HYPACK 2025 Q1 Release

by Caroline Liu

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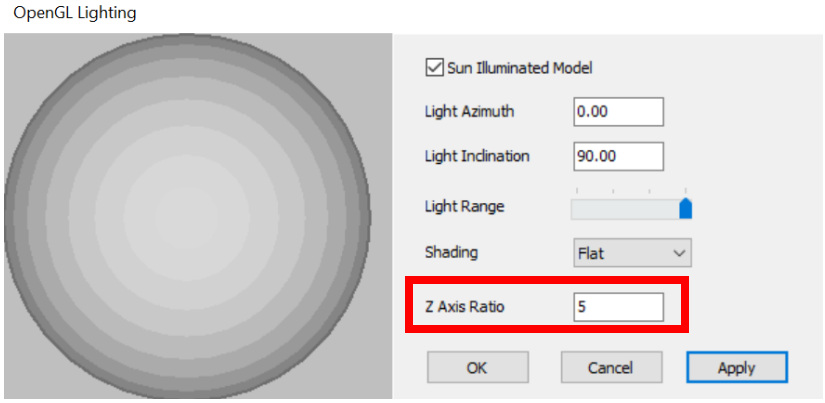
The table of contents lists the programs and processes that have received new features, updates, and bug fixes in the HYPACK 2025 Q1 update. Click and jump to the sections for more information.

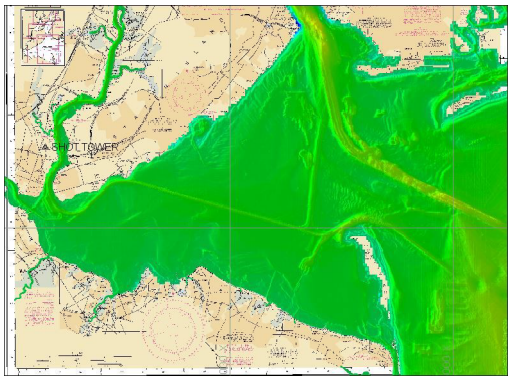
HYPACK SHELL

- **The OpenGL Lighting settings now apply to MTX, BAG, S-102, Esri GeoTIFF, TIN, and TIN surfaces.** This means the Light Settings widget applies to all surface models supported by HYPACK®. Open Light Settings from the HYPACK Shell in the Map window by clicking on Widgets -> Light Settings. The OpenGL Lighting window opens.
  > **Additionally, the Z Axis Ratio field has been added to the OpenGL Lighting dialog.** This field accepts floating point values from 1 (default) to 11, and is used to exaggerate and enhance the visual effect of sunlight on the surface of the supported models, improving visualization. Make sure the Sun Illuminated Model box is checked to apply the Z Axis Ratio.

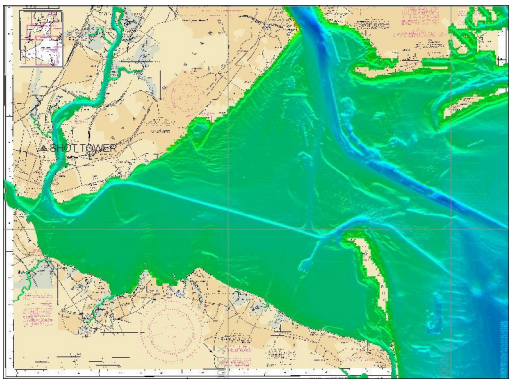


Example images of sun illumination and Z axis exaggeration applied to different file types are shown below:

