



HYPACK
a xylem brand

Sounding Better!

HYPACK® 2021 Q1 Release Notes

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HYPACK INTERFACE (SHELL)

- **From the Project Items list, you can invert the Z-value in an individual XYZ file:** right-click on the XYZ file and select Invert Depths. A File Save dialog appears for you to save the inverted depths using the same file name or using a new name to create a new file. [Cancel] temporarily displays the inverted values until you disable and enable the file again; it does not change the data.
- **Single beam HS2x files draw depths of 0** rather than ignoring them, leaving gaps in the data.
- **The TideView graph displays multi-day tides.**
- **Georeferenced PDF files are drawn with increased 300 DPI resolution.**
- **KML file points draw in black.**
- **Target Database shows targets in the same order as the legacy Target Editor.**
- **ESRI Export:** Corrected coding conditions which caused the geodatabase window to fail.
- **Files for interface localization have been updated for the Russian language.**

SOFT LICENSES

A soft license replaces the dongle with web-based license activation and deactivation routines. There are activation routines for HYPACK® computers with or without an Internet connection. Soft licenses are compatible with dongles so, for example, you can pair a HYPACK® Max soft license with a HYSWEEP® dongle and have the full functionality.

IMPORTANT: The soft license must be refreshed at least every 90 days. If the license is not refreshed, the license is deactivated. Each time you refresh your license, the day count restarts.

Refreshing a license occurs automatically when you launch HYPACK® on a computer with an Internet connection. Refreshing your license is a bit more cumbersome, but possible, without web access on the HYPACK® computer; however, it does require an online device.

NOTE: HYPACK® displays a reminder beginning 10 days before the end of your 90-day interval. The License Manager also displays the day count in the status bar.

Advantages

- No dongle that can be damaged or lost.
- Easy license transfer between computers, even when they are in different locations.

- Quick process from purchase to installation.

Disadvantages

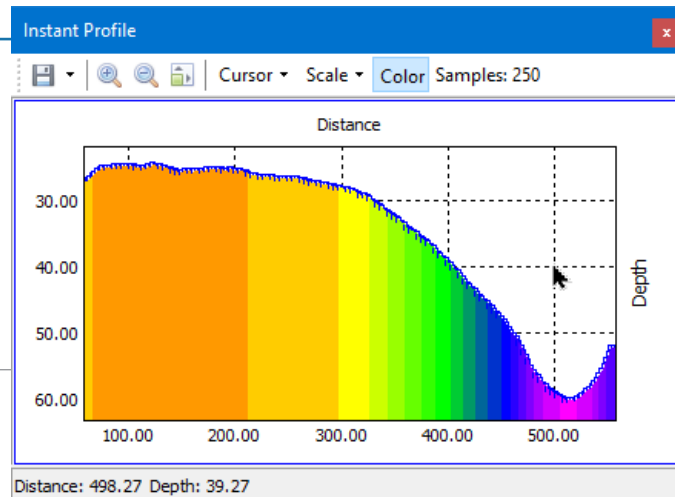
- A soft license does not support ARCS and S63 chart permits.
- A soft license leased license cannot convert to a permanent license.

MATRIX INSTANT PROFILE

Sample Matrix Instant Profile

- **Save XYZ stores a user-defined number of points.** The Samples option defines the number of points generated across the next profile line. You can then export the points with the corresponding depths. The default value is 250. The minimum is 2.

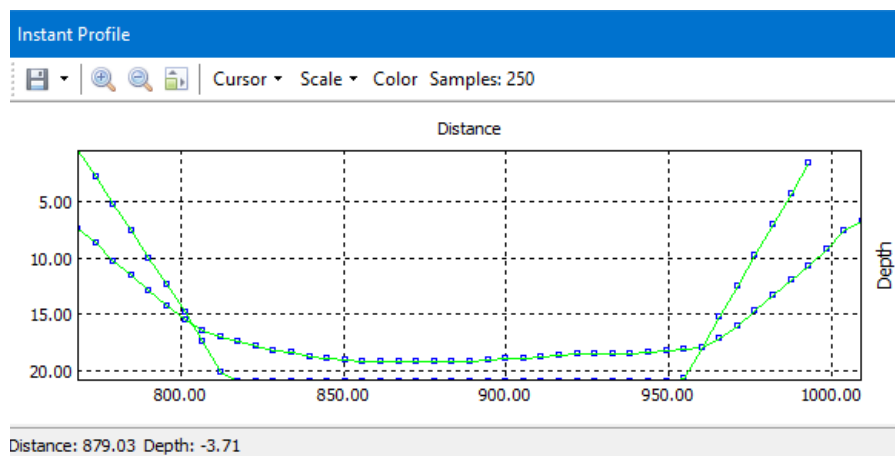
NOTE: If the profile crosses unfilled matrix cells, those points are discarded resulting in fewer than the specified number in your output file.



