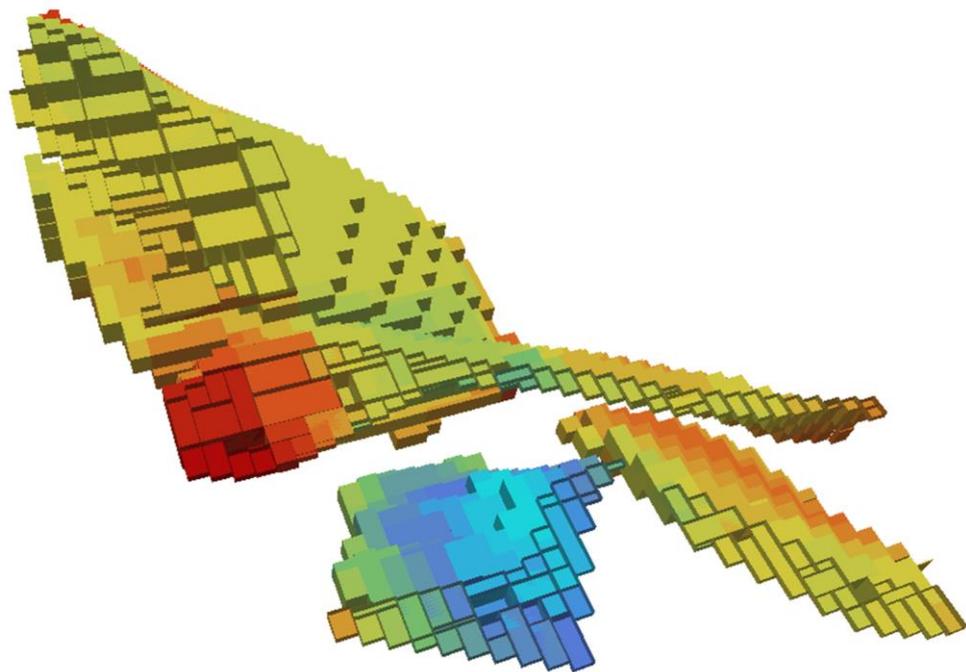




MINING / HOW TO ...

ESTIMATE A DATAMINE[®] SUB-BLOCK MODEL



Although Isatis does not create or edit sub-block models, this **document shows how to import, visualize, estimate and export a ¹Datamine sub-block model with Isatis**. The guiding principle when importing a Datamine sub-block model is to treat it as a polygon file in Isatis from which all actions will be performed.

In this example, Au grade is estimated independently in two domains, *Domain 1* and *Domain 2*. The workflow is divided into 4 parts:

- ⇒ Import of the Datamine sub-block model file into Isatis as a polygon file and discretization;
- ⇒ Conversion of the Domain datamine field into an Isatis macro selection variable;
- ⇒ Estimation of the Au grade on Domain 1 and Domain 2; and,
- ⇒ Exporting the estimation in the existing external Datamine sub-block model file.

This workflow produces a Datamine sub-block model (*.dm) that can easily be read back by Datamine. Note that the drill-hole import and variography modeling steps are not described in this document.

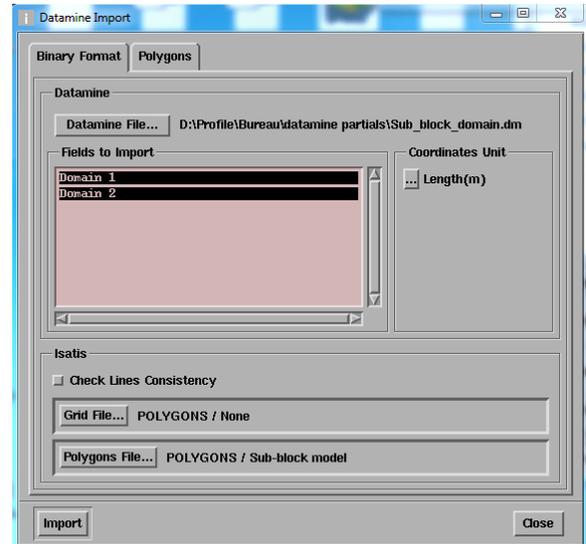
¹ Datamine is the property of CAE Mining

