

GE GRAPHIC IMAGER[®] for Adobe[®] Photoshop[®]



Tutorial Guide

Tutorial Guide

In this tutorial you will learn the basics of Geographic Imager via a series of tutorial exercises.

The included exercises cover the following operations:

- Opening a File
- Specifying a Reference File
- Specifying a Coordinate System
- Transforming
- Mosaicking
- Transforming a Mosaicked Image
- Tiling
- Georeferencing
- Exporting a Reference File
- Convert To GeoTIFF
- GeoCrop
- Marquee Crop
- Running a Script

Tutorial Exercises

All the data for the tutorial exercises can be found in the following locations:

Windows XP: *C:\Program Files\Avenza\Geographic Imager\Tutorial data*

Windows Vista: *C:\Program Files\Avenza\Geographic Imager\Tutorial data*

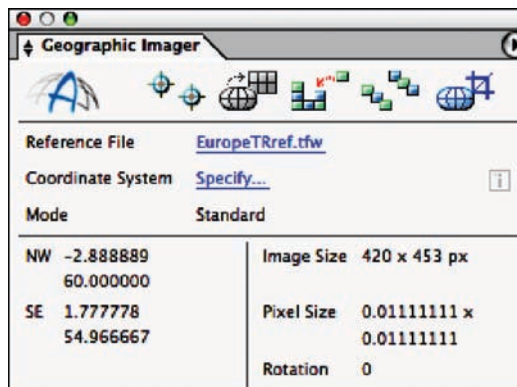
Mac: */Applications/Avenza/Geographic Imager/Tutorial Data*

OPENING AN IMAGE

1. Open the *'EuropeLL.tif'* and *'EuropeTR.tif'* files. in Photoshop via **File > Open**.
2. Ensure that the *'EuropeTR.tif'* file is the active document and view the Geographic Imager palette. If the palette is not open/visible, it may be accessed under the following: **File > Automate > Geographic Imager: Show Palette**
3. Keep these images open for the next exercise (Specifying a Reference File).

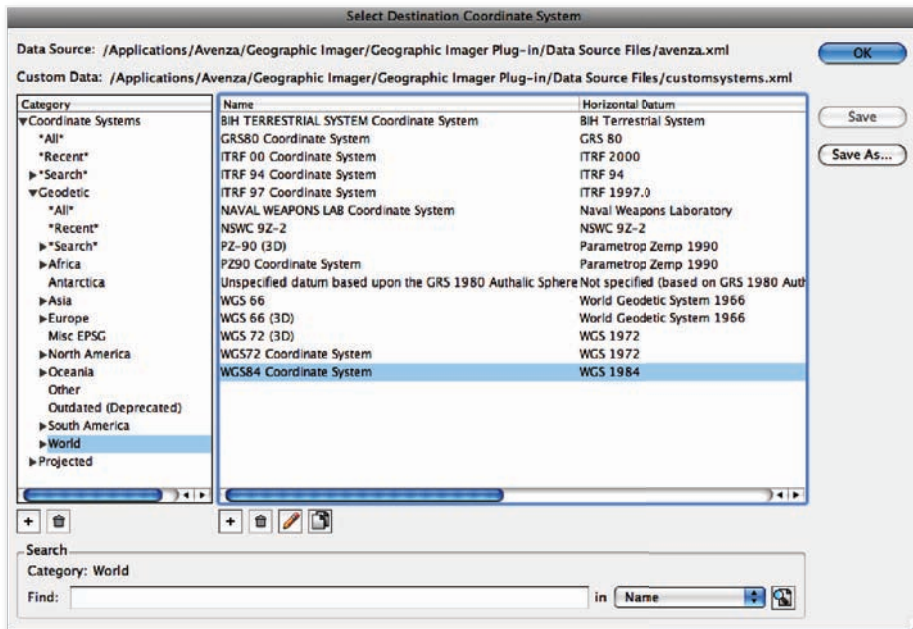
SPECIFYING A REFERENCE FILE

1. With the *'EuropeTR.tif'* file still the active document, click the **Specify...** link for the reference file in the Geographic Imager palette. This allows the user to specify a reference file containing geographic coordinate information for the active image.
2. Select the *'EuropeTRref.tfw'* file and click the **Open** button. Once selected it will be listed in the Geographic Imager palette as the reference file.
3. Keep these images open for the next exercise (Specifying a Coordinate System).




