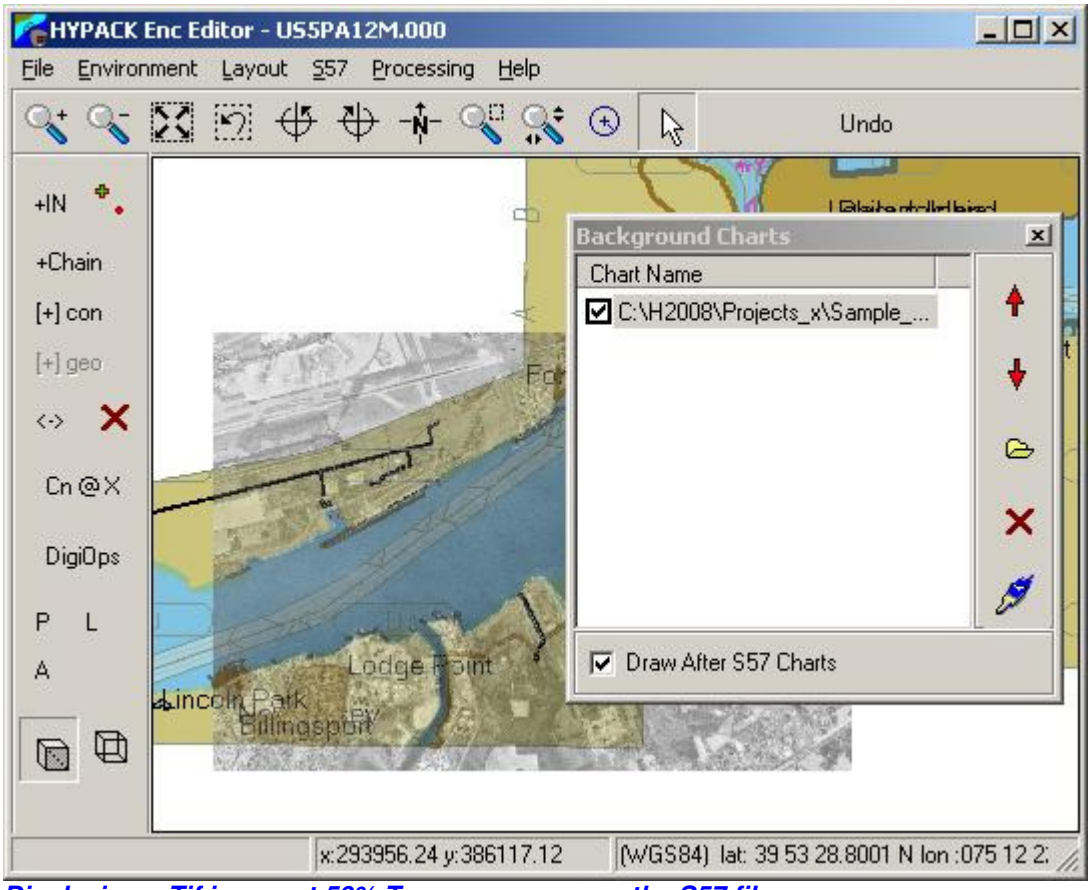
Enhancements to the ENC EDITOR

By Bill Bergman

Background File Display for Digitizing

Background Charts can now be displayed in the encEditor for use in orientation or as a background image for digitizing. The Background Charts dialog shown below is accessed from the File menu in the Main Editor Window. You can control the drawing order of charts relative to one other(click and drag or use the up/down arrows) as well as whether charts will display before or after the S57 Chart being edited (check the Draw After S57 Charts box). If you are drawing a chart on top of the S57 chart, you may wish to double-click the background chart to control opacity/transparency.



Displaying a Tif image at 50% Transparency over the S57 file

Digitizing Tools

The S57 format is powerful but perhaps a bit difficult to use, while our DG2 editor is more intuitive but lacks the ability to share geometry between features. In this version of the Enc Editor, we have added a digitizing toolbox to allow the direct digitizing of features. That is, in a single operation, you define both the object and its related geometry.

