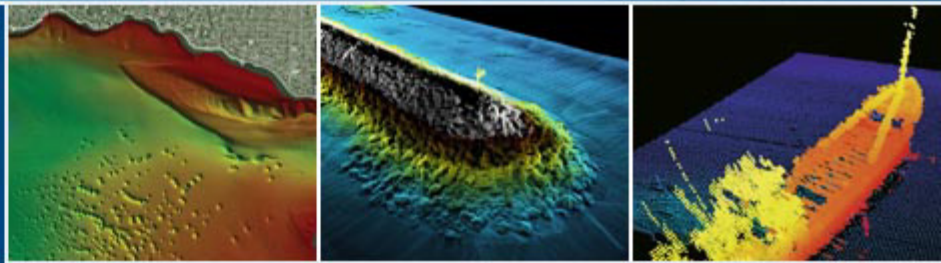


CARIS HIPS and SIPS 9.1

Changes List



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| • BASE Editor | • HIPS and SIPS | • Paper Chart Editor |
| • BASE Manager | • HPD | • Ping-to-Chart |
| • BDB | • HPD Server | • Product Editor |
| • CARIS | • Hydrographic Production Database | • Publications Module |
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CARIS¹ HIPS² and SIPS³ 9.1.8

Enhancements

Reference	Description
Filters	
	The Surface Filter has been updated to better handle slopes when CUBE surfaces are used as the source for the filter.
Subset Editor	
	Reference models are now visible as a reference surface in Subset Editor.

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Maintenance

Reference	Description
Processes	
	A decrease in performance was identified under different configurations, primarily dealing with the use of Applanix SBET navigation sources over a network. An investigation revealed a combination of inefficiencies in the use of the HIPS file, as well as reading SBET data. Interaction with the HIPS file and direct-read sources such as SBET have now been optimized, and all processing configurations will now see increased performance, particularly processing over networks and/or with SBET data sources.

CARIS HIPS and SIPS 9.1.6

Enhancements

Reference	Description
Convert To HIPS	
	Conversion support has been added for 32-bit side scan data in XTF format.

Maintenance

Reference	Description
Convert To HIPS	
	A specific issue decoding GSF data where some bathymetry records contained zero number of beams has been resolved.
Export	
	Export HIPS to FAU now writes available data correctly to the roll field, instead of writing zeros.
Generic Parser	
	Generic Data Parser is now correctly reading from the *.par file, the number of header lines to skip, and displaying the value in the "Number of lines to skip" field.
Mosaicing	
	An issue with the SIPS Backscatter incident angle calculation near a UTM zone boundary was causing artifacts in the created mosaic. This has been resolved.
	SIPS Backscatter now handles the ping number resetting mid-line for Kongsberg and Reson data (although the problem was not observed with Reson).
	SIPS Backscatter interpolation has been updated to better locate adjacent samples.
Query	
	Navigation, Side Scan, Single Beam and Subset Editor now correctly show ground coordinates in the Selection window when the Tools >Options Coordinate Type is set to Ground and the data is queried.
SV Correct	
	Sound Velocity Correction is now working with the Kongsberg library when the Enable Kongsberg Sound Velocity Correction Library option is set in Tools > Options.
Water Column Imaging	
	Water Column Imagery data from R2Sonics data in Hypack is now displaying in Swath and Subset Editors.

CARIS HIPS and SIPS 9.1.5

Enhancements

Reference	Description
Convert to HIPS	
	Updated the conversion of Klein HydroChart/UUV 3500 SDF data to convert motion data from every beam.

Maintenance

Reference	Description
Load Delayed Heave	
	The Import Auxiliary data process, when using Applanix data containing a GPS rollover, is no longer failing to load data to the subsequent lines following the GPS rollover.
Merge	
	The Beam Shift functionality in Merge has been updated to use the same formats as in HIPS and SIPS 9.0.x versions.
	Certain combinations of sensor data from chronologically adjacent lines were causing most of the line to be rejected when Time Buffer was enabled. The Time buffer functionality has been updated to resolve this issue.

CARIS HIPS and SIPS 9.1.4

Enhancements

Reference	Description
Calibration	
	Users can now add a new sensor date/time entry to the Vessel Configuration file while in Calibration during Subset editing.

