



## 2021 Q2 Release Notes

By Judy Bragg

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### **SHELL**

- Updated to provide Polish language interface.
- Fixed error drawing DG2 charts caused by parentheses in text entries.
- Instant matrix profile honors elevation mode.

### **LICENSING**

- Corrected problem with soft license activation in Spanish Windows®.

### **NEW MENU ITEMS**

- **Added ENVIRONMENTAL EDITOR to the PROCESSING menu.** The ENVIRONMENTAL EDITOR is a modification of the MAGNETOMETER EDITOR, separating the features that allow you to view and edit data recorded to raw SMI records.
- **Added OBJ EDITOR to the PREPARATION-EDITORS menu.** The OBJ EDITOR enables you to modify the files to conform to HYPACK orientation conventions, to size appropriately for your survey vessel, and to optimize the OBJ shape display in HARDWARE and REAL TIME CLOUD.

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### **PREPARATION**

#### **S57 CHARTS**

**Distance Marks** display option increases the font size for river mile numbers.

#### **HARDWARE**

- **Advanced Nav INS driver:** Corrected inverted heave.
- **DQM\_Mechanical.dll:** Norfolk The data can come over a choice of ethernet or a serial port. On this \$RAW string only boom angle is applied to bucket depth math.  
Sample String:  
\$RAW,craneroll,cranepitch,boomangle,bargeroll,bargepitch,barometer,draft,temp
- **Echotrac E20 driver:** Added support for 32-bit echogram. Any data logged with the E20 is logged at full-quality—no downsampling as in earlier versions.

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Both the 32-bit and 64-bit Single Beam Editors have also been updated to process this new, full-quality echogram data.

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**NOTE:** SBMax 21.2.0 or SBMax64 21.2.2 and newer is required for processing.

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The E20 Device window in SURVEY includes Signal Range buttons to adjust the display brightness. *This does not affect the recorded data* – you will always record the full resolution echogram data, regardless of your Signal Range setting.

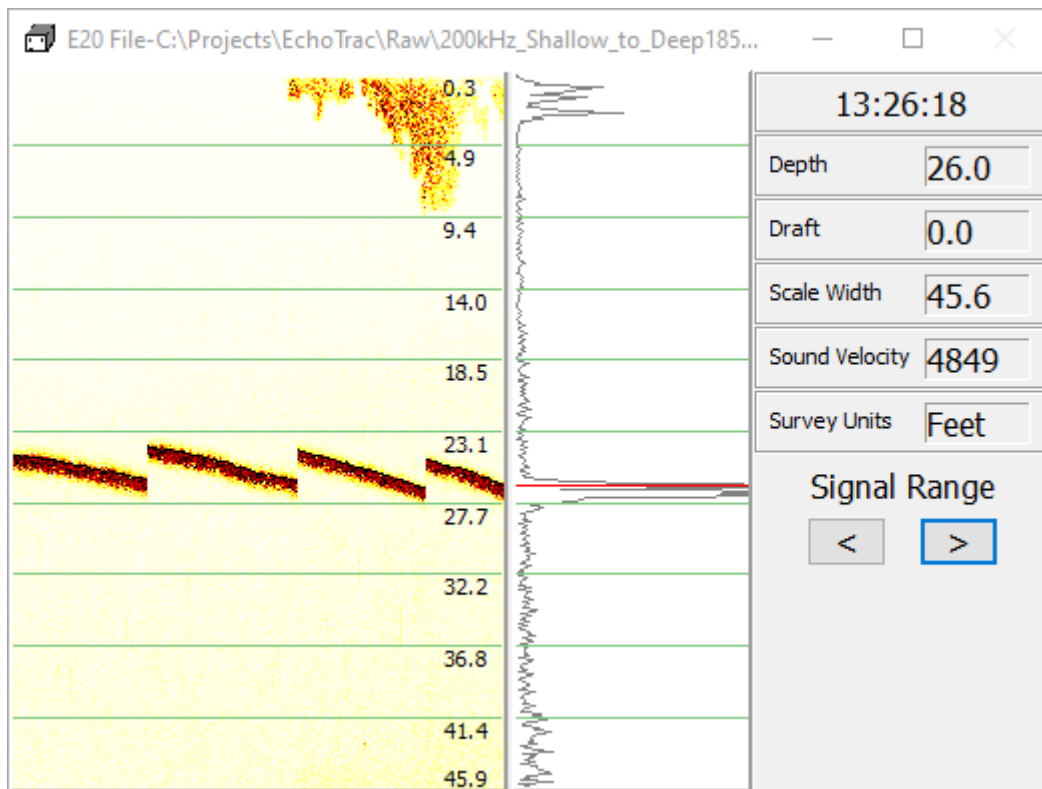
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**NOTE:** It's likely that, with the increased echogram signal range, you'll need to lower the signal range until you see your imagery.

