



## Matrix Files in HYSWEEP® SURVEY

By Amine Elhaddad

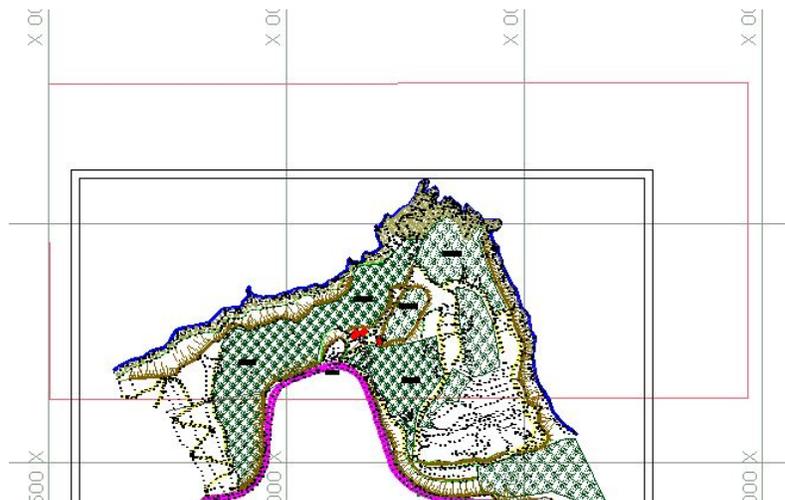
One of the most useful features in HYSWEEP® SURVEY is the color-coded coverage map, available only when a matrix file is loaded.

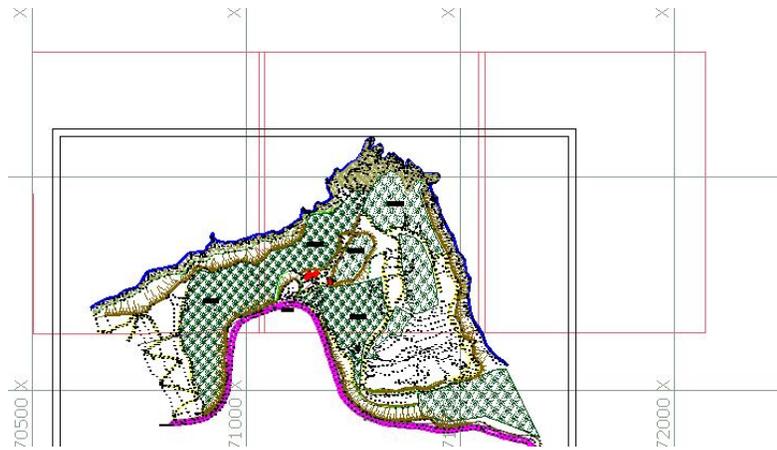
Matrix files are simply areas divided into cells created in the MATRIX EDITOR, they allow users to show places where the data are being collected or is already collected in a survey areas.

When performing a multibeam survey, you either use one or more HYSWEEP type matrix files and paint them in HYSWEEP® SURVEY, or use the Auto-matrix feature in HYPACK® SURVEY.

If enabled in the project, the matrix files are automatically loaded into HYSWEEP® SURVEY, which will load and unload the individual matrix files, depending on the vessel location. When you close the program, the files automatically update and save.

*FIGURE 1. Matrix Files Created in MATRIX EDITOR—One Matrix File Created for the Whole Area*





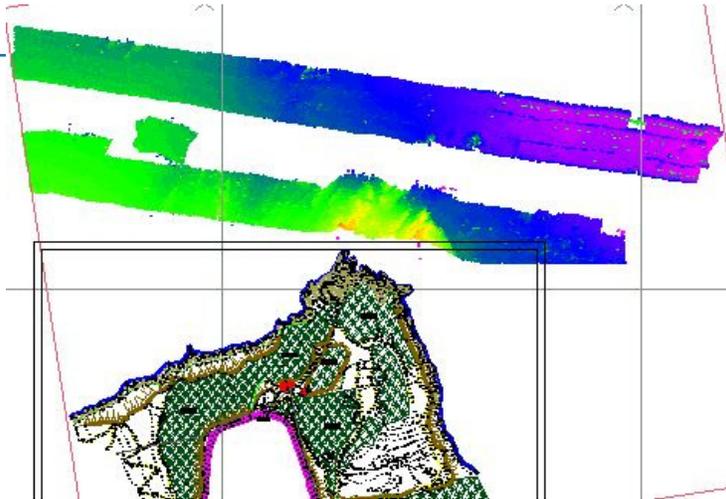
This article focuses on how to update matrix files using the MAPPER program in HYPACK®. This is really helpful when you realize that your matrix file was not updated with data from the last survey, or data during the last hour's survey.