- **Generates points along the enabled channel template (*.CHN).**

Tip: To see compare bottom and channel depths, remove the color fill.

Instant Profile of Bottom Depths with Channel Template Depths



- **Save Image** option stores a screen capture of the current matrix profile.
- **The status bar shows the depth for each cursor mode:** Annotation mode now shows the bottom depth at the cursor position. Default mode still shows the depth at the cursor position.

SOUNDING COLORS

Bug Fixes:

- **Zone Fixes:**
 - > Zone colors are always displayed for table with editable colors. (If you select a style that has fixed colors—DXF Colors and Spectrum, and Contrast—there is no zone display.)
 - > Inverting colors also inverts zones.
 - > Zones are stored in the color table file to keep the Style synchronized with the band colors.
- **Alternate color table assignments remain in project transfer.** A color table assigned to a data file (different than the default project color table) is stored in a project relative format, where possible, to be included when you Transfer the project .
- **Color tables refresh when a launched process closes** to pick up any changes.
- **Most ancillary program modules honor the default project colors set in the HYPACK® Shell.** New code “behind the scenes” works to keep your project colors consistent.

NOTE: You should still avoid naming your color tables either color.hcf or colorint.hcf, as they are still reserved for other purposes.

- **Live Preview:** As you select different tables in the Color Manager, the Shell updates its display to preview the data display using the selected table.
- **In the Color Table Editor, [Apply]** updates the HYPACK® map display.

CUSTOM SOUNDING COLORS

Custom colors appear in the color selection dialog where you can select them to define the a particular color for soundings.

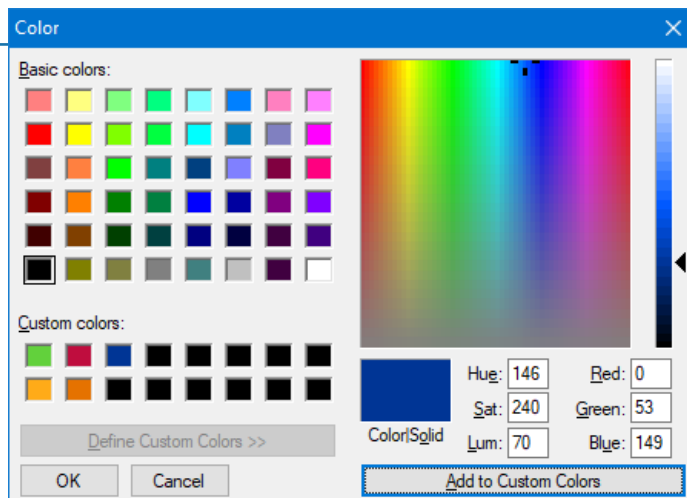
Color Selection Dialog

If you have particular colors that you use for your soundings, you can define them in the Color Selection dialog and use them to define the sounding colors in the Color Table Editor.

The custom colors from the current editing session are stored in the HCF file and available next time you edit that color table.

If you need the same custom color set for additional color tables, you can store one or more sets from the Color Table Editor, each to a separate INI file. (Select FILE-SAVE CUSTOM COLORS.) You can then restore the custom color set

required for your purposes in future color table editing: just load the appropriate INI file to



populate the Custom Colors area of the color selection dialog. (Select FILE-LOAD CUSTOM COLORS.)

The custom color sets are stored, by default, in the C:\HYPACK Store\Color Tables folder.