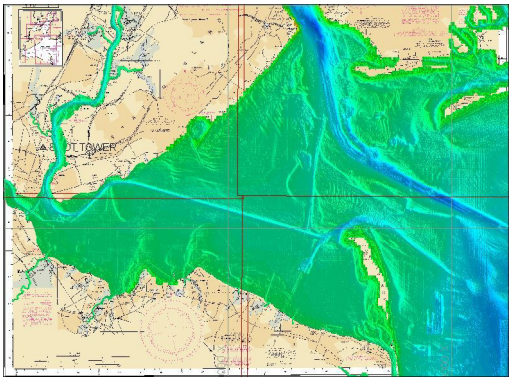
Z axis exaggeration - Esri TIFF



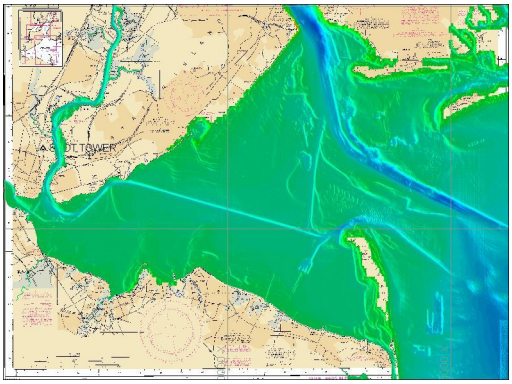
Z axis exaggeration - MTX



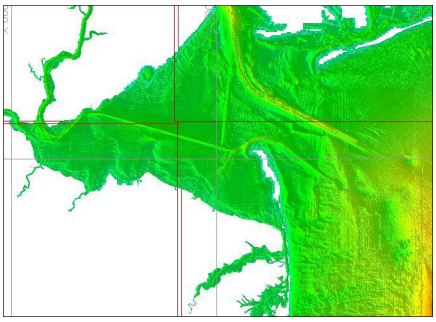
Z axis exaggeration - S-102



Z axis exaggeration - TIN

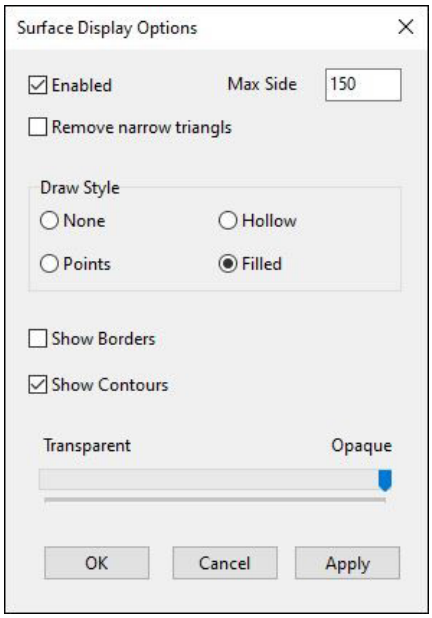


Z axis exaggeration - BAG



- **Users can now TIN an XYZ file with new display option Display as Surface.**

  In the HYPACK Shell, navigate to the Project Items list, and check the box next to the name of the file you want to change the display settings on (You must have the file checked for the Display as Surface option show up!) Right click the file name, then click Display As Surface. The Surface Display Options window appears, which has the following settings:



  > Enabled - Check to display data using the settings selected in the Surface Display Options window. Note that Display as Surface will also be checked in the right click menu.
  > Remove Narrow Triangles - Removes (decomposes) narrow triangles from the resulting TIN. Our definition of “narrow” is currently if one of the angles of the triangle is 2 degrees or less.
  > Max Side - Maximum distance searched between points to form triangles. After tessellation is complete the algorithm decomposes triangles containing an edge length greater than Max Side.

  Draw Style:

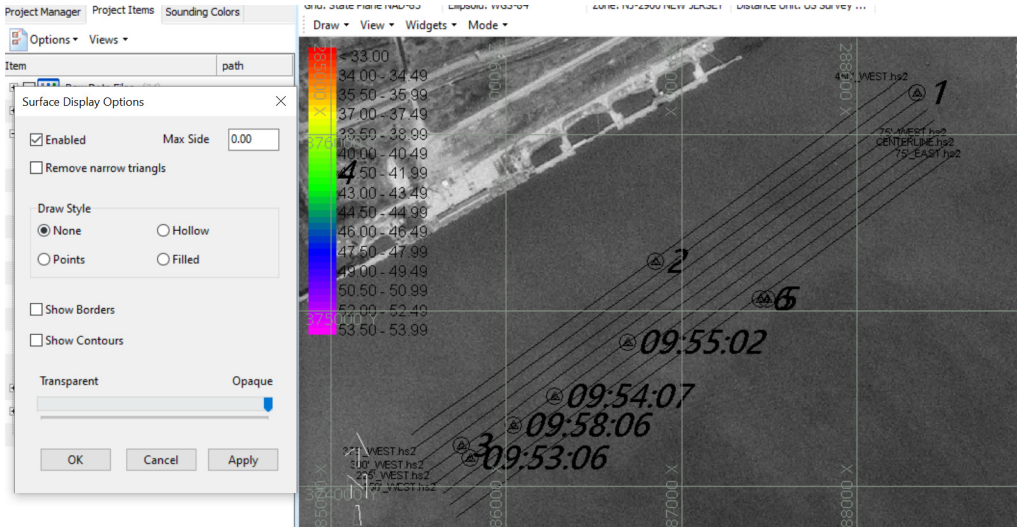
  > None - no data points are displayed.
  > Points - data is displayed as colored points corresponding to depth values.

