



3DTV Simulation

By Bob Glover

Working in the Technical Support department, I occasionally get calls from people asking about 3DTV and whether or not you can playback data while showing your boat going through the water.

In order to show a vessel while in 3DTV, we must have the X and Y position of the vessel. This is fine during SURVEY as shared memory can pass the position across to 3DTV. The question becomes, how can I get a position for the vessel when we are not collecting data real time?

In this article, I will explain how to setup a simple 3DTV simulation project that will let you use your collected data and also show your vessel, while you do a fly-over of your surveyed area.

1. **Setup a project with your collected data.** This data must be processed into an XYZ or matrix file.

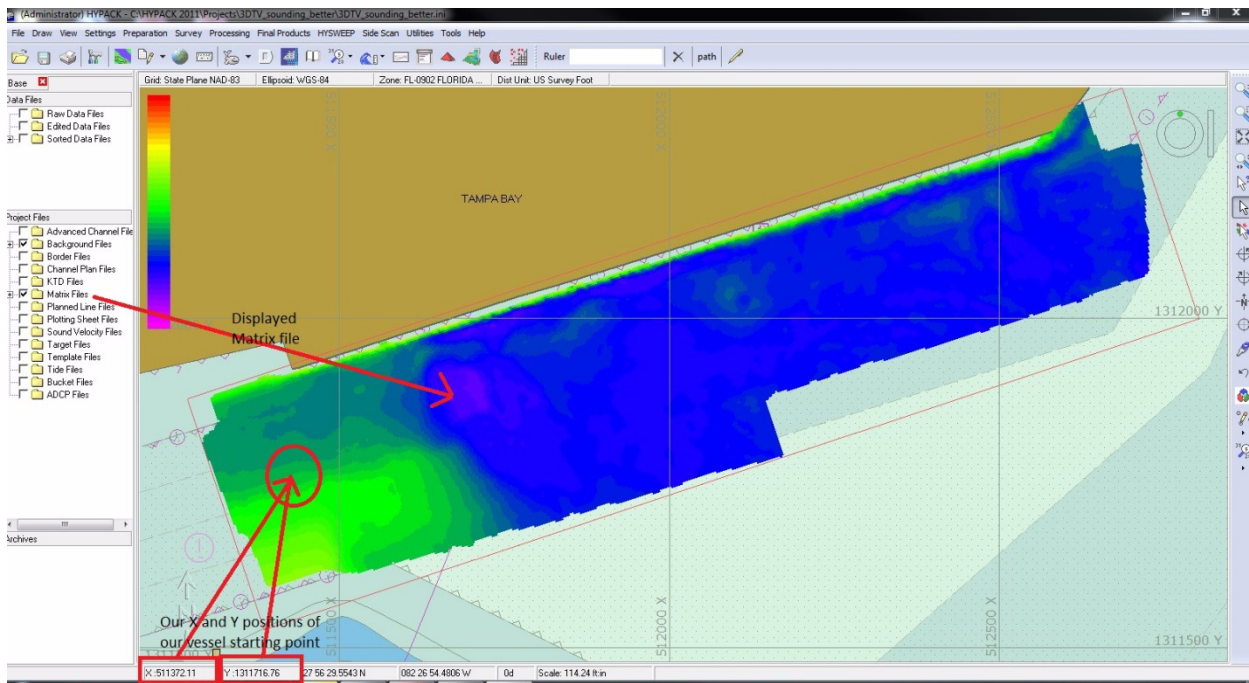
Tip: It might be best to create a new project for your test, as we will have to make changes to the hardware setup in order to make our simulation work correctly.

2. **If you have XYZ data but no matrix, make a matrix file from the XYZ** in the TIN MODEL program.
 - a. In the Initial Data dialog, load the XYZ as the input file, set your TIN Max Side and click OK.
 - b. Check out the 3D color model to make sure your model is filled correctly. If it isn't, you might have to go back and increase the TIN Max Side.
 - c. Once the model looks right, export and save the matrix.

Tip: Remember to use a larger cell size to save memory. A large matrix can slow down 3DTV, as it uses a large amount memory.

3. **Go back to the HYPACK® shell and enable your matrix** so that we can see it.
4. **Get the coordinates for the starting point for your vessel.** (This is not where the camera will be located. The camera position will be setup once in 3DTV.) These are the coordinates we will use to setup the sim32.dll.
 - a. Move the default cursor over the point in the matrix where you would like the vessel to start. The coordinates will appear in the status bar.
 - b. Write down the X and Y position of the cursor.

