

GEMCOM MINESCHED™

Surface and Underground Scheduling



Gemcom MineSched™ provides scheduling for surface and underground mines of all sizes and types, improving productivity and profits beyond what's possible in manual scheduling.

Benefits:

- Easily create and compare scheduling scenarios quickly.
- More closely meet your tonnage and grade requirements with quality and material ratio targets.
- Lower your cost of mining and processing by preparing easy-to-mine schedules.
- Ensure practical schedules by validating your schedule with 3D animations, built-in graphs, Microsoft® Project Gantt charts, and Microsoft Excel® outputs.

The World's Most Advanced Scheduling User Experience

Gemcom MineSched™ is employed by surface and underground mining operations of all types and sizes to produce long-term and short-term schedules, and to meet blending targets. MineSched can schedule from pre-created block, grid, and polygon models that originate from many different mine planning systems, including Gemcom Surpac™, Gemcom GEMST™ and Gemcom Minex™. Most importantly, MineSched creates schedules that improve productivity and profits beyond what could be achieved by manual scheduling.

Surface Mine Scheduling

From copper to coal, open pit to strip mining, MineSched provides complete long-term and short-term schedules. Working from block or grid models, MineSched can schedule pit push backs and mining benches with ease.

- Schedule from block, polygonal and grid models with any number of materials and qualities.
- Control all aspects of the schedule or use MineSched's target-based scheduling algorithms.
- Incorporate mining directions, bench lags, face geometry, location limits and other mining constraints to ensure practical schedules.
- Schedule ancillary activities such as drilling, blasting, and back filling.
- Include material movement to stockpiles, processes, and spatially modelled waste dumps.
- Report truck haulage tonne kilometres at different haulage gradients.

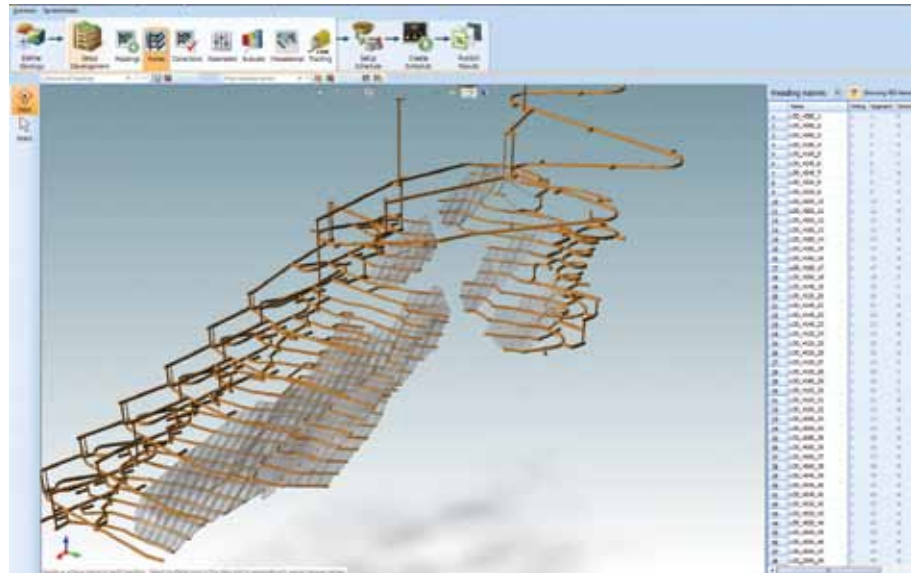
Underground Mine Scheduling

From heading advancement to stope production, MineSched generates practical and integrated underground development and production schedules.

- Use the same workflow-based user interface for underground development and production scheduling for a consistent and intuitive user experience.
- Conveniently manage all development and production scheduling parameters within a single scenario.



With a unique five-step workflow, you can create and compare schedules with ease.



Unique Setup Development user interface - close interaction between the 3D display and data grids.

- Share resources between underground development and production to accurately model equipment utilisation within the schedule.
- Include ore and waste from headings in the material flow network through the mining operation.
- Rapidly reproduce scenarios across development and production with a single mouse click to efficiently compare scheduling alternatives.
- View combined results in the unique dashboard to analyse the schedule across development and production.

Combined Interactive and Automated Scheduling

Benefit from the best of both worlds – MineSched couples automated scheduling techniques with the ability to selectively schedule period by period to save significant time in schedule creation.

- Pause scheduling at any time to view the results up to the last full period scheduled.

- Resume scheduling from any period, negating the need to rerun the entire schedule.
- Automatic detection of parameter changes ensures schedules are valid and can be easily reproduced

Production Blending

MineSched blends material from mines, stockpiles, processing plants, and waste dumps, producing schedules with complete reports and graphical results in just minutes.

