HYPACK 2023 Q1 Release Notes

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The table of contents lists the programs and processes that have received new features, updates, and bug fixes in the HYPACK 2023 Q1 update. Click and jump to the sections you want to read more about.

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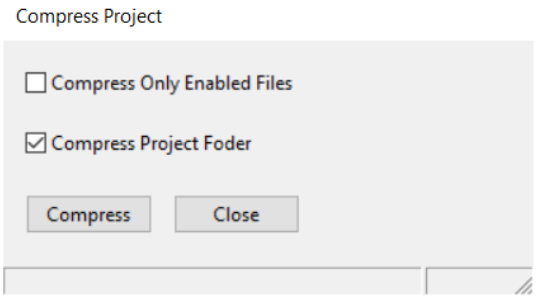
HYPACK SHELL

- **Added the Compress Project Folder option to the Compress Project program.** When Compress Project Folder is selected, the entirety of the currently open project folder is saved to a ZIP file while preserving the file and folder structure.

  To use this option, from the HYPACK® Shell click File -> Compress Project. In the Compress Project window, check “Compress Project Folder”, then click [Compress]. The Save As window opens to the project folder by default, but you can select a different folder to save to. Give the ZIP file a name and click Save.

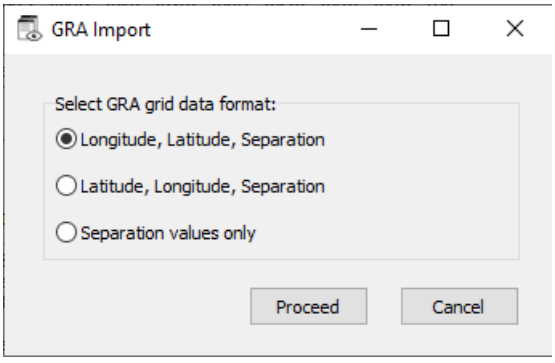


- **Targets deleted in the HYPACK® Shell can now be restored from the Target Editor.** See the Target Editor section in this document for more information.

PREPARATION

GEODESY

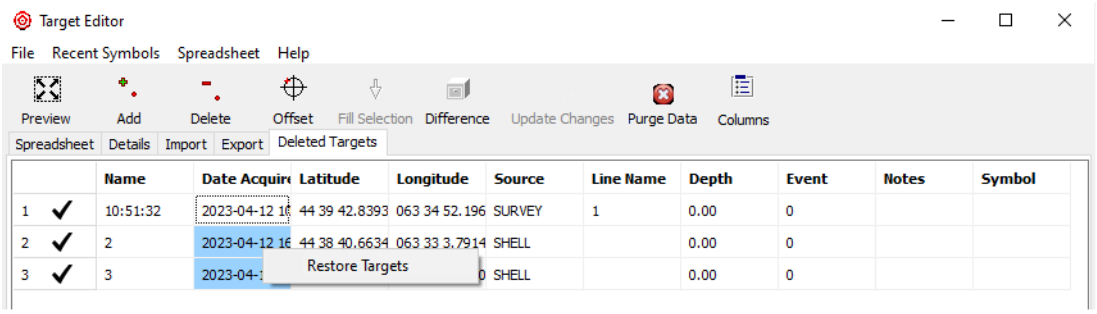
- **In the GEOID File Converter, the GRA Import window now appears if a *.GRA file is selected.** Users need to specify the data string format in the *.GRA file by selecting between the following three options: Lon/Lat/Sep, Lat/Lon/Sep, and Separation values only.
  To use this option, open the GEOID File Converter from the Shell by clicking Utilities -> Geodesy -> Geoid Generator, click [Select File] and open a *.gra file.



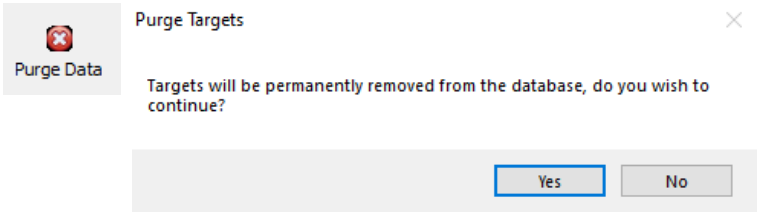
TARGET EDITOR

To improve usability in the Target Editor, we've made multiple updates to the Target Editor, Shell, and HYPACK SURVEY that give users the option to restore deleted targets before completely deleting them permanently. Open the Target Editor from the HYPACK® Shell by clicking Preparation -> Editors -> Target Editor.