**NOTE:** Failure to save the matrix can happen when the matrix file is too big, or if operative memory is overtaxed (which is possible, for example, with a background chart, planned lines and all equipment data and at the same time keeping big matrix. *This can cause a computer to shut off unexpectedly and hence a matrix file is not updated*

FIGURE 2. Matrix File with Missing Data in the Middle

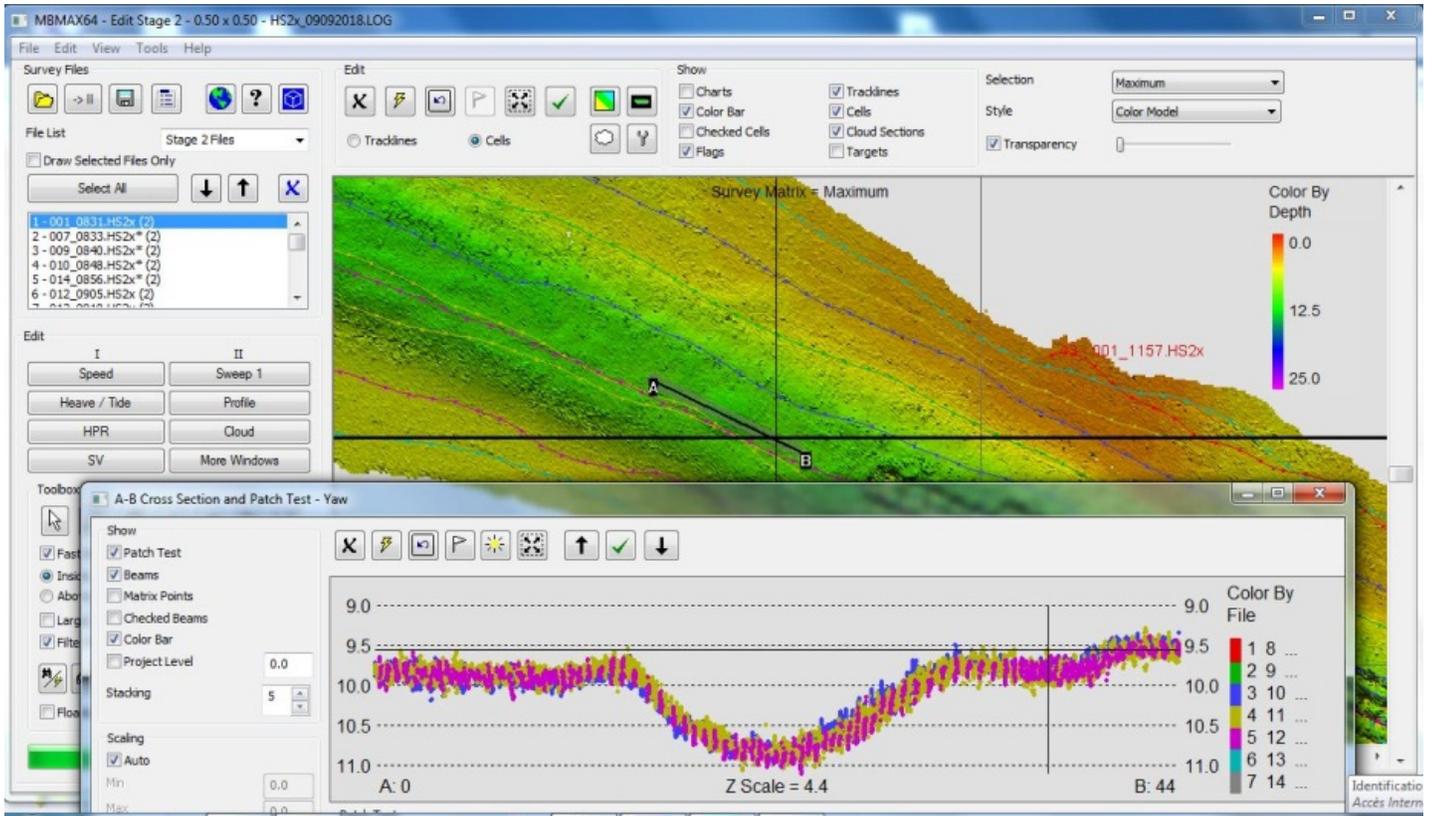
The MAPPER program is the solution! You can load an existing matrix there and update with the other soundings, so this is how things are done :

1. **Generate an XYZ file of the your latest data:** Just perform a quick processing of your multibeam data using the HYSWEEP EDITOR and export data as and .XYZ file. (You could also use a .MTX file.)



