



# GEOVIA ROLES EXPLORING THE GEOVIA SURPAC™ PORTFOLIO

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GEOVIA Surpac™ is the world's most popular geology and mine planning software, supporting open pit and underground operations and exploration projects in more than 120 countries. The software delivers efficiency and accuracy through ease-of-use, powerful 3D graphics and workflow automation that can be aligned to company-specific processes and data flows.

Surpac addresses all the requirements of geologists, surveyors, and mining engineers in the resource sector and is flexible enough to be suitable for every commodity, orebody and mining method. Its multilingual capabilities allow global companies to support a common solution across their operations.

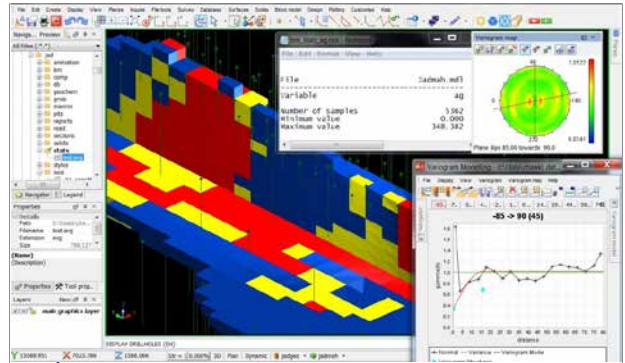
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- // GEOVIA BLOCK MODELER
- // GEOVIA SECTIONAL GEOLOGY MODELER
- // GEOVIA STRUCTURAL GEOLOGY ANALYST
- // GEOVIA MINE CONTRIBUTOR
- // GEOVIA SURVEYOR
- // GEOVIA MINE DESIGNER
- // GEOVIA DRILL & BLAST DESIGNER
- // GEOVIA STOPE OPTIMIZER

## // BLOCK MODELER

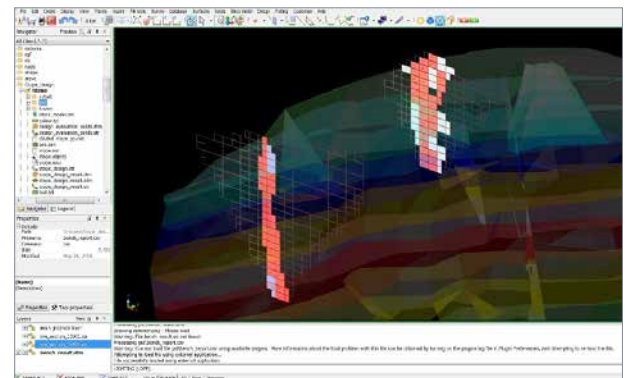
Analyze the spatial variability of earth characteristics and create regularized volumetric models of the combined set of characteristics. Perform bench based block grade control calculations for open cut operations.



- Calculate volume and quality of materials within extents of an area under investigation
- Create reports of any geological object according to international standards
- Generate volumetric block models & perform geostatistical analysis
- Evaluate mineral resources
- Produce outputs for regulatory reports and investment feasibility decisions