> Hollow - data is displayed as a series of interconnected colored points. The interconnecting lines are colored using extrapolated values calculated using the points they are connecting.
> Filled - data is displayed as a solid surface using data points to extrapolate depth values.

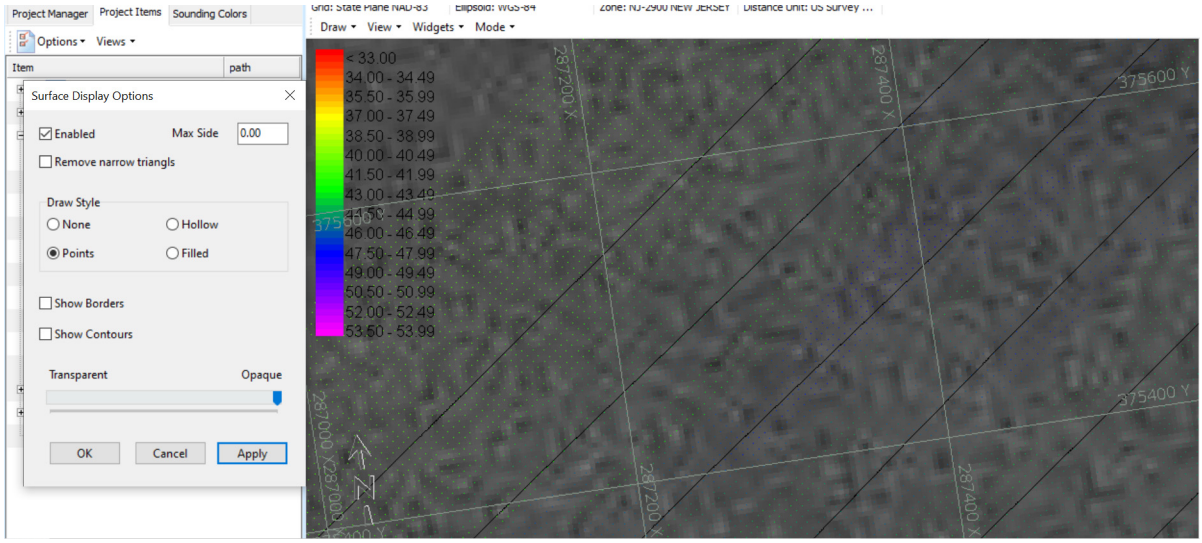
> Show Borders - draws the border around the data.
> Show Contours - draws contour lines in black.
> Transparency slide - control the transparency or opacity displayed surface in the Map window.
> Click [Apply] to display the file using the updated selected settings from the Surface Display Options.
> Click [OK] to apply these updated settings and close the Surface Display Options window.

Example images of different Draw Styles are shown below:

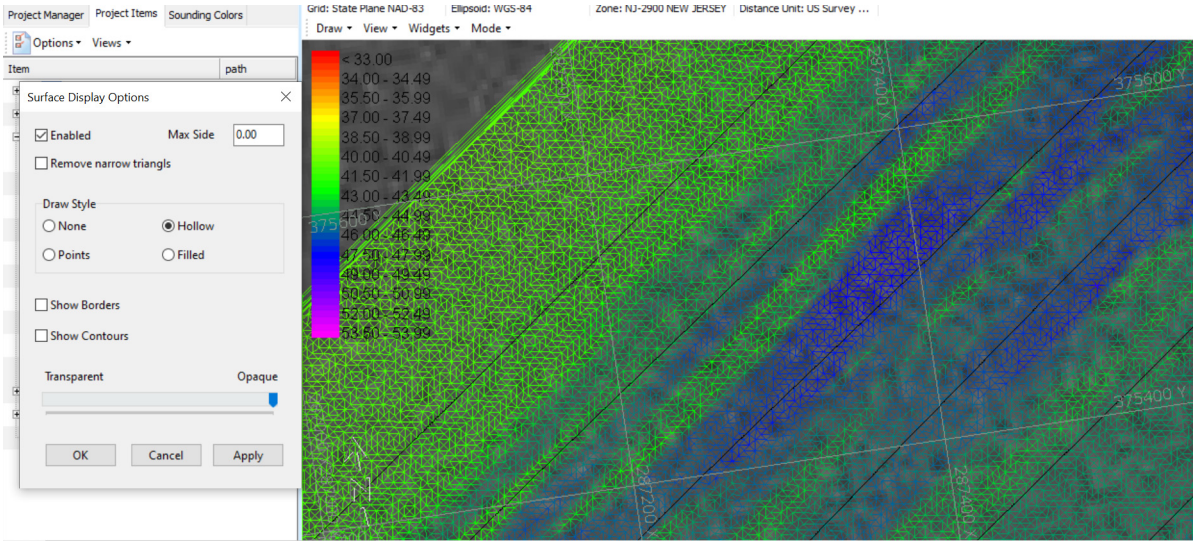
Draw Style - None



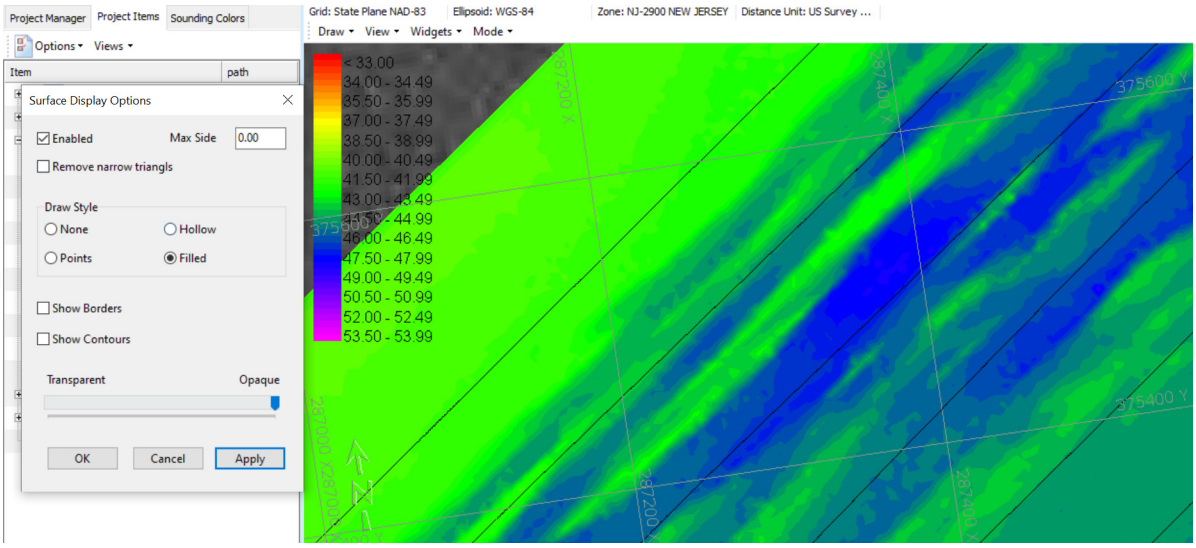
Draw Style - Points



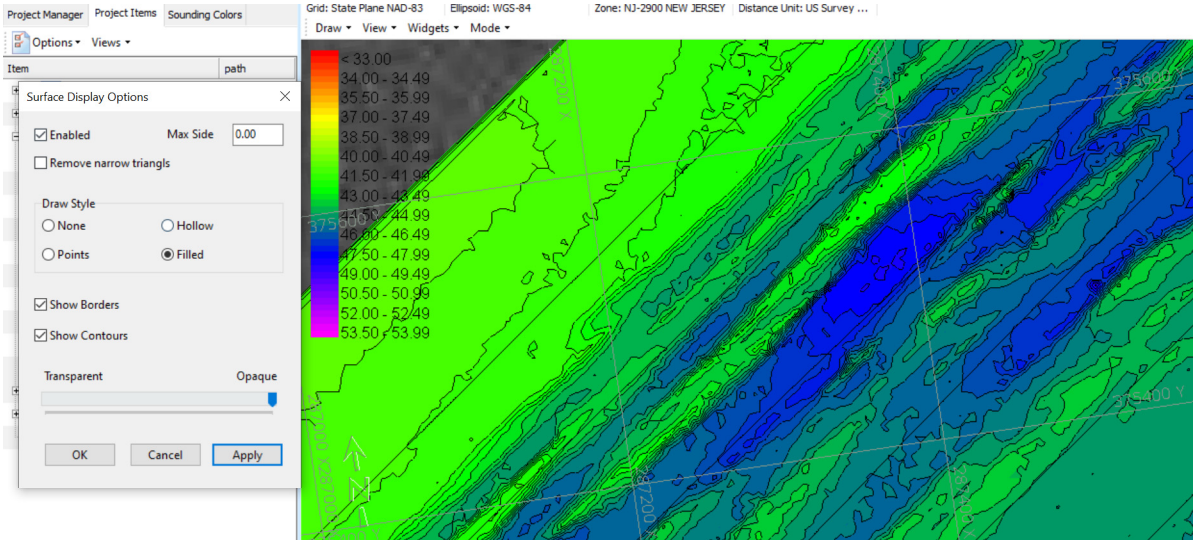
Draw Style - Hollow



Draw Style - Filled



Draw Style - Show Contours



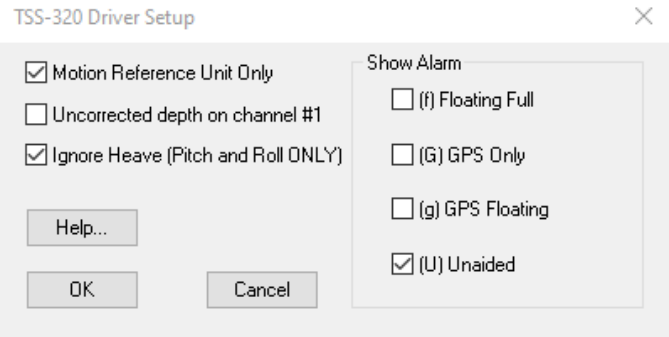
HARDWARE

SURVEY DEVICE DRIVER UPDATES

- **Tss320.dll (Tss Motion Reference Unit):**

  Added the Ignore Heave (Pitch and Roll ONLY) checkbox to the TSS-320 Driver Setup

window. While checked, heave is not displayed in SURVEY. The heave value is saved as zero in the HCP strings, while pitch and roll values are recorded.