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#### Sample E20 Echogram Display

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- **Geodimeter Driver:**
  - > Added support for Trimble S6 Robotic Total Station
  - > The vertical offset was subtracted instead of added, and it wasn't applied to the 39 message.
  - > Fixed to work with 7,8,9 messages, when NavStation information is entered.
- **Magnet.dll:**
  - > Changed the Marine Magnetics labels to be more clear. One is the compact format and the other is the standard format both of which are the same between the devices.
  - > Added support JW Fisher Proton 5, which has a separate message to include altitude.
  - > Corrected reading location
  - > Records the Device Specific Message in the Raw file.

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- **PosMV.dll:** Fixed SURVEY crash if Tide is disabled.
  - **PosMV3000:** The driver expected the sync string to begin with 0x99 0x90. Added support for sync strings beginning with 0x90 0x90.
  - **TideDr.dll:**
    - > Recompile corrected problem when using the Hazen 3011 provision in the driver connected to a serial port.
    - > Does not report a new tide unless the value actually changes.
  - **Towfish.dll:**
    - > Added [Reset Towfish Position] to reposition the towfish at its maximum cable length directly behind the vessel until the driver receives device input data to calculate it.
    - > Added an LCI-90i option to the cable counter that reads this format correctly.
    - > In the device window, the layback only adjusts after you press [Enter].

## HYSWEEP HARDWARE

- **Multiple Frequency Drivers:** Sonar frequency is HSX logged in RMB datagrams. Tacked on after ping number. HSX Format.doc changes are included in the ZIP. Most all of the HYSWEEP drivers have been updated to support this. Those that haven't been updated and those that don't know the frequency will log 0.
- **Added an option to suppress logging WGS84 data to HSX files (FILE -LOGGING OPTIONS).**

### *Driver Modifications*

- **Advanced Nav INS driver:** corrected inverted heave.
- **Kongsberg Multiple Frequency Mode:** Support Kongsberg KMALL datagrams.
  - > Supports datagrams that span multiple partitions. 2nd partition contains imagery data.
  - > Supports bathymetry in multiple frequency mode. The sample data used for debug contained 200, 300, 400 KHz data in interleaved pings. MBMAX64 breaks out soundings by frequency but MBMAX64 version 21.2.0 is required for Kongsberg multifrequency.
  - > Supports GPS transfer to HYPACK® SURVEY driver, HYSWEEP\_Extended.dll. This method should be considered beta until further testing.
- **WASSUP driver:** Extend slant range maximum from 650 m to 65,000 m.

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## DATA COLLECTION

### RAD SURVEY

- Added Query button to supplement existing menu item.
- Prevents multiple Comments windows.
- Select Target dialog now shows XY position of each target to distinguish between targets that could have the same name.
- Fixed Track Hazard Contours.
- Splash screen now updates copyright from the file information.
- Fixed missing code causing Resource 99 error.

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## GRID DISPLAY SETTINGS

- Display updates when you click [Apply] or [OK].
- Lat/Lon label settings are saved correctly.

## DATA DISPLAY

- Enhanced settings consistent between sessions.
- Separators needed multiple fixes to work properly.

## DREDGEPACK MODE

- In DREDGEPACK® mode, Reset Dredge option in the Edit Matrix dialog fixed.
- Fixed program failure caused by Zoom Extents when there are no background charts enabled.

## SIDE SCAN SURVEY

- Klein 4900 reads depth correctly.
- When the Klein 4900 is assigned to a towfish, the side scan mosaic appears at the towfish location.

## HYSWEEP SURVEY

**R2Sonic Water Column displays:** Fixed downsampling bug at ranges greater than 70m. Affected both Water Column Logger and Water Column Playback.

