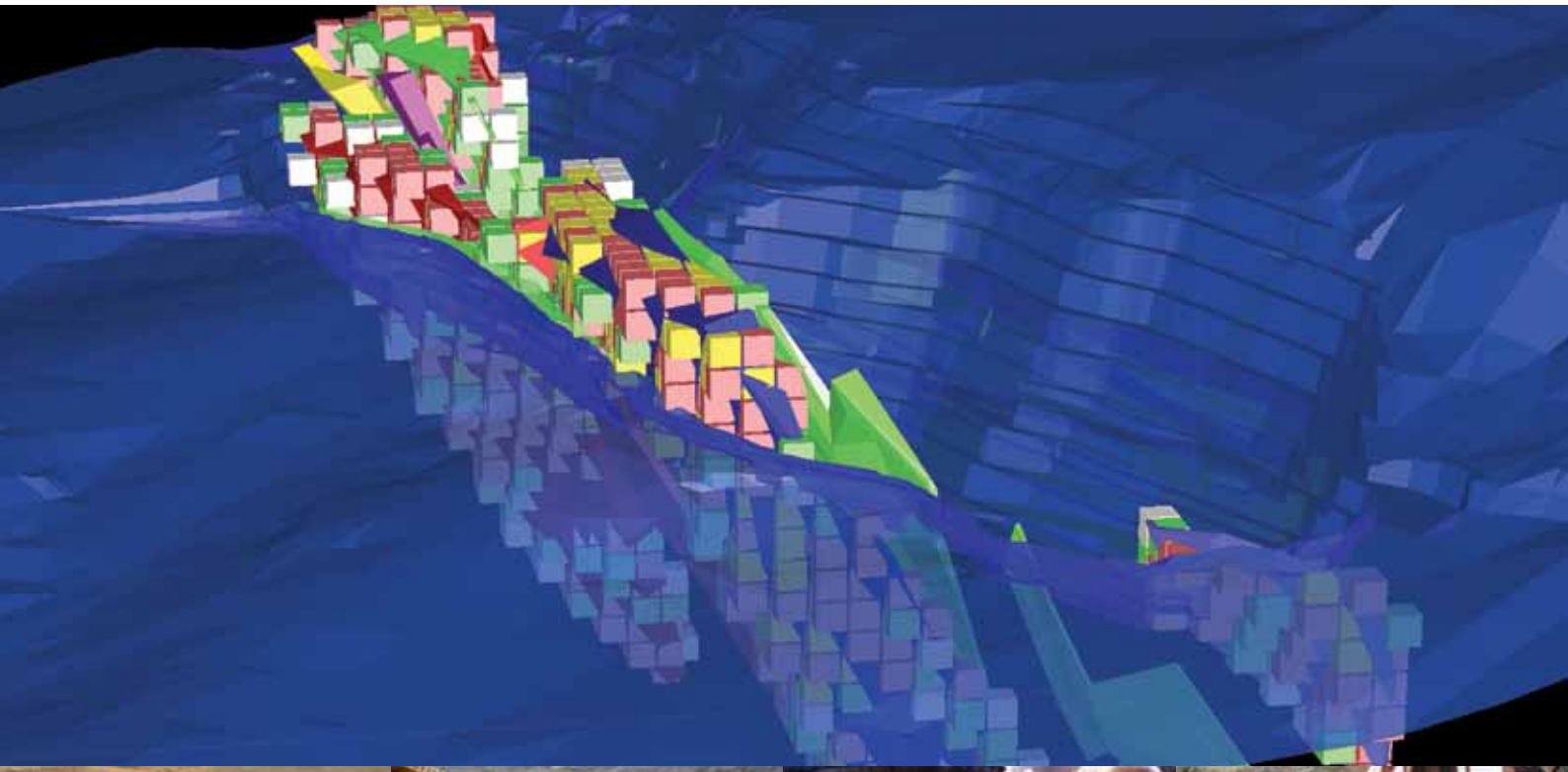
GEMCOM GEMS™

Geology and Mine Planning



Gemcom GEMS™ provides collaborative geology and mine planning capabilities that support cross-functional teams involved in exploration, modelling, mine design,long-term planning, and production scheduling.

Benefits

- Central database manages data, enabling data security and auditability, while eliminating data redundancy and increasing data integrity and accuracy.
- Streamlined data flows and central data access improves collaboration, providing information when needed to speed decision-making.
- System ease-of-use – robust dialog boxes guide users through workflows.
- Industry-standard Microsoft technologies integrate with existing IT infrastructure and ensure system scalability.
- PlotMaker feature allows users to annotate plots with text blocks, bitmaps, Excel spreadsheets, Word documents and other objects.