- **The Deleted Targets tab has been added to the Target Editor.** This tab displays all targets that have been deleted from the Target Editor, Shell, and HYPACK SURVEY.
- **Users can now restore targets deleted from the Shell, HYPACK SURVEY, and Target Editor from the Deleted Targets tab.** To restore a target, open the Target Editor and navigate to the Deleted Targets tab. Click on the target you want to restore to select it, then right click on it -> Restore Targets.
  You can select multiple targets by clicking and dragging to highlight their names prior to restoring.



- **The Purge Data icon and functionality have been added to the Target Editor toolbar, which completely deletes all targets within the Deleted Targets tab.** After clicking Purge Data, the following prompt will appear. Click [Yes] to confirm permanent deletion of all targets within the Deleted Targets tab.



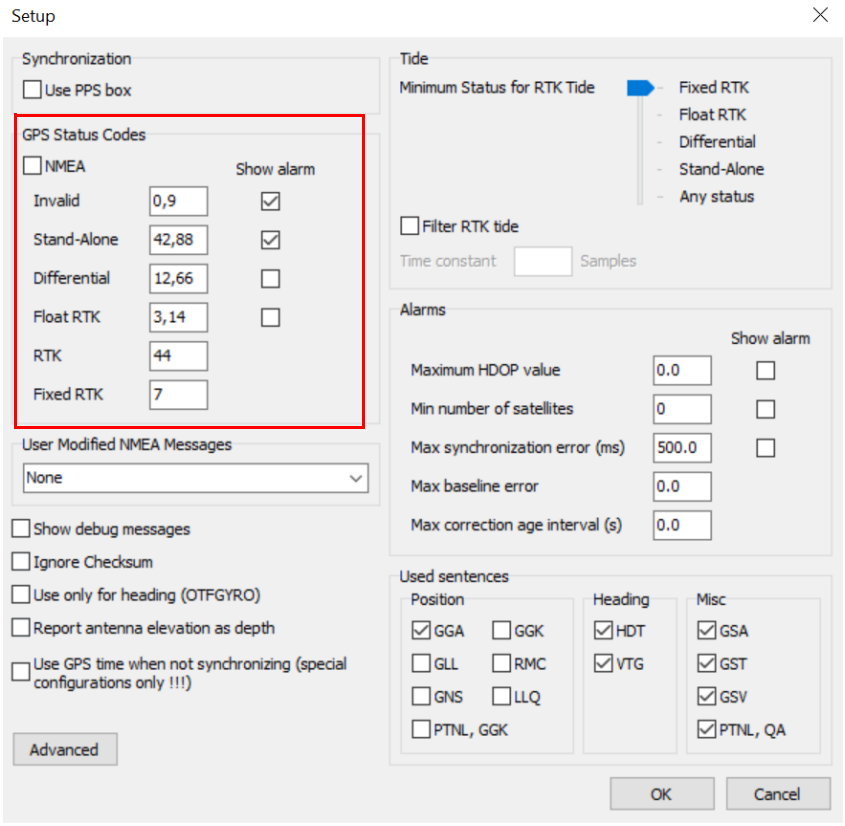
- **The Target Editor now loads with the Spreadsheet tab displayed by default**.

HARDWARE

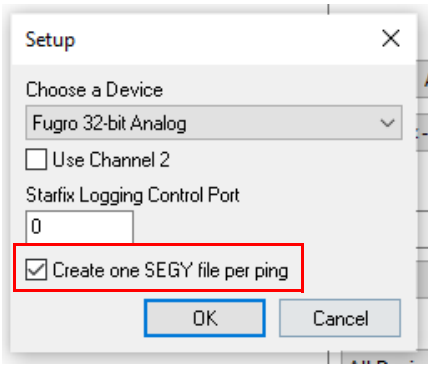
SURVEY DEVICE DRIVER UPDATES

To add and update device driver settings, from the HYPACK® shell click Preparation --> Hardware Setup. Search the list of available drivers, and click the name of the driver and click [Add -->]. Under the Installed list, double click the name of the driver to bring up its setup window.

- **GPS.dll: Users can now enter multiple status codes in the GPS Status Code boxes.** Use commas to separate multiple numbers.



