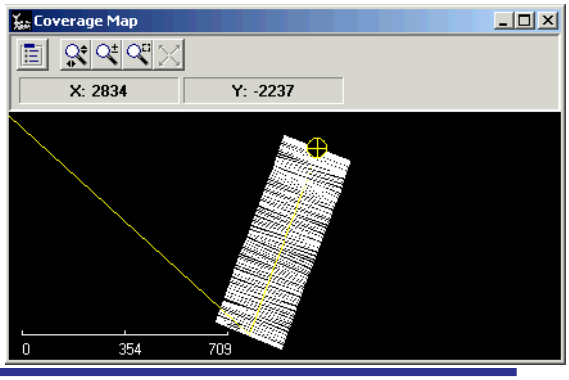
Monitoring Side Scan Coverage

By Judy Bragg

As I reviewed the SIDE SCAN SURVEY documentation and began integrating the development for 2016, I found myself thinking back over the development of our support for side scan in HYPACK®. With the vision, determination and perseverance of our HYPACK® development team, feedback from our users, and advancements in side scan technology, we've come a long way! There's a huge difference in the accuracy and resolution of our current waterfall display over our first awkward attempts "way back when".

"Stick" Diagram

In early development, the Coverage Map window displayed only a simple series of lines marking each swath. This enabled you to monitor your coverage of the survey area, but not much else.



Coverage Driver

The Coverage driver displays your coverage in your Survey Map window and exports a series of contiguous polygons to a DIG chart file representing the area covered by your survey. These chart files are saved to your project folder.

Each time you start logging, a colored swath draws to the Area Map according to the parameters in the Coverage Driver setup.

We originally developed this driver to monitor coverage of devices that couldn't paint a matrix and side scan was one of those applications at the time.

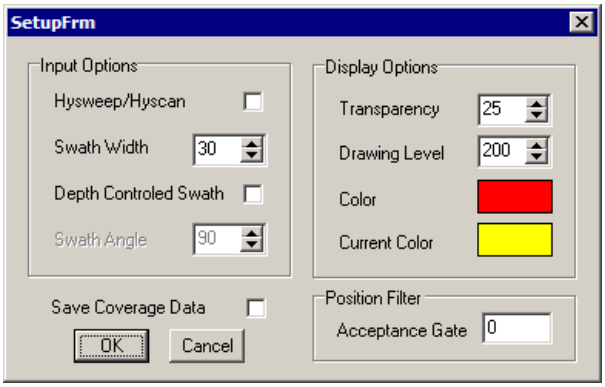
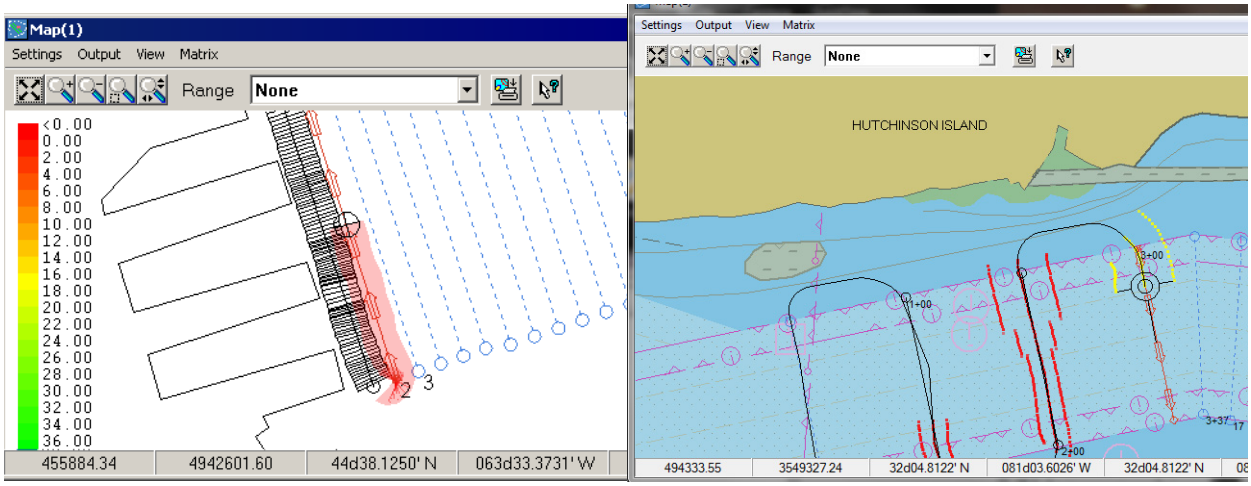


FIGURE 1. *Coverage.dll displays in the Area Map in SURVEY - Transparent Swath (left), Display Edges (right)*

