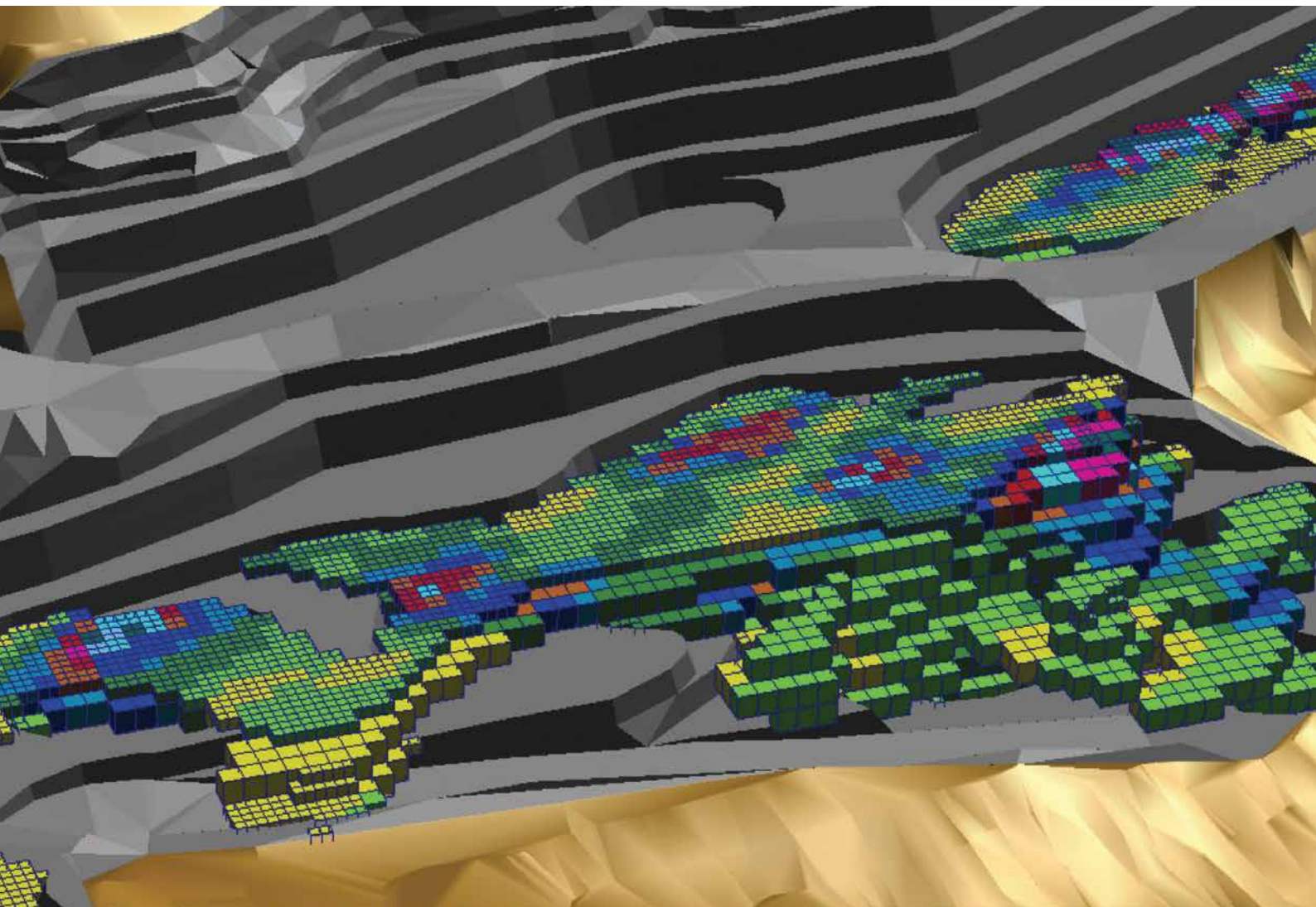


GEOVIA SURPAC

EDITIONS



Mining operations include a series of linked activities – from drill hole data entry in exploration, through mine design and planning, to mine operations and production management. Dassault Systèmes is committed to helping customers maximize value from their operations by providing the right tools and services to carefully manage activities over the mine's life cycle.