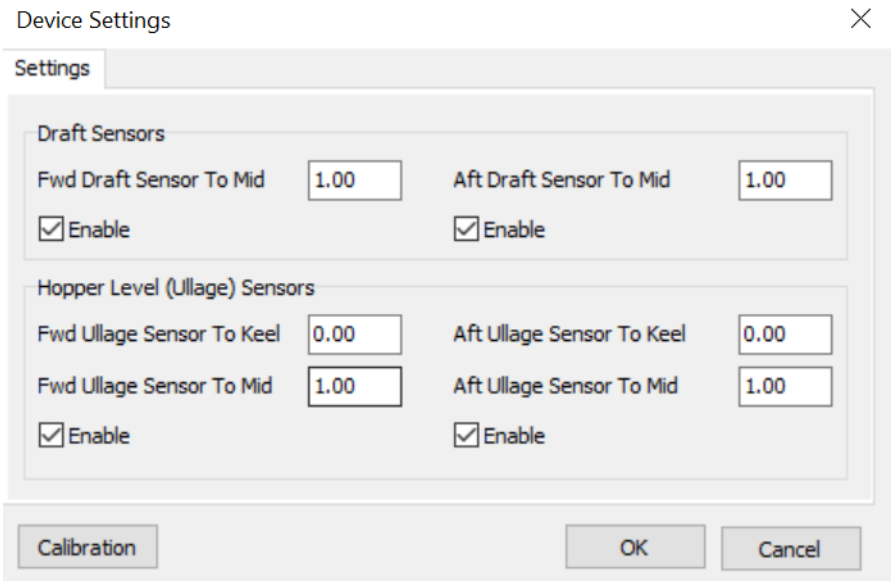
- **Subbot.dll: For Fugro 32-bit Analog devices, added the option to "Create one SEGY file per ping" to the Setup window.**
  By default, Fugro devices create one file per ping, however users can now choose to enable or disable this option.



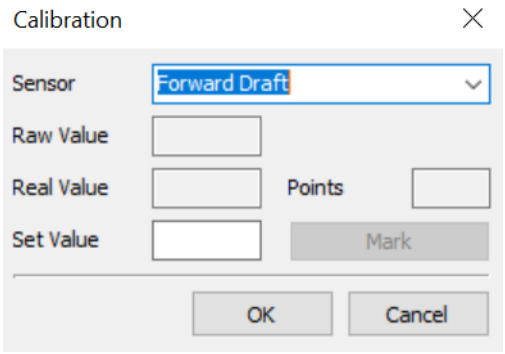
- **<u>New Driver:</u> Added the Entek Hopper System driver, EntekTSHD.dll.** This driver supports the Entek PLC hopper system, which uses two hopper-level sensors and two draft sensors. The driver reads draft and ullage levels, displays them visually, and sends the information to the Load and Draft Monitor (LDM) program in DREDGEPACK®.

  After adding the Entek Hopper System driver in the HYPACK Combined Hardware, double click the driver name to open the Device Settings window. For draft sensors, enter their location relative to the midship draft scale, and for the hopper level sensors enter

their heights above the keel.



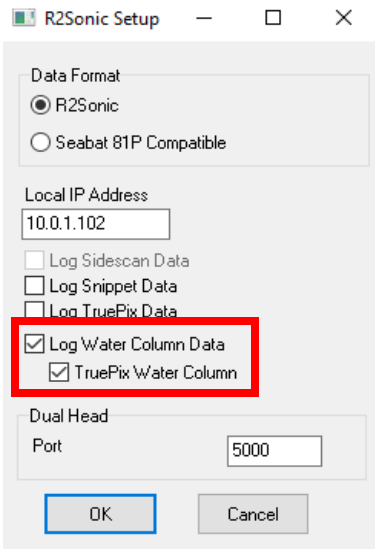
Calibration is performed similar to the Entek Bubbler calibration. Click [Calibration] to open the Calibration window. For each sensor you want to calibrate, first measure the value, select the value from the Sensor drop down, then add the measured value in the Set Value box and click [Mark].



HYSWEEP® Device Driver Updates

- **Valeport SWiFT SVP: Now supports the Valeport SWiFT CTD.** Detection of whether you have a CTD or SVP occurs automatically and does not need further user input. For more information, see the Sound Velocity section.
- **R2Sonic Devices: Added the option to log TruePix compressed water column data.** To use this option, in the HYPACK Combined Hardware setup window, select HYSWEEP Devices and choose from the following R2Sonic devices: R2Sonic Dual Head 2020, Dual Head 2024, SONIC 2020, and SONIC 2024. Double click the device name to open the

