Mira Geoscience
...modelling the earth

GOCAD® Mining Suite

Base Module
Earth modelling and 3D-GIS solutions

Summary

GOCAD Mining Suite Base Module provides a complete earth modelling and 3D-GIS solution for the mining industry. It is designed to build and query integrated exploration models for mineral exploration and geotechnical hazard assessment. From data import to exploration drillhole design, geoscientists from all disciplines can manage their exploration program from one central software application. Its multidisciplinary approach provides reliable results that become an integral part of the decision making process. Being modular software, you can custom build it to your needs.
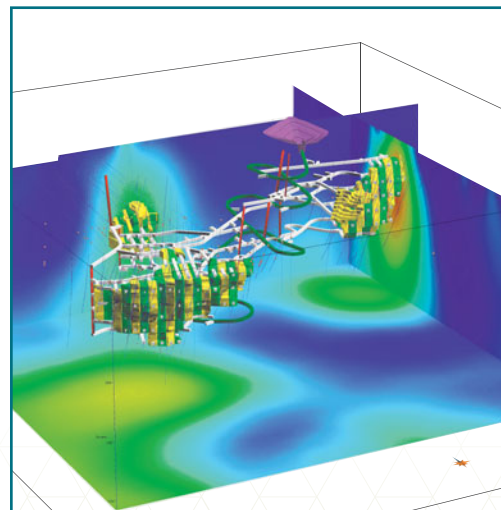
GOCAD Mining Suite Base Module is an extension of SKUA-GOCAD™–Paradigm®, the world's most sophisticated geological modelling platform, adapted specifically for the mining industry and available exclusively from Mira Geoscience.
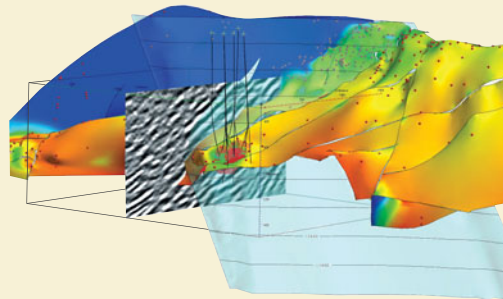
This industry-leading earth modelling application has been designed from the ground up to rapidly construct integrated multi-disciplinary 3D earth models.

» Imports geological, geophysical, geochemical and geotechnical data from standard mining industry formats

» Does interpretation through advanced visualization and GIS-based queries

» Models surfaces rapidly with seamless transition to block model format

» Updates models directly in 3D

» Maps data from one object type to another via several projection and interpolation methods

» Generates drillhole targets from multiple data sources and can be identified and ranked based on 3D-GIS queries

» Provides key functionalities to plan straight and deviated boreholes with its drillhole designer toolkit

A wide variety of modules developed by Mira Geoscience and Paradigm can be added to the GOCAD Mining Suite Base Module. This offers the flexibility to tailor a software solution to match your company's specific needs.

Earth modelling
- » True 3D topological modelling
- » Advanced wireframing tools for the most complex geological surfaces
- » Powerful interactive mesh editing tools
- » Fault network builder
- » Unique geometrical interpolation engine for surface
- » Rapid model updating directly in 3D
- » 3D block model building
- » 3D deformed and faulted stratigraphic grid building

Interoperability	Extension	Import	Export
Ascii	.asc, .txt, .prn, .csv & .tab	X	X
AutoCAD	.dxf	X	X
Crone PEM	.pem	X	
DataMine	.dm	X	X
ER Mapper Grid (.ers)	.ers	X	X
ESRI	.shp & .grd	X	
Gemcom	.3dr & .tri	X	X
	.bt2	X	
Geosoft	.ply	X	
	.gxf & .xyz	X	X
Images	.jpg, .bmp, .pbm, .pgm, .png, .ppm, .tif, .xbm & .xpm	X	
ioGAS	.gas	X	
Located BMP	.bmp, .tab & .bmpw		X
Map3D INP	.inp	X	
MapInfo	.tab, .dat, .id & .map	X	X
	.tab (image files)	X	
Maxwell	.pte & .pts	X	
	.tem		X
MINEX	.dmp	X	
PDF3D	.pdf		X
SEGY-2D as Voxel and Surface	.sgy	X	
Surpac	.str	X	X
	.dtm (+ .str files)	X	
UBC-GIF	.msh, .mesh, .den, .sus, .chg, .res, .con, .mod, .kap, .rho, .eta .sns, .fld & .dat	X	
VPmg Model File to 3D Grid Object	.den & .sus	X	

Exploratory data analysis
- » Histograms, cumulative distribution functions and basic statistics on object properties and geometry
- » 2D and 3D cross-plots with multi-variate statistics
- » Link between cross-plot selection and 3D camera
- » 1D, 2D and 3D variogram computation and modelling environment
- » Stereonet and 3D structural data visualization
- » Support for 3D-GIS queries (property, proximity, shell, metadata, special features, intersection and geological)
- » Editable and dynamic spreadsheet display of data linked with the 3D camera
- » Meta-data editor

Property modelling
- » All object types can host an unlimited number of scalar and vector properties (attributes)
- » Seamless transfer of properties between object types via projection and interpolation
- » Advanced 2D/3D inverse distance interpolation on surface nodes and grid cells
- » Distance map computation between objects
- » Drillhole compositing
- » 2D minimum curvature gridding
- » 3D discrete value interpolator

Drillhole design
- » Straight hole from collar location
- » Deviated hole from collar and lift and swing parameters
- » Real-time manual drillhole designer
- » Compute lift and swing of existing drillholes

Interpretation
- » Geological queries on drillholes
- » Digitizing environment
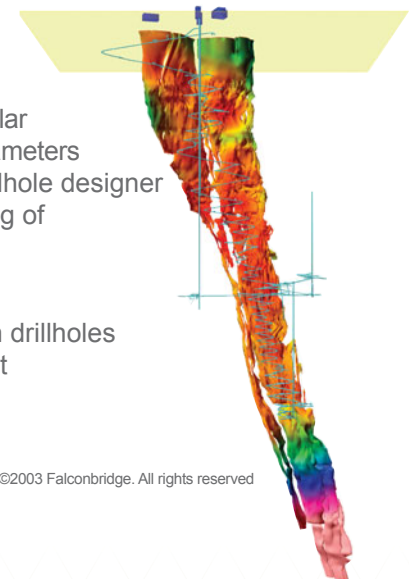
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