



Current Affairs

A Window on Software Engineering



World Files and Sirovision® Added to the Texture Surface Tool

For MineSight® 3-D v.3.40, two powerful options have been added to the **Texture Surface** tool that will enable you to use this tool to do detailed geologic interpretation of your data. These additions are World Files and Sirovision®. World files are small text files that contain geo-reference information for an image and are used to more accurately locate or place images on a surface. Sirovision® is a very accurate, three-dimensional imaging and analysis system that is used for geologic and geotechnical assessment.

World Files

World files are small text files that contain the size and position (geo-reference) information for an image. A typical world file might look like:

```
1.5    -the dimensions of a pixel in
      project units in the X direction.
0      -rotation term for row.
0      -rotation term for column.
-1.5  -the dimension of a pixel in
      project units in the Y direction.
402800 -the X coordinate of the center of
      pixel 1,1 (upper-left pixel).
411450 -the Y coordinate of the center of
      pixel 1,1 (upper-left pixel).
```

World file formats have different extensions for different image types. When an image is read (using **Menu | Open** or **File | Insert File**), MineSight® 3-D looks for a matching world file using the following extensions:

- *.tfw = world file for TIFF image
- *.pgw = world file for PNG image
- *.jgw = world file for JPEG image

If no world file exists, the image is inserted so that the upper left corner is in the center of the screen and the pixel size is set to one.

Additional information about World files is available at the following websites:

http://www.softree.com/V4_Examples/T-024/TIP024.htm

http://exchange.manifold.net/manifold/manuals/5_userman/mfd50Import_Image__TIF_Various_types.htm

Sirovision®

Sirovision® creates 3-D images of surfaces (e.g., underground walls and open pit faces) that allow you to map and analyze rock mass structures in accurate detail. Sirovision® technology comes from © Copyright CSIRO Australia, 1997-2002 and is based on stereo imagery from digital cameras.

According to Sirovision®:

Sirovision® uses digital images to generate three-dimensional data (x,y,z coordinates integrated with visual data) that can be used in many mining and construction applications. It has been designed to meet the requirements of the mining and construction industries and can be used in the field to provide 3-D data in minutes. Data is generated at thousands of 3-D points per second and the system provides facilities for accurate mapping and analysis such as characterization of discontinuity orientation patterns and measurement of discontinuity spacing and persistence for use in many areas of mining and civil engineering.

Sirovision® can be used in

- Slope stability analysis
- Blast design
- Mine design

More information and example Sirovision® files can be obtained from the Sirovision® website:

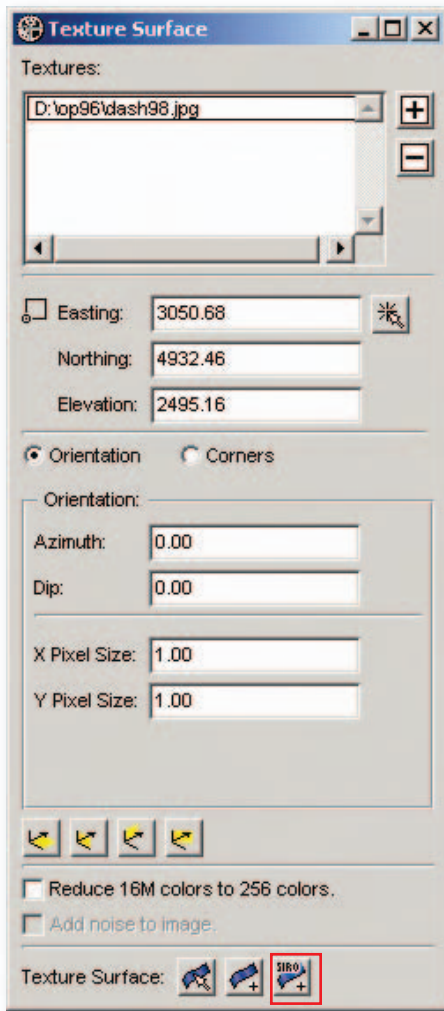
http://www.sirovision.com/Sirovision_Summary.htm

Using World Files and Sirovision®

When you invoke the Texture Surface Tool (via **Tools | Texture Surface tool...**), the following dialog is displayed.

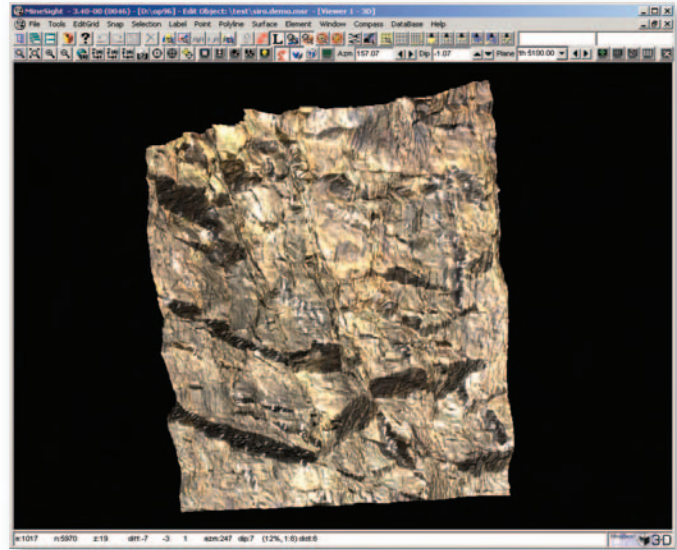
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The Texture Surface tool dialog. If World Files exist, they are automatically used when the matching image is selected. The icon to use a Sirovision® file is outlined in red.

on the geometry object. By default, this geometry object is assigned the “geometry material type.” If this object is displayed in wireframe, go to the **Object Properties | Surfaces** tab page and toggle **ON Show Faces** and toggle **OFF Show Lines**.



This picture shows the Sirovision® demo image surface as created and displayed in MineSight® 3-D representing a real rock face. This surface is only nine meters across and shows substantial detail. This demo file is available on the Sirovision® website.

Both of these exciting options make **Texture Surface** a very powerful tool. Be sure to look for them in MineSight® 3-D v.3.40-00.

Whether you want to use World Files or Sirovision® files, the first step when using this tool is to add an image file by clicking on the **+** icon to bring up the file chooser, and then selecting the image you want to use to texture a surface. The path to the image you selected is then displayed in the **Texture Surface** dialog (as shown).

World files have a *.tfw, *.pgw, or *.jgw extension and otherwise have the same name as the associated image file. If the image file you want to use has a matching World file, the World file will be read and the input fields on the **Texture Surface** dialog will reflect the values found in the World file.

Sirovision® files are specially made *.tif files. In the file chooser, select the Sirovision® image you want to use, then click on the **+** icon. You will then be given the option to choose an existing geometry object or to create a new geometry object. You can then “target”

Correction: In the article *Shape Files in MineSight® 3-D v.3.40* found in the December 2004 issue of *MineSight® in the Foreground*, all references to file format **.dfb** should read **.dbf**. Please make note of the change.