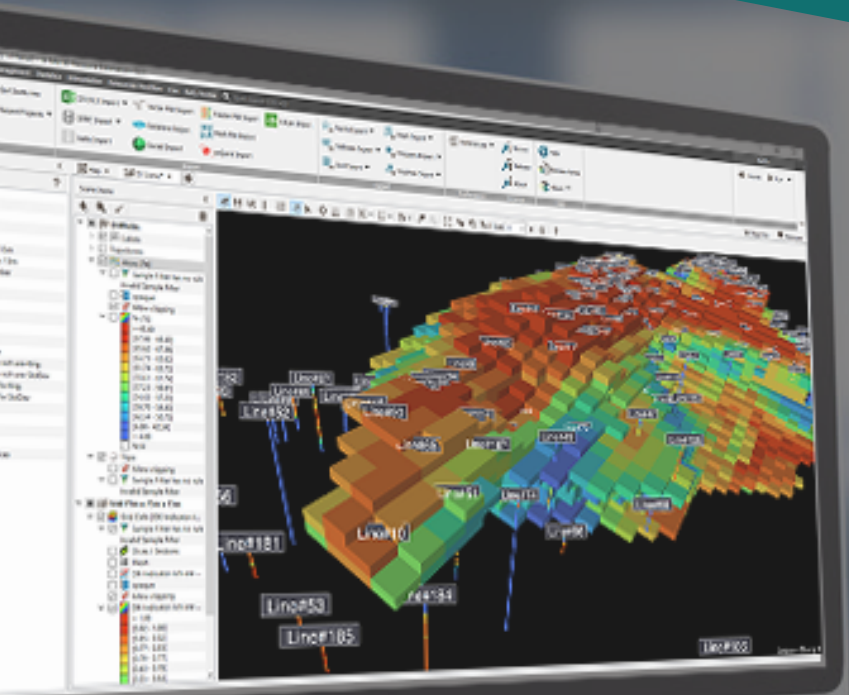# DATAMINE

Geostatistics made accessible

ISATIS.NEO

WHO USES ISATIS.NEO

- ✓ Geostatisticians
- ✓ Resource Geologists
- ✓ Mine Geologists
- ✓ Mining Engineers
- ✓ Broad Resource Teams

Isatis.neo is a powerful, intuitive, and highly customizable geostatistics software solution. It provides easy access to an **exclusive set of geostatistical and machine-learning techniques** for geologists, mining engineers, and resource teams to deliver robust and accurate resource models and confidently make effective decisions.

The software results from decades of experience in geostatistics software development. It offers the latest generation of tools and the broadest range of estimation and simulation functions available on a single desktop application in the market. It delivers **peak performance** with a user-friendly interface and cutting-edge algorithms, constantly optimized to boost user efficiency.

KEY BENEFITS

EASY ACCESS TO A FULL SUITE OF STANDARD AND ADVANCED GEOSTATISTICAL TECHNIQUES.

Isatis.neo offers an unsurpassed choice of statistical and geostatistical tools for comprehensive data and orebody analysis, visualization, robust modeling, and quantified uncertainty and risk analysis through simulations. It is developed based on research and development projects in collaboration with the French Mines Paris-PSL, where geostatistics originated. This results in an exceptional, specialized product that offers several unique tools that resource geologists can use to gain high-level insight into their projects.

HIGH CONFIDENCE IN RESULTS

Isatis.neo comes with intelligent applications that help optimize the parameter settings and several validation tools comparing the output with the original input data through various metrics. This gives users confidence in their results.

HIGH EFFICIENCY WITH AUTOMATED AND CUSTOMIZED ROUTINES.

Isatis.neo includes batch scripting capabilities to record and automate sequences that can be finely adjusted to companies' processes. It lets you add Python code to batch files for even more optimized and customized routines, which gives the software tremendous capabilities. Hence, you can combine geostatistics with machine learning techniques to solve real and complex mining problems.
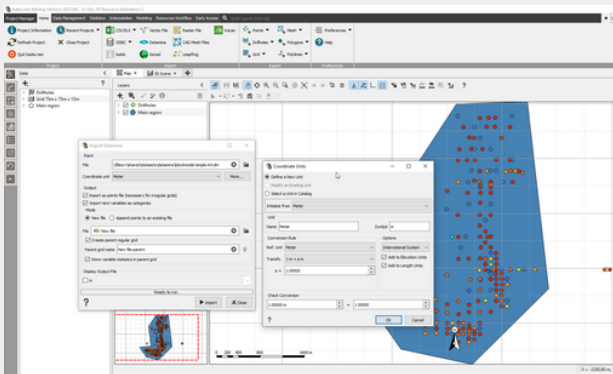
EASE OF LEARNING

Isatis.neo is democratic and addresses everyone, novice or expert in geostatistics. It is quick to grasp, featuring a modern and intuitive user-software interface. It comes with a popular online user guide and technical documentation, and numerous tooltips clearly explain the parameters.
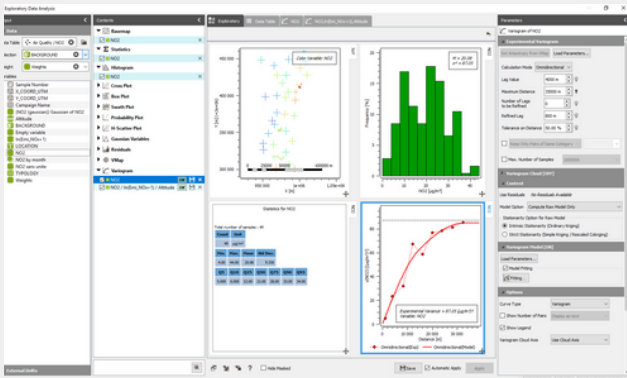
FEATURE HIGHLIGHTS

LOAD A WEALTH OF DATA AND FORMATS

Isatis.neo offers exceptional interoperability, enabling you to exchange data with major mining software packages effortlessly, which includes Isatis, StudioRM, Surpac, Vulcan or Leapfrog, and databases such as Microsoft Access or acQuire. It can also read the standard file formats (e.g., xlsx, csv, CAD, shapefiles).