SAVING YOUR COLOR FILE

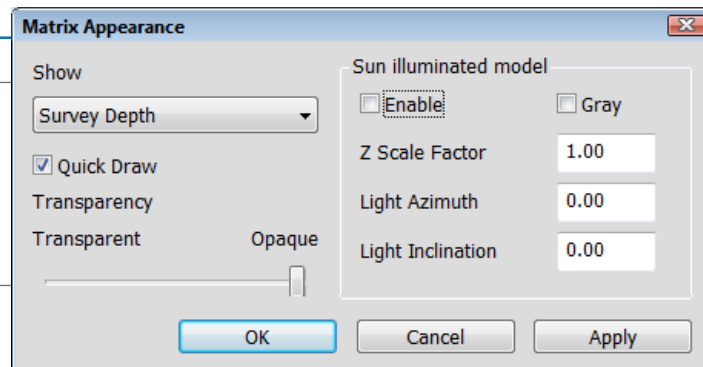
- **Extended File Save and Open options.** The Color Manager shows color files (*.HCF) stored in both the project and C:\HYPACK Store\Color Tables folders. The Color Editor menu now includes additional file save and open options that automatically access the HYPACK Store location for more efficient use of color tables that may be used in multiple projects.
 - > **To save new color tables,** use FILE-SAVE or FILE-SAVE (SHARED) store the file to the project folder or the C:\HYPACK Store\Color Table respectively.
 - > **To save an existing color table to the other file location,** use FILE-SAVE AS or FILE-SAVE AS (SHARED).
- **Zone stored with each color table.** The HCF file has always stored the bands and colors. Zones, however, were not, and the zone display often got out of sync and showed a different style from the color bars. Storing the zone colors to the color table corrects this problem once and for all.
- **Custom Colors stored with each color table.** The custom colors from the current editing session are stored in the HCF file and available next time you edit that color table. You can change the custom colors either in the Color Selection dialog or by loading a different custom color set. (See [“Custom Sounding Colors”](#))

COLOR TABLE ASSIGNMENTS FOR SURVEY OR DREDGEPACK® MAPS

When you want to use multiple Map windows in SURVEY or DREDGEPACK®, you may do so to display different values represented in your logged data. For example, Matrix files have two depth fields that enable you to choose from several values for color-coding the matrix—primarily Survey or Dredge depths, or the difference between the channel template and either the Survey or Dredge depth. You can set the value in the Matrix Display Options.

Matrix Display Options

NOTE: These settings do not affect the values that are stored in the matrix. *They are for display purposes only.* You can change them at any time.

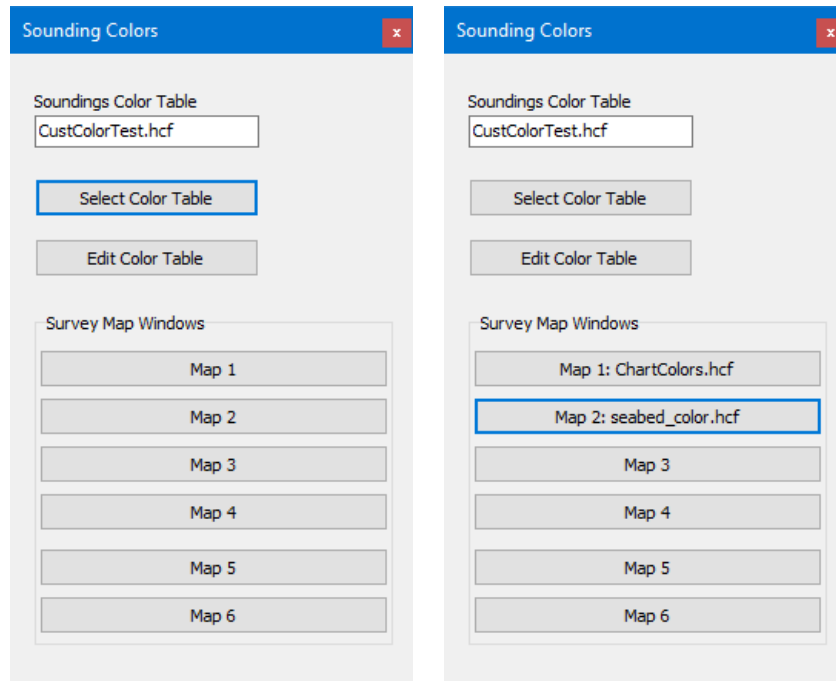


Since these values are likely to represent quite different values, they are likely to need different color tables. In the Sounding Colors panel you can now pre-define a color table for each of the possible six Map windows available in SURVEY or DREDGEPACK®.