Maintenance

Reference	Description
Import Auxiliary Data	
	If delayed heave is imported and not used by a process, such as Merge, that can use delayed heave, the process will no longer use the time extent of the delayed heave
Load Delayed Heave, Merge	
	When processing Applanix data containing a GPS rollover week, data after the rollover would be read using an incorrect week and would fail to load. This has been resolved for all Applanix data (POSMV, RMS and SBET).

CARIS HIPS and SIPS 9.1.3

Notice

An issue has been identified in the Compute GPS Tide process. It appears only when users have loaded Delayed Heave data and have used the Dynamic Heave option in Compute GPS Tide. The issue is present in HIPS and SIPS versions 9.0.22, 9.0.23, 9.1.0, 9.1.1, and 9.1.2. The Compute GPS Tide process is not applying Delayed Heave as expected and instead is always using the stored Heave data. The result will display artifacts which are the difference between Heave and Delayed Heave.

This issue has been addressed in this update.

Affected users will simply be required to run Compute GPS Tide after installing the update, and Merge the data again if GPS Tide was applied to the soundings.

Enhancements

Reference	Description
Filters	
	HIPS Data Filters > Boundary Polygon functionality now uses the Keep Up to Date flag on each surface affected by the filter, and when Automatic Surface Update from Tools > Options is on, the affected surfaces will be updated after filtering is complete.

Maintenance

Reference	Description
Compute GPS Tide	
	In releases since 9.0.22 up to and including 9.1.2, Compute GPS Tide was not using delayed heave data when it was loaded into the line. This process has now been updated to always use delayed heave when it is loaded and the Dynamic Heave option is turned on in the Compute GPS Tide dialog box.
Convert To HIPS	
	Using versions of HIPS and SIPS previous to 9.1.2 and converting into a *.hips project updated by 9.1.2 was causing the line display of those lines and processing of all lines to fail. The application will now properly recognize those lines from previous versions and allow line processing.
SIPS Processes	
	SIPS Backscatter beam pattern creation has been updated to account for the compensation setting applied for Kongsberg data.

CARIS HIPS and SIPS 9.1.2

Highlights

Status Flag

- ☑ A new status flag, “Suppressed”, is available for HIPS data and processes. The flag is applied in Subset Editor.
- ☑ This new flag is intended for users who wish to exclude large groups of soundings from general processing, without rejecting them or treating them as Critical Soundings. Examples of this include pilings, seafloor structures and other man-made objects.
- ☑ The Suppressed flag is not tracked as a Critical Sounding type.
- ☑ The Suppressed flag is optional for all grid types and export of HIPS data.

In order to access this functionality it is necessary to use Window > Layout > Reset Default Layout.

New menu items have been added to the Subset Editor right-click menu, to the Display Filter drop-down list and a toolbar button to the Status Edit toolbar.

Surface Objects

- ☑ Rejected data can now optionally be used for all grid types.

Compute GPS Tide

- ☑ Point Clouds can now be used as separation models in Compute GPS Tide. A TIN of the points will be created on-the-fly to interpolate separation values for the computation.

Enhancements

Reference	Description
Compute GPS Tide	
	Support has been added to use point clouds as separation models in the Compute GPS Tide process.
Convert To HIPS	
	Hypack conversion has been updated to support *.hs2x files in the Select Raw Data Files dialog box.
	The labels for EdgeTech conversion options have been updated to clarify their use.
Subset Editor	
	<p>A new flag, "Suppressed", has been introduced to Subset Editor, Surface Creation and Export HIPS. Data flagged as Suppressed can be hidden from view and from processing without being Rejected.</p> <p>NOTE: As this functionality has added a new menu item to the Subset Editor right-click menu, to the Display Filter drop-down list and a toolbar button to the Status Edit toolbar, it is necessary to use Window > Layout > Reset Default Layout in order to get access to these items.</p>
Surface Creation	
	The surface creation process has been updated to allow for the use of rejected soundings. Rejected data can now optionally be included in a surface.

