



OPEN MINING FORMAT (OMF) SUPPORT DOCUMENT

1. Why an Open Mining Format?

Problem

Software routines associated with the mining value chain often require geometric and topological data to be shared between different software applications. However, this sharing of data is frequently restricted due to the lack of interoperability between many of the various software platforms currently available. Often, vendors restrict direct access to proprietary Application Program Interfaces (APIs) to protect their intellectual property. Generic file export formats are also becoming less able to accommodate increasingly large and complex data files. As a result, users limit themselves to vendor-specific software suites or operate lengthy and inefficient import and export processes.

Solution

The Global Mining Guidelines Group (GMG) has established a Data Exchange for Mine Software sub-committee to tackle this issue. The sub-committee is made up of representatives from software vendors and mining companies. Members of this group are working together to produce an open-source standard data file format that encompasses a set of guidelines, with GMG encouraging the evolution and adoption of this format across a wide range of vendors and operators.

As a first step, GMG has created the Open Mining Format (OMF) file specification to facilitate the easy transfer of 3D data.

This open-source data model and file specification offers:

- the ability to easily share data between software applications;
- the capacity for companies to seamlessly share data internally or externally;
- a more streamlined and efficient approach that eliminates manual or convoluted transfer processes.

A Beta release (version 0.93) of the OMF and associated Python API is available on Github (<https://github.com/gmggroup/omf>).

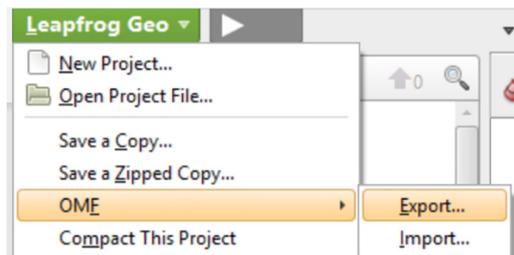
Explanation of the OMF API can be found on Readthedocs (<https://omf.readthedocs.io/en/latest/>)

Work is currently being done to develop version 2.0 of the OMF. To achieve the broad industry engagement, which is key for this initiative's success, GMG has initiated a global outreach program among mining organizations and worked to develop partnerships with other industry associations.

2. How to access OMF in supported products

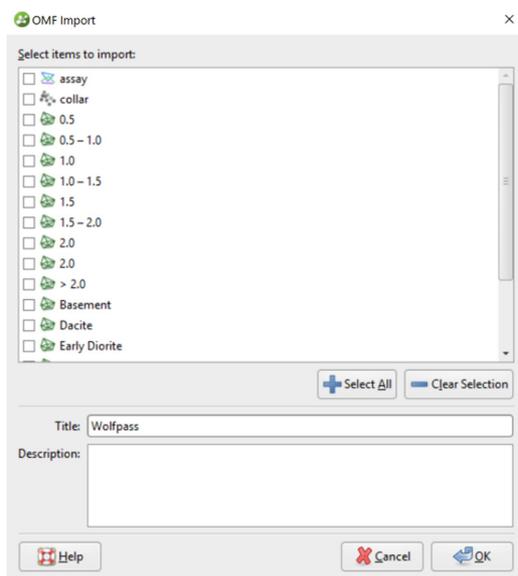
2.1 Leapfrog Geo

To access OMF format support inside Geo, click on the **Leapfrog Geo** button located in the top left corner when in the Project tab, as per the next image. Choose **OMF** and either select **Export** or **Import**.



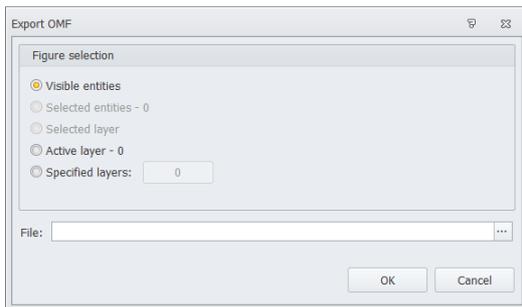
Most objects in a Leapfrog project can be exported in OMF format – including drilling (as line segments), points, meshes, geological model surfaces and volumes, interpolant surfaces and volumes, and block models.