All Map windows in SURVEY or DREDGEPACK® use the default color table, unless you use the Survey Map Window buttons to pre-define a color table: Click the button corresponding to the Survey Map window for which you want to assign a color table, select the color table from

the Color Manager and click [OK]. Each button with an alternate color table assignment displays the HCF file name on the button.

Sounding Colors Panel—All Map Windows Use the Default Color Table (left), Map 1 and 2 Show Alternate Color Tables (right)



PREPARATION

GEODESY

- Warning if component of RTK correction method is unspecified.

VDATUM SIMPLIFIED

VDatum Zone and Surface drop-downs read file names from the HYPACK VDatum folder (C:\HYPACK 2020\datum\vdatum), rather than from hard-coded database.

- Allows non-standard names in VDatum Surface drop-down.
- Eliminates the very large VDatum install folder from HYPACK.
 - > You can download only the VDatum files you need from the NOAA site, rather than a large file that includes all files.
 - > Avoids potential IT restrictions regarding software installation.
 - > Instantly updates the options for new and updated VDatum files. We don't have to synchronize our coding for each NOAA change, and users can implement NOAA changes instantly. Everybody wins!

GEODESY IN THE PROJECT WIZARD

The new Selection Mode options expand the available methods you can use to set your project geodesy.

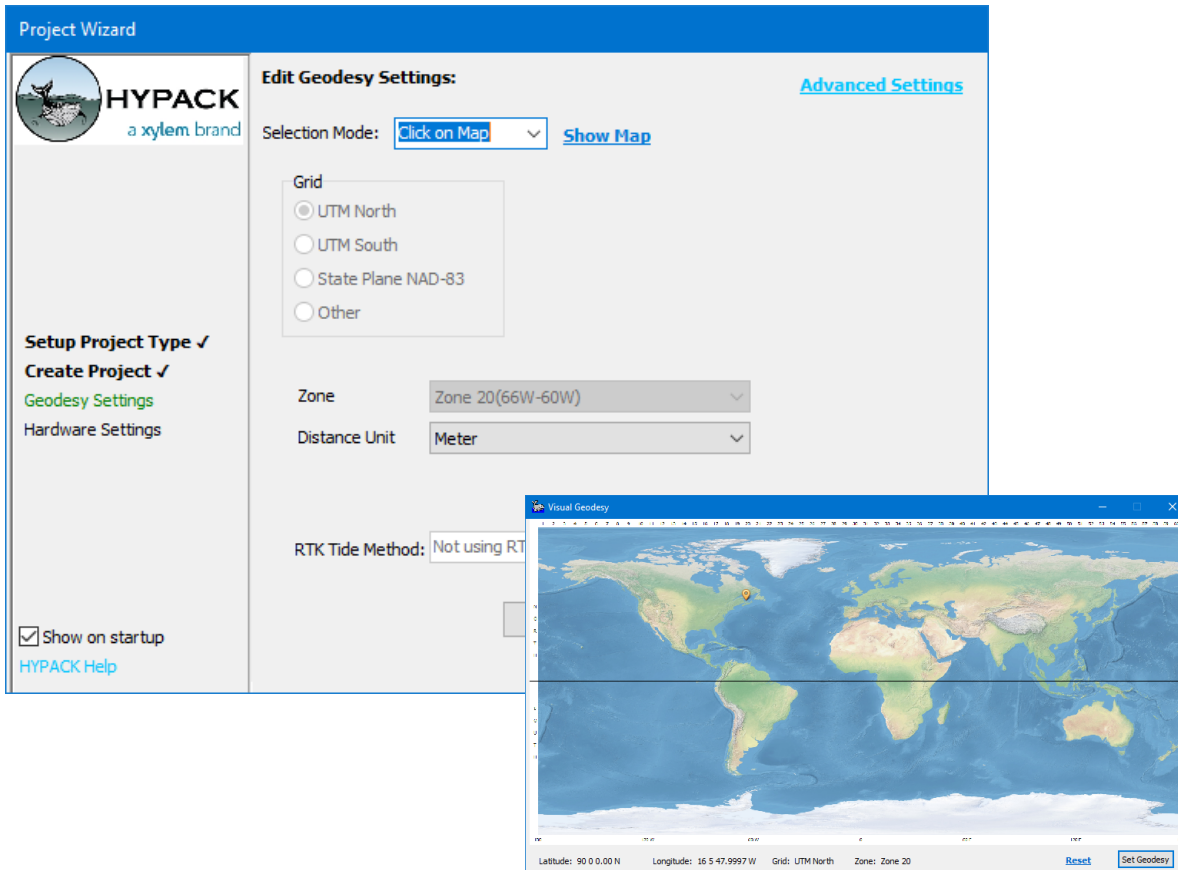
NOTE: Both of the new options are available *only for UTM grids*.

