Digitizing Background Files in ENC EDITOR

By Pat Sanders

One of the new features of HYPACK® 2009 is the ability to bring background files into the ENC EDITOR display. This opens up the possibility of using the mouse to digitize the information and save it out to S-57 format.

1. **Get yourself a background file**.

   While sitting in my hotel room at Muscat, Oman, I decided to test a couple of new routines in the HYPACK® 2009 version. The first was to use the IMAGE GEO REFERENCE EDITOR.

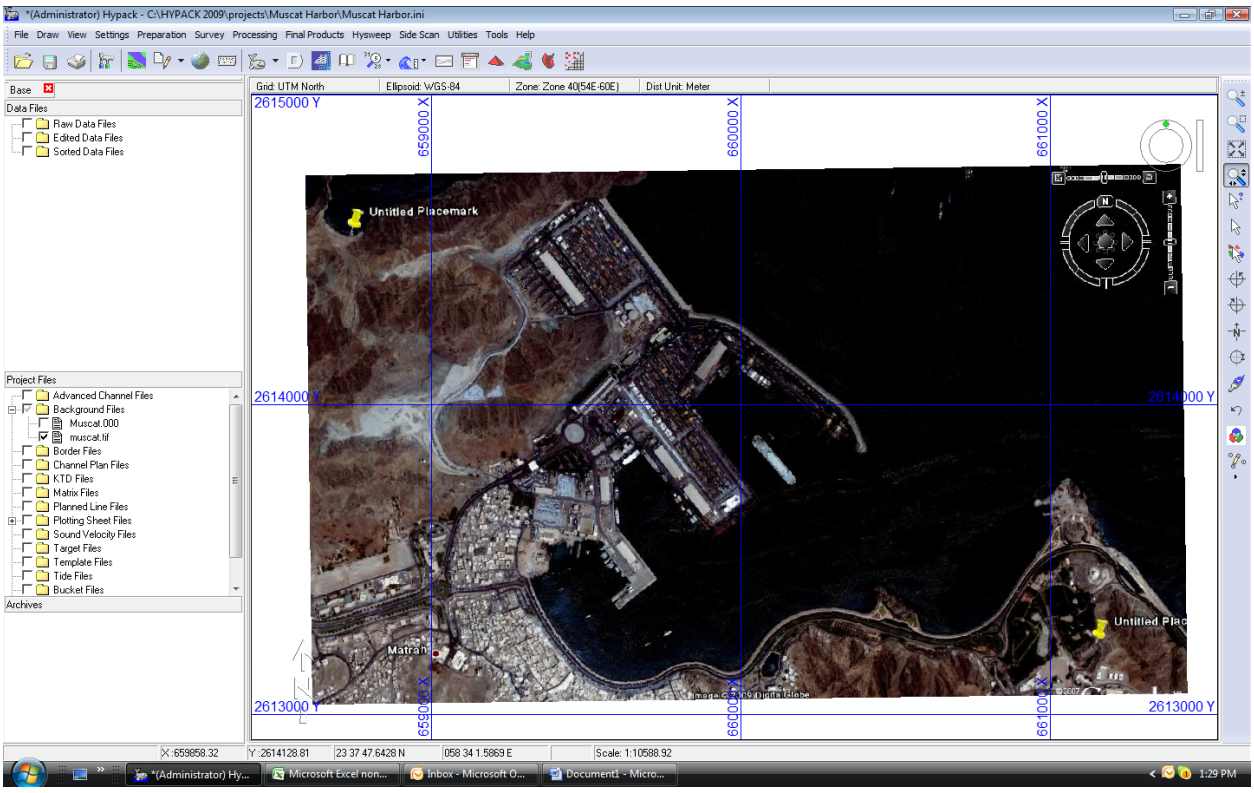
   a. **Load up Google Earth™ and find your area of interest.** I punched in Muscat and centered the image of the harbor.

   b. **Mark two targets (noting the WGS-84 Lat-Long) in Google Earth™.**

   c. **Take a screen capture, paste the image into a graphics program and save it out as a BMP file.**