For instance, to setup for digitizing Safe Water Buoys, do the following:

1. **Open the Digitize toolbox** by clicking on DigiOps to open the Dialog pictured below.
2. **Generate the Feature**, in this case the Safe Water Buoy.
    a. Click on the ellipsis for New Feature,
    b. select Feature Class=Geo, Geometry=Point, and Feature=Buoy, safe water.
    c. Click OK.
3. **Select the isolated node tool and click the location of each buoy you would like on the chart**.
4. **Select each buoy and assign appropriate attributes**. You may select multiple features and attribute them at once as a time saving feature.

New Digitize Dialog for 1 step feature creation

Creating features with line or area geometry is more involved, but the Digitizing toolbox has support to make it easier. For instance, a line feature is defined by 1 or more spatial chains. After selecting your feature with line geometry, use the Chain tool to digitize the points making up your feature. You may use this tool multiple times for a single line entity. When you are finished, click the "Done with Feature" button to finish the process and make encEditor ready to define your next object.

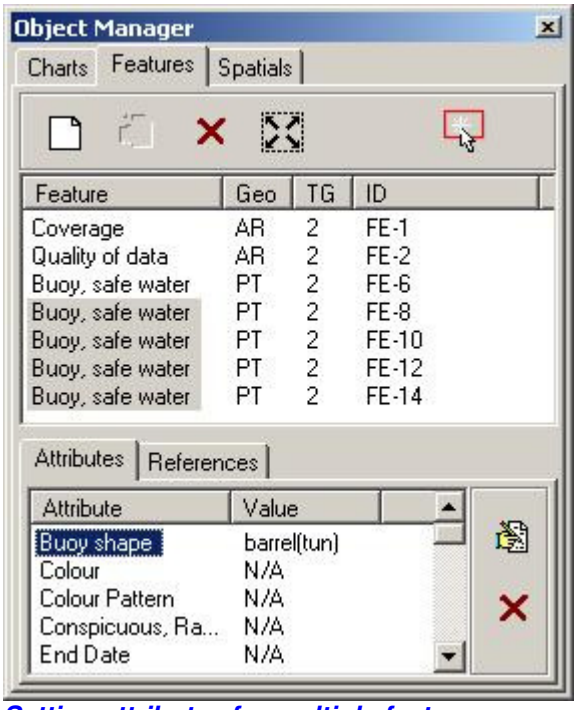
Area Features can be the most complex to define, especially if they consist of multiple chains for the exterior boundary and multiple chains for multiple interior "holes". You must ensure that each chain's ending node is the next chain's starting node, that the final chain's ending node ends on the first chain's starting node, and don't forget the orientation (clockwise for the exterior and counterclockwise for interior polygons). It's not easy to even write about, but thankfully much clearer to visualize.

The first help comes from the Spatial Target area of the Digitize Option Dialog. Here you inform encEdit which part of the Area feature you are working on. You then use your Connected Node, Chain and Connection tools in the usual manner to define the chains making up your polygon. Each chain will have small direction arrows to aid you in determining direction for the orientation rule. If you notice that chains are out of order, the best option is to open the 'Chain Reference' Dialog. This is denoted by the

'x--x' icon on the References page in the Object Manager. Here you simply rearrange chains so that the Begin/End Nodes are successive and close the polygon. Don't be afraid to experiment, it's not as hard as it sounds. Better yet, there is an Undo button at the top of the Main edit window in case you get in trouble.

Sometimes you will have edited a feature's geometry, adjusted chain order and orientation and you are sure that everything is S57 compliant, but encEditor refuses to draw it. This can and does happen. The display engine is quick to detect and flag features with "problems" and will happily ignore them in the future. There is some logic to trigger a re-evaluation of an object for correctness, but it doesn't always occur in a timely fashion. You can now force a re-evaluation by selecting "validate chart" from the processing menu. This is quite useful if you noticed an Invalid Geometry warning in the message window, fixed it and expected an improved drawing presentation, but didn't receive one.

We are working on a general dialog to inspect the chart and provide editor support for problem correction. Select 'integrity check...' from the processing menu to open a validation dialog. As this is a work in progress I will have more to say about it in a future article.



Setting attributes for multiple features

New Symbols in Updates S-52

We have received Edition 3.4 of the IHO Presentation Library for S57 and integrated the changes into our display routines. There is also a large expansion for the presentation of Inland Enc Charts, as well as improvements to the display of AML format data. The new symbols are available in both the Target Editor for target assignment as well as our DG2 editor.