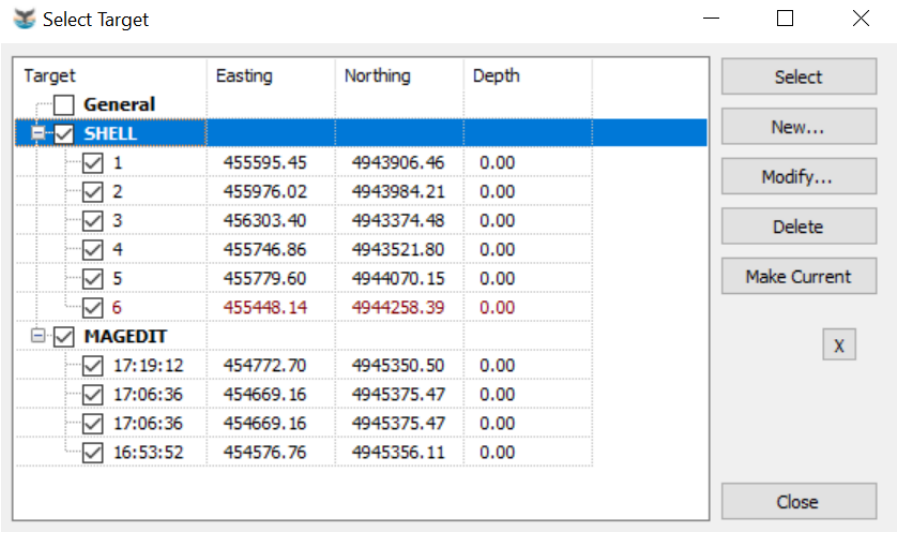


SURVEY

- **The HYPACK Survey logo has been updated to improve its visibility in the taskbar**. Here is the updated logo.

- **The Target Select box has been changed to a tree structure that enables the user to quickly turn groups of targets on and off.**
  To access the updated Target Select dialog in HYPACK Survey, click Targets -> Select. The Select Target dialog appears. Targets are now organized by target group name, and

the dialog shows the Easting, Northing, and Depth values for each target for easier identification.