1. Data Import

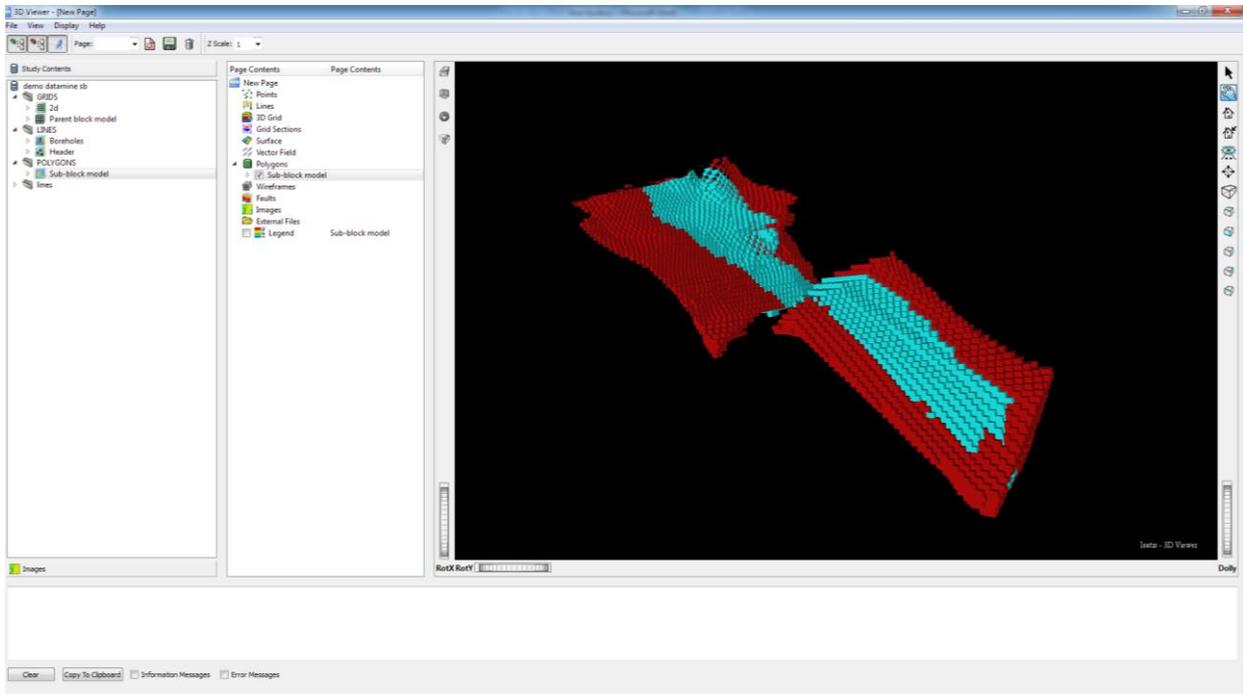
Isatis provides an application to import several types of Datamine Files. The *Datamine Import* panel converts sub-block models into Isatis polygon files on which the estimation will be directly performed.

Select the file to be loaded in Isatis:

- ➔ File → Import → Datamine/CAE Studio Import
- ➔ Select a *.dm file containing a block model with sub-blocks and import it as an **Isatis polygon file**. Do not forget to select the fields to be imported.