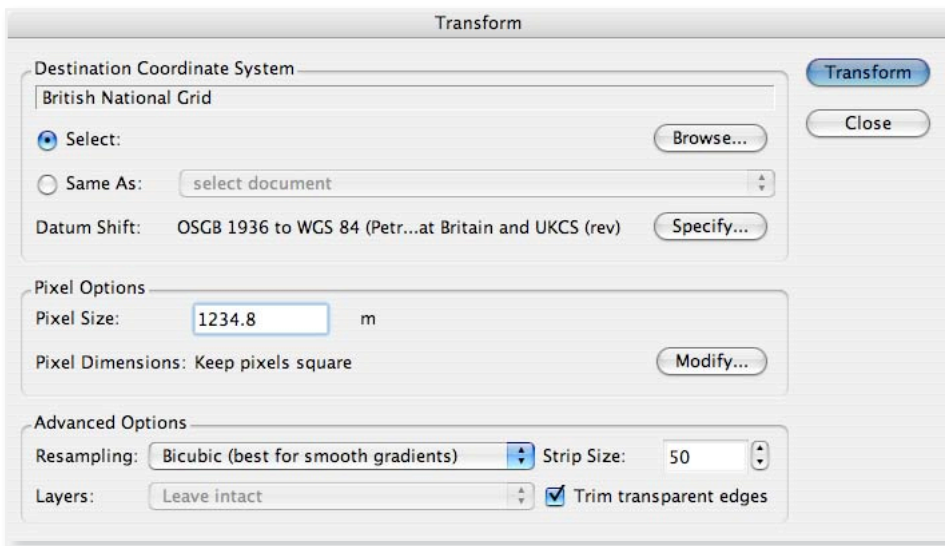
SPECIFYING A COORDINATE SYSTEM

1. With the *'EuropeTR.tif'* file still the active document, click the **Specify...** link for the Coordinate System.
2. Click the **Browse** button.
3. Expand the **Coordinate Systems > Geodetic > World** category, select the **WGS84 Coordinate System** and click the **OK** button.
4. Click the **OK** button in the **[Select Destination Coordinate System]** dialog to finalize the selection. This sets the current coordinate system to be assigned to the active image.
5. Keep these images open for the next exercise (Transforming).



TRANSFORMING

1. With the 'EuropeTR.tif' file still the active document, click the **Transform**  button in the Geographic Imager palette.
2. Click the **Browse** button.
3. Expand the **Coordinate Systems > Projected > Europe > United Kingdom** category, select the '**British National Grid**' coordinate system and click '**OK**'. This allows the image to be transformed to the chosen coordinate system selected. At this point Geographic Imager will automatically select an appropriate datum shift to be performed during the transformation process. If this datum shift needs to be changed the Specify button can be clicked to open the [Specify Datum Shift] dialog so the desired datum may be selected. *See page (39 & 40) in the user guide for an explanation of datum shift.*
4. Change the **Pixel Size** to **1234.8**, leave the other options as the defaults.
5. Now click the **Transform** button in the [Transform] dialog. The image will be transformed.



6. Make the 'EuropeLL.tif' file the active document and click the **Transform** button.
7. Click the **Same As** radio button and choose the 'EuropeTR.tif' (British National Grid)' file from the [Same As] dropdown list.

8. Click **Yes** when asked 'Do you want to update the pixel size and central latitude to match these of the selected document (e.g. for the purpose of mosaicking)?'
9. Click the **Transform** button in the **[Transform]** dialog. The image will be transformed into the British National Grid coordinate system.
10. Close all images without saving before proceeding to the next exercise.



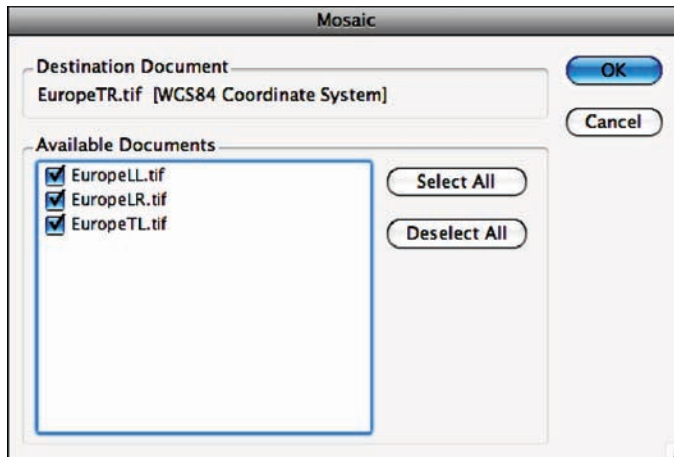
MOSAICKING

1. Open the *'EuropeTL.tif'*, *'EuropeLL.tif'* and *'EuropeLR.tif'* and *'EuropeTR.tif'* files.
2. Make the *'EuropeTR.tif'* the active document and specify the *'EuropeTRref.tfw'* file as the reference file.

