

An aerial photograph of a large-scale mining operation. The scene is dominated by dark, layered earth and rock. In the foreground, a large yellow and orange conveyor system is visible, extending across the site. To the right, a white dump truck is filled with dark material, likely coal or ore. The overall atmosphere is industrial and rugged.

# GEOVIA ROLES EXPLORING THE GEOVIA WHITTLE™ PORTFOLIO

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When exploration and mining companies need to evaluate the financial viability and the optimal mine strategy for a deposit, they turn to the industry leading strategic mine planning solution – GEOVIA Whittle™.

Companies depend on Whittle to help them determine their investment strategy and to deliver robust mine plans that maximize profitability by taking into account real mining constraints.

Whittle delivers trusted results and is used in scoping, feasibility, life-of-mine scheduling, and in the ongoing re-evaluation of mine plans throughout the production phase

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## WHITTLE™

// PIT OPTIMIZER

// PUSHBACK OPTIMIZER

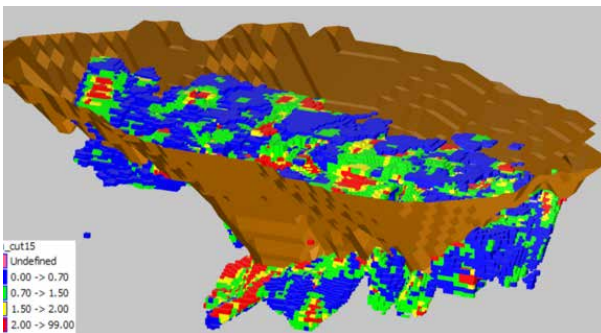
// MULTI-MINE OPTIMIZER

// BLEND OPTIMIZER

// SIMULTANEOUS OPTIMIZER

### // PIT OPTIMIZER

Find the optimal mining strategy utilizing a combination of economic, physical, geotechnical and operational constraints.



Choose either Pseudoflow or Lerchs-Grossman (LG) algorithm to generate optimized pit shells

Utilize unparalleled toolkit for high level economic evaluation of new projects and operating open pit mines

Uncover and understand economic drivers and associated sensitivities

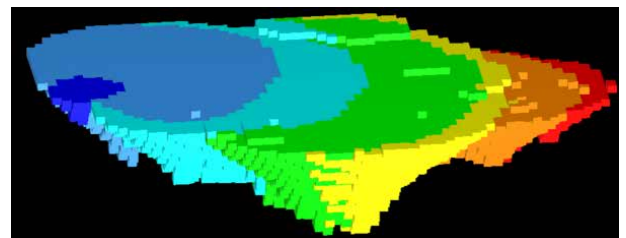
Focus on NPV maximization or resource recovery

Manage projects with an easy-to-use framework

Analyze multiple scenarios and elements with advanced reporting and charting

### // PUSHBACK OPTIMIZER

Create Strategic Mine Plans linking in Milawa's Life of Mine Scheduling approach focused on NPV or material balance.



Determine best set of practical pushbacks or mining phases

Develop optimal and achievable life of mine schedules

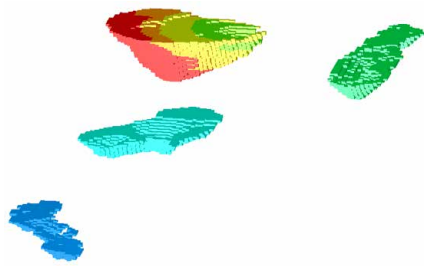
Handle complex mining and processing constraints

Calculate NPV based on realistic schedules supporting up to 50 pushbacks

\*The Pushback Optimizer role also includes all of the benefits of the Pit Optimizer role.

## // MULTI-MINE OPTIMIZER

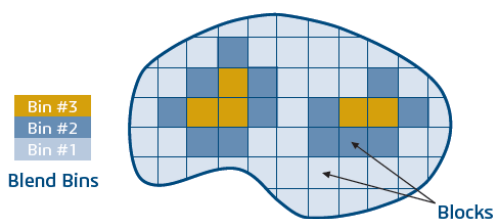
Perform a single optimization over a complex collection of mines all while maintaining individual work constraints for each mine. Producing a more realistic overall schedule from the different areas all within the one optimization framework.



- Run a single optimization over a whole mining complex
- Apply individual work constraints for each mine within a complex
- Define unique physical constraints for each mine, such as mining width
- Modify mining rate per mine in different scenarios
- View, report and analyze all or individual mines in one go
- \*The Multi-mine Optimizer role also includes all of the benefits of the Pushback Optimizer role.

## // BLEND OPTIMIZER

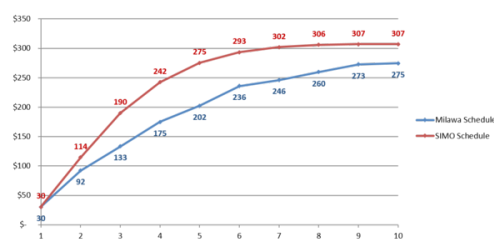
Optimize blend considering the schedule and existing stockpiles to ensure these are optimized at the same time, driven by the overall objective of maximizing the Net Present Value (NPV) of the whole operation.



- Blend optimization based on Whittle schedules or imported schedule
- Bulk blend scenario analysis considering multiple products with different specifications, prices, blending costs and blending limits
- Handle multiple coal specifications and constraints such as minimum BTU, max ash and sulphur
- Perform extractive blend factoring in blending costs and constraints, such as process recovery, prices and selling costs while limits are applied to the extractive process
- Handle multiple stockpiles, different cut-offs, time dependant recoveries, initial size and grade while utilizing Whittles scheduling engine to determine the optimal blend strategy
- \*The Blend Optimizer role also includes all of the benefits of the Pushback Optimizer role.

## // SIMULTANEOUS OPTIMIZER

Simultaneously optimize schedules, cut-offs, stockpiles and blend for the life of the operation. Find better outcomes compared to traditional methods resulting in higher Net Present Value (NPV) for the operation.



- Increase NPV beyond multiple sequential optimization mechanisms
- Simultaneously optimize the optimization mechanisms for cut-off, blending, stockpiling and sequencing to create the ultimate mine schedule
- Make individual optimization mechanisms more accessible in a single step
- Analyze and report using both standard Whittle outputs and advanced spreadsheet reporting
- Handle 30 processing paths as well as capital or CAPEX optimization
- \*The Simultaneous Optimizer role also includes all of the benefits of the Pushback Optimizer role.

## Our 3DEXPERIENCE® platform powers our brand applications, serving 11 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 250,000 customers of all sizes in all industries in more than 140 countries. For more information, visit [www.3ds.com](http://www.3ds.com).