## // SECTIONAL GEOLOGY MODELER

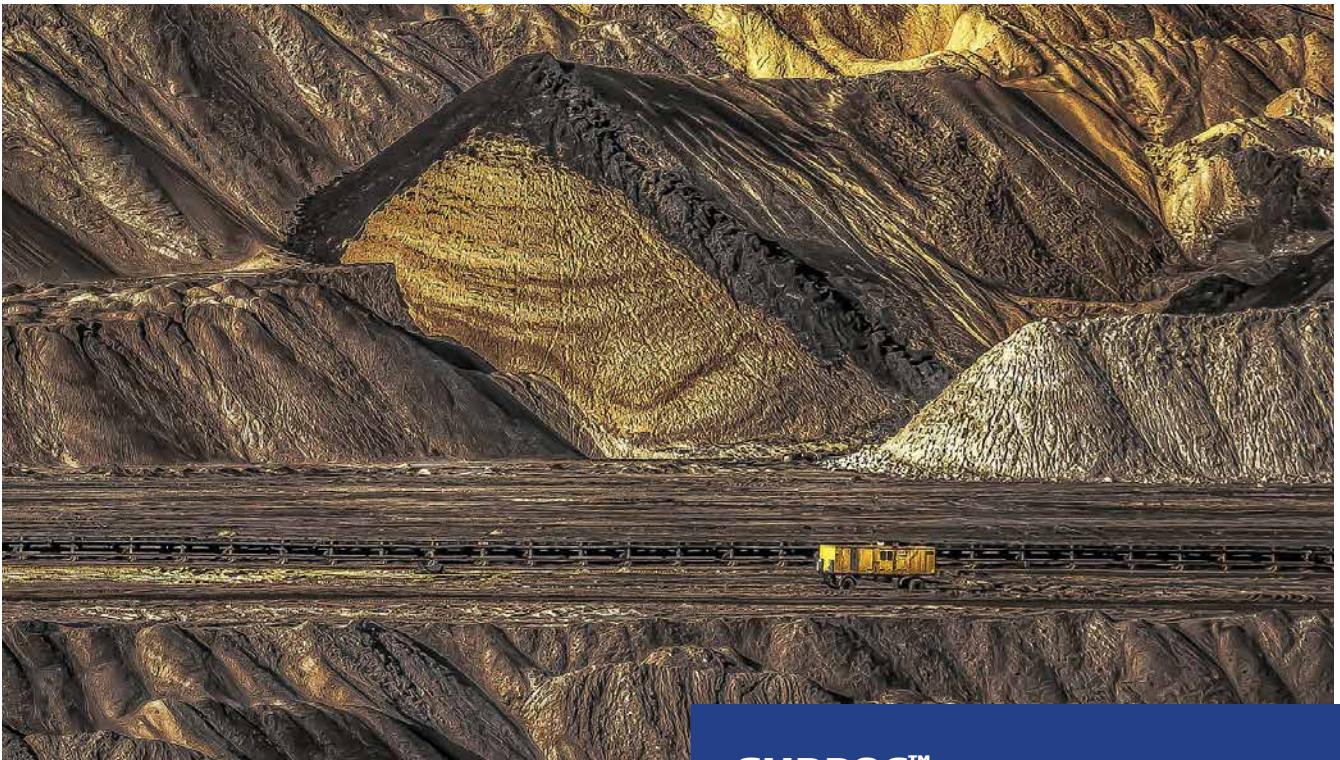
Visualize and analyze drill holes and other surface samples and measurements. Perform compositing, sectional geological modeling, meshing and gridding of surface and subsurface geology objects, and bench based grade control calculations for open cut operations.



- Input, access and output various types of geological data
- Select, constrain, view and interpret geological data
- Create geological, structural and domain models
- Conduct face mapping from point cloud and photogrammetric meshes
- Calculate volumes and model quality of materials within area under investigation



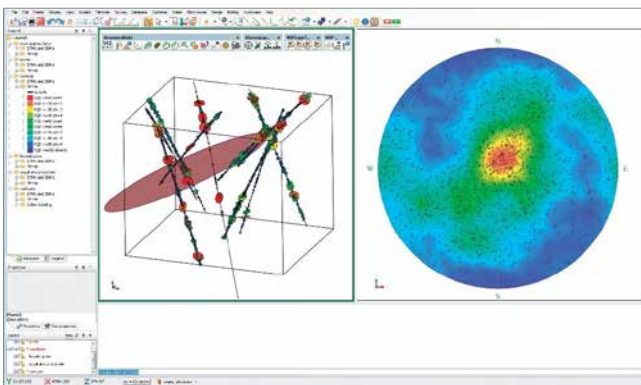




**SURPAC™**

## // STRUCTURAL GEOLOGY ANALYST

A comprehensive set of visualization and analysis tools for any kind of oriented data such as drill holes, point clouds and textured meshes.