- Create schedules that meet quality and material ratio targets with consideration for practical mining constraints and suitable mining methods.
- Apply minimum and maximum draw rates to stockpiles to accurately reflect operational constraints.

Visualisation and Publishing

Visualise Mine Schedules with 2D and 3D Graphics

With MineSched's 3D display capabilities, every detail of a schedule

can be viewed in 3D, providing visual validation and communication of any sequence of activities. Using the software's 2D features, engineering drawings can be plotted to scale to show exactly where mining takes place in each period.

- Display tonnage and grade attributes.
- View coloured period and production data.
- Animate a mining sequence as a movie or frame-by-frame.

Microsoft Excel Reports and Charts

MineSched's reporting functions provide a clear insight into a schedule's period by period grade, tonnes, equipment requirements, and economics.

- Format and share data with other applications.
- Generate reports with production tonnage and grade data for each time period.
- Produce polygon and bench reports.
- Define a custom report format and use pre-created templates.

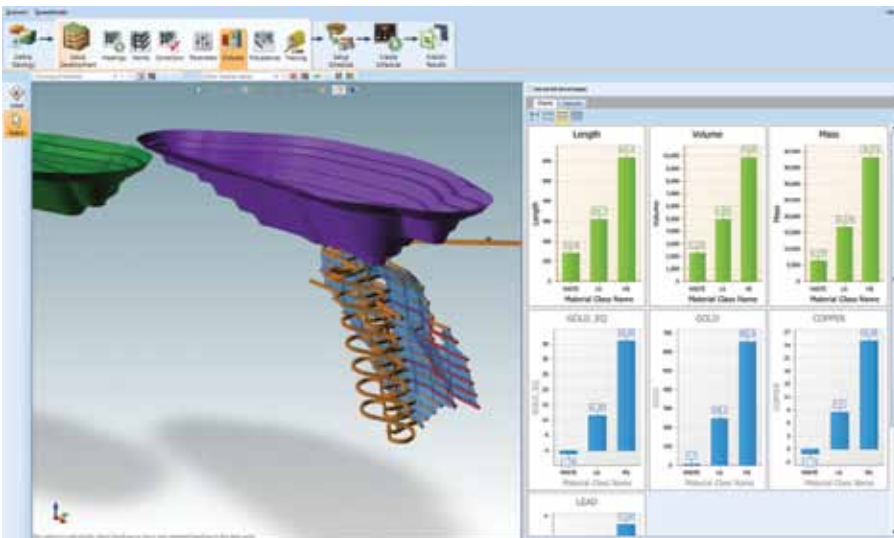
Microsoft Project Gantt Charts

MineSched produces complete Microsoft Project Gantt charts and network diagrams with ease, allowing mining activities to be reviewed by sequence and time. These Gantt charts include essential elements such as organised activity groups and task dependency links.

Tailor MineSched to Support the Unique Needs of Each Operation

Since no two mine sites are exactly the same, MineSched's simple setup and broad functionality allow you to tailor MineSched to meet your specific needs.

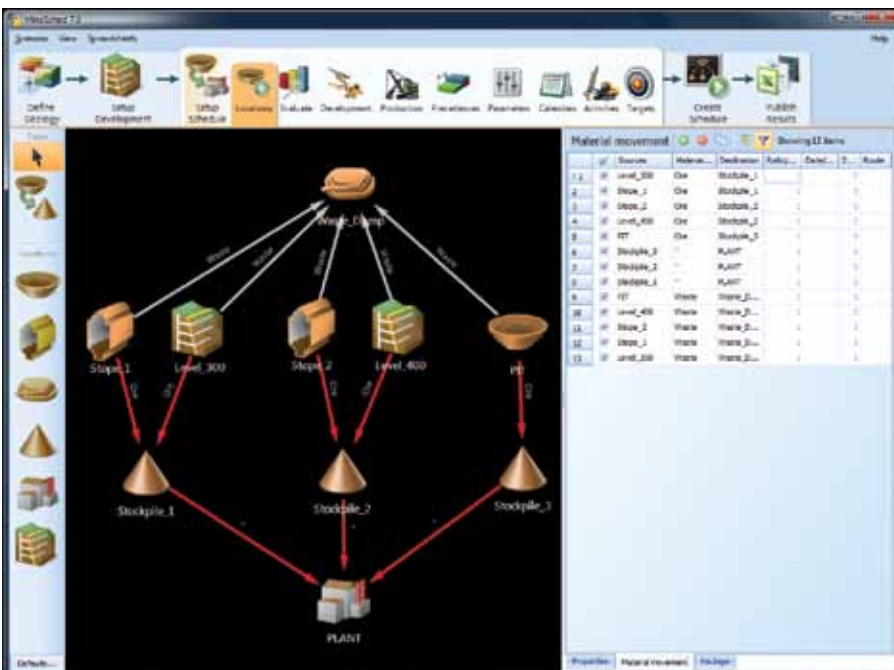
- Create long-term or short-term plans that can schedule down to any level of detail.
- Schedule against a limitless number of parameters such as mining locations, resource and activities.
- Link external Microsoft Excel workbooks containing scheduling parameters to any MineSched scenario.
- Compatible with multiple geological model sources such as comma separated value (CSV), as well Surpac, GEMS and Minex.
- Work in any number of time periods (years, months, days, or minutes).



