1. Introduction

This tutorial is intended to familiarize you with the Geomatica Toolbar and describe the basics of viewing data using Geomatica Focus.

All data used in this tutorial is available in the *\Geomatica_v100\demo* directory.

2. Starting Geomatica

To start Geomatica:

a) Double-click the Geomatica desktop icon, or
b) Launch Geomatica from your system's Start menu.

When you start Geomatica using the desktop icon, the Geomatica toolbar opens and Focus starts automatically. All Geomatica applications can be started from the Geomatica toolbar.

3. The Geomatica Toolbar

The Geomatica toolbar provides access to all Geomatica programs.

Figure 3.1: The Geomatica toolbar
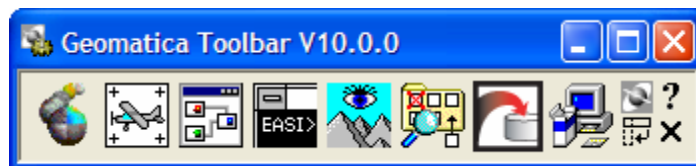
Each button on the Geomatica toolbar provides access to a specific Geomatica program. The Geomatica programs are described below:

Focus
Focus is the main data visualization environment in Geomatica. Focus includes geospatial processing algorithms, data capture functionality, and information extraction and analysis tools.

OrthoEngine
OrthoEngine is a complete photogrammetry environment, offering geometric correction, orthorectification, Mosaicking, and DEM extraction functionality, as well as 3-D visualization and data extraction environments.

Modeler
Modeler is a visual scripting environment that provides an interactive methodology for developing, automating, and batch-processing both simple and complex workflows.

EASI
EASI is a command-line-based scripting environment that provides workflow development as well as customization functionality.

FLY!
FLY! is a visualization tool that renders perspective scenes and interactive 'fly-throughs' by using imagery and elevation information.

Chip Manager
The Chip Manager lets you create and manage image chip libraries that are used as ground controls in orthorectification workflows.

GeoRaster Metadata Mapper
The GeoRaster Metadata Mapper lets you store, index, and manage geospatial files in Oracle 10g databases.

License Manager
The License Manager provides Geomatica licensing and installation information and options.

3. Viewing Data in Geomatica Focus

When Geomatica is started from the desktop icon, Focus starts automatically. The following illustration shows the basic components of the Focus interface.

Figure 2.2: The Focus interface

*A. Menu bar **B.** Toolbar **C.** Maps and Files tabs **D.** Work area **E.** View area **F.** Status bar*
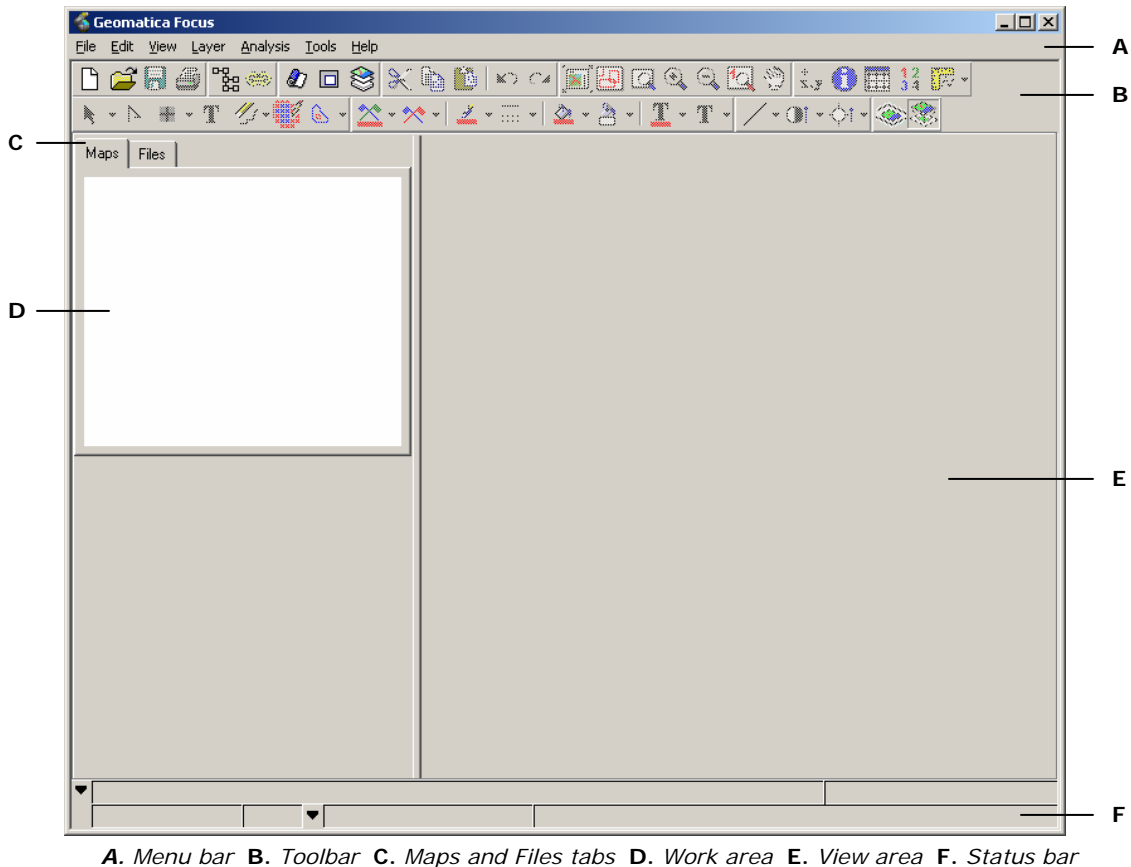
Geomatica Focus is designed to work with geospatial data in more than 100 data formats through PCI Geomatics Generic Database (GDB) technology. This format flexibility, combined with a suite of easy-to-use viewing tools, makes Geomatica Focus the perfect environment for viewing spatial data.

