Current Affairs
A Window on Software Engineering

Shape Files in MineSight 3-D v.3.40

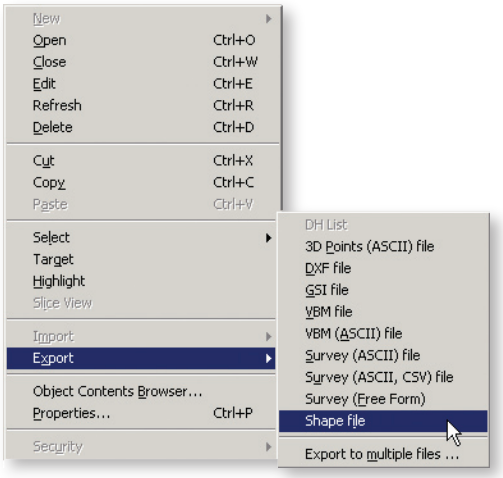
For those who work with GIS software such as ARC/INFO®, the ability to export and import **Shapefiles** has been added to MineSight® 3-D. **Shapefiles** support polygons (areas), polylines (lines), and points. Importantly, they contain spatial and attribute information for these object/data types that can be transferred between GIS software packages, including MineSight® 3-D.

Shapefiles consist of a main file (with .shp extension), an index file (.shx extension), and a dBASE table file (.dbf extension).

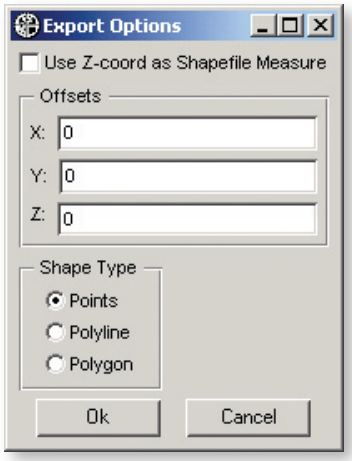
More specifically, according ESRI's Shapefile whitepaper document:

> "An ESRI shapefile consists of a main file, an index file, and a dBASE table. The main file is a direct access, variable-record-length file in which each record describes a shape with a list of its vertices. In the index file, each record contains the offset of the corresponding main file record from the beginning of the main file. The dBASE table contains feature attributes with one record per feature. The one-to-one relationship between geometry and attributes is based on record number. Attribute records in the dBASE file must be in the same order as records in the main file."

Exporting Shape files from MineSight® 3-D



Export to Shape files.



Shapefiles Export Options dialog.

Offset values are added to the vertices of the shape file on export. If the **Use Z-coord as Shapefile Measure** is toggled ON, then the Z-coordinate of the object is used as the **Shapefile** measure.

Any offset values are added to the vertices of the **Shapefile** when the objects are exported.

When data is exported from MineSight® 3-D to **Shapefiles**, solids are disallowed and are not processed. For instance, you could have an object with lines, points and solids. The lines and/or points (depending on the option you choose) will pass through, but the solids are ignored. In fact, if the object contains multiple shape types (points, polylines, and polygons), then only the type specified on the **Export Options** dialog will be processed to the output file. In that case, you must choose one **Shape Type** to export.

If the object you want to export contains only solid(s), then it will not be processed and an error message will be displayed in the message window.

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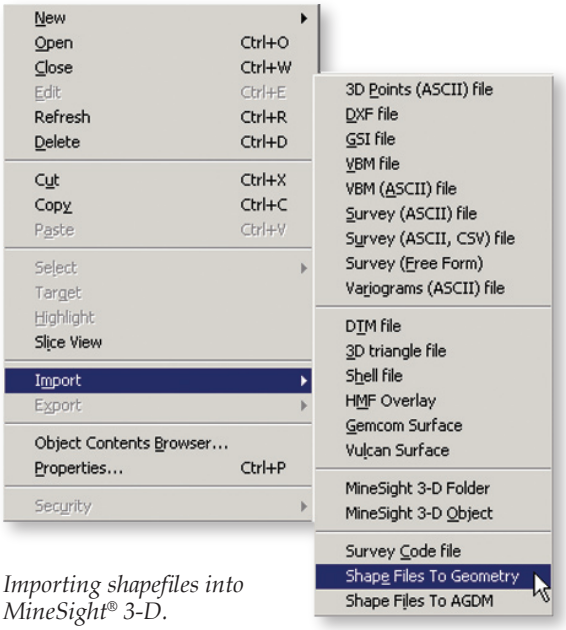
Error message displayed when exporting just Solid(s) to Shapefiles.

Since Geometry objects are not associated with an attributed database, only the main **Shapefile** (.shp) and index file (.shx) are created on export. However, since Geometry View objects are geometry stored in a relational, attributed database, these objects are exported to three files: a main **Shapefile** (.shp), an index file (.shx), and a dBASE table file (.dbf).

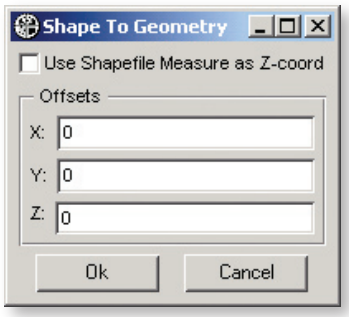
Importing Shape files from MineSight® 3-D



Importing shapefiles into MineSight® 3-D.

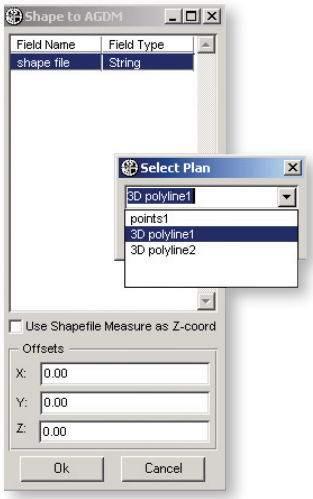
Shapefiles can be imported into MineSight® 3-D as either straight Geometry objects or into an already existing AGDM (attrdb13_16.mdb).

If the **Shapefiles** consist of just the main file (.shp) and the index file (.shx), then the data can only be imported to Geometry since no attributed data (.dbf) file exists. Remember, the dBASE file (.dbf) contains the attribute records. If the shape file consists of all the file type extensions (.shp, .shx, and .dbf), then the data can be imported directly into the AGDM.



Import Shapefiles to Geometry.

When importing **Shapefiles to Geometry,** the dialog is identical to exporting objects to **Shapefiles**. If the **Use Shapefile Measure as Z-coord** is toggled ON, the **Measure value** in the **Shapefile** is used as the Z-coordinate for the imported shape. Otherwise, the Z-coordinate of the **Shapefile** is used as the Z-coordinate of the imported shape. In other words, if this option is toggled OFF, the shape will be imported at the same elevation as the original.



Import shapefiles to AGDM.

As in exporting, any offset values entered are added to the vertices of the **Shapefile** before the data is imported.

After first making the connection to an AGDM and then selecting the **Shapefile** to import from the file chooser (.shp extension), the **Shape to AGDM** dialog will be displayed. Shown on this dialog are all of the attribute names and values that are associated with the selected **Shapefile**. You can select one or multiple rows of attributes to import into the database. Click on OK, and the **Select Plan** dialog will be displayed. Here you can select an existing plan from the dropdown menu or you can type in a new name to create a new plan. The **Shapefile** will then be imported into the AGDM.

Data imported into the AGDM can be viewed from a Geometry View object  .

More information about **Shapefiles** can be found on the ESRI website, in the Shapefile white paper: http://www.esri.com/library/whitepapers/pdfs/shapefile.pdf .