing in product development and building that unique value proposition – fundamentally it was viewed as an entrepreneurial start-up within the group,” he said.

“After a slow process of proving the individual components of the technology suite in trials with a number of major mining groups ... we’re at the point now where we don’t really want to engage in any more pilots and proof of concept, that type of thing, because it’s all been done. The whole emphasis now shifts to operational deployment and bulking up the sales pipeline.

“The Codan business revolves around mass manufacturing of rugged hardware and what Minetec is now presenting ... is the ability to do that large-scale manufacturing of devices for the mining industry.”