

New scheduling resources

Optimised Maptek™ solutions provide Novo Resources with a reliable, repeatable workflow to plan the where and how of mining a gold project in the Pilbara region of Western Australia.

Novo Resources explores and develops gold projects in the Pilbara region across an area of about 13,000 square kilometres.

Novo Resources holds a 100% interest in the 160 km² Beatons Creek gold project near Nullagine, which hosts a resource of 457,000 indicated oz Au at 2.1 g/t and 446,000 inferred oz Au at 3.2 g/t.

The company uses Maptek™ Vulcan™ software for geological and geostatistical modelling, drill and blast, grade control and mine planning. Maptek Evolution Origin is used for block scheduling.

As the Beatons Creek deposit is spread over a vast area, the initial block model is huge – some 150 million blocks – making the data challenging to work with.

Having a dispersed deposit makes it critical to commence mining in the right place to ensure the value of the deposit is maximised.

Vulcan reblocking reduces the data to a more manageable 25 million blocks and Novo uses Pit Optimiser, which rapidly generates pits using multiple parameters of multiple scenarios and pit shells, to further focus the area of interest.

The optimised pit shells are loaded into Evolution to investigate scheduling options based on desired strategic targets and outcomes, such as controlling mill feed or delaying production stages.

The advantage of Evolution's powerful genetic algorithms and cloud processing is that multiple sequences are investigated in parallel. Unfit solutions are disregarded and the best of the best solutions are considered against each other to quickly find an optimised result.

Evolution Origin block scheduling provides greater granularity and flexibility than other methods as it can create schedules on a block by block basis, rather than bench by bench.

The speed and power of the software means engineers can analyse a range of optimised schedules and focus on finding value in the data. Traditional scheduling approaches involving massive spreadsheets to manage data can inherently introduce error.

Integration between Vulcan and Evolution is important for keeping consistency of data and ensures a seamless workflow. This avoids manual handling and manipulation of data.

Novo Resources Senior Mining Engineer Steve Zhou says Maptek technology provides comprehensive tools which are logical and easy to use to achieve desired results across the entire mining pipeline.



'Communicating accurate information quickly plays a key role in such a dynamic operational environment. User-friendly 3D design, editing, visualisation and plotting tools, plus advanced calculation tools more than meet the requirements,' Zhou said.

'On a corporate level, Vulcan and Evolution working together can achieve strategic plans that comply with business priorities, providing evidence and 'what if' scenarios to assist the board in decision making.

'Both tactical and strategic personnel appreciate tools to tackle their obstacles successfully – especially the production teams who are working under pressure most of the time.'

Future steps include looking to manage haulage fleet capacity as part of the scheduling process process multiple variables to deliver valid schedules along with on-the-fly haulage.

*Thanks to
Steve Zhou
Senior Mining Engineer
Novo Resources*