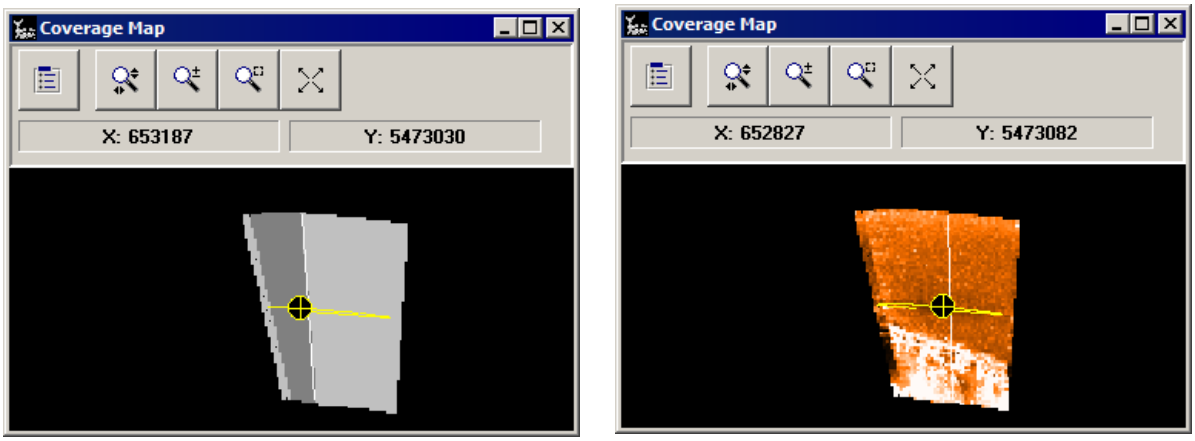


PAINTING A MATRIX

We advanced to painting matrix files, first according to the number of times covered, then with side scan return strength. The former successfully helps to assure that you have achieved at least 200% coverage as is often required by contract.

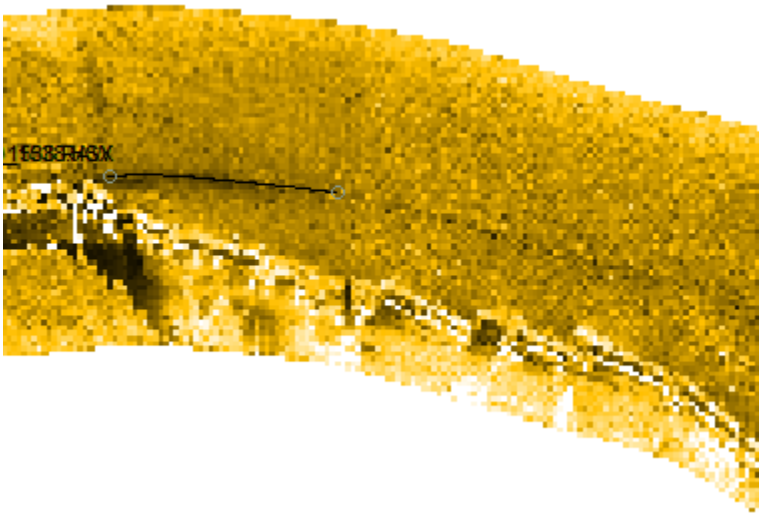
The signal strength matrices provided a bit more information, however, they had poor resolution and we wanted to do better. Back to the drawing board!

FIGURE 2. *Painting a Matrix—1x 2x Coverage (left) and Real-time Mosaic (right)*



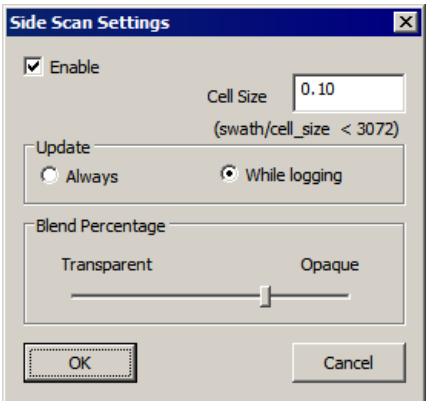
NOTE: At this writing, the Real-time Mosaic option name is something of a misnomer for HYPACK® 2016 as you will read in the next section. The option may be renamed by the time the 2016 release goes to beta testing.

FIGURE 3. *Side Scan Data Painted to a Matrix in HYPACK® SURVEY*



REAL-TIME MOSAIC

In HYPACK® 2016, you will see (as Lazar Pevac wrote in his May Sounding Better! article) another leap forward with the advent of Real-Time Mosaic: a series of georeferenced TIF (GeoTIF) images (tiles) generated by SURVEY based on your real-time mosaic options.



HYPACK® SURVEY paints a preview of the real-time mosaic tile at the vessel location. As the vessel moves through the project area, the program continuously loads and unloads the individual tiles according to the vessel location and logs the data to a binary file in the project \Autoscan folder.

When you close the SURVEY program, HYPACK® Generates a series of GeoTIF files from the binary data and loads them to your project \RT Mosaic folder. From there, you may load them as background charts.