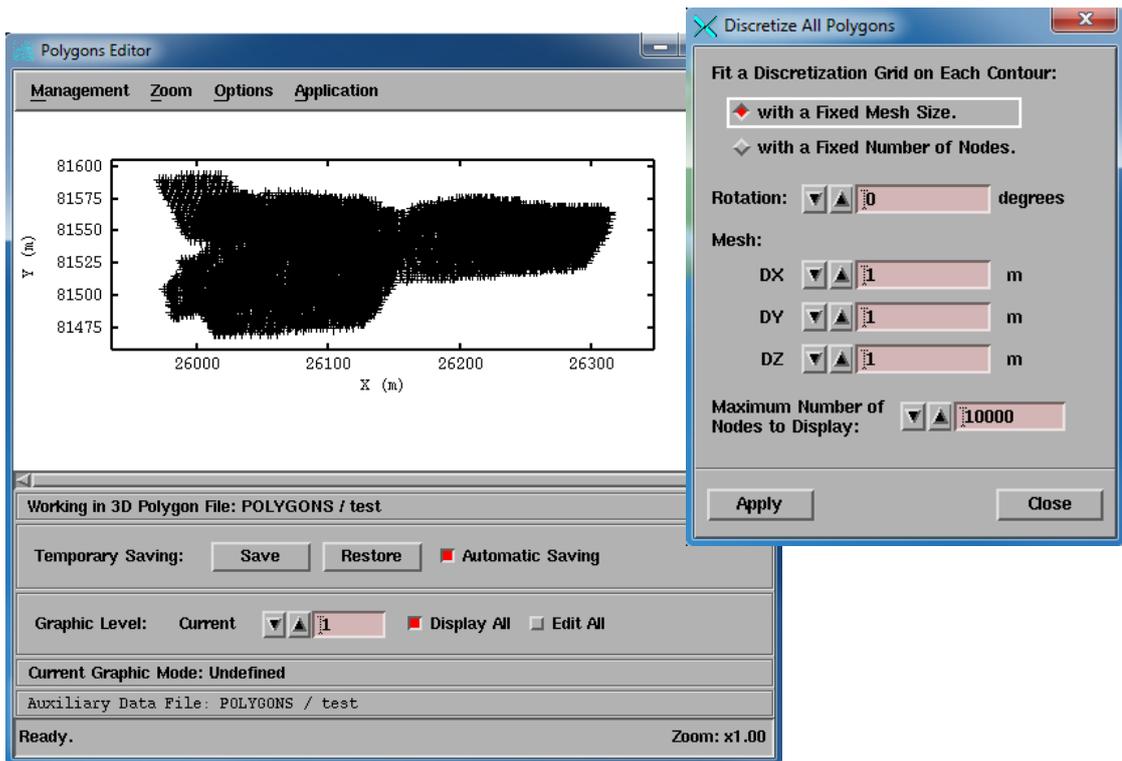
The sub-block model can now be displayed in Isatis' *3D-Viewer*.



The polygon file needs to be discretized. This action corresponds to the discretization of the polygon contours into a regular grid. The discretization size must be adapted to match the smallest size of the sub-blocks. This is a compulsory step prior to performing polygon kriging.

Run Isatis Polygons Editor:

- ➔ Load the sub-block model polygon file through *File* → *Polygons Editor* → *Application* → *Open Polygon File*
- ➔ Apply a discretization of $1 \times 1 \times 1 \text{ m}^3$ through *Application* → *Discretize*.
- ➔ Do not forget to press *Application/ SAVE and RUN* to save the modifications.

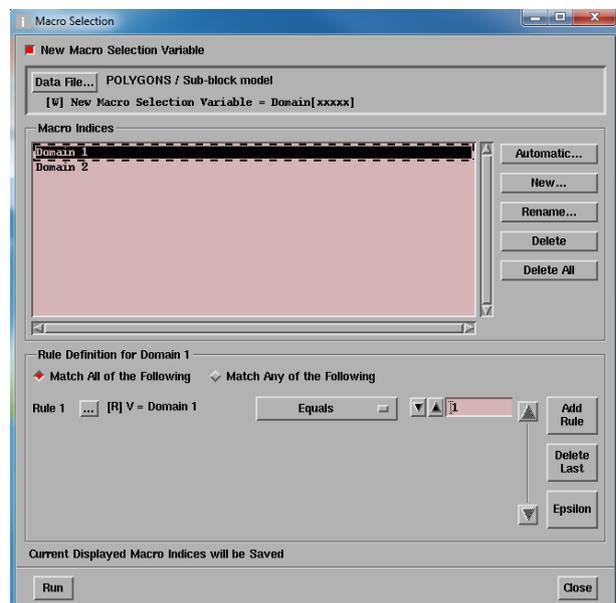


2. Domain Macro Selection Creation

The Datamine zone field needs to be converted into an Isatis macro selection variable.

