

Mining Security Questionnaire

The following questions were answered by Mark Freer, Kronos Business Development and Kevin Pearman, new business development CCTV, Kronos business unit at Bytes Systems Integration.

QUESTIONS:

1. Please help us identify mines of different kind and the common security & safety issues at mine sties.

“South Africa’s economy thrives on mining, it is the biggest producer of platinum and one of the largest suppliers of gold in the world, and also mines coal and diamonds. South Africa boasts some of the deepest mines in the world with some gold mines reaching deeper than 3000 meters, with speculation of digging below 5000 meters, this means that safety is a huge and expensive issue.

Some of the biggest issues facing South African and African mines are issues with perimeter control, illegal underground mining and theft. Up to 30% of the gold that is mined in SA is stolen before it can generate profit for the mining houses. African and South African mines face the unique and devastating problem of pirate miners and illegal mining activity. Pirate miners slip down mines unnoticed with the mine workers and blast and live underground. They commonly use mercury to extract gold risking mercury poisoning, are heavily armed and damage the mine infrastructure and therefore threaten the safety of legal miners,” says Kevin Pearman, Business Development CCTV, Kronos business unit at Bytes Systems Integration.

“The Mines and Safety Act of 1996 places heavy fines and sentences for poor safety regulations in mines, such exorbitant fines threaten the profit making ability of the mining industry and are therefore a huge concern for South African mines. That said South African mines are striving to improve safety and security providing the ultimate opportunity for technology to combat these issues,” adds Mark Freer Kronos Business Development at Bytes Systems Integration

2. How can perimeter, video surveillance, sensors, RFID, communication, access control OR intrusion detection be used to overcome the unique security issues at mines?

“The use of video surveillance underground helps to monitor miner safety by viewing rock falls or accidents in real time, surveillance would speed up search and rescue times and help inhibit the activity of pirate miners, however it is often not considered a viable option due to the area of the underground tunnels that would require surveillance. That said surveillance could be used effectively above ground. Sensor systems and RFID could have similar benefits shortening rescue times substantially, capturing pirate miners and could also prevent collisions of underground trains and provide perimeter control, and keep better track of raw materials movements from the underground to the surface. Improved communication underground and the ability to communicate at great depths could also greatly improve safety

Access control is one of the most commonly used security features adopted in South African mines, they go to great lengths using ID cards to make sure the entry and exit of miners is strictly monitored.

But this system is not fool proof and has unsuccessfully thwarted the threat of illegal mining activity, it could be taken one step further through the use of retinal or finger print biometrics to ensure fake access cards are not used and keeping better control of movements of people above and below ground,” says Pearman.

3. How do you perceive the growth of mining security in the years to come?

“In the past mining houses have been fooled by fly by night security solutions, looking to the future, they need to adopt security solutions from companies that provide stability, security, advanced technology and ongoing backup support.

The unique security challenges facing the mining industry could lead the way towards advancements in technology, because the growth of mining security for the future lies in the affordability and effectiveness of the people, processes and technology. The mining industry is suffering under the scourge of theft and illegal mining activity as well as the expense of failed safety measures that result in loss of life. They require systems that are more effective than the existing solutions, systems that can see further and go deeper, and they require them quickly.

Only steadfast secure companies that can offer the latest solutions will provide ultimate security to combat the unique security issues faced in South African Mines, companies that can leverage relationships with high end security networks and the most advanced securities available. Theft and safety issues could spell the end of mining In South Africa and it is time to set the president on the latest technology backbone to combat these issues,” says Pearman & Freer

4. What are the key components of your mining solution and how do its features fit mining security?

“In the past South African mines have been limited by various companies offering systems that do not integrate fully. Bytes Systems Integration is unique in its solutions offerings in that they are flexible, tailored and diverse, we can offer a full dashboard of security and streamlined IT solutions from biometrics to RFID. Solutions that would integrate into one security room system – providing a single view of the activities above and below the surface.

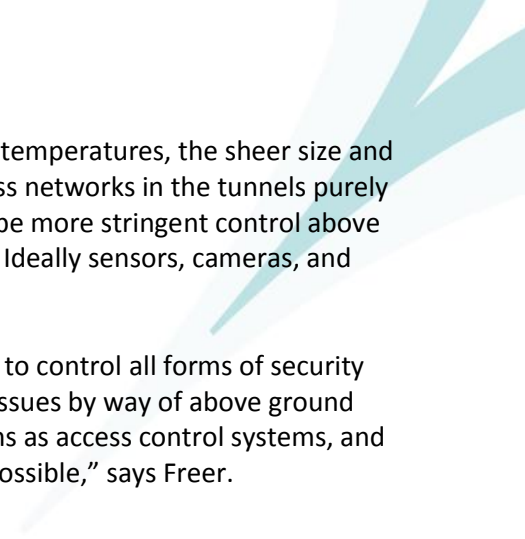
Bytes Systems integration proposes that the best solution would be an integrated solution that made use of advanced finger print or retinal scanning biometrics as well as intelligent perimeter detection on the surface, while the use of CCTV technology and guard monitoring could be used above and below ground.

Bytes Systems Integration can also offer the benefits of ongoing support in the form of call centre backups that run 24/7 as well as Service Level Agreements. We can offer flexible and advanced solutions to suit changing security needs, and have the widest variety of security solutions to offer under the Altron Group name, making Bytes Systems Integration the ultimate one stop security shop,” says Pearman.

5. What are the current challenges mining security is facing? And the possible solutions?

“Two of the issues with mining security technology are the conditions under which it must operate and the expense of implementing large scale solutions. South African mines have hundreds of kilometres of tunnels which simply cannot be effectively monitored by cameras. At the depths of South African mines, the temperatures reach in excess of 45 degrees Celsius and the environment is constantly moist and humid which again limits the technology that can be used.

The obvious solution at the moment would be to use the technology available to the best of its



capabilities. However some inhibiting factors include underground temperatures, the sheer size and geography of tunnels, and the inability to roll out large-scale wireless networks in the tunnels purely because of the size of the investment. But that said there needs to be more stringent control above ground, right to the point of entry to the mine tunnels themselves. Ideally sensors, cameras, and biometrics need to be implemented extensively above ground.

They need to start utilising an entire building management solution to control all forms of security under an IT umbrella. They also need to manage health and safety issues by way of above ground surveillance, and the use of sensors and biometric scanning solutions as access control systems, and then introducing these technologies as deep below the surface as possible,” says Freer.