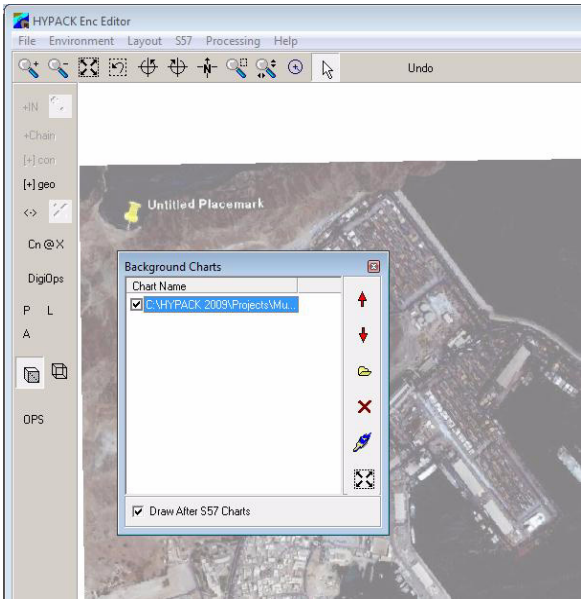
   d. **Using the IMAGE GEO REFERENCE EDITOR in HYPACK® 2009, reference the two targets and do a 2-Point Registration, saving the picture out to a GeoTIF file.** The resulting picture is shown below.

FIGURE 1. *Geo-referenced Image in HYPACK®*



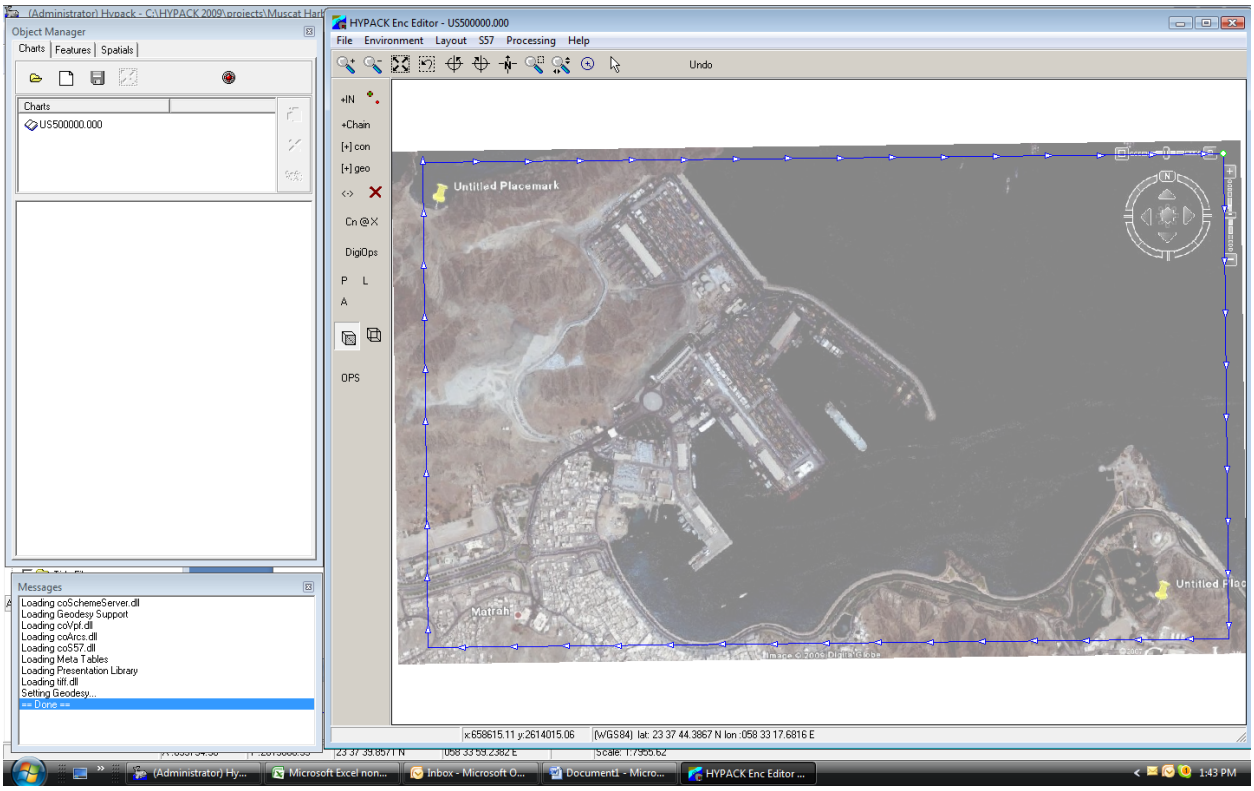
2. **Open the ENC EDITOR and Load the GeoTIF:**
   a. Under the Final Products menu of HYPACK® 2009, **start the ENC EDITOR**.
   b. **Load the GeoTIF into the background.**
      i. **Select 'File – Background Charts**'.
      ii. **Center the chart in the display.** Highlight the file by clicking on the name, then click the paintbrush and zoom the extents to get it up on the screen.
      iii. **Set the chart transparency.** You can then double-click on the filename and set the transparency to about 50%. Finally, check the 'Draw After S-57' box. This will allow you to see the S-57 chart with the GeoTIF semi-transparent above the chart.