## SURVEY LOG

- **Tools to manage multiple sets of header information:**
  - > **Export Header Data:** Export the header information as a configuration file (\*.ini) which will be saved in the project folder by default. You can choose to either overwrite an existing file or create a new configuration file.
  - > **Import Header Data:** Import the header information from a pre-existing configuration file (\*.ini) to automatically repopulate the upper portion of the dialog.
- **Option to restore survey data to the spreadsheet. Import Survey Log:** You can import a raw Survey LOG (\*.LOG) file or a CSV (\*.csv) SURVEY LOG report file to restore survey information from a previous survey session to the spreadsheet area.
- **Automatic log backup:** SURVEY LOG automatically appends each log entry to survey\_log.csv in the project folder. In case of system shutdown, you can restore the data from this file.
- **Export as: Added support for** a Comma Separated Values (\*.CSV) format Survey Log Report (in addition to the existing PDF and Excel XLS formats).
- **[Delete Row]** removes the currently selected row in the survey log. *It does not affect corresponding raw data files.*

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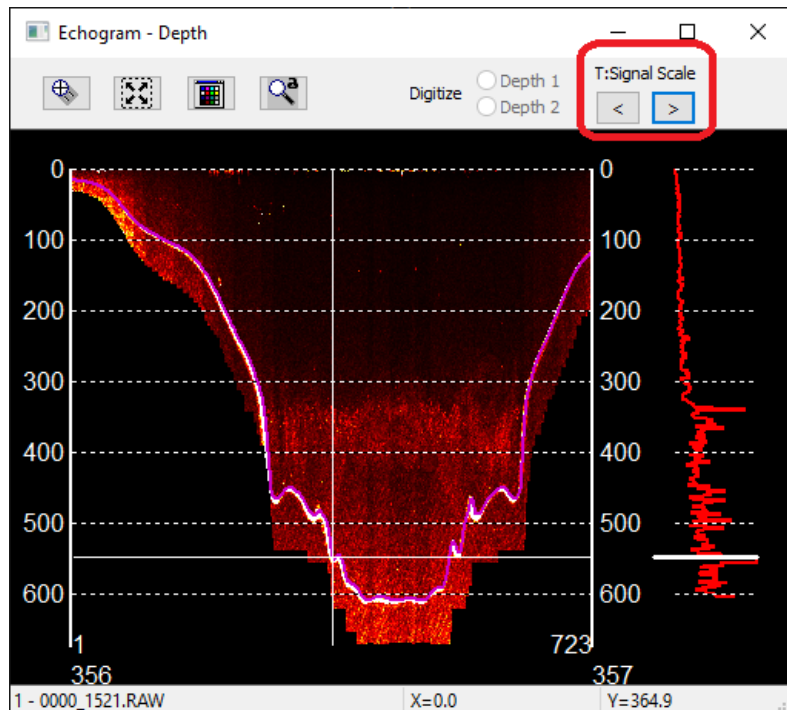
## PROCESSING

### BOTH SINGLE BEAM EDITORS SUPPORT 32-BIT ECHOTRAC E20 ECHOGRAMS

Both the 32-bit and 64-bit Single Beam Editors have been updated to process the full-quality, 32-bit echogram data logged with the 21.2.x Echotrac E20 driver.

#### *E20 Echogram in 64-bit SINGLE BEAM EDITOR*

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**NOTE:** SBMax 21.2.0 or SBMax64 21.2.2 and newer is required for processing.

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### 64-BIT SINGLE BEAM EDITOR

- **SBMAX64 reads 32-bit echograms** as well as the 16-bit echograms it has always read.

#### *FILE OVERLAY*

- Fixed Overlay dialog to work when HS2x survey files are loaded in SBMAX64.
- Added support for loading old ALL format files as overlays.

#### *SORT FEATURE*

- Fixed SORT to properly mark matched files, fixing the sort function.

- Made the grid cells uneditable like SBMAX to prevent misuse of the dialog and bugs. Users must use the load button.
- When using the up and down arrows to move cells, the window will scroll with the selection so that the selection is always on the screen.
- When a file that is being sorted does not have a match, it moves to the bottom of the spreadsheet to show it is unmatched, like SBMAX. Rows are renumbered as required.
- Backspace or Delete on keyboard deletes cells (because you can't modify cell text directly.)

## 64-BIT HYSWEEP EDITOR (MBMax64)

- **Correct intermittent problems with sounding colors** in the Sweep and Cloud windows.
- **Corrected R2Sonic Water Column downsampling bug** at 100m range.
- **ROSS Multi-transducer data:** If sound velocity = 0, MBMax64 replaces the 0 with 1500 m/sec and reads the data instead of ignoring it.
- **Reads sonar frequency from both RMB and SNR records**, as drivers may log the data to either location.
- **Saves WGS84 positions (when available) to the HS2x position datagram.** Tested the GPS Recalc with HSX/HS2x files that contain WGS84 positions. (These positions can be omitted in HYSWEEP® SURVEY in the Logging Options dialog.)
- **Correct File Date read error** when loading S7K data.