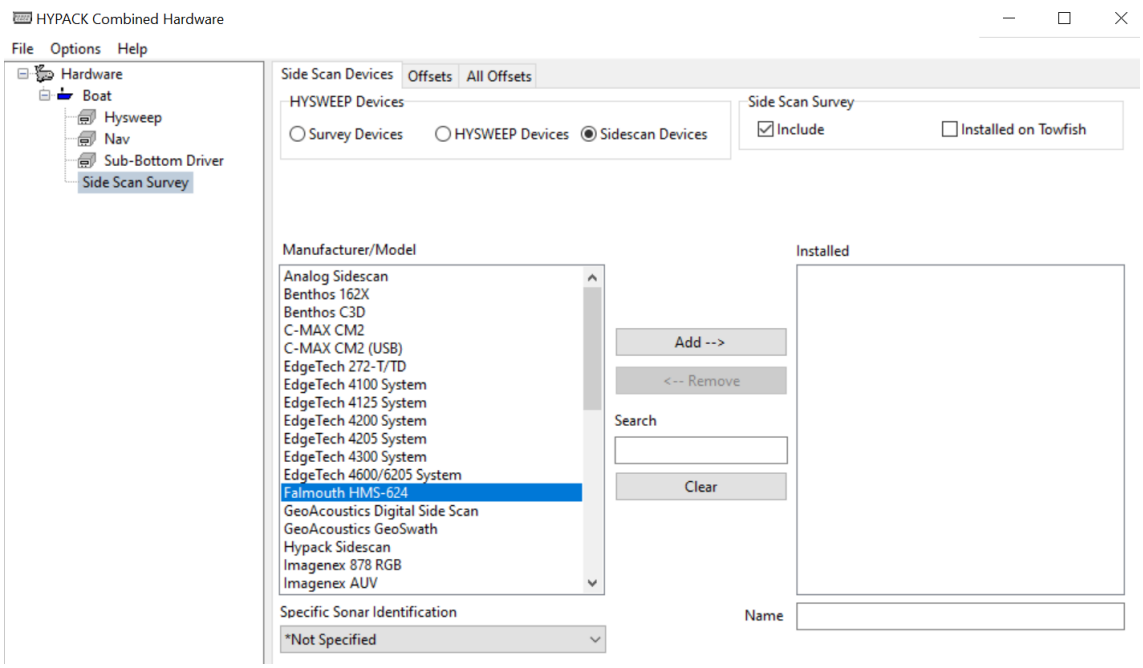
R2Sonic Setup window.



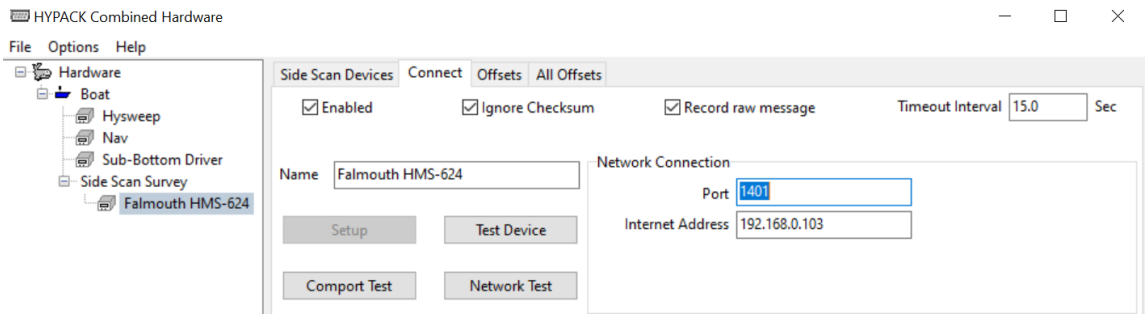
Check both “Log Water Column Data” and “TruePix Water Column”, and make sure the R2Sonic device control software is set to output TruePix angle and magnitude data. The compressed data will be logged and displayed in the HYSWEEP® Water Column Logger window while HYSWEEP® SURVEY is running.
For more information, see [“Compressed Water Column in HYSWEEP” by Mike Kalmbach.]

Side Scan Device Driver Updates

- **Added support for the Falmouth Scientific HMS-624 side scan sonar.**
  Add this device driver by opening HYPACK Hardware and selecting Sidescan Devices from the Mobile tab.



Network settings for the HMS-624 side scan sonar are given in the screen shot.