Also, specify the coordinate system as the same as the other documents. This can be done by clicking the **Specify** hyperlink in the coordinate system section of the Geographic Imager palette and selecting one of the other images in the **Same As** drop down menu. The images to be mosaicked must all have the same coordinate system, referencing information and pixel scale.

3. Make the *'EuropeTL.tif'* the active document and click the **Mosaic** button. 

A list of available documents for mosaicking will be displayed in the **[Mosaic]** dialog. Select the desired documents you wish to combine or click the **Select All** to enable all those listed. Any open documents that do not satisfy the mosaicking criteria will be included in the list however these will be greyed out and a reason will be displayed alongside the file name.




4. Click the **OK** button to close the dialog and perform the mosaic operation.
5. Keep these images open for the next exercise (Transforming a Mosaicked Image). Proceed to the next page to transform the mosaicked image.

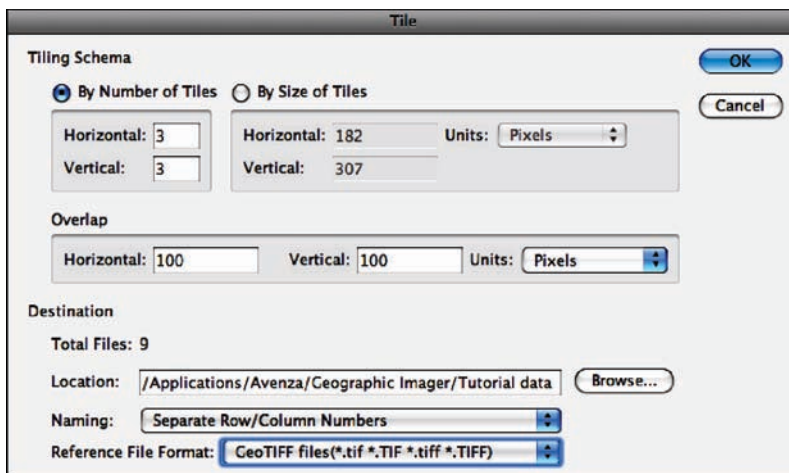
TRANSFORMING A MOSAICKED IMAGE

1. Using the Transform function, select the **British National Grid** coordinate system under **Projected > Recent**
2. Click the **Transform** button in the **[Transform]** dialog to complete the transformation. The image will be transformed into the British National Grid coordinate system.
3. Keep these images open for the next exercise (Tiling).




TILING

1. Continue using the transformed mosaicked image.
2. Using the transformed mosaicked image select the **Tiling**  button from the Geographic Imager palette.
3. In the **[Tiling]** dialog select the **'By Number of Tiles'** radio button, then enter 3 into each of the *'Horizontal'* and *'Vertical'* text fields. This will result in the creation of 9 new images.
4. In the **Overlap** fields enter **100 pixels for both horizontal and vertical fields**. This will result in each image having a 100 pixel overlap with each of its abutting images.
5. In the destination section provide a path to a directory to which the images will be created.
6. In the **Naming** field select the **Separate Rows/Column Numbers** then click the **OK** button. Each image will contain the name of the original image plus a reference to the row and column to which it represents.
7. Select **GeoTIFF files** as the **reference File Format**. The destination images will be assigned.
8. When the process has completed navigate to the destination directory and view the images.
9. Close all open images without saving.



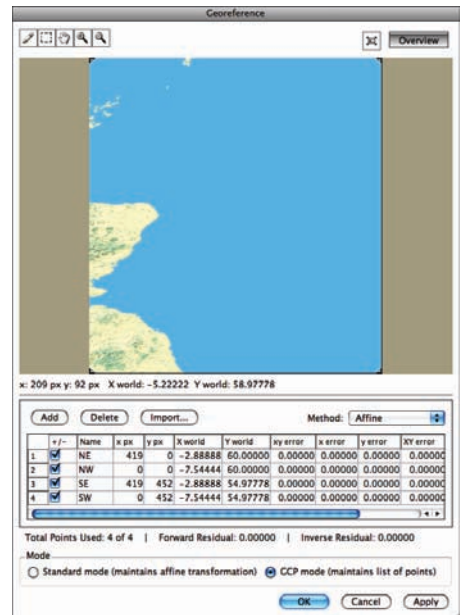
GEOREFERENCING

1. Open the [**Preferences**] dialog by clicking the button in the top right corner of the Geographic Imager palette.
2. Ensure that the **Default Reference Format** is set to **World Files** and the 'Use GeoTIFF for referencing' checkbox is unchecked.
3. Change the **Reference Point Precision** to **5**. Then click the **OK** button.
4. Open the 'EuropeTR.tif' file.
5. With this image active, select the **GCP** button. 
6. Select the **Add Points** tool (pencil, top left) and add 2 points at random locations by clicking on the image in the Preview window.
7. Edit the Pixel Coordinates for both points in the table by toggling the check box beside the point.
Give **Point 1** a pixel coordinate of $X_{px} = 0, Y_{px} = 0$
Give **Point 2** a pixel coordinate of $X_{px} = 419, Y_{px} = 0$
8. Click the **Add** button twice and enter pixel coordinates for the 2 new points by toggling the check box beside the point.

