

Electronically initiated blasts lead mining into the future

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BLASTING BENEFIT

Electronic initiating systems enable more uniform fragmentation of materials, while reducing vibration in the surrounding environment

The number of mines using the new range of electronic wireless initiating system technologies is steadily increasing, explosives manufacturer AEL Mining Services reports.

AEL Mining Services' electronic initiating systems product manager, **Carlos Goncalves**, explains that the new Digishot Plus technologies enable more uniform fragmentation of materials, while reducing vibration in the surrounding environment. These are some of the key benefits of using electronic initiating systems. Electronics also increase safety on mines.

In markets where AEL operates, a large number of customers have converted to electronic detonators, instead

of using the traditional pyrotechnic methods.

"The electronic systems are more efficient and can result in time savings, a key consideration in the mining industry. Use of the electronic detonators was best demonstrated in the South African market during the construction of the Gautrain rapid rail project. The use of electronics was one of the key reasons why the first phase of the project was finished before the deadline," Goncalves says.

The AEL electronic detonator features a good down-line wire, which enables maximum function. However, the communications protocol for surface blasts, as embodied in the Digishot Plus

system, uses remote firing, which removes the need for traditional cables and wires involved in blasting operations altogether, resulting in a safer and more robust communications protocol," he explains.

Traditionally, pyrotechnics blasting systems experience a degree of scattering in the timing delays, resulting in unpredictable results. "The electronic detonators provide for predictable and exact blasting results," he adds.

Electronic detonation systems enable functions that the traditional pyrotechnics system lacks. The system's increased blasting control allows for accurate site modelling to be undertaken before triggering the explosion.