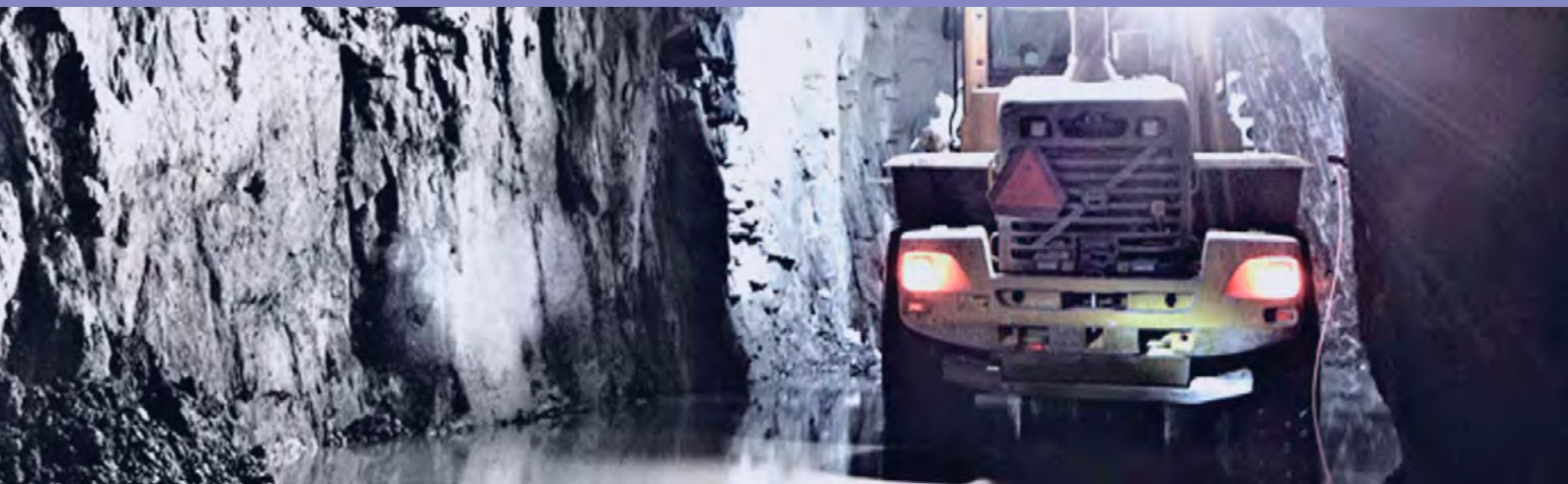
Deswik®
Delivering mining efficiency

Underground Metals Solutions



INTEGRATED PLANNING TOOLS FOR UNDERGROUND METALS OPERATIONS

An Integrated Platform

Strong technical solutions tailored to specialized industry needs

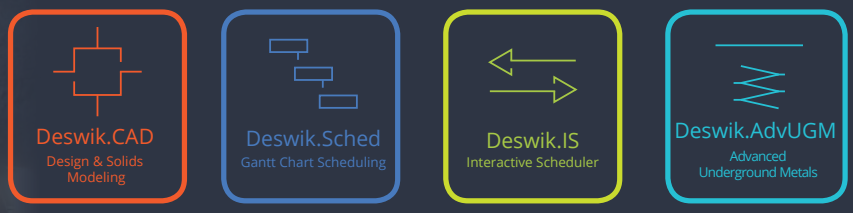
Deswik has developed a fresh and innovative range of unique tools that span the value chain from receipt of a geological model through to reporting for costing. Our software incorporates design and scheduling features across the core platform and associated modules, including:

- **Deswik.UGDB** – Underground Drill & Blast
- **Deswik.ASD** – Auto Stope Designer
- **Deswik.SO** – Stope Optimizer
- **Deswik.Caving** – Cave Flow Modeling
- **Deswik.UNO** – Underground Network Optimization
- **Deswik.Blend** – Material Flow Modeling
- **Deswik.SOT** – Schedule Optimization Tool

An Integrated Solution

Dynamically link your mine designs and schedules

Deswik uses best practice mine planning techniques embedded in next generation software enabling you to spend more time analyzing and planning scenarios rather than manipulating data. Built on our core software modules Deswik.CAD and Deswik.Sched, and linked via Deswik.IS, our integrated approach to mine planning helps our clients to deliver more with their mine planning expertise.



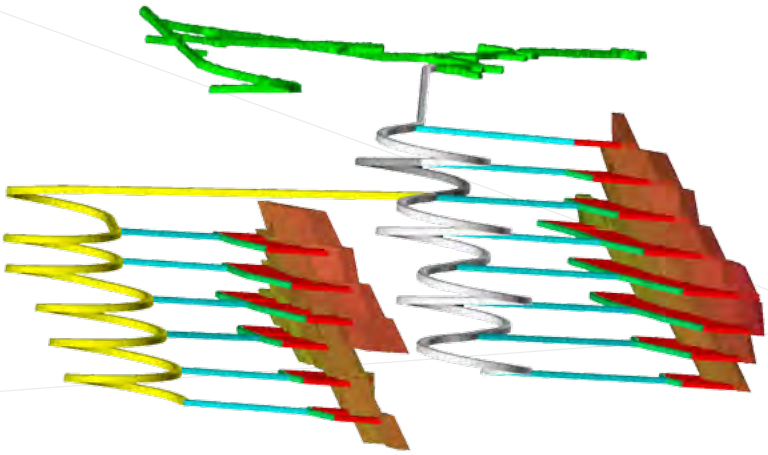
Key Features

- Powerful design and solids modeling tools.
- Audit, manipulate and prepare geological data for mine planning.
- Schedule development, production and all ancillary and secondary tasks.
- Spatial or attribute-based dependencies – view in both Gantt and 3D CAD.
- Gantt Chart based scheduling is easy to update and readily understood by all stakeholders.
- Seamlessly integrate short-term detailed schedules with long-term schedules.
- Schedule constraints, objectives and material flows in a single integrated interface.
- Comprehensive reporting including direct export to MS Excel.
- Resource levelled schedules use resource based rates and equipment pools.
- Import from and export to most mine design and CAD software packages.
- Advanced tools for value adding activities:
    - Auto development designer
    - Underground tabular design toolbox
    - Development and CMS solids creation
    - Development and stope reconciliation
    - Backfill planning and reconciliation