## SHOW OPTIONS

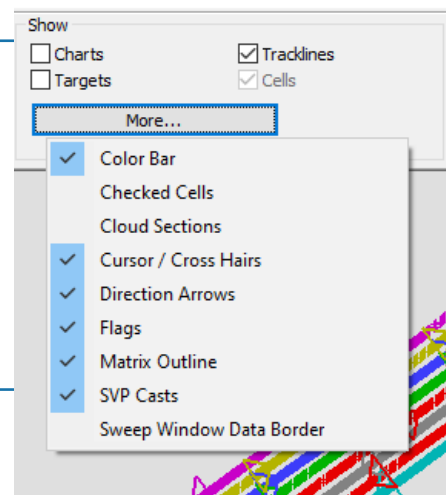
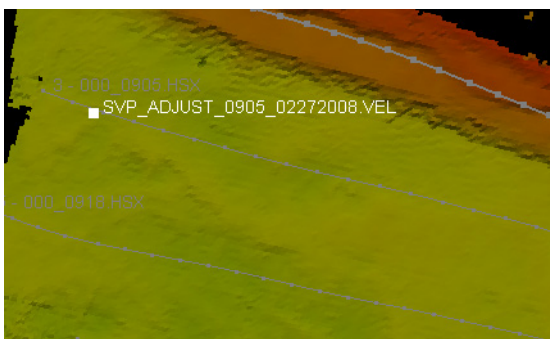
The most common options remain as check boxes in the toolbar. To access the rest, click [More...] and select additional options and a few new ones from the drop-down list.

### Show Options

New options include the following:

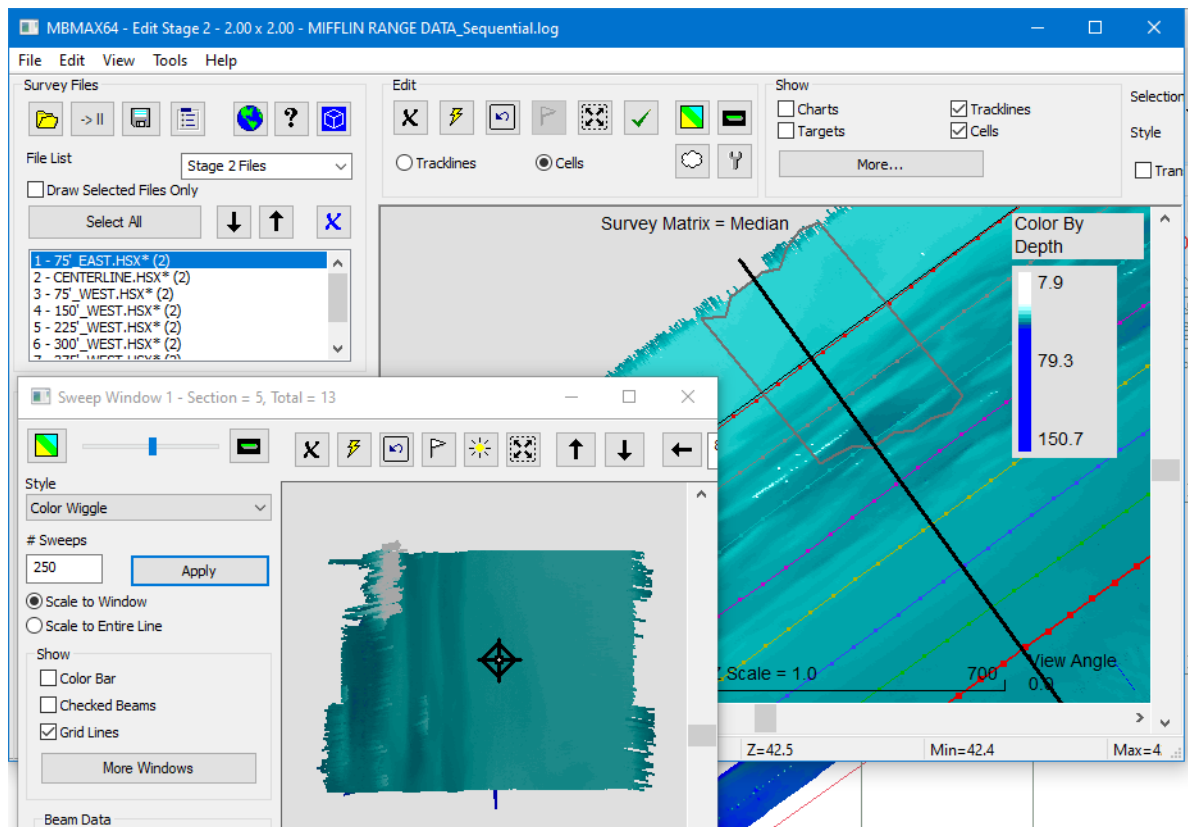
- **Direction Arrows** draws survey direction arrows on the track lines. (Phase 1)
- **Matrix Outline** shows the border of the matrix. (Phase 2)
- **SVP Casts** tagged with location. (Phase 1) This option