- **Location Mode** displays fields where you can enter the latitude and longitude of your project area. Then, when you click [Set Grid and Zone], the wizard automatically selects UTM North or South based on the latitude, and the zone based on the longitude.

Location Mode

The screenshot shows the 'Project Wizard' interface with the 'Edit Geodesy Settings' dialog box open. The dialog has a blue header with the 'Project Wizard' title and the HYPACK logo (a xylem brand). On the left, there is a sidebar with navigation options: 'Setup Project Type ✓', 'Create Project ✓', 'Geodesy Settings' (highlighted in green), and 'Hardware Settings'. At the bottom of the sidebar, there is a checkbox for 'Show on startup' and a link for 'HYPACK Help'. The main area of the dialog is titled 'Edit Geodesy Settings:' and includes an 'Advanced Settings' link. The 'Selection Mode' is set to 'Location'. Below this, there are radio buttons for 'Grid' selection: 'UTM North' (selected), 'UTM South', 'State Plane NAD-83', and 'Other'. To the right, there are input fields for 'Latitude' (45 0 0 N) and 'Longitude' (63 0 0 W), with a 'Set Grid and Zone' button below them. Below the grid selection, there are dropdown menus for 'Zone' (Zone 20(66W-60W)) and 'Distance Unit' (Meter). At the bottom, there is an 'RTK Tide Method' dropdown set to 'Not using RTK tide'. At the very bottom of the dialog are three buttons: 'Back', 'Next', and 'Cancel'.

- **Click on the Map** displays a world map where you can use your cursor to indicate the location of your survey area. The wizard then chooses the UTM Grid and Zone accordingly. If you want to adjust your location using the map again, the Show Map link reopens the map display.



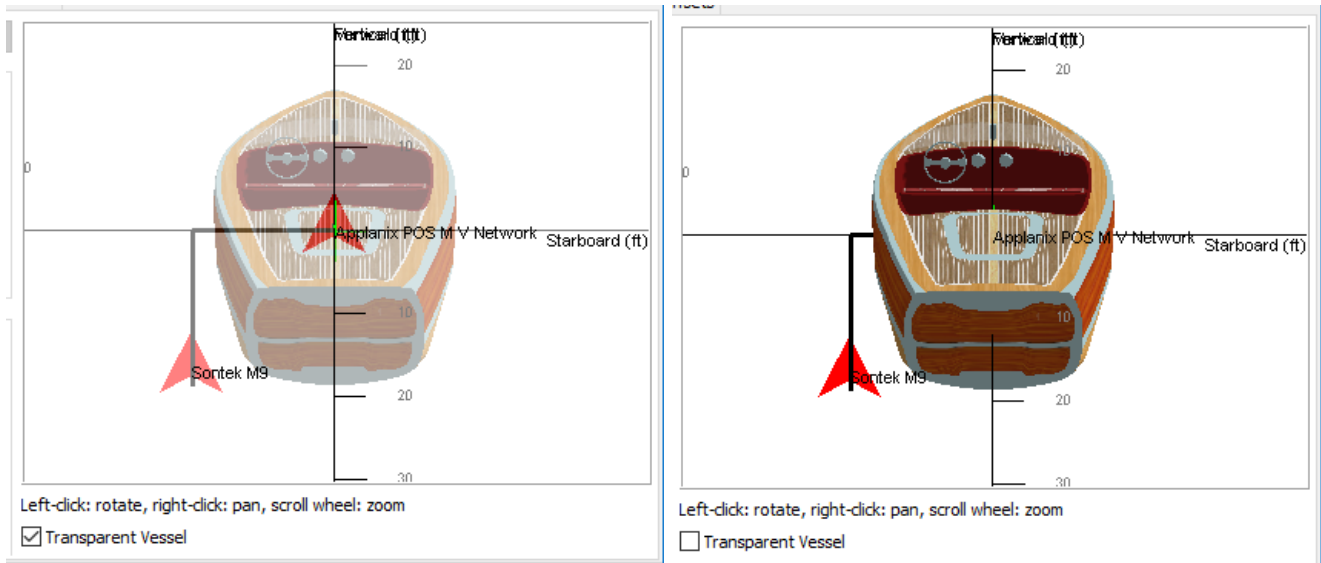
As before, the RTK Tide calculation method appears in the display but any changes must be made in the GEODETIC PARAMETERS module. Click the Advanced Settings link to get there.