With our Subscription Model, we are pleased to provide a new way to access the GEOVIA application portfolio. Each Edition provides a unique combination of tools designed for typical users, and their standard tasks and activities. Customers “subscribe” to the Edition that best suits their needs, on a one-year renewable term.

Each Edition has been carefully selected to offer the broadest range of features to address a user's core requirements

GEOVIA SURPAC—ALL EDITIONS

At the core of all GEOVIA Surpac™ Editions is a rich set of common tools bundled together to meet the needs of a diverse range of disciplines supporting the entire mining value chain, from exploration through to production.

All of the Surpac Editions benefit from Surpac's ease-of-use and immediate drag-and-drop access to diverse data formats. Furthermore, full plotting functionality comes standard with all Surpac Editions allowing users to plot what is displayed with a single button. All Editions equip users to accurately model surfaces and solids, such as topographies and ore bodies. Each Edition includes analytical tools for calculating volumes from any surface or solid model and tools to carry out basic statistics of any point data.

All Surpac Editions include the full use of the Surpac 3D graphics environment, Surpac's renowned scripting capabilities, and the complete suite of editing, sectioning and drawing tools.

GEOVIA SURPAC EDITIONS

- Surpac Geology
- Surpac Geology and Modeling
- Surpac Mine Design for Open Pit
- Surpac Mine Design for Underground
- Surpac Mine Design for Open Pit and Underground
- Surpac Survey
- Surpac Premium

SURPAC GEOLOGY EDITION

Intended for the exploration geologist, the Surpac Geology Edition contains the complete functionality suitable for

BENEFITS OF A SOFTWARE SUBSCRIPTION MODEL

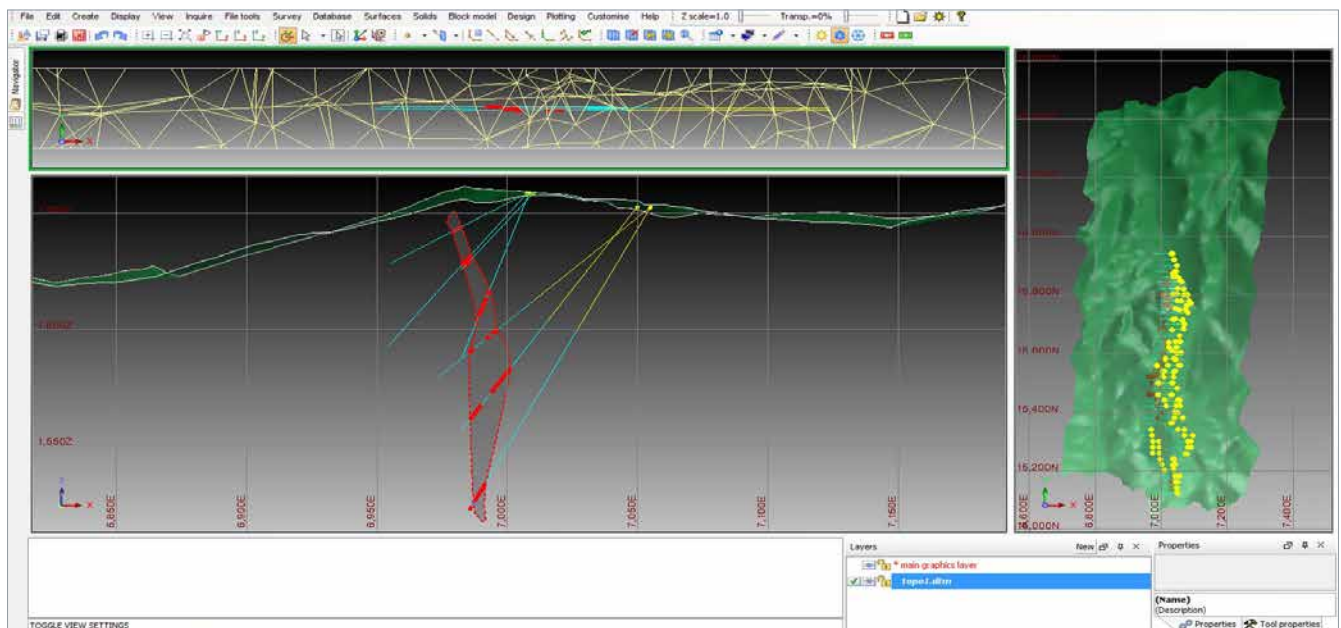
- Reduced initial investment
- Ability to utilize Opex versus Capex budget
- Pre-packaged Editions designed to meet the needs of typical user profiles from Exploration to Production
- Ideal for shorter term projects
- Includes all updates and technical support, network licensing and much more...