Extract and visualize orientations directly from drill holes, points and block models

Analyze surface gradients

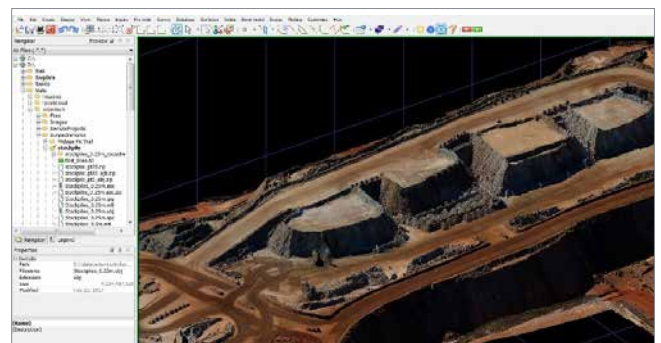
Visually create planes from point clouds or textured meshes and analyze them on a stereographic projection

Perform structural trend analysis in large and complex datasets

Perform rapid structural analysis of point cloud and photogrammetry dataset

## // MINE CONTRIBUTOR

All the tools you need to visualize and collaborate with other mine planners and geologists on enterprise mining data.



Input, access and output mining geological and engineering data

Select, constrain and view exploration data and mine information

Model and create complex surface and solids representing mining data

Create point and line data with comprehensive CAD toolset

Import and manage massive point cloud data, clean and generate surface meshes, and report on volumes

Automate workflows using powerful scripting capabilities with ability to record and playback

Support very large point cloud datasets

Enable reports, plans and visual outputs for production crews and other downstream uses

Languages supported: English, Chinese, Russian, Spanish, and French



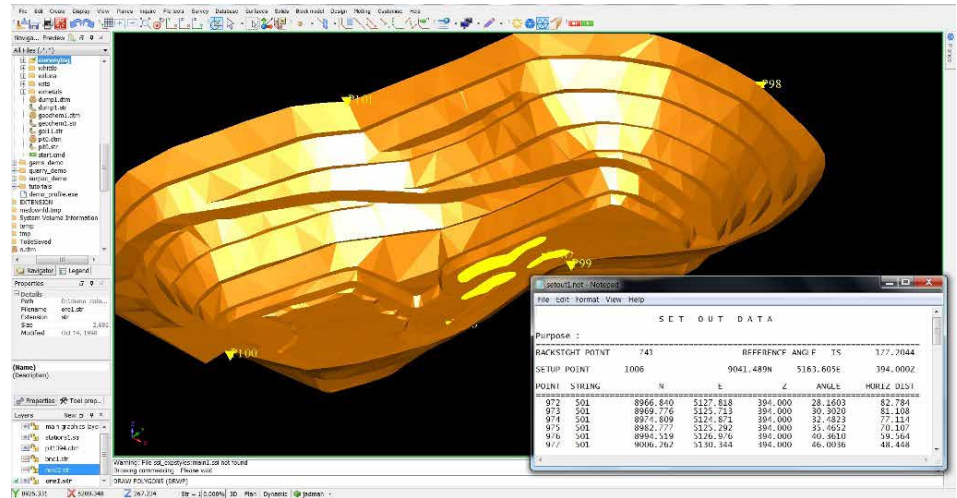
**Surpac addresses all the requirements of geologists, surveyors, and mining engineers in the resource sector and is flexible enough to be suitable for every commodity, orebody and mining method.**

**SURPAC™**



### // SURVEYOR

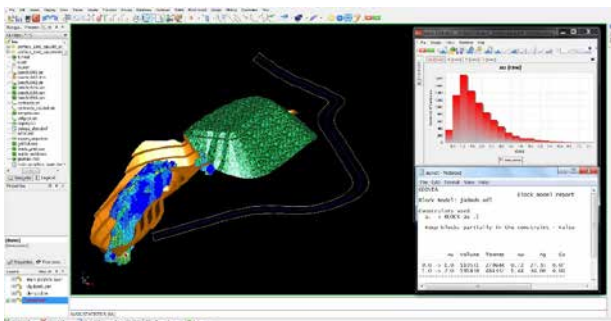
Generate the daily survey requirements for the mine site by integrating and processing survey data from CMS, GPS and other traditional survey instrumentation, and update as-built mine geometry from reduced survey data.