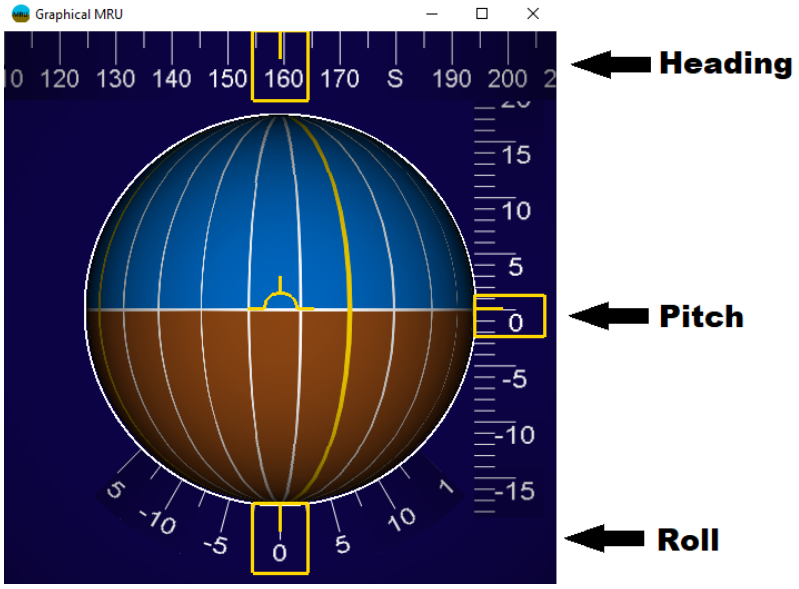


- **The Graphical MRU window has been updated to easily show users the heading, pitch, and roll values in real time.**

  There are three scales in the window that show the real time values of heading (top), pitch (right), and roll (bottom). The vessel is represented by the yellow half circle in the center.

  To switch the display between day and night mode, simply click anywhere in the window.

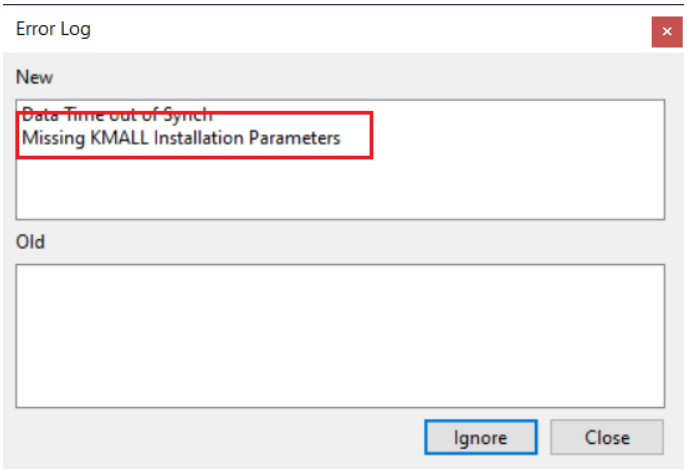
  To view the Graphical MRU window, from the HYPACK Shell, click Survey and choose among one of the three HYPACK Survey options to open the Survey window. In the Survey window, click Options -> Shared Memory -> Graphical MRU.



HYSWEEP® SURVEY

- HYSWEEP® Survey now applies range adjustments to KMALL data if they are available. Range adjustments account for the difference between transmitter and receiver array locations.

  An error message will appear in the Error Log if KMALL installation parameters are missing. These are needed for the range adjustments.



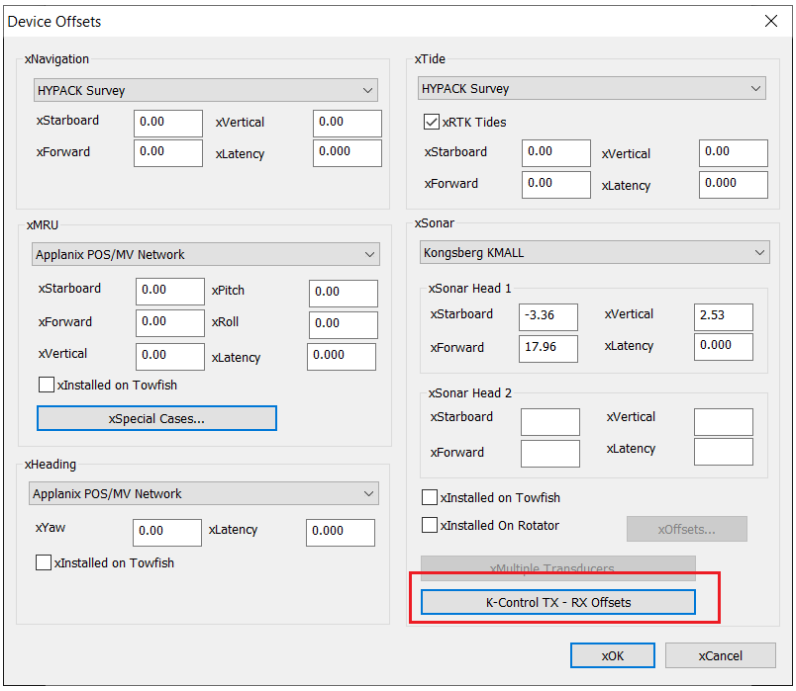
If HYSWEEP® Survey does not receive installation parameters, real time soundings will be slightly inaccurate, however the survey can be fixed from the MBMAX64 Device Offsets window.

