



Keeping watch

IF IT cannot be measured it cannot be managed, or so the old aphorism goes.

Over the past few years, as computing power and use has increased, there have been a raft of products released allowing miners to better measure the production at their sites.

A 10-minute delay in production, such as time spent waiting for spotters or waiting for a surveyor to complete their work could potentially cost one or two loads a shift.

These delays are preventable. They can add up to millions of dollars over a year.

Being able to identify these issues is a step down the path of removing them from the system.

So too is excessive downtime. These can highlight areas for improvement such as shift changeovers or poor maintenance processes.

Knowing how and why equipment is performing allows operators to identify constrained areas and find ways to improve them. Tracking the location of equipment can identify bottlenecks and inefficiencies in the mine design.

Caterpillar offshoot Minestar has a system that monitors the telemetry of vehicles, as well as their position in the mine. It allows the mine manager to see how much product the trucks are hauling, how quickly they are doing it and what problems they are encountering along the way. It also provides handy maintenance-related data and helps mine management identify problems before these become major issues.

However, it is understood the Minestar systems only achieve full functionality when linked to Caterpillar equipment.

Modular Mining offers similar systems. It is designed around Komatsu equipment but can be applied to equipment from other manufacturers.

Software makers have also been tackling this sort of measurement problem.

Micromine has its Pitram mine production system, which is in use at about 50 minesites worldwide.

It operates in many mining environments from GPS-based open pits to voice-based and automated underground implementations.

A timesheet system that can be upgraded is also available and is compatible with the automated and voice implementations.

Pitram also tracks the operations of mine equipment. It measures things such as when the equipment is offline for preventative maintenance or just standing idle, to produce timeline and equipment performance reports. These include things such as Mean Time Between Failures and Mean Time To Repair reports to highlight maintenance performance and equipment that may need replacing.

The system also records and graphically portrays the operating state of each piece of equipment under the categories of operating, idle or down. Time stamped information about the equipment's operating status is stored in the Pitram database for detailed operational analysis. Corrective maintenance jobs are generated automatically when equipment goes down during a shift.

Pitram can display the state and location of the equipment on an equipment maintenance dashboard.



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