### Sample SVP Cast



> **Sweep Window Data Border** outlines the area shown in the Sweep Window.

*Sweep Window Data Border*



## KONGSBERG ALL UPDATES

- **Raw Data:**

**When loading RAW 78 datagram, we adjust the vertical offset** in the Device Offsets dialog. Offsets are found in ALL file Installation Parameters:

MBMAX64 Vertical Offset =  $S1Z - WLZ$ , where (according to Kongsberg documents)  
S1Z is Transducer 1 vertical location  
WLZ is Water line vertical location.

- **XYZ Data:**
  - > **When loading XYZ-88 datagrams, all sonar offsets are set to zero in the Device Offsets dialog**, as the soundings in XYZ-88 datagrams are already corrected for X, Y, Z, yaw, pitch and roll.
  - > **Uses the combined draft/heave data from the XYZ-88 datagrams**, so heave correction should also be set to 0.
  - > **In the Patch Test, yaw, pitch and roll offsets are zeroed / ignored**, as you can't do patch testing using the XYZ data.

## S7K UPDATES

- **Loading S7K logged by PDS software displays a "This Version Can Not Read PDS Files"**. These datagrams cannot be supported in HYPACK® because the data is not sequential.
- **Prevents program failure due to data grams (water column) that exceed the buffer size**. In such cases, the program ignores the water column data.

## MAGNETOMETER EDITOR

- **Corrected error with Latitude and Longitude that were all logged at 0,0** (introduced after 21.0.4).



- **Supports directly loading EXO Bin Files.** All files must contain the same data combination logged in the same order in each record.
- **Bug Fixes:**
  - > Append to File Name option in the EDT save options resulted in empty LOG files.
  - > When you exported a series of XYZ files from the SORT routine, the autaname used the previous export value beginning with the second export.
  - > Corrected reading HDOP and Number of Satellites from i3XO data.
  - > Images of target area are included in the target record when exported from the WMA (Whole Magnetic Analysis) window.
  - > Depth Display no longer graphs anything when “None” is selected

## **NEW PROGRAM:** ENVIRONMENTAL EDITOR

The ENVIRONMENTAL EDITOR provides the tools to process your environmental data stored to SMI records:

- Clean bad data using point and block editing tools, and the Search and Filter options.
- Generate contour maps of each value.
- Generate reduced XYZ files for plotting.

The ENVIRONMENTAL EDITOR recognizes SMI records, and makes them available for viewing and manual editing in the Profile and Spreadsheet windows.

When you load raw data with SMI records, the program opens the Special Marine Instrument (SMI) dialog with a listing of available values. These options vary according to the device you are using and what you are recording. You can configure each window to display up to 32 such values in a single editing session. The Profile window graphs each value using a different color.