- Calculate total material handled, rehandled or filled
- Set out or delineate locations and boundaries
- Ensure compliance with survey-related regulation or legislation
- Publish the following measured survey data for use in the mining production process:
  - Survey control stations and reduced pickups
  - Mining infrastructure (buildings, roads, processing plants, etc.)
  - As-built maps of the mine, compared to the design
  - Monthly volumes mined/filled and broken (reconciliation)

### // MINE DESIGNER

Convert strategic mine plans into practical mine designs including mine surfaces, ramps, tunnels, haul roads, waste dump, whilst also producing reserve reports and mine plans. Encompasses all design horizons including daily, weekly, monthly and long term.

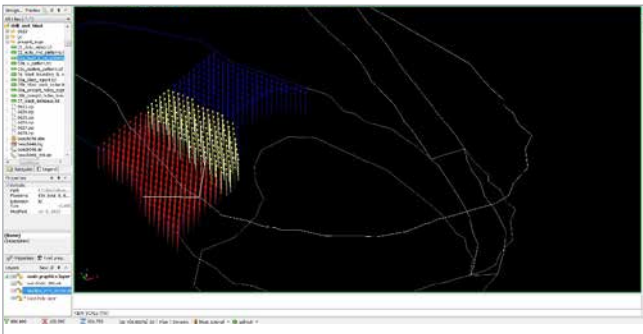


- Design bench, berm and ramps constraints for surface mining
- Design stopes, tunnels, ramps and shafts for underground mining
- Design waste dumps, tailing dams and haul roads for mining infrastructure
- Incorporate geotechnical constraints such as slope stability
- Integrate geology for reserve reporting of grade, tonnes and volumes
- Produce mine plans and visual outputs for communication with production crews



## // DRILL AND BLAST DESIGNER

Design and plan suitable blast patterns to ensure monthly production tonnage targets are met, factoring in safety, materials and costs associated while looking for ways to reduce costs and improve performance.



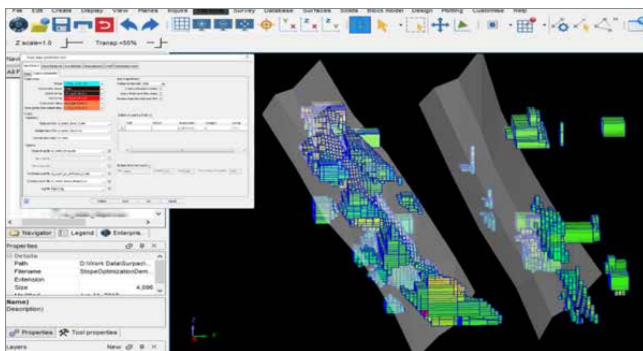
Surface mining - efficient design of bench blast patterns considering blast hole layout, load and charging, detonation sequence and blast solids

Underground mining - efficient design of underground ring or drill & blast patterns considering blast hole layout, load & charging, detonation sequence and drill rig parameters

Produce reports, plans and visual outputs for production crews and required reporting for costs and volumetrics against targets

## // STOPE OPTIMIZER

Create and consider multiple possible stope designs to determine the optimal design that meets a set of strategic objectives, often tied to extracting the highest possible economic value from a deposit.



Generate optimum stope designs for a range of underground mining methods

Produce stope inventories from block models that spatially represent the location of mineralization

Generate stope designs that maximize recovered resource value above cut-off grade

Create practical mining parameters such as minimum and maximum mining width, anticipated wall dilutions, minimum and maximum wall angles and many other factors

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