managing drill hole data and for modeling real-world deposits. With this Edition, geologists visualize drill holes in 3D and cut sections for polygon modeling of the ore body. This Edition models grade envelopes (*iso-shells*) to aid the geologist in understanding the spatial relationship of the data used in the geological interpretation.

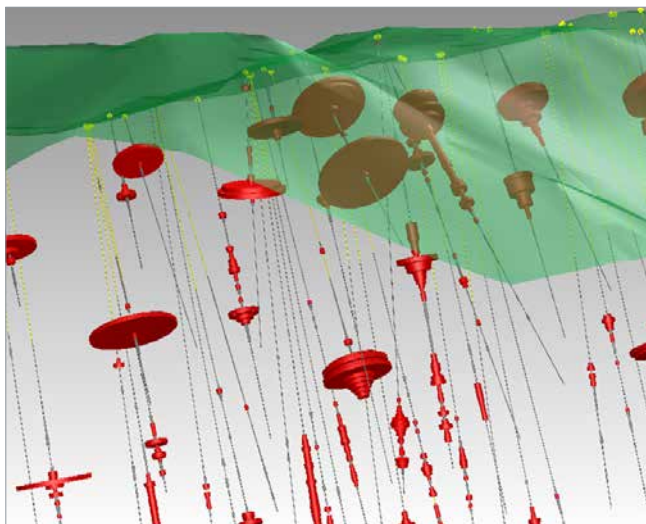
Other functionality includes contouring surface geochemistry and calculating polygonal resource estimations. Users of the Surpac Geology Edition can create animations of the data in 3D and produce images, plots and maps to illustrate and describe a model in a way that is easily consumed by geologists, engineers, surveyors and investors.

SURPAC GEOLOGY AND MODELING EDITION

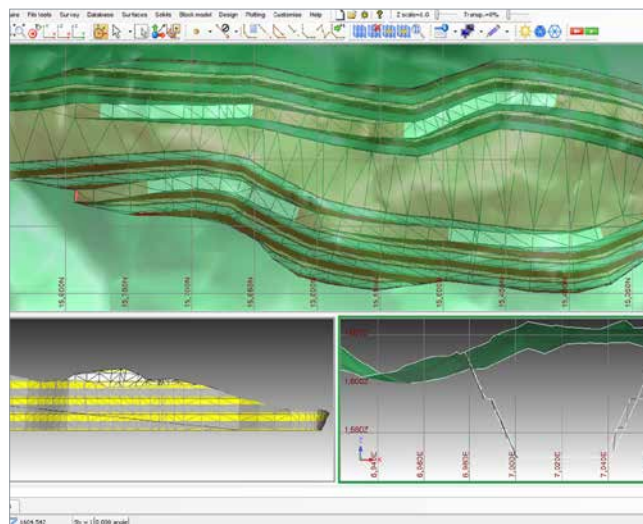
The Surpac Geology and Modeling Edition is the tool of



A multi-pane display showing drill holes, surface topography, and an ore body solid in sectional and plan views.



A surface topography and drill holes showing cylinders that represent gold grades.



A multi-pane display showing a surface topography and pit design in sectional and plan views.

choice for resource and mine geologists. With capabilities over and above those found in the Surpac Geology Edition, the Surpac Geology and Modeling Edition contains all of the tools necessary for resource estimation; notably, geo-statistical analysis (variogram modeling) and block modeling.