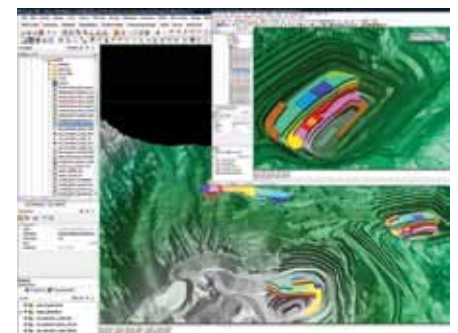
Validate your material class and attribute definitions with integrated charts.

“Using MineSched, we can run different options quickly and work out how to save money. In today’s economic environment we are constantly revising factors such as where we mine, what quality we mine, and how deep the pit is going to be, in order to ensure an acceptable balance between cost and profit. In this business, you have the potential to lose millions of dollars on a contract if you’re not managing your operations right. To do this we need a good scheduling package. We can’t do without MineSched, that’s for sure.”

— Adrian Stewart, Technical Services Manager for Mining and Mine Services, PT Petrosea Tbk



Production Canvas allows Development headings to be included in the material flow through the mine network as part of an integrated schedule.



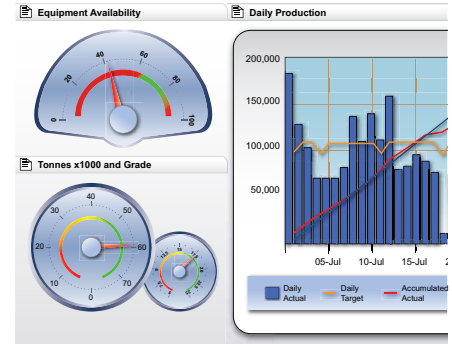
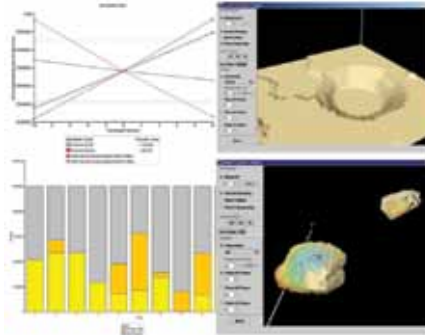
Both long-term life-of-mine and short-term day-by-day schedules can be created and visualised.



MineSched Modules Extend Your Capabilities with these Gemcom Systems

Development

The Development module schedules any underground mine design. Full schedules can be produced within minutes. Based on user preference, parameters can be entered globally and by heading either through a worksheet or in the graphical user interface. Additionally, precedence relationships can be manually set or automatically generated based on design layout. Users have total control over the scheduling process by visualising and interacting with their data in 3D.



Production

The Production module meets all production needs for both surface and underground operations. With total flexibility in resource definition, the module supports long term feasibility studies, detailed shift-by-shift scheduling of resources, mining, and ancillary activities. Mining constraints can be applied to ensure that practical schedules are generated.

Production Blending

The Production Blending module is an extension to the Production module, employing proprietary blending algorithms to meet grade targets at the mine, on stockpiles, and at the processing plant. These algorithms are a unique combination of satisficing and optimising sub-algorithms, which are dynamically applied as the schedule is created. It is the combination of the sub-algorithms which delivers both excellent results and performance.

Gemcom Whittle™: Economic Analysis and Optimisation

Gemcom Whittle is the world's most popular and effective life-of-mine scheduling, optimisation and analysis system for open pit mines. Mine planners depend on the system to help them maximise NPV, balance schedules, and to optimise blends and stockpiles. With results that are trusted by the financial community, Whittle is also used in pre-feasibility and feasibility studies.

Gemcom InSite™: Mine Production Management

Gemcom InSite gives mining operations the tools and real-time data needed to improve production management from the mine to final product. With InSite, you will be able to link production data, costs, and planned versus actual production. The result is greater efficiency, lower costs and the ability to continuously improve performance of all processes, activities and equipment.

For more information email minesched@gemcomsoftware.com or visit www.gemcomsoftware.com/minesched.

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