Deswik.UNO

Rapidly create optimized, least cost, practical decline and planar stope development designs

- Decline optimization tool.
- Underground level development network optimization tool.
- Produces planar and decline centerlines which have been optimized on cost.
- Dramatically reduces the time it takes to produce access.
- When combined, Deswik.UNO together with Deswik.SO (stope optimizer) reduces what previously took weeks to hours.
- Scenario manager.
- Simple wizard-based configuration.
- Supports complex decline networks.



Deswik.Caving

Models flow of rock within the cave Life-Of-Mine to give recovery and dilution forecasts

- Caving simulation
- Optimizes production targets at draw points.
- Schedules production for block, panel and sublevel caving.
- Integrates with the Deswik process.
- Generates recovery reports by level, phase, resource classification, draw point, and time.
- Allows for cave propagation within a simulation.
- Allows for fine and alternate particle properties.

Deswik.SO

Underground stope shape optimization using the industry leading SSO v2.0

- Automatically generate highest value stope solids across a wide range of mining method geometries and ore body types, delivering strategic stope designs and pillar location optimization against complex ore bodies.
- Wizard-based setup for rapid definition of stope parameters such as specific design criteria and cut-off values.
- Scenario Manager facilitates comparison of multiple design scenarios with rapid adjustments.
- Export and import scenario settings for rapid setup of new projects and re-evaluation of scenarios against new geological data.
- Embedded in the Deswik.CAD graphics platform for effortless generation of stope wireframes and solids.

Deswik.ASD

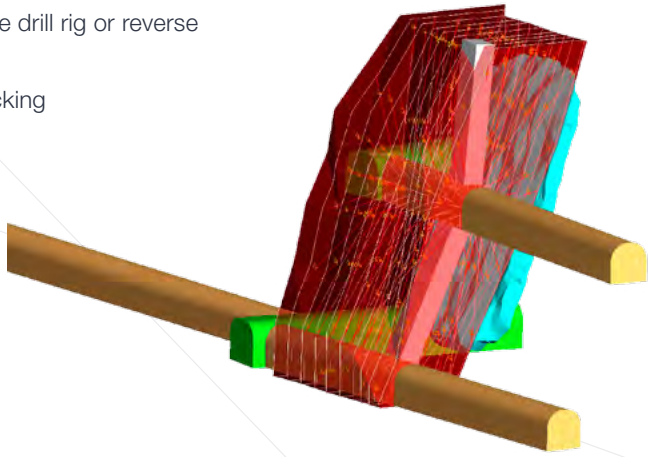
Automatically create mineable stopes for narrow-vein vertical mining methods

- Consider geological constraints and incorporate design parameters such as pillar restrictions, dilution factors and cut-off grades.
- Constrain stopes to follow defined lenses in the orebody, accounting for close-spaced multiple lenses.
- Development matching for incremental cost analysis to the extents of the ore body from a central access drive.
- Support multiple input data sources to generate variegated stope designs in different ore zones or geological models.
- Embedded in the Deswik.CAD graphics platform for effortless generation of stope outlines and solids.

Deswik.UGDB

Fast, efficient drill and blast design for underground mining methods

- Intuitive manual or automatic layout of drillholes with relation to design and existing voids.
- Set design parameters for parallel or fanned holes including fixed toe spacing, collar spacing or angle changes.
- Use set templates to rapidly insert a winze adjusted to dip and length, and charge the holes.
- Update holes layouts against survey and design changes, change the drill rig or reverse the drill look direction.
- Define charge holes and primer locations including customizable decking layouts with multiple explosive products.
- Set blast timing for holes in various patterns and sequences and animate the resultant blast.
- Slice the original stope solid against ring layout or generate directly from the ring designs.
- Rapidly set up plot templates with tables referencing key design information that updates for each plotted ring design.
- Export to IREDES in Atlas Copco or Sandvik data format and upload the design directly to the drill rig.



Deswik.SOT

Realize more value from your resource with an NPV optimized schedule

- Use heuristics and a unique evolutionary algorithm to optimize the net present value of long-term mine schedules.
- Control and narrow the focus by allocating more time to improving the highest-valued schedules.
- Investigate a range of scenarios with capacity flexing to optimize against varied operational resource capacities.
- Apply fleet-size constraints, as an additional option to traditional production constraints.
- Fix the start date of defined activities such as exploration drilling and understand their impact on the NPV of the operation.
- Add contaminant costs when the concentration passes a specified threshold for a given scheduling period.
- Apply optimized SOT sequences as seed schedules for further Deswik.Sched resource leveling processes.

Our industry-leading consulting solutions include

- Mine Planning, Design and Scheduling
- Equipment Selection and Optimization
- Geological Services
- Technical Due Diligence, Peer Reviews and Audits
- Software Implementation
- Scoping, Pre-Feasibility and Feasibility
- Process Mapping and Improvement
- Mergers and Acquisitions Support

Deswik®

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