Resource estimation in the Surpac Geology and Modeling Edition is an efficient, repeatable and auditable workflow. Resource geologists perform compositing and grade estimations using a variety of methods. As estimations are made, there are several methods for validating the block model against known grade values. Once the block model estimations are validated, it's easy to generate reports of the resource.

Ore control is accomplished easily, with confidence and repeatability using the Surpac Geology and Modeling Edition. Detailed forecast reporting, blast-by-blast updating of the production block model, and preliminary reconciliation of tonnages both moved and stockpiled on site are all supported.

Surpac Geology and Modelling Edition is the go-to edition of Surpac for a complete geological toolkit. This Edition also includes Surpac's industry leading survey functionality.

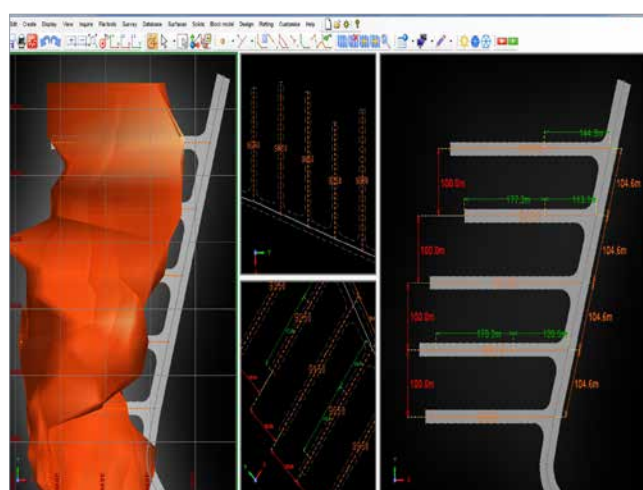
SURPAC MINE DESIGN EDITION FOR OPEN PIT

The Surpac Mine Design Edition for Open Pit provides open pit mine engineers with all of the tools necessary for mine design, blast design, road design, reserves reporting and plotting.

At the heart of this Edition are Surpac's tools for pit and dump design. These tools are intuitive and easy to use meaning mining engineers can quickly and effectively design pits that conform to ultimate pit shells, block models and the ore body shape. Once bench and berm parameters are entered, the pit can be generated automatically from base to surface and then adjusted thereafter. Ramps are created jointly with the bench design and can be adjusted during the design process. The same tools used to design pits are applicable to designing dumps as well.

The surface blasting engineer is able to use this Edition to design, plot, plan and store detailed blast designs based on bench designs and surveys. The information can then be communicated to the field for executing the plan, ensuring compliance with the best possible results.

The Surpac Mine Design Edition for Open Pit includes Surpac's industry leading survey functionality.



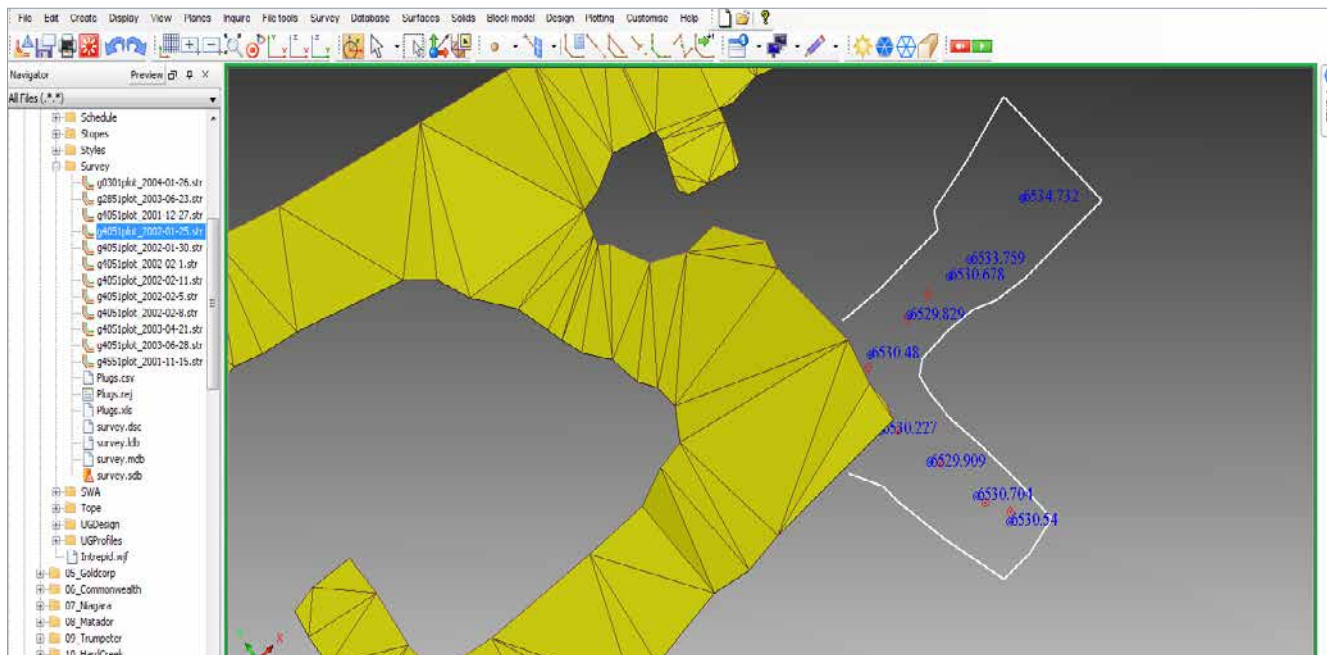
A multi-pane display showing an underground access and cross-cuts with dimensions.