### *Sample Special Marine Instrument Dialog*

### ***Cleaning your Data***

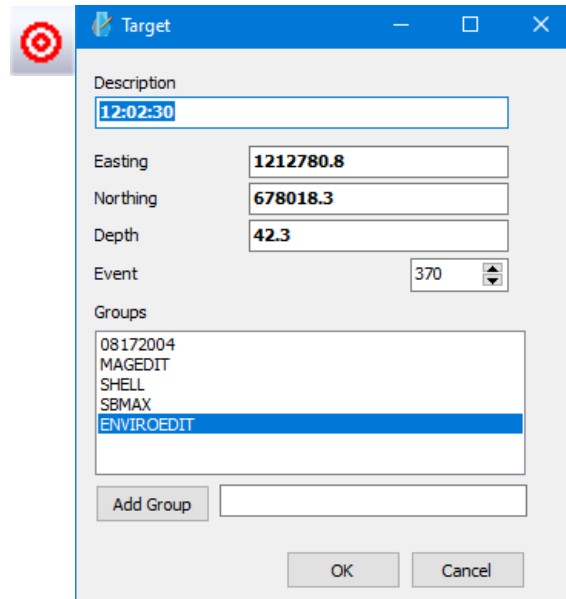
- **In the Survey window,** you can only edit the track lines (positions), though the display shows the value selected in the toolbar. When position data is removed, the

environmental data is deleted or interpolated based on the status of the delete option on the toolbar—Delete Removes Position vs Delete Interpolates Position. If start or end line positions are deleted, all positions are deleted as no interpolation can occur.

- **In the Profile window**, select one or more value to display using the list in the panel. Manual editing tools affect only the values you select, and filters affect only the Basis values selected in the Search and Filters dialog.
- **In the Spreadsheet**, you can manually edit the values in individual cells or fill a column with a uniform value.

### Mark Targets

Select the point where the target should be placed and click the Quick Target icon (F5). A Target dialog appears with the XYZ coordinates of your selected position and the default name (time) and target group (ENVIROEDIT).



### Saving Edited Data

When you have finished editing your data, save your edited data to the a HYPACK® Session files, HYPACK® ALL or XYZ format, or use the Sort or Contour routines to generate sorted XYZ or DXF contour charts of a select value.

- **Session files** (\*.SMI) can restore your data in its current state without re-editing

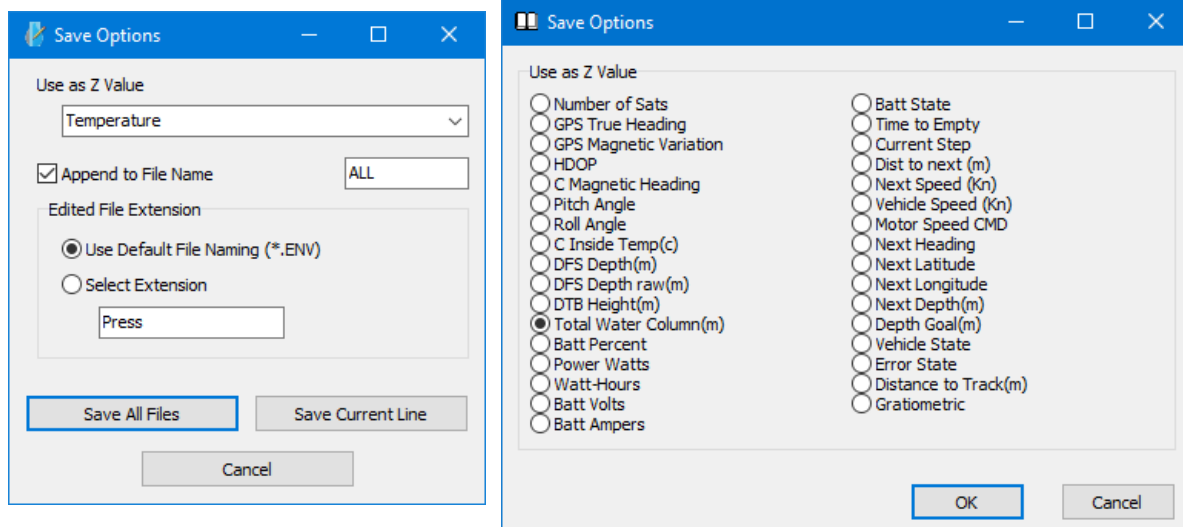
The other file types are useful in other HYPACK® modules to display your data and generate final products such as plotting sheets, cross section profiles, and surface models.

- **All format** options enable you to customize the filenames and extensions.

**Tip:** You can customize the file name to show the output Z value in each dataset.

- **XYZ format** output stores the user-defined value at each XY position.

Save Options Dialogs—All Format (left) XYZ (right)



- **Sorted XYZ.** The SORT routine thins data while it guarantees the minimum data value at their proper locations.
- **DXF charts** of targets or data from environmental studies. The output files can be used as a HYPACK® chart or imported to third-party CAD programs.

## SUB-BOTTOM PROCESSOR

- **Works in survey units** rather than meters only.