HYPACK HARDWARE

SUPPORT FOR 3D OBJ BOAT SHAPES

In the Offsets tab, in addition to the default or *.3OD shape files, you can also now load 3D OBJ files to represent the mobile (Boat) and hardware devices. The display shows your devices, relative to the mobile with the offsets currently configured for each device.

The Transparent Vessel option enables you to see devices positioned within the mobile shape. (Otherwise, it would be hidden in the display.)



DRIVER UPDATES

- **EchotracE20.dll:** Added option to use the timetag from the device over HYPACK® SURVEY time.
- **GPS.dll:** PTNL,GGK msg. has been updated for the new Trimble status codes.

Updated PTNL,GGK Quality Indicators.

- 0: Fix not available or invalid
- 1: Autonomous GPS fix
- 2: RTK float solution
- 3: RTK fix solution
- 4: Differential, code phase only solution (DGPS)
- 5: SBAS solution – WAAS/EGNOS/MSAS
- 6: RTK float or RTK location 3D Network solution
- 7: RTK fixed 3D Network solution
- 8: RTK float or RTK location 2D in a Network solution
- 9: RTK fixed 2D Network solution
- 10. OmniSTAR HP/XP solution
- 11: OmniSTAR VBS solution
- 12: Location RTK solution
- 13: Beacon DGPS
- 14: CenterPoint RTX
- 15: xFill
- 16: INS Dead Reckoning
- 21.1.

- **MDL.dll:** Converts input measurements to survey units.
- **NOAATides.dll:** Corrected problem reading NOAA tides on Windows® 7 computers.

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- **SBG.dll**: Corrected problem with logging through midnight.
 - **Subbot.dll**: Works in a playback configuration (as well as for data collection).
 - **Vulcan.dll**: Updated to honor the Use Uncorrected Depths matrix option in SURVEY. Currently the driver takes whatever the setting is on startup. So, if you change it, you must restart SURVEY/DREDGEPACK®.

HYSWEEP HARDWARE

- **HYSWEEP_Extended.DLL** Description corrected.
- **Marine Sonic Seascan HDS**: Removed Chinese characters in English device name.
- **POS MV**: Allows multiple instances.
- **Reson, NORBIT, Kongsberg devices**: Small changes to setup to avoid confusion.

DATA COLLECTION

REAL TIME CLOUD

Display draws correctly when the legend is enabled.

HYSWEEP® SURVEY

Sound Velocity Profile imports with centimeter resolution, not decimeter.

POST-PROCESSING

64-BIT SINGLE BEAM EDITOR

- **The extension in the Open File dialog is now saved from the previous use.** No more having to keep switching from *.LOG to *.*.
- **Reads up to 2000 raw files.** Formerly, it had a 256 file limit.
- **In the Read Parameters, only HYPACK Navigation device appears as HYPACK Survey.** Previously, a few other HYPACK devices also appearEd there as HYPACK Survey.
- **Autoscale Z-range is more reliable.** The program updates the depth range more often so autoscaling the colors to the depth range ignores deleted soundings.

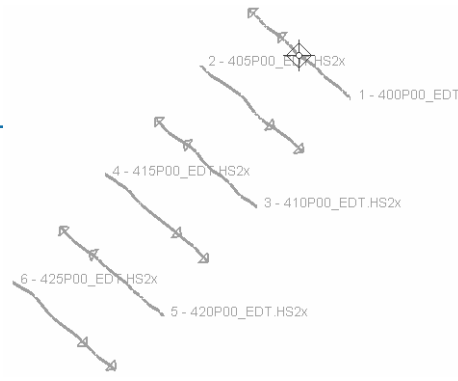
- **Arrows on the track line display** to show heading during logging.