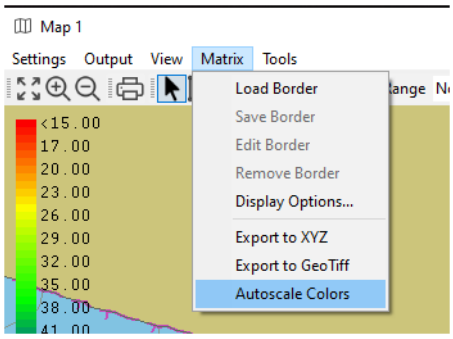


DATA ACQUISITION

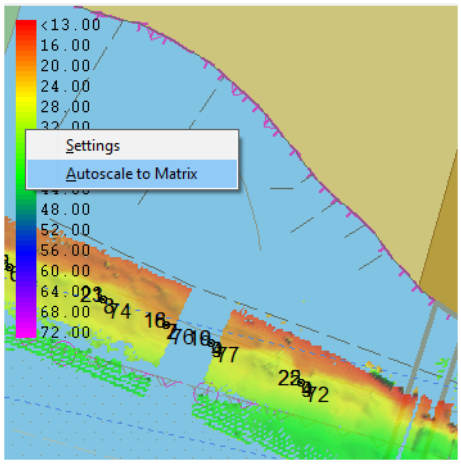
SURVEY

- **Targets deleted in HYPACK® SURVEY can now be restored from the Target Editor.** See the Target Editor section in this document for more information.
- **Added autoscaling options for both fixed matrix and auto-matrix files.** The autoscale function uses current minimum and maximum depths in the matrix to set up the color bands. Since the matrix depths can change, autoscaling is not dynamic and requires user input.

  To autoscale colors on a fixed matrix, from the area map window click Matrix -> Autoscale Colors.



To autoscale colors on an auto-matrix, right click on the color bar and click Autoscale to Matrix.



HYSWEEP® SURVEY

- **Valeport SWiFT CTD Support:** Users can now download casts from the Valeport SWiFT CTD from HYSWEEP® with the same procedures used for the SVP. For more information, see the Sound Velocity section.
- **HYSWEEP® Water Column Logger now supports and displays TruePix compressed water column imagery.** See the update on R2Sonic devices in the HYSWEEP® Device Driver Updates for more information on setting up TruePix logging for R2Sonic devices.

BUG FIXES

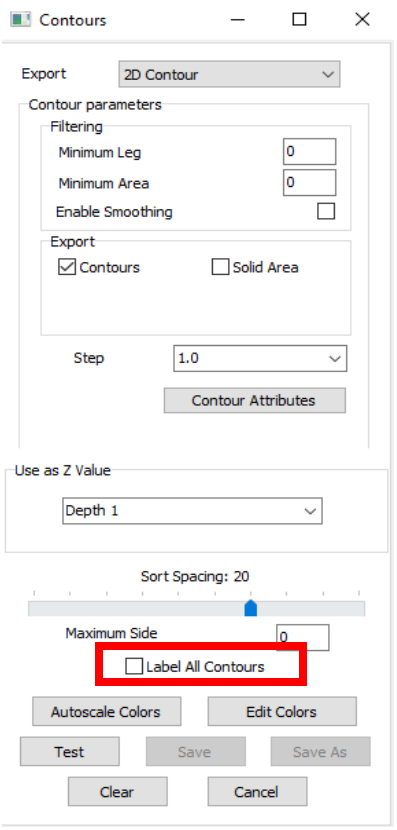
- **Sound Velocity table:** Previously, readings in the Sound Velocity table would have data lines containing depth values of zero on every other line. **These zero-depth lines are now removed and no longer appear in this table.** Make sure you have the newest version of Hysweep.exe and mbHardware.dll to prevent this from happening again.
- **Fixed an issue where some casts were truncated and did not show some of the deepest depth readings and velocity data points.**

64-BIT SINGLE BEAM EDITOR (SBMAX64)

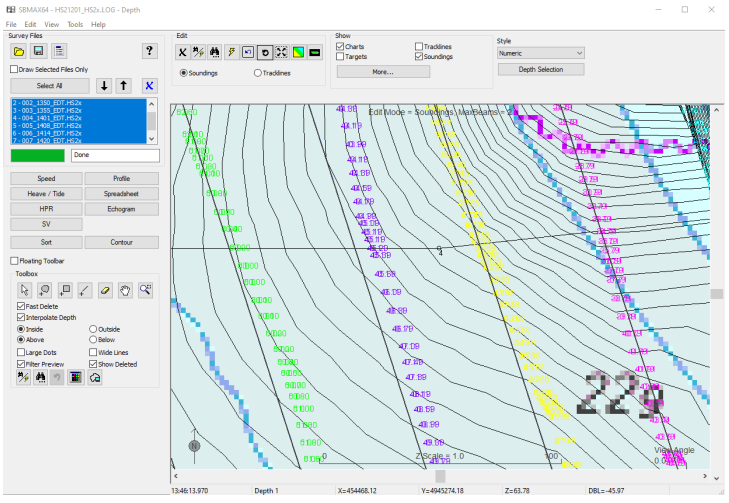
- **Users can now enable contour labeling with the newly added Label all Contours checkbox in the Contours window.** When checked, all contours are labeled using the settings defined in the Contour Setting window.