OMF files are imported by selecting **Import** from the same menu. A list of objects within the OMF file will be displayed for selective import.

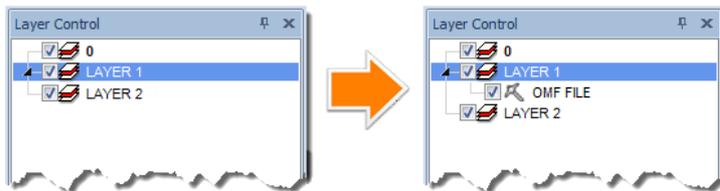


2.2 Deswik.CAD

To export data in OMF format from Deswik.CAD, click **Export | Open Mining Format (OMF)** in the **File** menu. When the **Export OMF** dialog box appears, the user selects the entities he/she wishes to export. The export currently supports the export of polyface, polyline, points and point entities. Line entities that can be converted to a polyline, including ellipse, rectangle, arc, borehole and drill hole entities, will be exported as polylines.



To import data in OMF format into Deswik.CAD, click **Import | Open Mining Format (OMF)** in the **File** menu. The user can browse for the files they want to import. Deswik.CAD creates a “child” layer (of the same name as the file) for each file selected. It then imports the files and saves the data to the new layers. The symbol next to the layer name identifies where the layer is imported from.



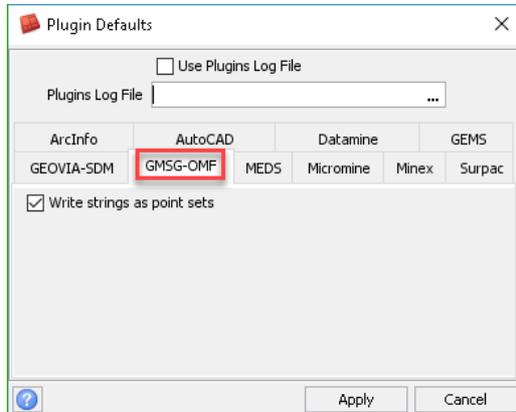
2.3 Dassault Systèmes

2.3.1 Surpac

Surpac 2019 supports OMF using a plugin. You can set the defaults for the plugin, save SDM, DTM or string files as OMF files, and save OMF files as SDM, string or DTM files. In **Navigator** you can view any saved file and convert it to a different file format using the **Convert File(s)** function.

To set plugin defaults, click **Customise > Plugin preferences**, or in the **Function Chooser**, type **Plugin Defaults** and press **Enter**. In the Plugin Defaults form, select the **GMSG-OMF** tab.

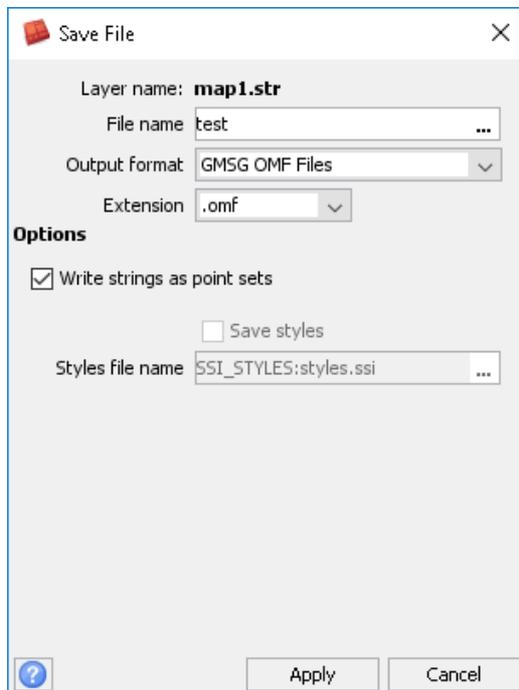
To set the default to save as point-set elements, select the **Write strings as point sets** check box. To set the default to save as predefined data-set elements, clear the check box.