FIGURE 1. Getting the Vessel's Start Position

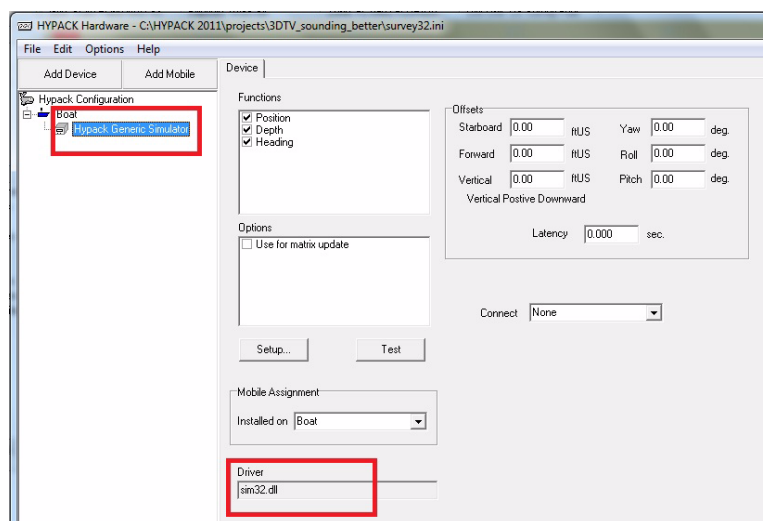


5. **Open HYPACK® HARDWARE** and setup your hardware configuration for your test project.

Tip: If you created a new project, it might be easier to delete the current setup and start from an empty configuration.

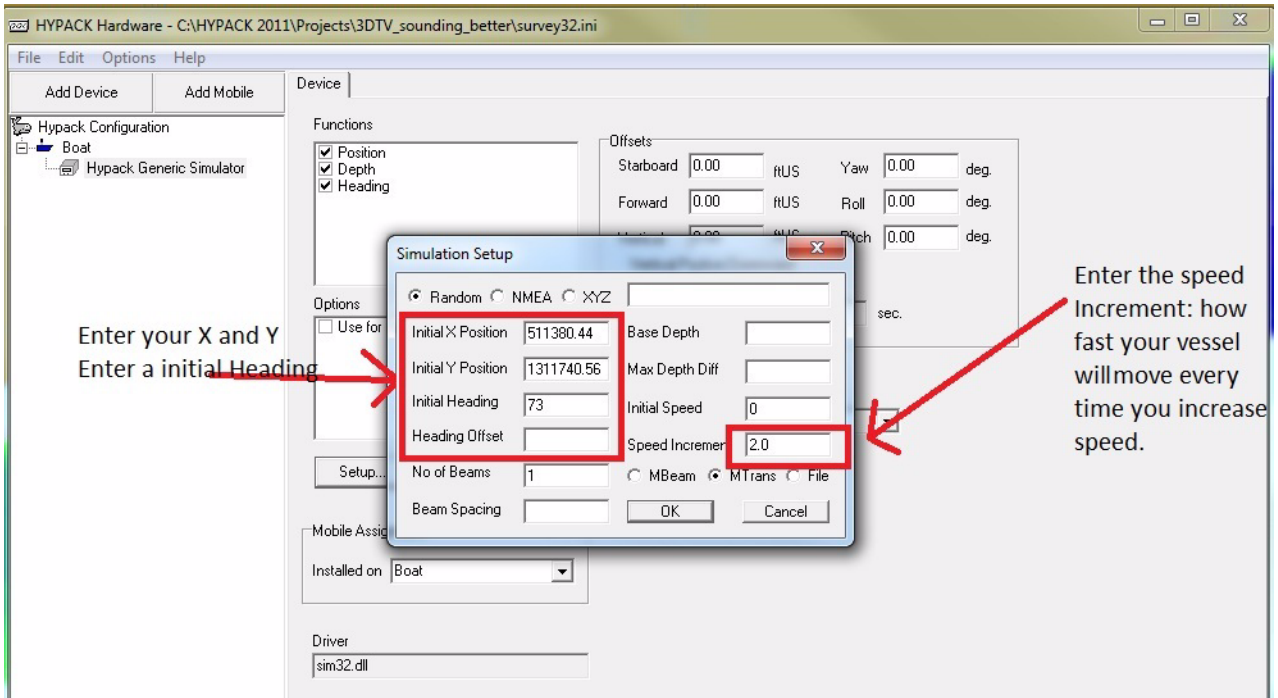
- a. **Add the HYPACK® generic simulator (sim32.dll).** This is the only device you need. No offsets or connections must be applied; the only thing that will be needed is the setup.