Maintenance

Reference	Description
Beam Pattern, Mosaicing	
	Due to corrupt data records, SIPS Backscatter beam pattern and mosaics were not being created successfully. This has been resolved. Corrupt data records are now skipped.
Convert To HIPS	
	Kongsberg conversion using the direct reference option now honours the timestamps setting, allowing the GPS time or System time to be used. The default Auto option will use GPS time.
	Data readers in the conversion and SIPS Backscatter mosaicing have been updated to handle certain Kongsberg data with incomplete datagrams.
	The conversion of Side Scan data from Hypack HSX format has been updated to no longer scale down to 8-bit.

CARIS HIPS and SIPS 9.1.1

Maintenance

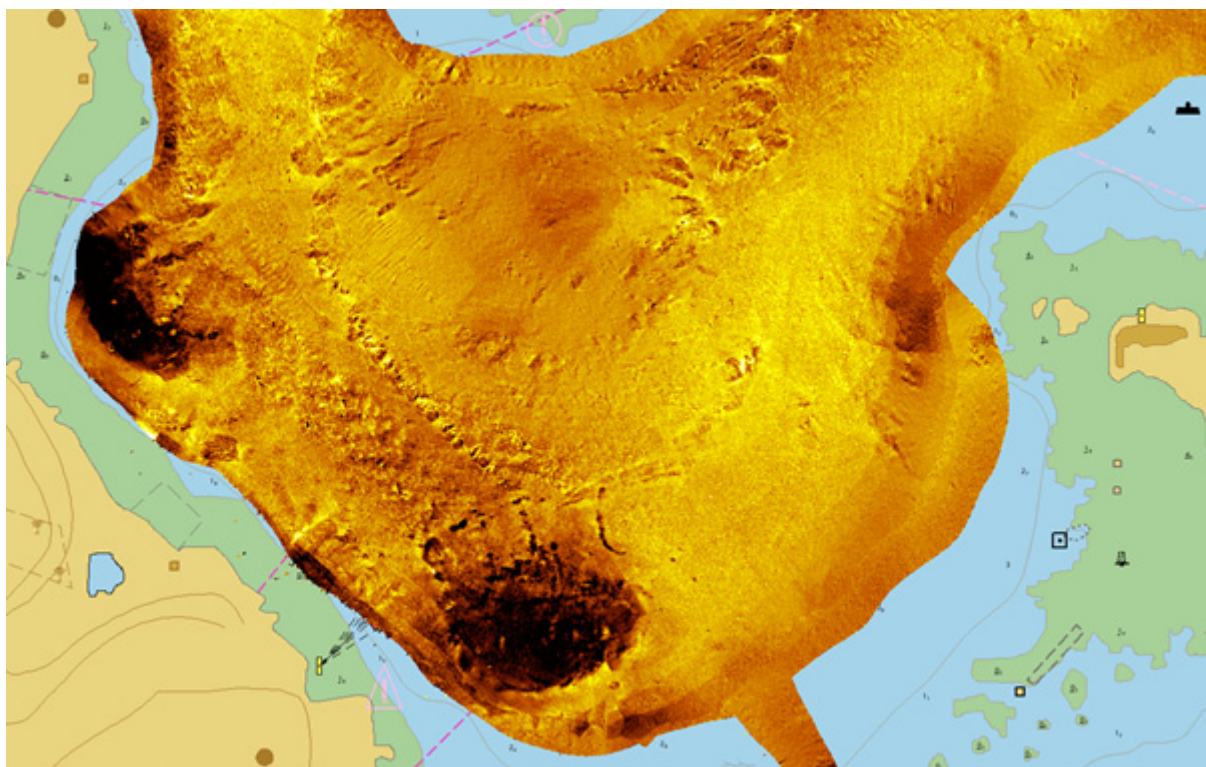
Reference	Description
Attitude Editor, Filters	
	Attitude Editor filtering flags are now retained properly for each sensor when multiple sensors are edited and saved.
Convert to HIPS, SVC, Mosaics	
	The Kongsberg converter has been updated to support EM712. This allows Sound Velocity Correction and creation of SIPS Backscatter mosaics to function correctly.
Navigation Editor	
	An issue has been resolved that was preventing Navigation Editor from saving data after editing.