Sample Track Lines in the Survey Display

- **Overlay displays corrected in the Survey and Profile displays.**

Overlays Dialog:

- > **Single files loaded in the Overlays dialog** now load properly. You can now mix single files and LOG files.
- > **The scrollbar loads consistently** to enable viewing long file lists.
- > **Spreadsheet function improved:**
 - **Shifting groups of files:** Select a group of files and click the up or down arrow buttons one or more times. The selected files all move together.
 - **Sort works better:** You can load single files in a few cells and if you click sort the files will move to the proper row.



NOTE: The sort function only works on the columns of the selected cells in the grid.

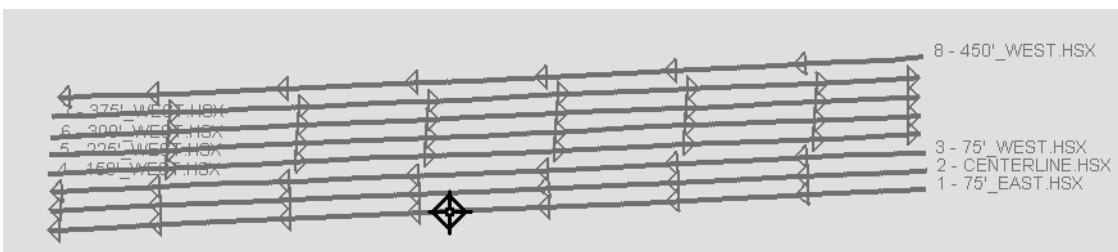
Profile Window:

- > **Overlay draws based on Show Depth 1 and 2 options.**

64-BIT HYSWEEP® EDITOR

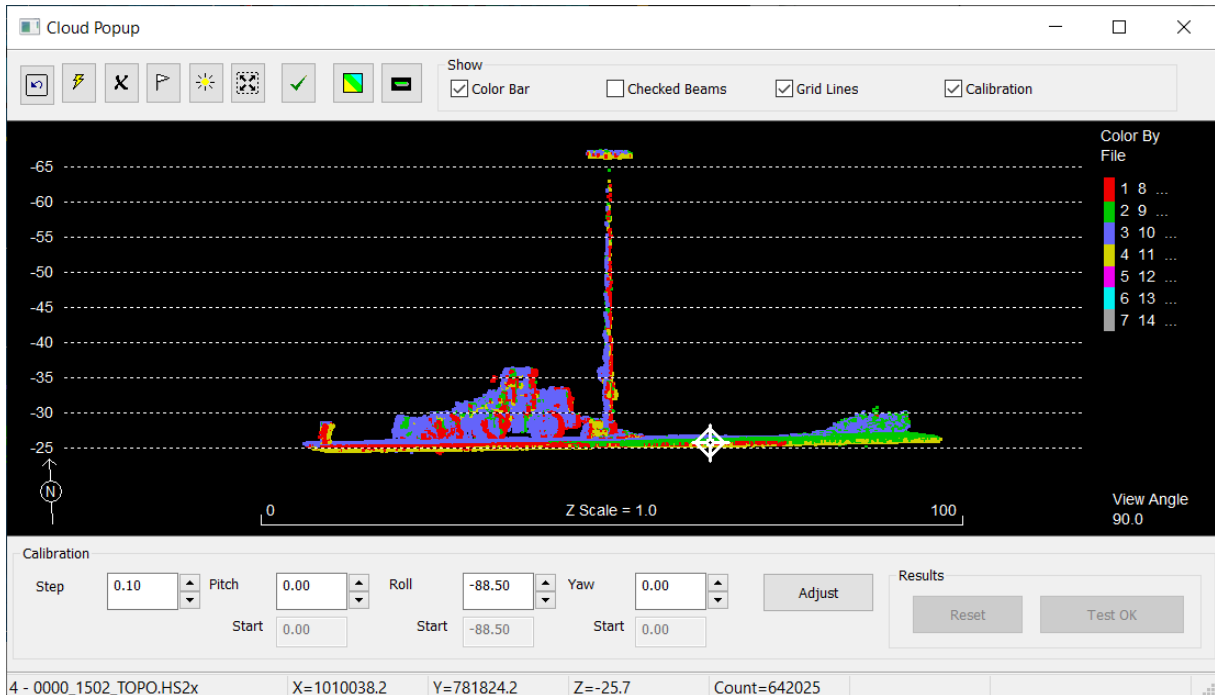
- **Cross Hairs option in the Show area of the toolbar** enables the point cursor in Stage 1, and the cross hairs in Stage 2.
- **Filter preview (Yellow X's) draws faster.**
- **Arrows on the track lines** to show heading during logging.