GEMCOM

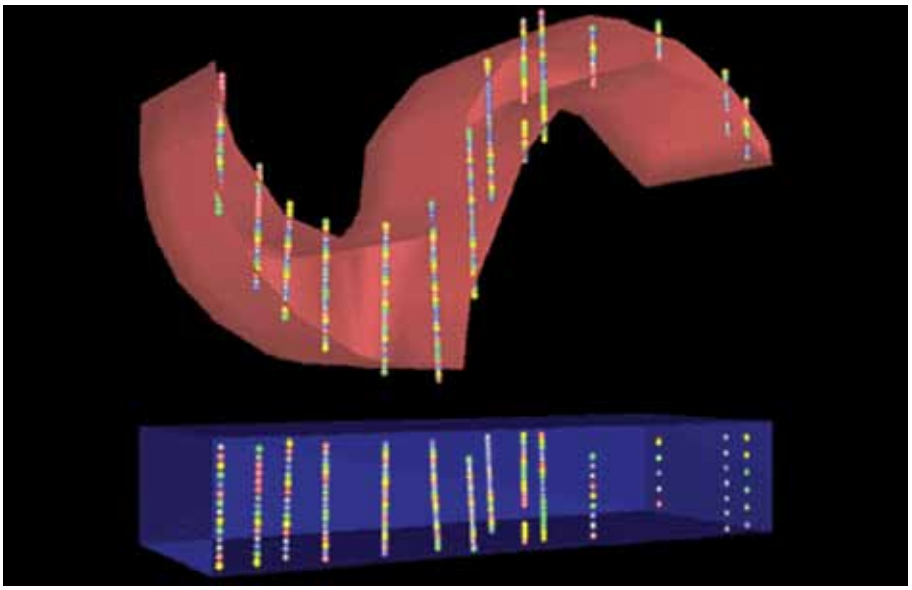
Collaborative Geology and Mine Planning Solution

Gemcom GEMS™ is the leader in collaborative geology and mine planning solutions. GEMS has been providing the right capabilities for open pit and underground mining professionals in exploration, modelling, mine design, long-term planning and production scheduling.

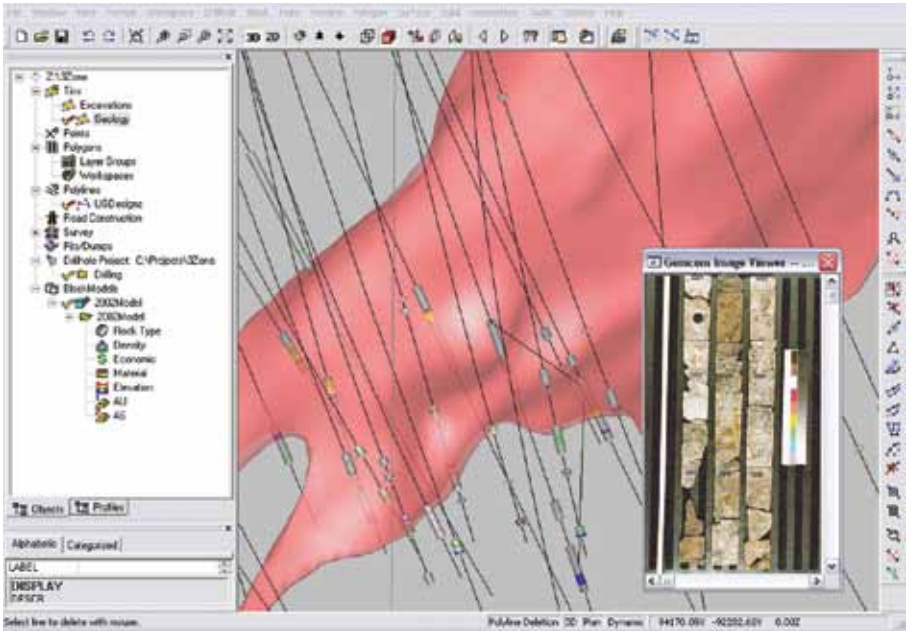
With GEMS' unique central database geologists and engineers gain immediate access to organised, up-to-date geological and mine planning data. GEMS' data security and auditing provides the capabilities they need to improve compliance with industry regulations like JORC, SAMREC and NI 43-101.

Exploration and Resource Modelling

Whether you work in the field or at the office, GEMS offers you the right capabilities for your tasks. With GEMS, you can manage drillhole data, create plots, maps, model surfaces and solids, and employ sophisticated geostatistics to quantify, visualise and analyse mineral deposits.



Unfold complex geology for better geostatistical analysis.



Attach core photos to drillhole intervals.