CARIS HIPS and SIPS 9.1.0

Highlights

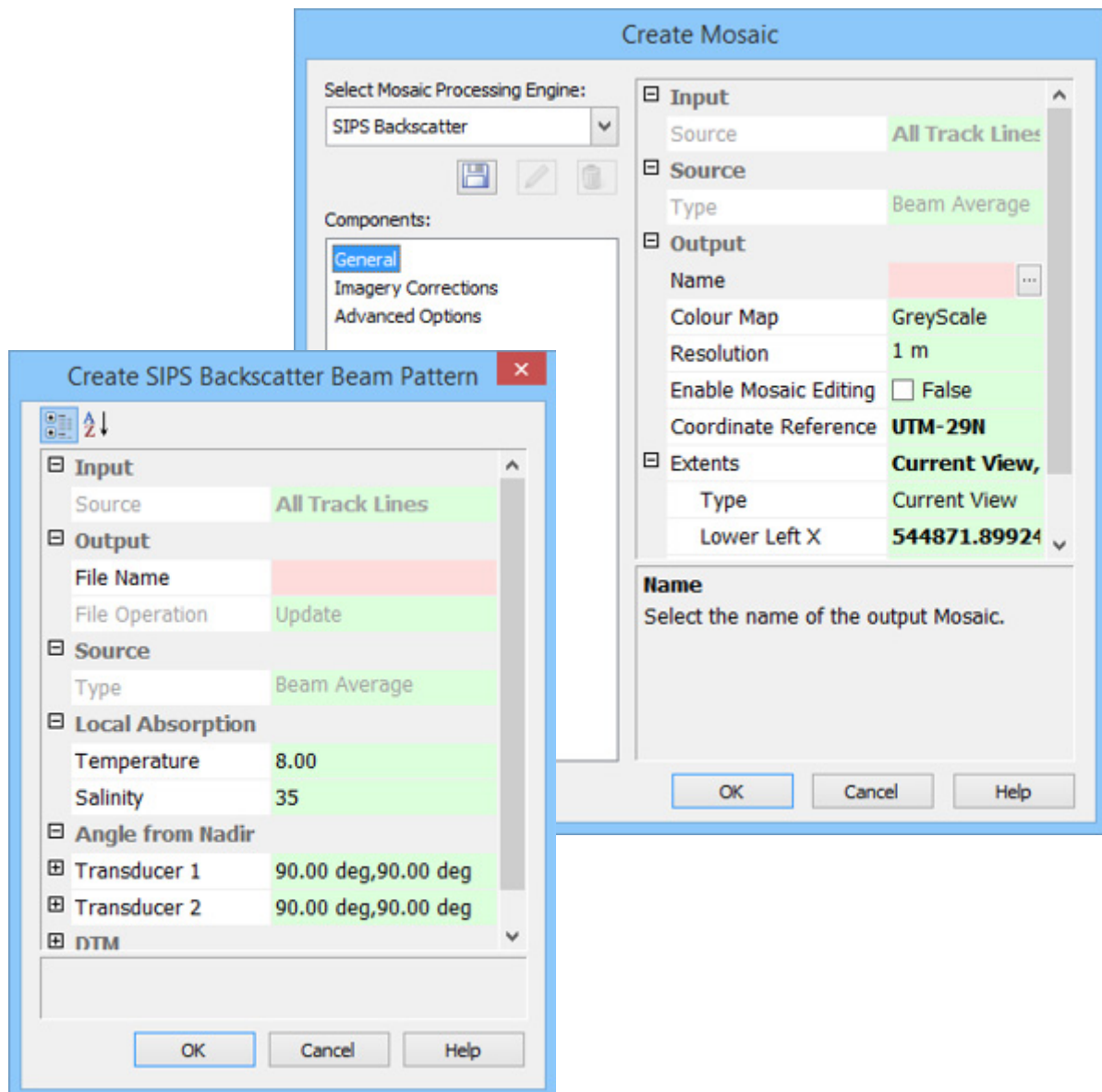
New SIPS Backscatter Processing Engine

- ☑ The new SIPS Backscatter processing option for multibeam backscatter is based on accepted acoustic principles and standard industry techniques.
 - The primary innovation is the method used to create and manage the sonar beam pattern: instead of requiring a small representative area of known bottom type, the entire dataset is fed into beam pattern calculation, and can be continually updated with new data over a survey or the entire survey season.
 - The beam pattern can be managed with a stand-alone process or as part of mosaic creation.
- ☑ The SIPS Backscatter engine is a single additional step at the end of a traditional multibeam bathymetry workflow. All radiometric corrections are applied automatically, and normalized for computation of the beam pattern. The user can also choose to apply an Angle Varying Gain correction for angular sediment response.
- ☑ The image below shows a mosaic of Reson 7125 data over Plymouth Harbour, UK, processed with the SIPS Backscatter engine.