Track Line Display



- **Calibration window in Pop-up Cloud window:** A new tool for LiDAR calibration is in MBMAX64 (64-bit HYSWEEP® EDITOR) uses cloud points instead of the cross section of our traditional patch test. While there are advantages to each method, cloud calibration seems well suited to LiDAR systems.

Figure 3: Cloud Popup with Calibration Panel.



SIDE SCAN MERGE MOSAIC

Each file uses their own TFW coordinates rather than all of them using the same coordinates as the first file.

GEOCODER

Added support for the new snippets format written by HYSWEEP® (record number 7058).

FINAL PRODUCTS

HYPLOT

- Fixed the tree view checkboxes.
- Right-click on the color bar and select Settings accesses the Color Manager.

TIN MODEL

- **New Volume Report Options:**
 - > **Extended choice of Volume Report file formats:** In addition to the text file formats we've been using for years, you can also save your volume reports to PDF, Comma Separated Values (*.CSV), or to an Excel File (*.XLS).
 - > **Append or Overwrite:** When you export to CSV, XLS or PDF format, you must name your output file. If you select the name of an existing file, you can append the new report to the existing file (of the same format), or overwrite it. When you append the

report to an Excel spreadsheet, the new report appears on a new sheet in the same file.

Tip: You can even append your PDF volume report to a PDF exported from HYPLOT to keep both reports in one document.

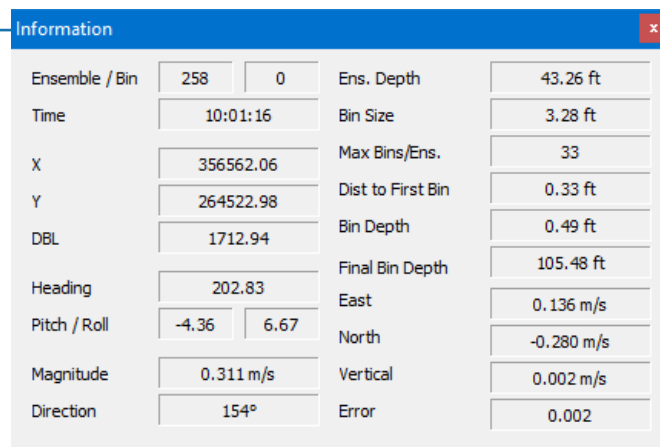
- > **Landscape or Portrait Orientation:** When you export to PDF format, choose the paper orientation that best fits your data. When you have several columns or your language makes longer labels, Landscape orientation helps prevent column labels from overlapping.
- > **Show Report When Done** opens your report in the appropriate application when the export is complete,
- **Improved 2D drawing:**
 - > Speeds are increased
 - > 2D fill and contour charts now included with other chart files.

UTILITIES

ADCP PROFILE

ADCP Profile Information Window

- **More extensive Information display:** Added Ensemble Depth, Bin Size, Max Bin/Ensemble., Distance to First Bin. Bin Depth and Final Bin Depth.
- **Corrected off-screen dialog problem.**



Information				
Ensemble / Bin	258	0	Ens. Depth	43.26 ft
Time	10:01:16		Bin Size	3.28 ft
X	356562.06		Max Bins/Ens.	33
Y	264522.98		Dist to First Bin	0.33 ft
DBL	1712.94		Bin Depth	0.49 ft
Heading	202.83		Final Bin Depth	105.48 ft
Pitch / Roll	-4.36	6.67	East	0.136 m/s
Magnitude	0.311 m/s		North	-0.280 m/s
Direction	154°		Vertical	0.002 m/s
			Error	0.002

MANUAL TIDES

- Corrected problem reading NOAA tides on Windows® 7 computers.

DOCUMENTATION UPDATE

We discovered that the HYSWEEP® and Side Scan Interfacing Notes were missing some supported devices. Updated documents are included with the other file updates.