FIGURE 2. Sim32.dll in HYPACK® HARDWARE



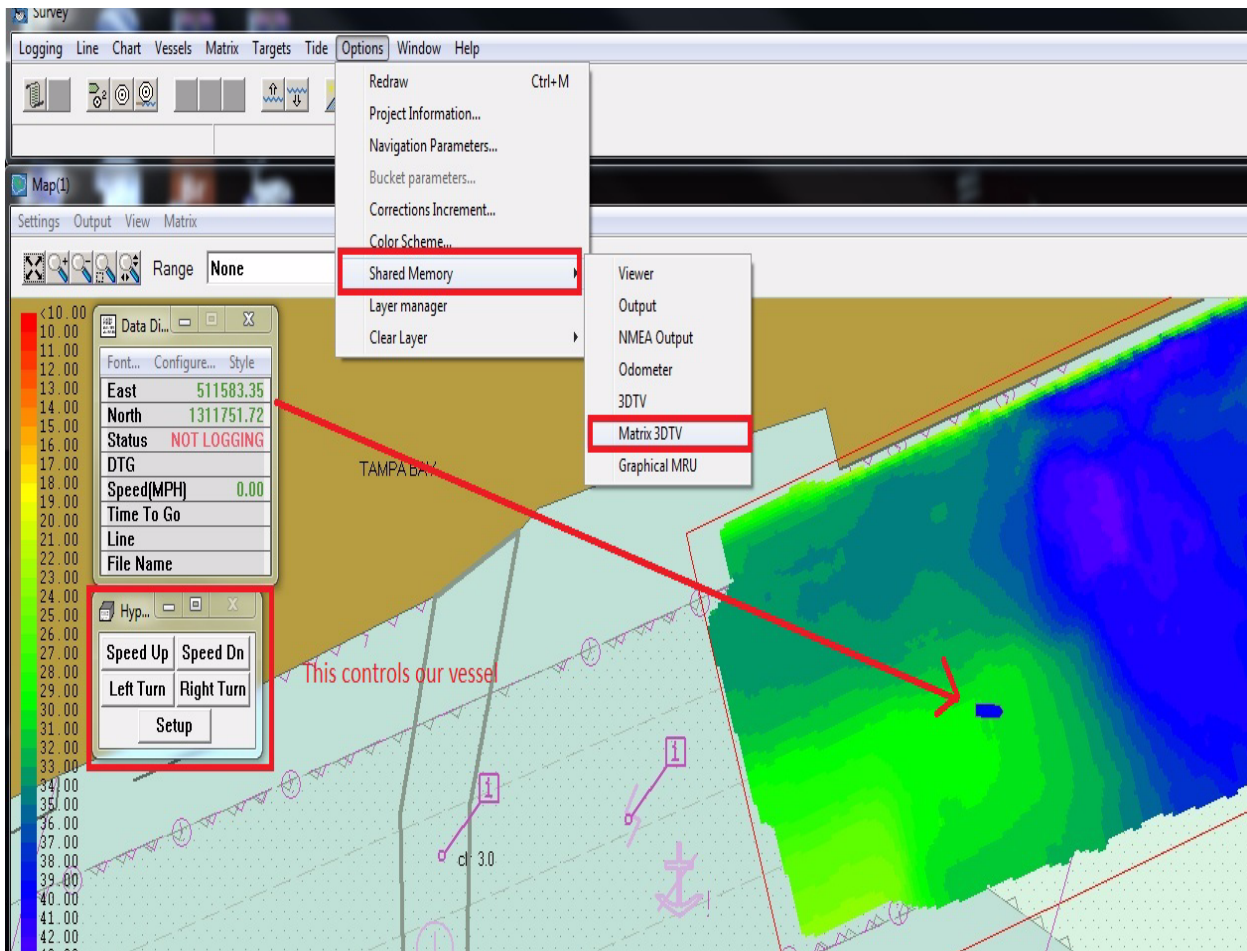
- b. Click on the HYPACK generic simulator and then [Setup].
- c. Enter the vessel starting point X and Y that you wrote down earlier, along with the heading and the speed increment of your simulated vessel.
- d. Click [OK].
- e. Exit HYPACK® HARDWARE.