POST-PROCESSING

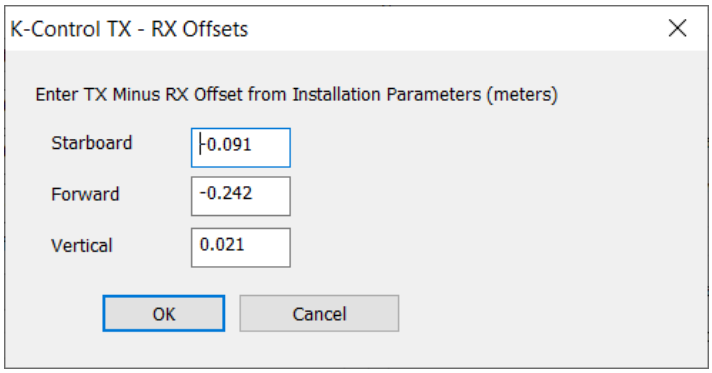
64-BIT HYSWEEP® EDITOR (MBMAX64)

- **For data logged to HSX files by KMALL driver: Added a button in the Device Offsets window that opens a new form for entering the sonar transmitter (TX) and receiver (RX) offset values obtained from K-Controller.** From the Device Offsets window, click

[K-Control TX - RX Offsets].



The K-Control TX - RX Offsets window appears. Starboard, Forward, and Vertical offset values are entered exactly as found in the K-Controller installation parameters. Note that the units are in meters, and the receiver (RX) offset is subtracted from transmitter (TX) offset.



FINAL PRODUCTS

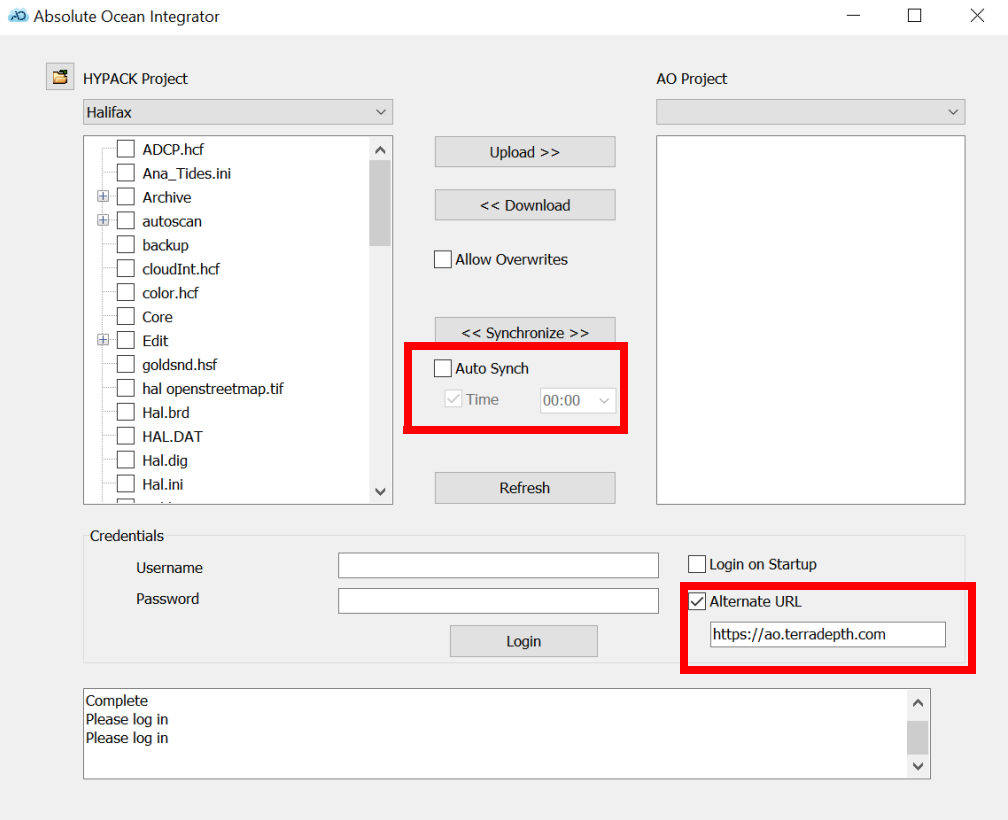
TIN MODEL

- **The BAG file export option has been removed from the Export dropdown in the TIN Model program.** Users should instead use MBMAX64 to create BAG files. Refer to Exporting Bag Files from the 64-bit HYSWEEP Editor in the HYPACK Manual for more information.