A major strength of Focus is its ability to easily view and navigate databases. This section will show you how to open and view image layers, vectors, and attribute data in Focus.

3.1 Viewing Image Data in Focus

With Geomatica Focus started, you are ready to add data.

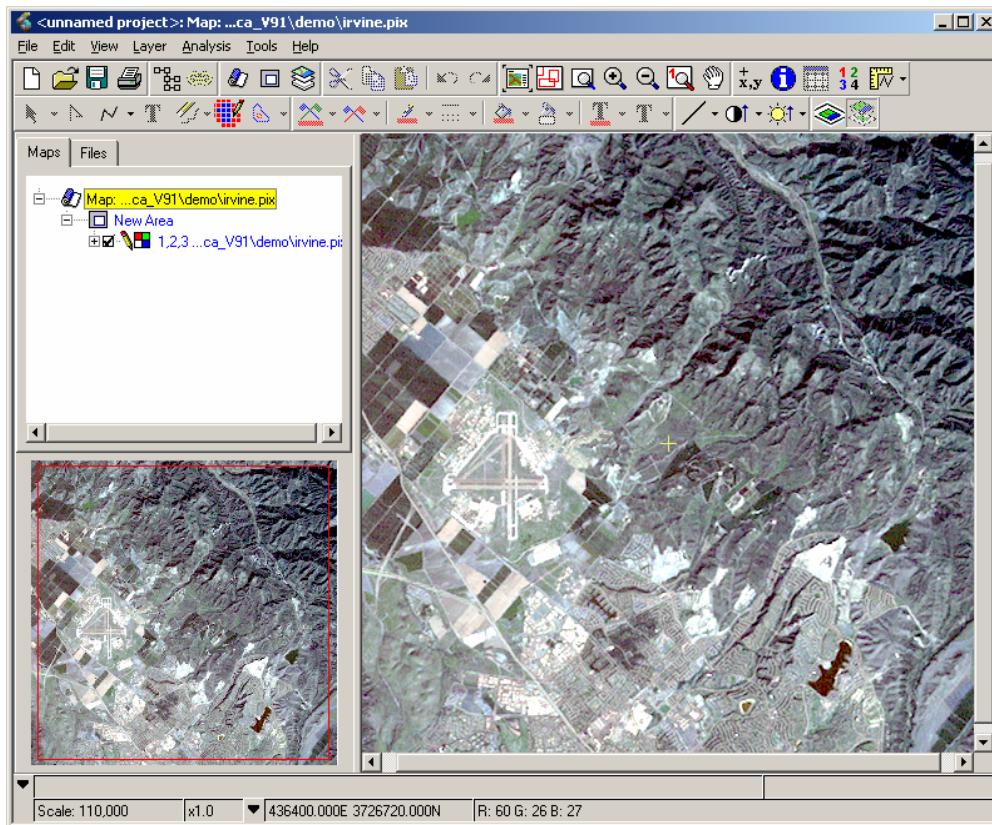**To open an image file in Focus:**

1. In the Focus **File** menu, click **Open**.

   The **File Selector** window opens.