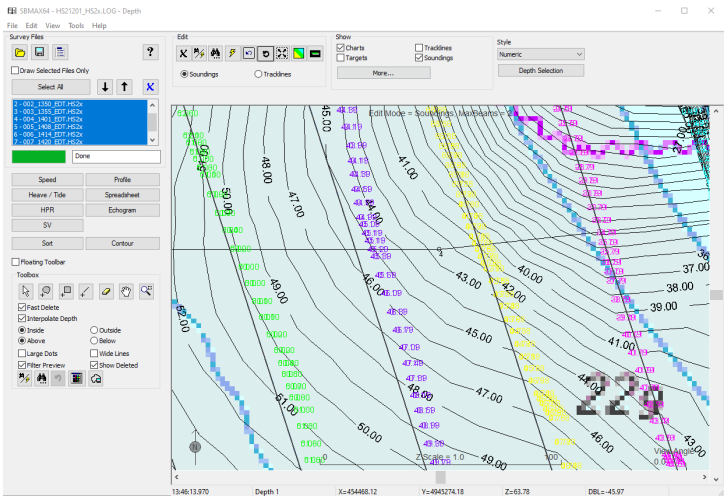
  To use this feature, open SBMAX64, load your survey files, and click [Contour] to open the Contours window. From here, check the Label all Contours box, click [Test] to generate the labels, then click [Save] to save the contour file.

  To change the contour and label properties and settings, from the Contours window click [Contour Attributes] and make your edits in the Contour Setting window.



The following is an example of the SBMAX64 window with (right) and without (left) Label All Contours checked.

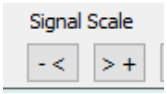




- **In the Contours window, clicking [Autoscale Colors] now draws a new contour scaled using the color settings in SBMAX64.** Edit color settings SBMAX64 by clicking View -> Color Settings... to open the Color Settings window and apply your changes.

Echogram Window

- **Users can now adjust the signal scales of separate echogram windows independently of each other.** Previously, signal adjustments were linked between both echogram windows. This new update makes viewing separate echograms easier.
- **The Signal Scale arrow buttons have been swapped in the echogram window to make usage more intuitive.** We've also added +/- symbols on the buttons. The [>+] button now increases the signal, and the [-<] button decreases it.