FIGURE 3. Sim32.dll Driver Setup



6. **Go into HYPACK® SURVEY.** You should see your matrix displayed and your boat shape at the XY location that you entered into your simulator setup. Figure 4 is what you should have on your screen in SURVEY. Notice that the data display shows the same X, Y that you entered into your sim32.dll; this is now the position of our vessel.
7. **Open the MATRIX 3DTV module** by selecting OPTIONS-SHARED MEMORY-MATRIX 3DTV.

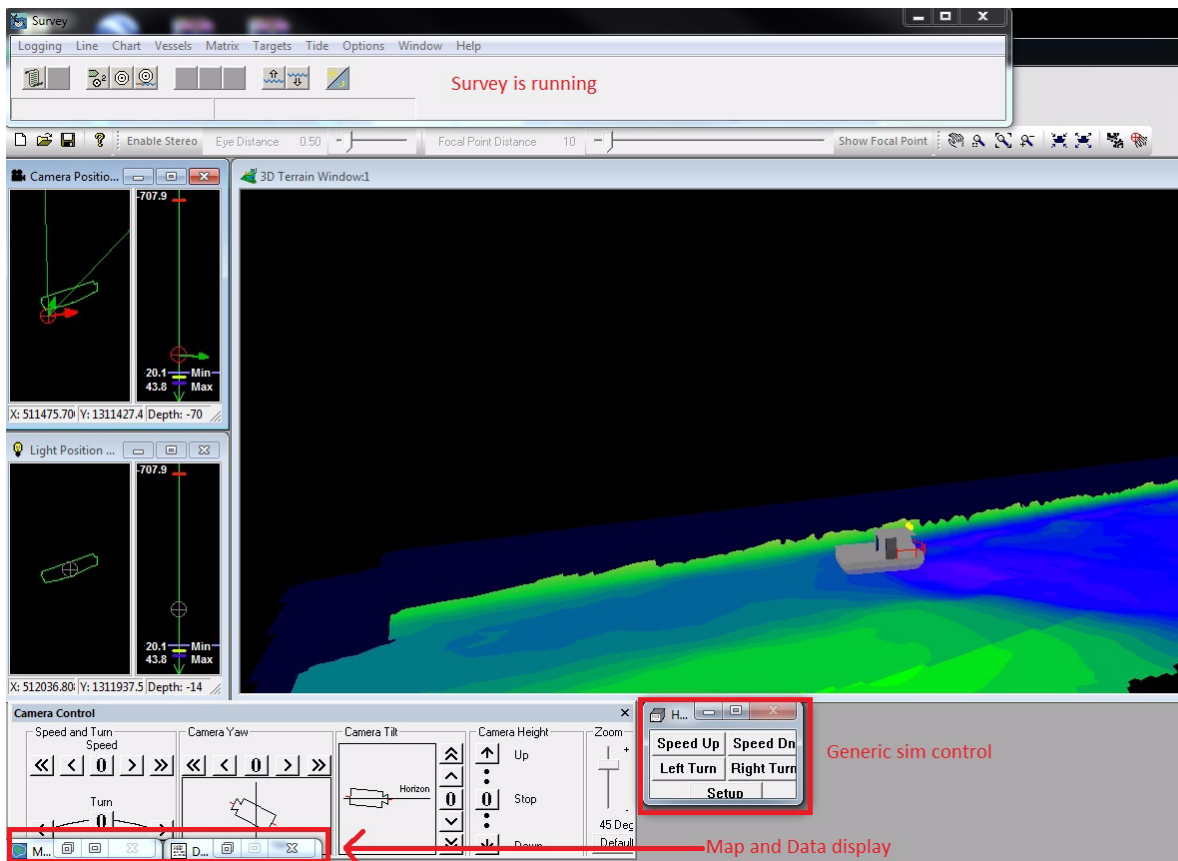
FIGURE 4. *Your Simulation in SURVEY*



8. Configure your windows.

- **If screen space is limited, you can minimize unnecessary SURVEY windows.**
The one thing that you must keep open is the HYPACK generic simulator driver device window as this will let you control your vessel while in the 3DTV module. You might have to toggle back and forth to close the map and data display windows, the end result should look like Figure 5. Now you can see your 3DTV view with your matrix data displayed.

FIGURE 5. MATRIX 3DTV with the Vessel Controls from SURVEY



- Set your screen to show your camera controls.
 - It might be best to tile your windows.
9. **Begin your fly-over of the data** by using the sim32 driver control window to speed up our vessel as well as move it left and right. This is a very basic way to begin to become familiar with 3DTV.

As always, should you have any further questions, please feel free to contact us in technical support.