- ➔ *File* → *Selection* → *Macro...*

Create a macro selection variable named domain with two macro indices *Domain 1* and *Domain 2* using rules based on the values of the variables *Domain 1* and *Domain 2*.

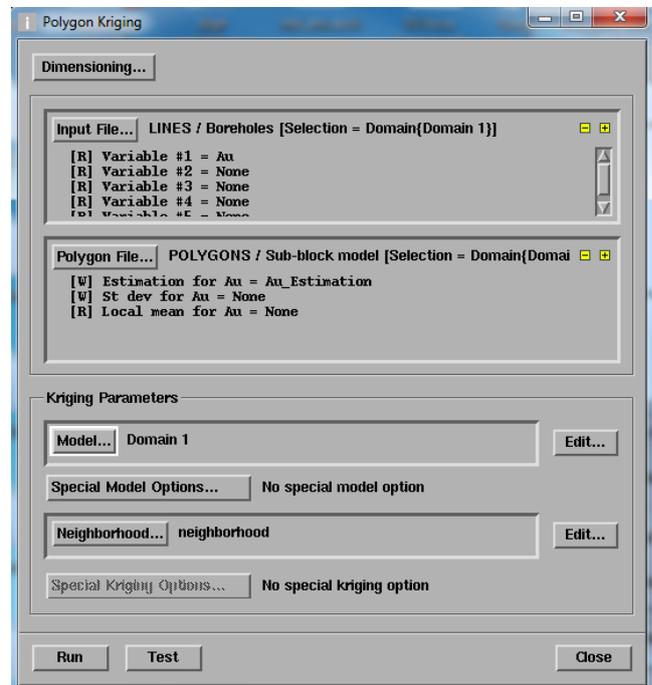


3. Polygon Kriging Estimation

The sub-block model can be estimated using the *Polygon Kriging* panel.

→ Interpolate → Estimation → Polygon Kriging.

Using the macro variable selections along the dedicated variogram model and neighborhood, estimate the *Domain 1* and *Domain 2* independently.

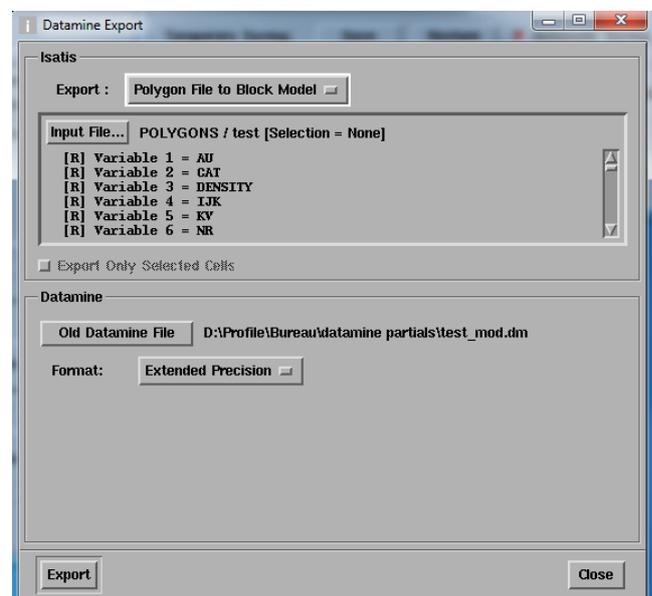


4. Estimation Export to Datamine

Once the sub-blocks are estimated, use the *Datamine Export* application for the outputs to be exported in a Datamine readable file.

→ File → Export → Datamine/CAE Studio Export

Using the mode *Export Polygon File to Block Model*, the estimates can be written into the original Datamine file. Note the very same external Datamine file (*.dm) that has been imported into Isatis must be selected. The new Datamine file can be then re-imported into a Datamine project.



Let us help you implementing this workflow: contact our consultants at consult-mine@geovariances.com.