Side Scan Processing

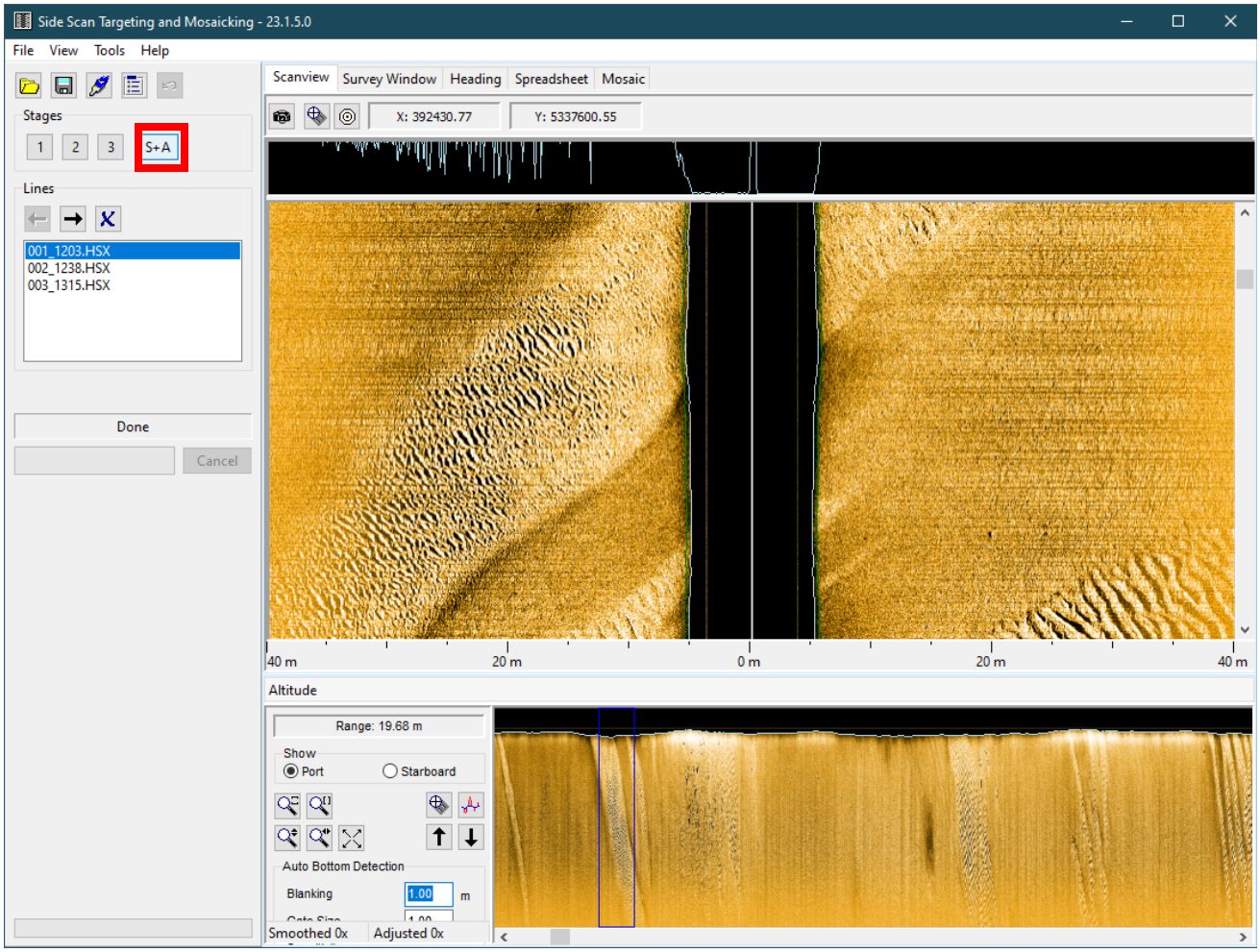
Targeting and Mosaicking Beta

Some updates have been made to the Targeting and Mosaicking Beta program, which are covered in "Targeting and Mosaicking Beta 2023 Q1 Updates" by Daniel Tobin. The following is an overview of the new feature.

- **Added a new view option that simultaneously shows Scanview and Altitude View.** To view both windows together, launch HYPACK® and click Side Scan -> Targeting and Mosaicking (Beta), then click [S+A] under the Stages section in the Targeting Mosaicking Beta program. The Scanview will be displayed above Altitude View window. Make sure you are in the Scanview tab.

  Click a location in the Altitude View and the Scanview will display imagery and data at that

position. You can also scroll through the Scanview - as you do so, the blue box in the Altitude View will show your current position. For more information,

