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Mine planning simplified

MINE planning software has been helping miners simplify their operations for years. However, the constant addition of functions and features means that in some cases the software is becoming almost as complex as the paper and spreadsheet systems it replaced.

Part of the problem, Runge general manager Kevin Holm says, is that many mine planning engineers operate in a "solutions" rather than a "problems" space.

"The clients [work] within an uncontrolled mine planning process and they reach a roadblock and they're looking for something to get themselves around that, so they approach us to add more features and more functionality to the software," he said.

By mapping the mine planning process right from the beginning, companies could identify potential roadblocks and ways to get around them before they reached that point.

"When you become efficient or effective at mine planning that's when you get that time that allows you to experiment, but experiment in a more controlled manner," Holm said.

"You're saying, 'we have a process and here's a portion of that process that's not up to scratch, I can now spend some controlled time in actually improving that part of the process rather than trying to look at the total process'"

Likewise, Micromine product development manager Ivan Zelina said there needed to be a focus on streamlining mine planning software and processes.

"Everyone is trying to streamline and as a mining technology developer we're trying to get rid of these unnecessary steps with our product," he said.

For Micromine, a big part of this is developing software solutions that work together to create a more integrated flow throughout an operation, eliminating unnecessary steps.

By bringing all stages of mine planning into a single environment, Zelina said mines could reduce the time and complexity of an operation.

In the past, he said, a mine would have to do a mine plan, import the parallels or block models into a scheduling application to develop schedules and then import those to a production control system.

"What we were finding was that, because transferring the medium-term plans, the six-monthly or monthly plan into the real-time production control system was so complex, people wouldn't do it at all," Zelina said.

"The mine plan coming from the Micromine application goes directly into the mine production control system, so the integration of the mine production with the mine planning means the real-time [production] - the production that happens during this hour or this shift - can be linked to the actual plan produced by the mining engineer.

"It's all greatly simplified the data handling that has to be done between departments"

One thing critical to reducing the number of unnecessary steps in the mine planning process is to keep the software itself as simple as possible. However, Holm said this was not always easy.

"When engineers look at software, the more features and functions it has, that's what makes them choose the software in every case," he said.

As well as making the software more complex, this can have a long-term impact for software developers.

"When you eventually have to change the platform that the software operates from, you now have to design that new software around all of these features and functions, and that can become really costly and time consuming," Holm said.

At Micromine, Zelina said there was a focus on developing broad systems to meet the requirements of a range of projects, rather than tailoring solutions to specific sites.

"We try to stay away from making completely custom solutions that only fit one site. Rather than just working on one project, we try to understand all our customers and come up with generic technology," he said.

"Even if the mine tells you that 'our method is unique, no one else does it this way', you find so many commonalities that in the end you can come up with a product that, with a little configuration, can meet all those different conditions." AMM

Getting CET for grid analysis to seek out the discontinuities

THE Centre for Exploration Targeting has developed CET Grid Analysis, a software system designed to seek out discontinuities within magnetic and gravity data.

Grid Analysis provides a step-by-step trend detection menu that offers texture analysis-based image enhancement, suitable for analysing regions of subdued magnetic or gravity responses; discontinuity structure

detection for identifying linear discontinuity; and edge detection.

The algorithms behind Grid Analysis were created by the Geophysics and Image Analysis Group at CET, with support from Barrick Gold, which provided previously analysed datasets to test the algorithms. Initial processing of potential field data showed a good correlation with known structure and geology.

Since its development, Grid Analysis has become a vital tool for Barrick's gold mines around Lake Victoria in Tanzania.

The software provides access to new layers of information, assisting with the interpretation of magnetic and gravity data.

CET's Grid Analysis software is being marketed and distributed by Geosoft.



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