- Protect and share exploration data.
- Employ a variety of methods from simple polygons to highly sophisticated 3D solids modelling to create accurate geological models.
- Model grade values choosing from block or grid models for the solution that best suits your deposit type.
- Leverage a complete set of grade estimation techniques.
- Take full control over the interpolation process to account for anisotropy, geological domains and anomalous grade values.

Needling – A Unique Volumetrics Advantage

- GEMS' volumetric process, known as "needling," gives your project an immediate advantage. Needling differentiates the proportion of each solid in the block model, providing you with weighted tonnage and grade values for each rock type.

Overcome the Challenges of Folded and Faulted Deposits

- GEMS' Unwrinkle/Unfold capabilities enable you to overcome the challenges posed by complex folding and faulting. It places data points into a transformed space in which the correct spatial relationship is maintained for analysis and interpolation purposes. It then transforms the estimates back into their original space.

Mine Planning

The mine planning and design features available in GEMS support both open pit and underground operations. With key processes linked together through the GEMS database, mine plans can be kept up-to-date more accurately based on ever-changing information.

- Design mine plans to meet your volumetric and grade objectives.
- Use long-term planning tools to set mining targets and test scenarios to determine the best way to mine over multiple working periods.
- Reconcile performance by comparing planned mining activities to actual performance and progress.
- Control daily production with always up-to-date survey and grade control data.

"Our migration to GEMS with Microsoft SQL Server brought separate databases together, so that everybody could work on the current data set. Now we have everything in one controlled, protected structure, along with better collaboration and communication among our departments."

— Renaud Adams, Vice President and General Manager, IAMGOLD Corporation

- Use GEMS Go Simulator to ensure that your plan is practical to mine by simulating mining with equipment fleets.
- Run volumetrics to determine and report reserve depletion.
- Depend on the Drillhole Excavation Warning System to help you identify potential hazards.

Open Pit Tools

- Interface seamlessly with Gemcom Whittle™ to optimise pit designs and pushbacks.
- Specify blast pattern layouts and control drilling depth by setting pre-defined surfaces, then place hole collars onto existing surfaces for elevation control.

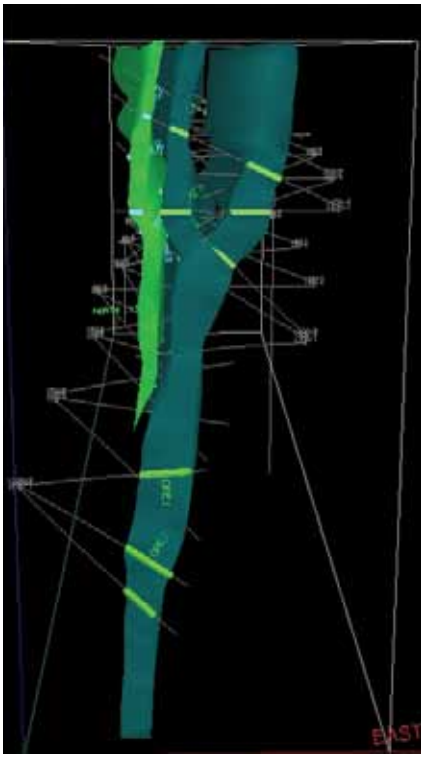
Underground Tools

- Automate the tunnel design process by turning centre lines you define into complete tunnels with safety bays and filleted intersections.
- Create comprehensive stope designs and determine volumes, dilution and mineable reserves.
- Ensure your designs are accurate and up-to-date by using a blast ring design tool integrated with stope design and 3D solids modelling.

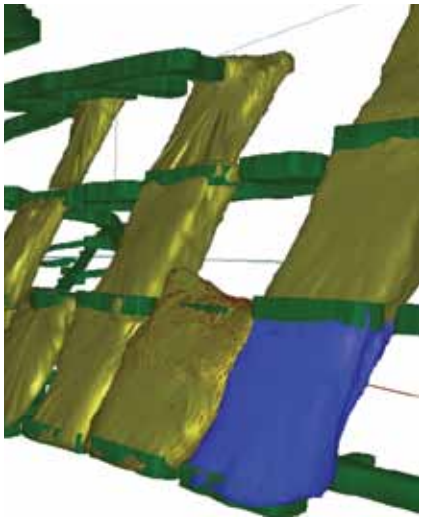
Mine Production

Whether you operate an underground or open pit mine, GEMS lets you control essential mining processes. With all data stored in a central database, all decisions are made using the most up-to-date information, which is available on-demand where and when it is needed.