UTILITIES

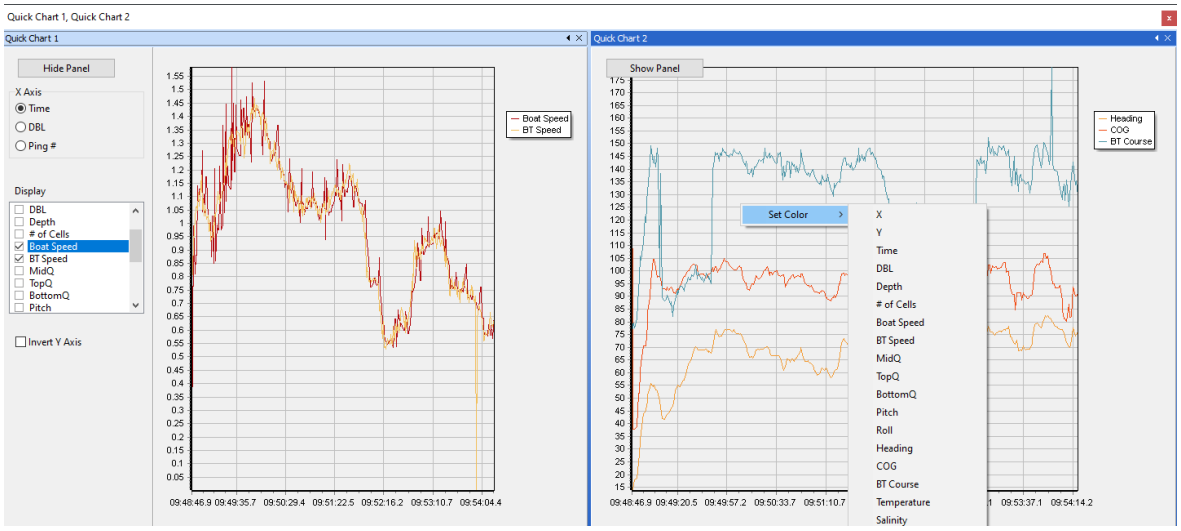
ABSOLUTE OCEAN INTEGRATOR

- The Absolute Ocean Integrator window now has received a few updates:
  - > Users now have the option to specify the file Auto Synch time. To do this, check the Auto Sync and Time checkboxes, and select the desired synch time from the drop down menu. While checked, the program compares the current time against the desired synch/upload time, and runs the file synchronization process to send HYPACK file updates to the Absolute Ocean website, when that time passes. Note that after the synch occurs, the Auto Sync and Time checkboxes need to be re-select for the next day.
  - > Users can now log into Absolute Ocean from an alternate URL. To do this, check the Alternate URL checkbox and type in the web address in the box underneath. This URL is saved to the *.ini file and repopulated if used.



ADCP PROFILE

- **Graph windows are a new feature in the ADCP Profile program, which allow users to display multiple sets of data simultaneously.**



To launch a graph window in the ADCP Profile program, select View -> Quick Chart. You can have several quick charts open simultaneously, and they are also dockable within the ADCP Profile window as a tabbed display.

> Click [Hide Panel] to hide the settings panel. Click [Show Panel] to display the settings panel.

> X Axis: Select among Time, DBL, or Ping # as x-axis values.

> Display: Check the boxes to select the data values to display on the graph.

> Invert Y Axis: Check this box to invert the y-axis.

> Set Color: To change the line color of a data set, right click on the graph and hover over Set Color to expand the list of data values. Click on the data value name, and the Color selection window will appear. Pick the desired display color for the data set, then click [OK].

- **SonTek M9 temperature data is now displayed in the ADCP Profile program.** All temperature values now show in the spreadsheet, and can also be plotted in a graph window.

CLOUD

- **The CLOUD program now supports Esri TIF files.** Users can load an Esri TIF file into the CLOUD program, and then edit the file and save it as an XYZ or LAS file.