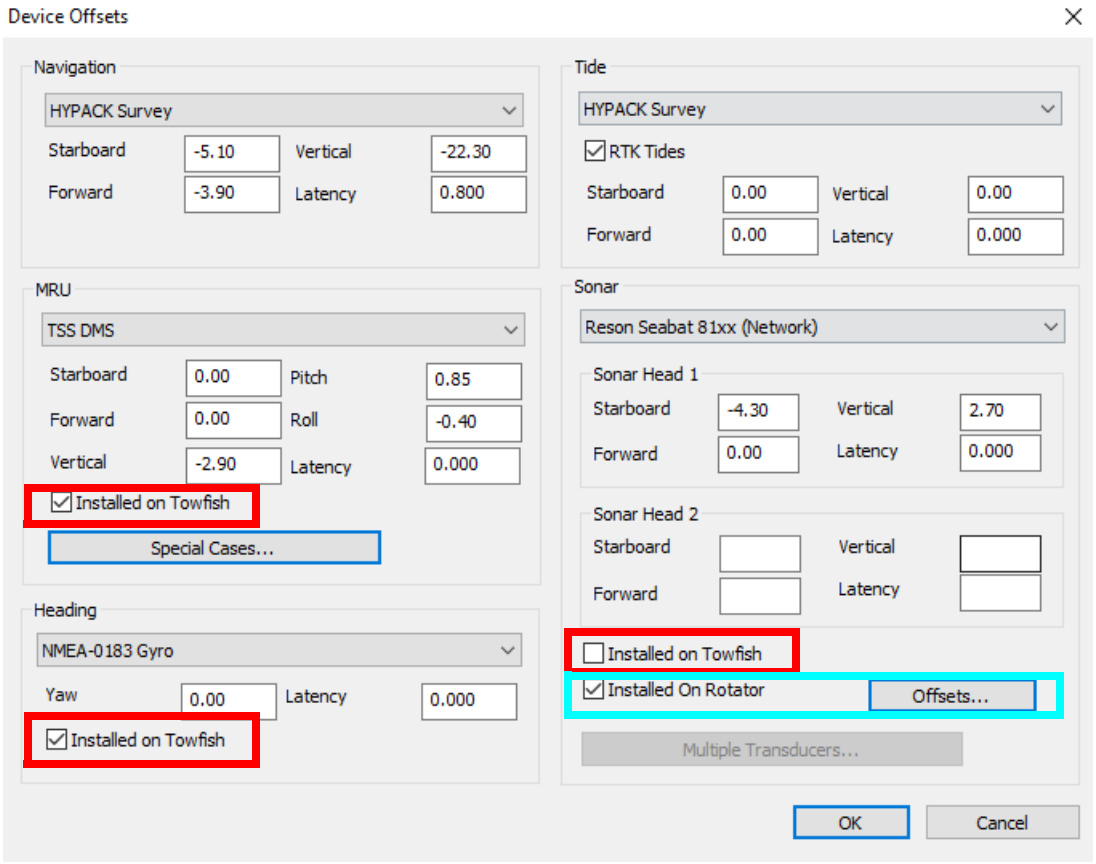


64-BIT HYSWEEP® EDITOR (MBMAX64)

A couple of new options have been added to the Device Offsets UI in Read Parameters -> Devices Tab -> [Edit]. These options are the “Installed on Towfish” and “Installed on Rotator” checkboxes.

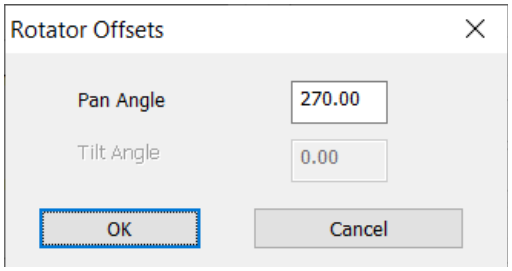
- **Device Offsets now show the mounting location of the MRU, Heading, and Sonar devices with the new “Installed on Towfish” checkbox in Device Offsets.** With the “Installed on Towfish” checkbox, users can ensure that dynamic draft intended for the boat is not applied to a mobile and its associated devices, and vice versa.

The device location can be changed on file loading, however it is disabled after files are loaded.



- **Users can now specify if a sonar is installed on a rotator with the "Installed Rotator" checkbox.** To set the rotator angle, click [Offsets] to open the Rotator Offsets window.

  The checkbox and offsets button are disabled after files are loaded. Reload the files to make any changes.



UTILITIES

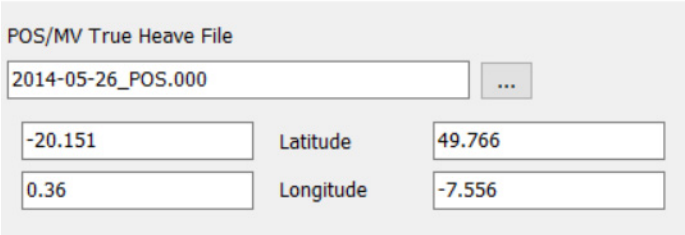
SOUND VELOCITY

- **Added support for the Valeport SWiFT CTD**.
  - > Set up, use, process, and download Valeport SWiFT CTD data from HYPACK® or HYSWEEP® the same way you would for the Valeport SWiFT SVP device.
  - > In HYPACK Hardware Setup under HYSWEEP Devices, add the Valeport SWiFT SVP driver to use with either SVP or CTD devices. Detection of whether you have a CTD or SVP connected occurs automatically without further user input.
  - > For instructions on processing Valeport SWiFT data, see: "An Update on Valeport SWiFT Usage within HYPACK" by Andrew Clos.

SBET EDITOR

Several new features have been added to the SBET Editor which are covered in detail in "SBET Editor Updates" by Jocelyn Kane. Here is a summary of the updates:

- **The blue POS/MV True Heave line is now drawn after a true heave file is loaded.** Previously, a blue line for heave was drawn at 0 even if a POS/MV True Heave file is not loaded. This update ensures the accuracy of the SBET File Editor display by drawing heave only from a loaded file.
- **Zoom Extents now only uses visible data points to determine and set the window view.** This means if the data has been edited and the Show Original Data box is unchecked, zoom extents only uses the remaining data points to determine the view. If Show Original Data is checked, Zoom Extents will take into account the original dataset to determine the view.
- **Latitude and Longitude display boxes have been added to the top of the SBET File Editor window.** These boxes display the Lat/Lon values where the cursor is positioned.



- **The Delete button has been added to the toolbar, which enables users to delete data above or below a specified value.** Users can also select a specific part of the data

that they want to the deletion and interpolation to apply. This addition helps users remove data spikes, which you can see in the example before/after images below.