Point 3 enter a pixel coordinate of $X_{px} = 0, Y_{px} = 452$
Point 4 enter a pixel coordinate of $X_{px} = 419, Y_{px} = 452$

9. Enter geographical coordinates for all 4 points in degrees.

Point 1: $X_{world} = 1.76667, Y_{world} = 60$
Point 2: $X_{world} = -2.88888, Y_{world} = 60$
Point 3: $X_{world} = 1.76667, Y_{world} = 54.97778$
Point 4: $X_{world} = -2.88888, Y_{world} = 54.97778$



10. Select the **Add Points** tool and add 1 more point at a random location in the Preview Panel.
11. Highlight **row 5** in the Table and click the **Delete** button.
This allows the removal of points that may adversely affect referencing and/or transformation.
12. Click the **OK** button to continue.
13. Specify the coordinate system as **WGS84 Coordinate System**.
14. Transform the image to **British National Grid**, specifying the pixel size as **1234.8** and the other options as the defaults.
15. Keep this image open for the next exercise (Convert to GeoTIFF).


CONVERT TO GEOTIFF

1. With the *'Europe TR.tif'* file open from the previous exercise and as the active document click on the **Options** button in the Geographic Imager palette and select the **Convert to Geotiff** function.
2. The **[Convert]** dialog will open. This is where you can specify the name and location of the outputted Geotiff. Specify the name of the image as *'EuropeTRCrop.tif'* and click **Save**.

Now the reference file for the image has been changed to reflect the newly created reference file.

3. Keep this image open for the next exercise (GeoCrop).

GEOCROP

1. With the same file open and as the active document select the **GeoCrop** button  from the Geographic Imager palette.
2. In the **[GeoCrop]** dialog click on the **Geodetic** radial button in the *Top-left* and *Bottom-right corner* section and enter the following values:

Top-Left Corner

X: -2.76667 deg

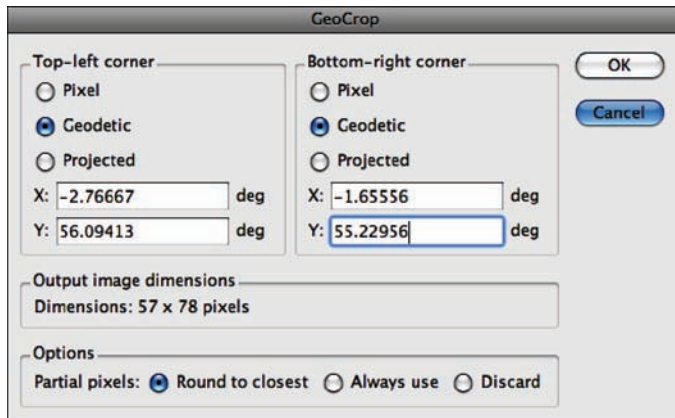
Y: 56.09413 deg

Bottom-Right Corner

X: -1.65556 deg

Y: 55.22956 deg

3. In the **Options** section leave the selection as **Round to Closest**.



4. Select **File > Save** to save the image. The cropped image and new extents along with the georeference information will be saved.

MARQUEE CROP

1. Reopen the 'Europe LL.tif' file and select the **Crop** tool from the Photoshop toolbar.
2. Select an area near the centre of the image to define the extents of the post-cropped image and press the **enter** key on your keyboard to complete the crop.
3. Select **File > Save As** to save the image. Specify a location and name as desired. The cropped image and new extents along with the georeference information will be saved.

RUNNING SCRIPTS

1. Ensure that all images are closed.
2. Go to **File > Scripts > Browse**
3. Locate the *ScriptBatchProcessingExample.jsx* in the following locations:

Windows XP: *C:\Program Files\Avenza\Geographic Imager\ SampleScripts*

Windows Vista: *C:\Program Files\Avenza\Geographic Imager\SampleScripts*

Mac: *Applications/Avenza/Geographic Imager/Geographic Imager Plug-In/SampleScripts*

Load this Script.

4. Watch how the script will open all four tutorial images, set the source coordinate system, transform to the British National Grid coordinate system and then rotate the canvas 45 degrees.
5. To conclude the Tutorial, click on the **Mosaic** function, select all images and click **OK**.