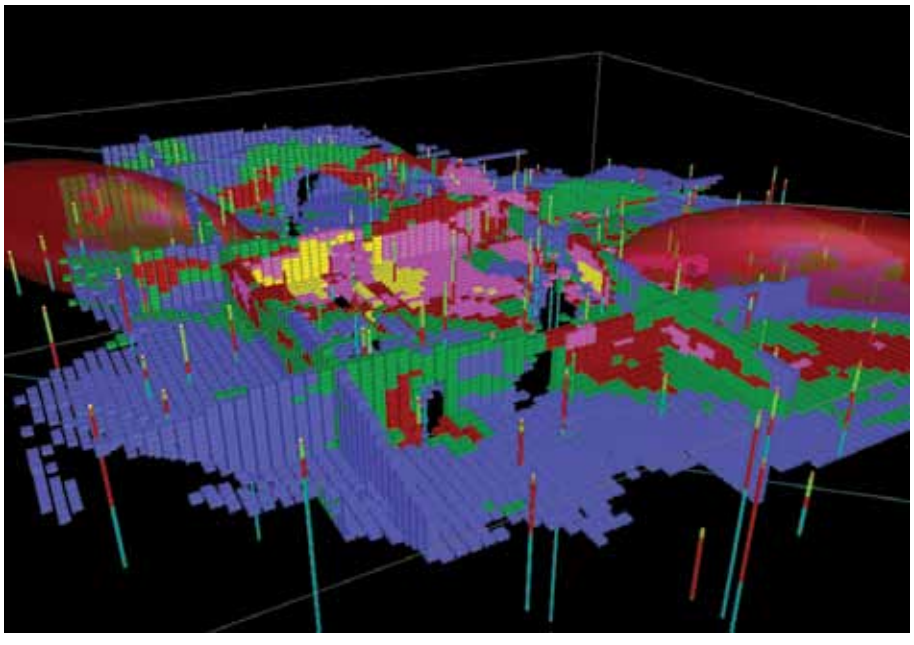
- Add production scheduling capabilities to produce Gantt charts and schedules.
- Download measurements directly from total stations and GPS recorders, then merge pickup data, update excavation status, report volumetric progress, and lay out dig limits and blast patterns.
- Improve ore control by enabling grade control engineers to use assay data and polygons to manage the daily operational grade control requirements.



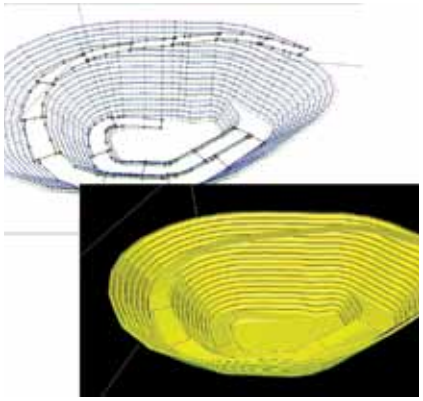
Orebody modelling.



Triangulated modules of underground workings (from survey data and CMS laser survey systems).



Block model of ore reserve estimation.



Open pit design.

GEMCOM GEMS™
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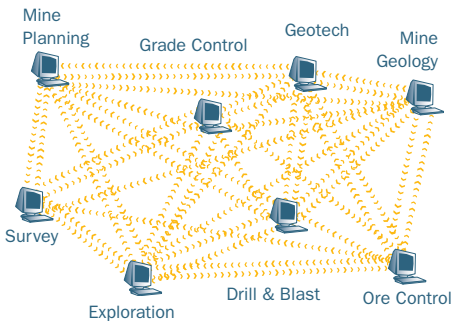
GEMS Collaborative Solution

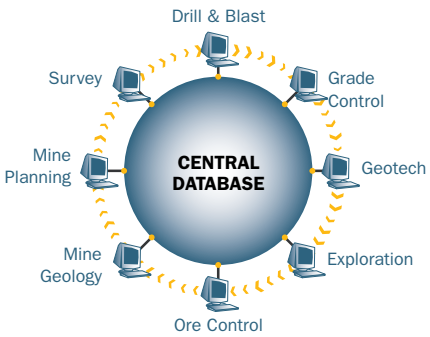
With a GEMS collaborative solution running on Microsoft SQL Server, workflows are optimised and mining professionals freed from managing data, allowing more time to be spent on running the operation.

The Problem



Multiple Sources of Questionable Information

The GEMS Solution



A Single Source of Trusted Information

The Benefits

- Business process improvement approach to implementation.
- Optimised workflows enable faster and better decision making.
- Role-based access to data.
- The right data is always available.
- Data is secured and managed.
- Redundancy of data is eliminated.
- Auditable information trails.

For more information email gems@gemcomsoftware.com.

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When mining companies seek to increase mine productivity, they turn to Gemcom for technology and services. The Company is home to world-renowned mining solutions like GEMS, Surpac, Minex, Whittle, and InSite, and to industry thought leaders who are pushing the boundaries of what's possible in mining.

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