SURPAC MINE DESIGN EDITION FOR UNDERGROUND

The Surpac Mine Design Edition for Underground provides all of the tools necessary for the underground mine engineer for layout design, stope design, ring design, reserves reporting, and plotting.

The Surpac Mine Design Edition for Underground uses extensive and detailed CAD tools for layout design of drifts, accesses, cross cuts, raises, ore passes and ramps. As is common (*and required*) in design environments, Surpac's CAD tools are used in multiple ways to achieve the desired mine design. Design of all underground mining methods is supported.

Stope design capitalizes on Surpac's extensive CAD toolset, but also uses some specialized stope design tools. The Stope Slicer divides an ore body model automatically into stopes that conform to stope parameters. There are also tools to design stopes by section, while accumulating calculations such as average grade, recovery and dilution. The blasting engineer uses this Edition to design, plot, plan and store detailed underground ring designs. The ring designs conform to the drilling and blasting parameters.



A model of underground workings with a new survey pickup.

The Surpac Mine Design Edition for Underground is ideal for the underground blasting engineer. It evaluates the possible effect and safety of a planned blast on existing workings (so that the required evacuations are ordered prior to the blast) and alters the design to accommodate existing cavities in the mine.

SURPAC MINE DESIGN EDITION FOR OPEN PIT AND UNDERGROUND

The Surpac Mine Design Edition for Open Pit and Underground provides mining engineers with access to Surpac's complete suite of mining engineering tools by combining the functionality of both Surpac Open Pit and Underground Editions, and includes Surpac's industry leading survey functionality.

SURPAC SURVEY EDITION

Surpac's industry leading survey functionality is included in the Surpac Geology and Modeling Edition, and all three Surpac Mine Design Editions. For situations where survey functionality is the sole requirement, users can use the Surpac Survey Edition to streamline the process for a surveyor to import and automatically categorize data directly

from the survey instruments. The surveyor then easily sorts and organizes survey data for tracking and comparison of the mining progress.

The surveyor can also create and manage up-to-date maps and plans of an open pit or underground mine; the infrastructure in and around the mine; and the detailed extracted vertical sections, while ensuring all users have access to the most current mining operation information for modeling and planning purposes.

The surveyor can create topographic surfaces (*for open pits*) or solids (*for underground*) from surveyed data for the purpose of volume calculations to aid in the reconciliation of mining activities.

SURPAC PREMIUM EDITION

For users with the most extensive needs, the Surpac Premium Edition is available. This Edition combines the capabilities of all other Surpac Editions and supports the workflows of all personnel responsible for the exploration, resource evaluation, day-to-day production and long term planning of a mine.

Our 3DEXPERIENCE® platform powers our brand applications, serving 12 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 190,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.