FIGURE 4. *Real-time Mosaic in the HYPACK® SURVEY Map Window (left) and Side Scan Waterfall (right)*

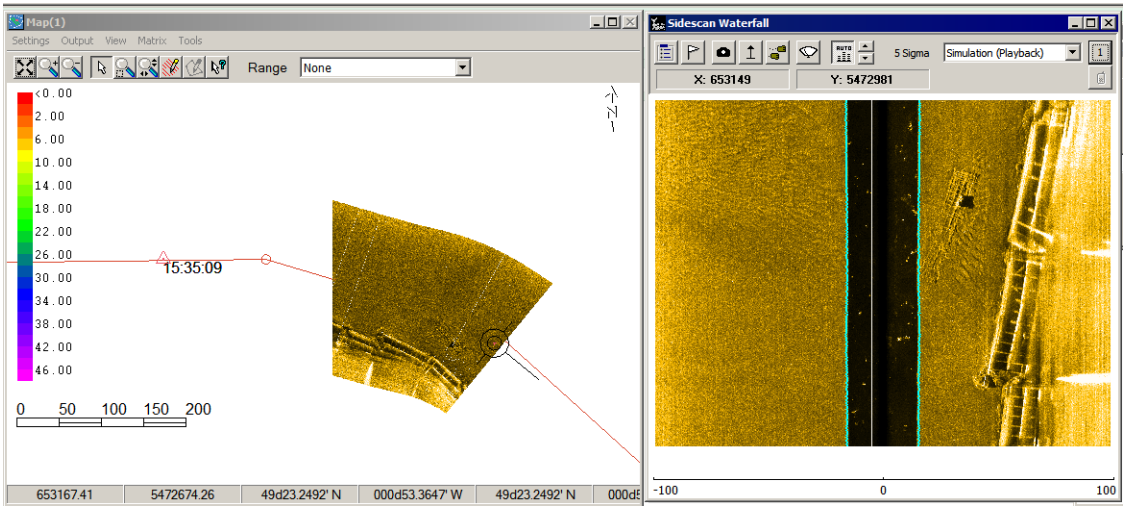
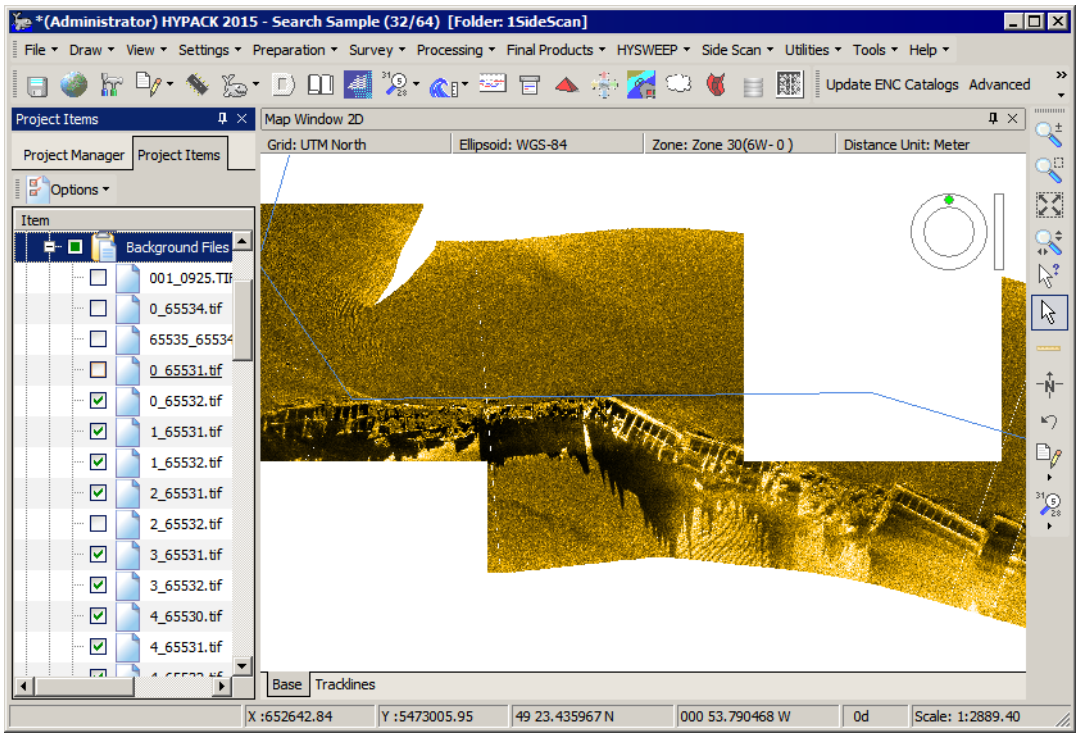


FIGURE 5. *Sample Mosaics from Real-Time Mosaic—Two Tiles Disabled in the Display to Illustrate Tiling*



This method is such an improvement over painting a matrix with side scan data, the current plan is to discontinue painting matrix files with side scan data beginning in the 2017 release.