To save an SDM, DTM or string file in Surpac as an OMF file, click **File > Save as**, or in the **Function Chooser**, type **File Save (SF)** and press **Enter**.

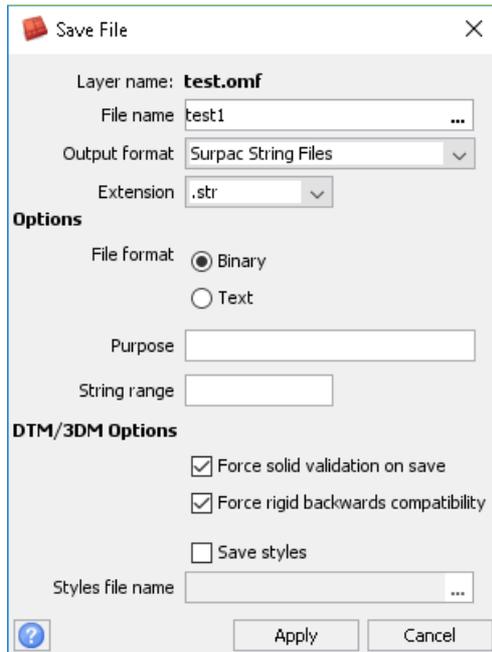
In the Save File form, select **GMSG OMF Files** in the **Output format** field and click **Apply**.

Surpac saves the DTM or string file as an OMF file in the current working directory.

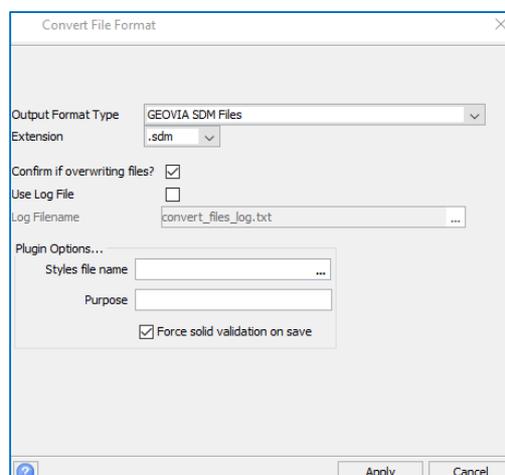


To save an OMF file in Surpac as an SDM, DTM or string file, choose **File > Save as**, or in the **Function Chooser**, type **File Save (SF)** and press **Enter**.

In the Save File form, select **Surpac String Files** in the **Output format** field and click **Apply**. Surpac saves the OMF file as a string file in the current working directory. Similarly, you can save an OMF file to an SDM or DTM file.



You can also convert between SDM, DTM, string files, and OMF files without using the **Save As** function. To do this, right click on a file in the **Navigator** tree, select **Convert File(s)**, and select the file format you want to convert to.



2.3.2 3DEXPERIENCE Platform

You can import and export OMF data on the **3DEXPERIENCE** platform.

To import OMF data into the **3DEXPERIENCE** platform, in the top bar, click **Add > Import**. On the *Import* form, select:

- **OpenMiningFormat (*.omf)** as the format.
- The data source.
- The location where you want to save the data.

You can also use the **Filter Objects** option to select specific objects in the OMF file for import.

Saving converts triangulations (as closed and open tessellated surface), lines (including boreholes stored as lines), and small to medium-sized point sets into CATIA geometry, such as VPLM (Virtual Product Life Cycle Management) Product Structure, Part Design features, and CGR (CATIA Graphical Representation) objects. You can view the imported data in the tree, and you can display it in the work area.

To export OMF data from the **3DEXPERIENCE** platform, in the tree, select the node for the data you want to export (sets of polylines, surfaces, etc.).

In the top bar, click **Share > Export**, and on the *Export* form, select:

- **OpenMiningFormat (*.omf)** as the format.
- The location where you want to save the file.

Saving converts VPLM AEC (Architecture Engineering and Construction) Product Structures and any associated geometry data into OMF binary format.