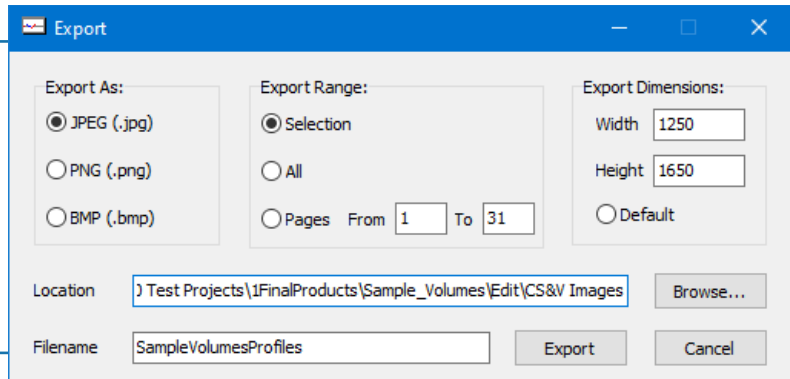
## FINAL PRODUCTS

## CROSS SECTIONS AND VOLUMES

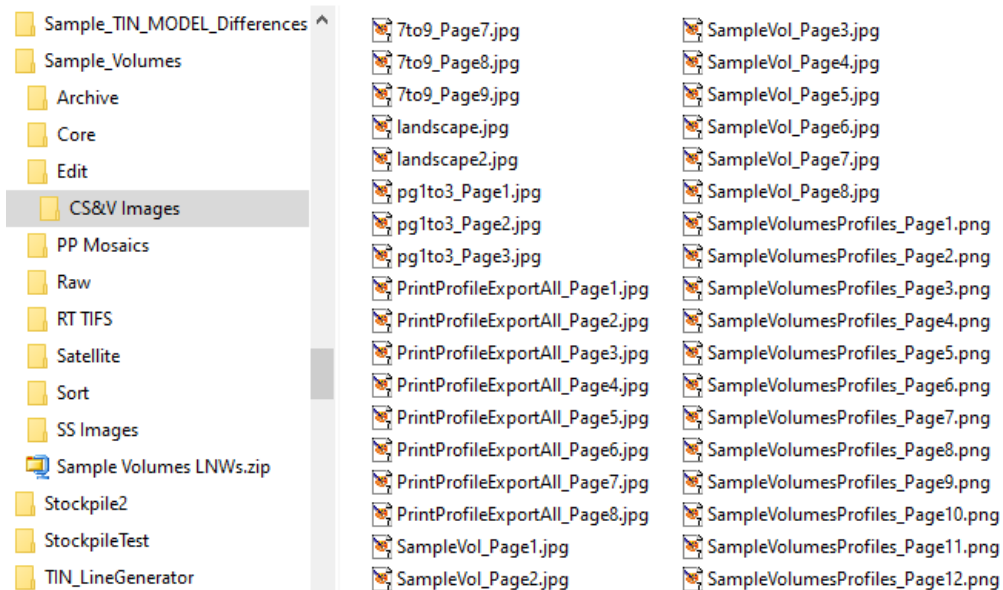
From the Print tab, you can export images of one or more pages configured according to your print parameters. In the Print Tab, when “Sheets Per Page” is set to “Multiple”, the dimension of the image is set based on the paper size selected in the FILE-PRINT SETUP to maintain best quality and prevent loss of data.

The program stores the images, by default, to the project \Edit\CS&V Images folder, but you can click [Browse] and choose a different folder.

### Export Dialog



### Sample Output



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## **HYPLOT**

- SHOM title box prints in its entirety.

## **EXPORT TO CAD**

- Corrected export of planned lines with arcs.

## **TIN MODEL**

- Supports contours at cm resolution.
- Improvements to custom resolutions.
- Corrected drawing when Show Picture option is selected. (The drawing in the preview and output file were always correct.)
- Fixed bug in DXF Export: With an XYZ file as a background file in EDIT-TIN menu then try to export contours in DXF, no DXF is exported.

## **ENC EDITOR**

- Changed S57 Read and Write routines to handle Ansi, Latin-1 and UCS-2 encodings. These are the 3 lexical levels described in the standard.

## **TARGETING AND MOSAICKING**

- Loads Klein 5900
- Corrected loading of JSF files where the speed in the spreadsheet view appears 100 times too high, and that depth isn't appearing in one of his datasets.