FIGURE 2. *Loading the GeoTif to the ENC EDITOR*



3. **Create a New S-57 File.**
   a. **In the Object Manager window, select the 'Chart' tab and click the 'Create New Chart' icon.**
   b. **I used the 'Set with Cursor' option, clicking in each of the four corners of the GeoTIF and then pressing the OK button.**
   c. **You can then modify the properties of the S-57 chart** (if you KNOW what you are doing). The extents of the chart can then be drawn on the screen.

FIGURE 3. *Showing the Full Extents of the GeoTiff in ENC EDITOR*



4. **Define Land/Water Areas**
   a. **At each 'border' between the land and sea, use the 'Chain' tool to digitize a polyline.** The ends of the polyline should (initially) extend beyond the boundary of the S-57 file.

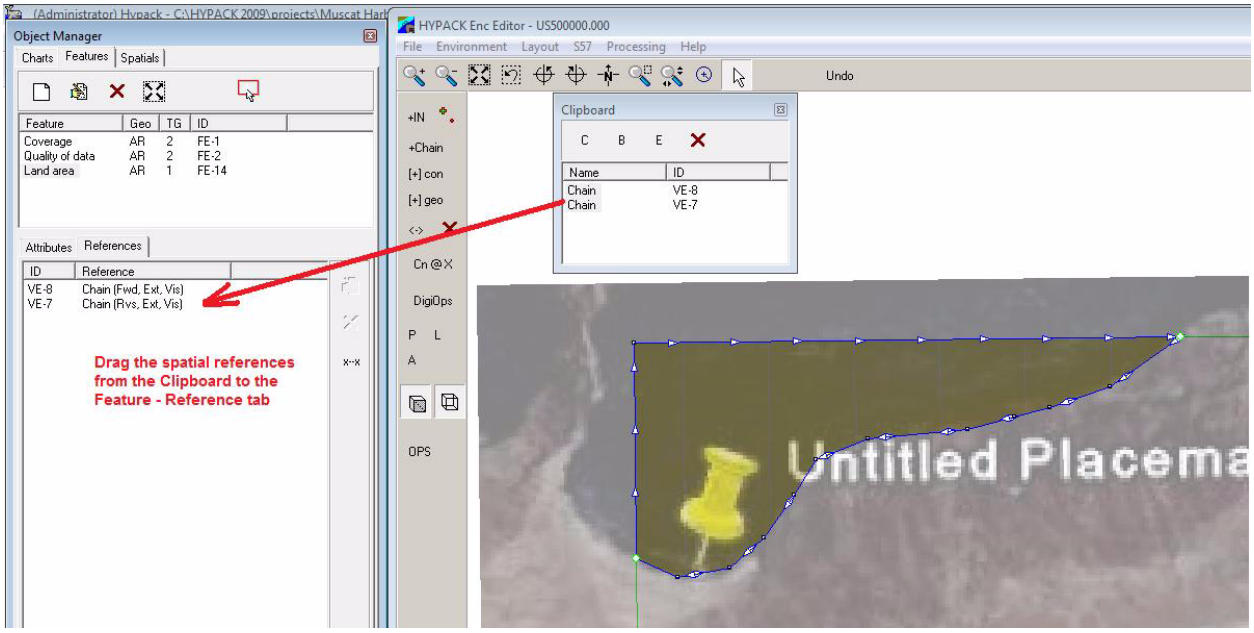
FIGURE 4.