QUICKLY GET RELIABLE ESTIMATES AND SIMULATIONS

Kriging and simulation options are grouped into one dialog box and selected with a mouse click, simplifying the settings choices. Systematic naming of output variables, based on a pre- or user-defined convention, saves users' time, and ensures name consistency across different models.
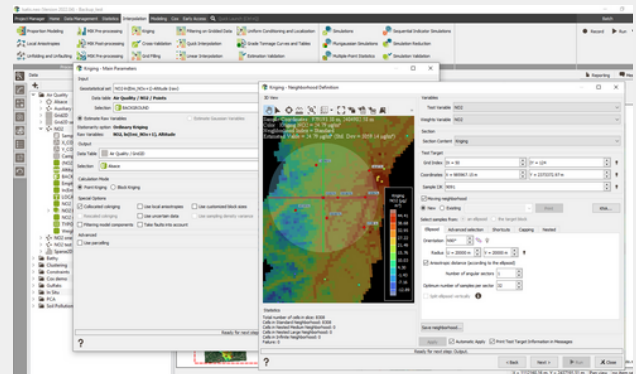

FULLY EXPLORE YOUR DATA

An integrated and user-friendly application for Exploratory Data Analysis enables the fast computation and display of various statistics (i.e., histograms, box plots, cross-plots, swath plots, probability plots, H-scatter plots), variograms, variogram maps, Gaussian transforms, and theoretical grade-tonnage curves just by simple drag and drop of variables. All the inputs users need for kriging or simulation (variogram models, stationarity options, anamorphosis functions) are stored in a single dedicated object. It guarantees consistency and makes further parameter setting more straightforward.

QUICKLY PRODUCE YOUR STUDY REPORTS.

An integrated word processor facilitates reporting. The tool allows users to copy views, graphics, and message contents to a report as the project progresses. Users can then edit the text to their needs and export the report in pdf or html format.
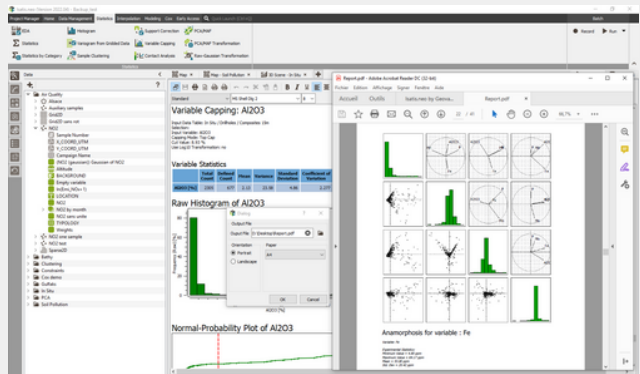
✅ **DATA ANALYSIS AND PROCESSING**

– Powerful application for Exploratory Data Analysis in univariate and multivariate contexts giving access to many statistics, variograms, and Gaussian transforms; groundbreaking automatic variogram fitting.
– Machine-learning-based sample clustering for geological and geometallurgical domaining.
– Smart tools for drill hole compositing, data declustering, correlation investigation (through Principal Component Analysis, Min/Max Autocorrelation Factors, Projection Pursuit Multivariate Transform), neighborhood optimization (with Kriging Neighborhood Analysis), cross-validation, grade capping, and model sub-blocking.
– Support correction tool to assess SMU impact and grade smoothing, considering or not the Information Effect, and generate grade-tonnage curves.
– Contact analysis to analyze grade variations at envelope contacts.
– Local anisotropies and unfolding tools to manage the geological component in the estimation.

✅ **GRADE ESTIMATION IN DOMAINS**

– Classical interpolation methods: nearest neighbor, inverse distance, moving average, moving median.
– Industry-standard estimation methods: point, block, subblock, simple, ordinary, universal, multivariate, spline, or linear kriging, kriging with external drift.
– Advanced estimation methods: rescaled cokriging, kriging with uncertain data, or faults, filtering model components, Mixed Support Kriging, using local parameters, using Sampling Density Variance, and Conditional Expectation.
– Estimation validation through a range of statistics and data comparison.
– Gems density estimation.

✅ **RECOVERABLE RESOURCE MODELING**

– Univariate and multivariate Uniform Conditioning and Multiple Indicator Kriging with localization on SMU.

✅ **UNCERTAINTY AND RISK ANALYSIS**

– Conditional simulations (Sequential Gaussian, Turning Bands, Direct Block, Stochastic Partial Differential Equations-based), possibly with local anisotropies, component filtering, or considering faults.
– Simulation post-processing delivering various statistics.
– Simulation validation through a range of statistics and data comparison.
– Intelligent selection of simulations for efficient risk analysis.

✅ **FACIES MODELING**

– Sequential Indicator Simulations
– Plurigaussian Simulations and Multiple-point Statistics
for complex deposit geology modeling.

CONTACT US

AUSTRALIA | BRAZIL | CANADA | CHILE | CHINA | ECUADOR | GHANA | INDIA | INDONESIA | KAZAKHSTAN | MALAYSIA | MEXICO | MONGOLIA | PERU | PHILIPPINES | SOUTH AFRICA | TURKEY | UNITED KINGDOM | USA

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