2. In the Geomatica program files, locate and open the **demo** folder.

3. In the **demo** folder, select **irvine.pix**.

4. Click **Open**.

   A Landsat multispectral image of Irvine, California opens in the Focus view area.

Figure 3.1: The irvine.pix image in the Focus View area

3.2 Viewing Vector Data in Focus

When a file is loaded into Focus, a default layer is presented in the viewer and listed in the Maps tree. All other layers contained in the same file are listed in the Files tree. It is possible to load any of these layers into the viewer and Maps tree.

To add a layer to the Files tree:

1. Click the **Files** tab.

   A list of available files and layers are displayed from irvine.pix.

2. Expand the vector layer list of irvine.pix by clicking the ⊞ next to it.

3. Right-click the **Transportation** layer and click **View** on the shortcut menu.

   The Transportation layer displays in the Map tree as well as in the viewer.

3.3 Adjusting Layers in the Current View

In Focus, the Maps tree displays all data layers contained in the View area. You can show or hide the items from the View area by clicking or clearing the check box in the Maps tree next to the item. You can also change the display priority of a layer by dragging it up or down the Maps tree.

To move a layer in the Maps tree:

1. Click the **Maps** tab.

2. Drag the **Transportation** layer to the bottom of the Maps tree.

   The transportation vectors move below the imagery and do not display in the View area.

3. Drag the **Transportation** layer to the top of the Maps tree.

   The transportation vectors display in the View area.

3.4 Viewing Data Attributes

Attributes are characteristics of geographic features typically stored in tabular format. In Focus, attributes can be viewed and edited using the Attribute Manager.

To open the Attribute Manager:

1. In the Maps tree, right-click the **Transportation** layer.

2. From the shortcut menu, click **Attribute Manager**.

   The Attribute Manager opens.

Two attributes are included in the transportation layer. **ShapeID** is an shape identifier and **Attribute** is a code indicating road class for each vector segment.

4. Zoom and Pan Tools

When viewing data in Focus, it is important to be able to navigate the data effectively. The zoom and pan tools allow you to do this quickly and easily.

Figure 4.1: Focus zoom and pan tools

4.1 Zoom Tools

There are several ways to zoom an image in the Focus viewer. The following zoom tools are located on the Focus toolbar:

- Zoom Interactive 🔍
- Zoom In ⊕
- Zoom Out ⊖
- Zoom 1:1 Image Resolution 🔍

To zoom in on an image feature:

1. Click anywhere near the airport (t-shaped object) in the Focus View area.

2. On the Focus toolbar, click the **Zoom to 1:1 Image Resolution** button.

   The image changes to a 1:1 resolution.

4.2 Pan Tool

The Pan tool is available when the View area is not at an overview magnification.

To pan an image:

1. On the Focus toolbar, click the **Pan** button.

2. Drag the image to where you want to move.

5. Image Enhancement in Focus

The Focus toolbar includes commands for quickly enhancing and adjusting the appearance of your images. These enhancements include contrast and brightness adjustments.

Figure 5.0: The Focus image Enhancements, Contrast and Brightness buttons

5.1 Applying Image Enhancements

The standard Focus image enhancements are Linear, Root, Adaptive, Equalization, and Infrequency. Image enhancements can be automatically applied using the Enhancements menu.

To apply an enhancement to an image layer:

1. On the Focus toolbar, click the arrow next to the **Enhancements** button.

2. Select an enhancement from the Enhancements menu.

5.2 Adjusting the Image Contrast and Brightness

Interpreting image data is often made easier by adjusting the image contrast and brightness.

To increase or decrease the image contrast or brightness:

1. On the Focus toolbar, click the arrow next to the **Contrast** or **Brightness** button.

2. Select **Decrease** or **Increase** from the menu, depending on how you want to adjust the image.

You Have Questions, We Have Answers

If you have questions or would like a personal demonstration, contact us today.

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