b. Once you have completed each chain, **create a 'connecting node' at each point where the chain intersects with the border**.
   i. **Using the 'arrow' icon, hold the shift key to mark each polyline**.
   ii. **Click the 'Cn@X' button.** It will highlight the intersection point and ask you if you want to create the Connected Node at the highlighted point.
   iii. **After you have completed the connected nodes, select and delete the chains outside the chart bondary and the connected node.** Your polyline will now look like the following:

FIGURE 5. *Final Area Spatial Object*

c. **Create the Feature Object.**
   iv. **In the Object Manager window, select Features – New Feature**.
   v. **Tell it that you want an 'Area' feature and start with a 'Land Area'**. When you say OK, it creates the feature, but there is not yet a spatial reference (an enclosed polygon) associated with the feature.
d. **Assign spatial information to the Feature Object.**
   i. **Inside the primary ENC EDITOR window, click the arrow icon, hold the 'Shift' key and select each polyline that makes up an enclosed area**. Each polyline will be listed in the Browse window.
   ii. **Click and drag the 'chain' info from the Browse window into the Feature's reference window.** If the polylines are all in the correct direction (feature on the left), it should fill in as a land area.

FIGURE 6. *Assigning the Spatial Information to the Land Area Object*



iii. **Check that the polylines connect end-to-end-to-end and in the proper sequence.** You can always check the sequence by clicking the 'x—x' option on the right-hand side of the Features – Reference tab.

By repeating this process for the different area features, you can convert the GeoTIF to an S-57 file, as shown below:

FIGURE 7. *Original GeoTIF*

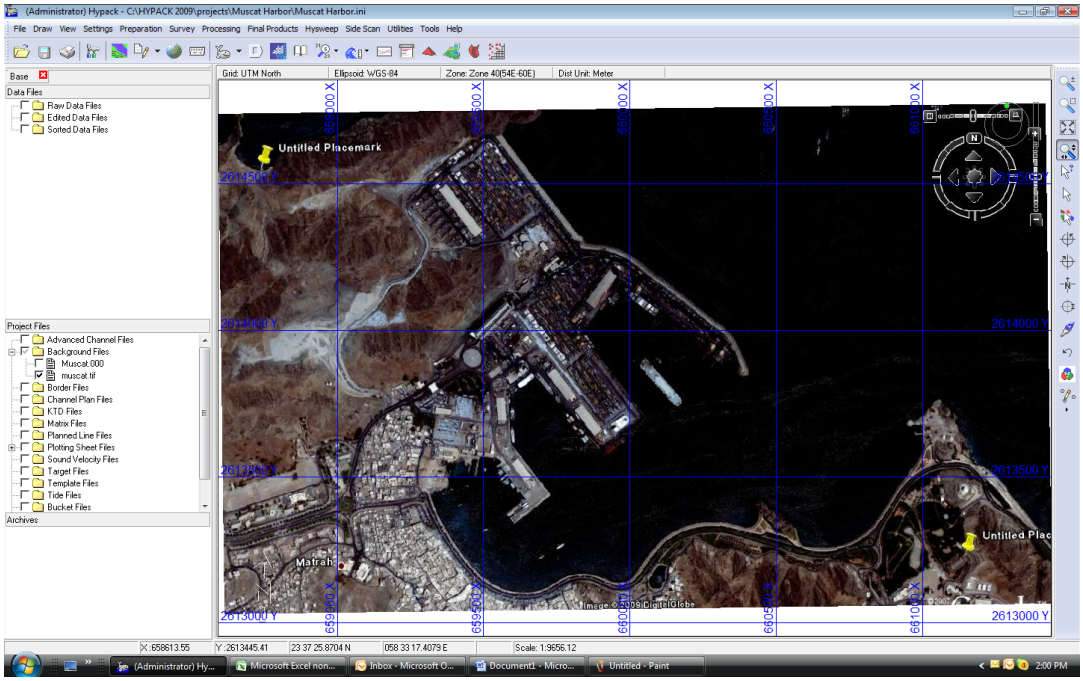


FIGURE 8. *, Resulting S-57*