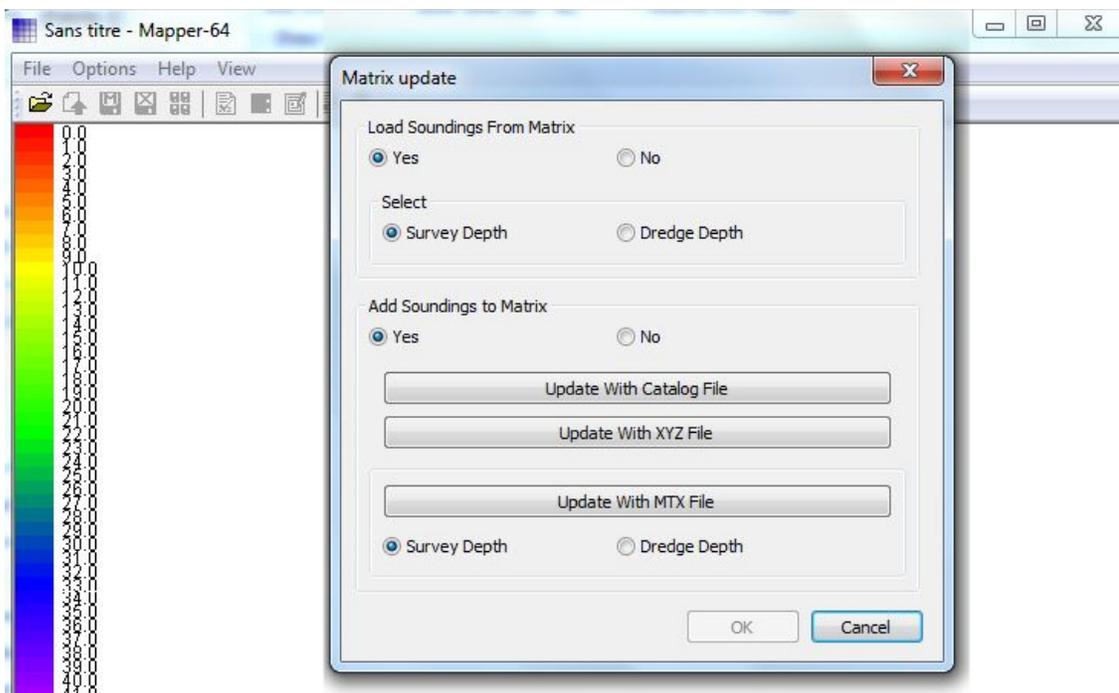
**NOTE:** This data file is just to fill up the missing parts of the matrix file; it should go without saying that the survey data should later be properly re-processed to edit for the final product.

FIGURE 3. Quick Data Processing in HYSWEEP EDITOR



2. **Launch the MAPPER Program.** Select PROCESSING-SOUNDING SELECTION-MAPPER. Here you can either update the missing part of a selected matrix with a catalog file, an XYZ file or a matrix file.

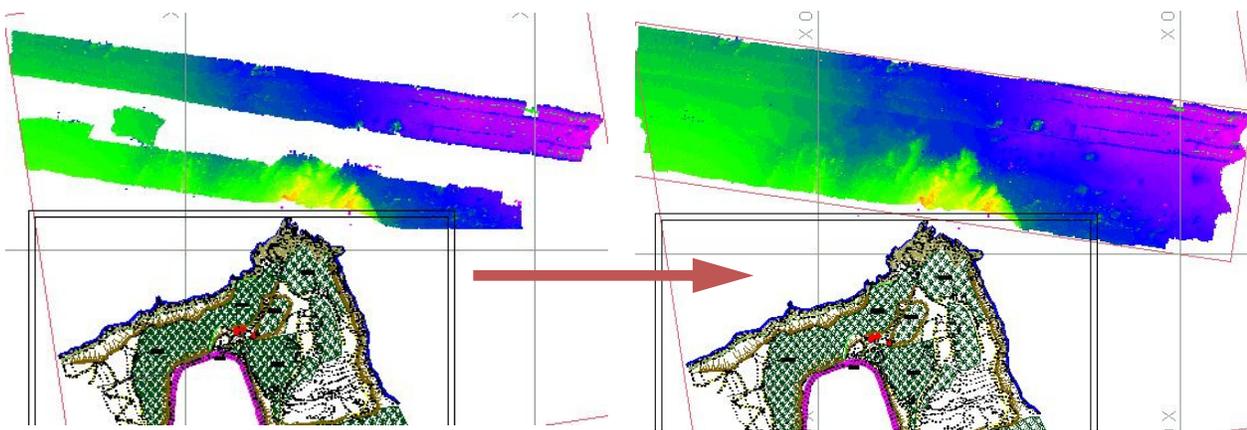
FIGURE 4. Open Matrix File you want to Update



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3. **Select your XYZ or MTX file** that you just created in the HYSWEEP EDITOR.

*FIGURE 5. Matrix File Updated*



**Conclusion :**

In certain projects, it may be advantageous to have a series of smaller matrix files, rather than one huge matrix file. It is more efficient for the program to concentrate on one, small matrix file at a time and automatically change from one to the other according to the vessel position rather than to manage and re-draw one matrix that is hundreds of megabytes in size.

When you work on a small project, you don't have to create multiple matrix files as one matrix is enough. If the study area is a bit large, sometimes it may be convenient to use Auto-matrix feature in HYPACK® SURVEY.