Simplified User Experience for Imagery Products

- ☑ New dialog boxes are available to simplify the creation of beam patterns and mosaic products in CARIS HIPS and SIPS.



Additional Support for Converting Klein data

- ☑ Support has been added for bathymetry logged in a Klein SDF file coming from a Klein UUV/Hydro Chart 3500.
- ☑ The SDF converter has been renamed to Klein to indicate the sonar manufacturer producing the data.

Faster Import

- ☑ The import of many formats into CARIS HIPS and SIPS has been improved by a significant margin. Actual improvement time varies by complexity of stored data, disk speeds etc.
 - Conversion of Hypack data is 50-100% faster.
 - Conversion of many post-processed data formats via Load Auxiliary Data is 50-100% faster.

Enhancements

Reference	Description
Convert To HIPS	
	Support has been added for bathymetry logged in a Klein SDF file coming from a Klein UUV/Hydro Chart 3500. The SDF converter has been renamed to Klein to indicate the sonar manufacturer producing the data.
	ASCII parsing routines used in Hypack conversion to HIPS have been updated to improve performance.
Processes	
	The Merge, Sound Velocity Correction, Compute TPU, Apply Attitude Filters, and Compute Towfish Navigation processes were reporting “database is locked” errors during processing. This has been resolved.
SIPS Processes	
	A SIPS Backscatter processing engine has been implemented to use Kongsberg and Reson beam average data to create correct mosaics. There is a new Mosaic dialog box containing all engines and their specific options, with the ability to store templates A new processing engine has been added to the beam pattern creation process. Beam pattern creation has been split into three separate dialog boxes, one for each processing engine: SIPS Backscatter, SIPS Side Scan and GeoCoder. The Create Beam Pattern menu and toolbar now show a sub-menu with these processes.
Vessel Editor	
	Sonar model entries have been added to the Device Models file for the R2Sonics 2020, for 200 and 400 kHz modes.
System Files	
	An official Klein Colour Palette has been added to the list of Colour Maps available for colouring mosaics.

Maintenance

Reference	Description
Beam Pattern	
	GeoCoder beam patterns are created over a homogeneous area of known sediment type. Creating a mosaic first, to determine the area to use, will update the line with the necessary information to create a beam pattern without having to run Sediment Analysis first.
Compute TPU	
	When displaying the Total Horizontal Uncertainty (THU) in the application, a 2d scale factor of 2.45 is used, rather than the 1d value of 1.96.
Generic Data Parser	
	An issue when importing large (>40MB) ASCII XYZ files into HIPS and SIPS as single beam data through Generic Data Parser was giving errors and processing the data was causing failures. This has been resolved.
Installation	
	The non-functioning Print button has been removed from the End User License Agreement page for CARIS installations.
Mosaicing	
	GeoCoder no longer causes the application to fail when processing certain 7K/HSX Time-series data.
	The Resolution option for the SIPS engine was being disabled after Auto Resolution was used with the Geocoder engine. This has been resolved in the updated New Mosaic dialog box by separating these options.
	Enabling the Linked option for TVG or Gain correction when creating a SIPS Side Scan mosaic will now apply the correction value from the Port channel to Starboard as well.
	When creating a SIPS Side Scan mosaic, setting the Channel option to Port or Starboard now correctly uses the selected channel.
	When creating a mosaic with the GeoCoder engine, it was always applying the Trend setting for the AVG Correction option. This has been corrected to apply whatever option is set by the user. As well, Moving Average was listed in the AVG list, but is not an option, so it has been removed from the list.
	The Intensity filter is now working properly when creating a mosaic using the SIPS Side Scan engine.
System Files	
	There were no colours set for the Greyscale2 colour map, so it has been removed from the application.
	TrackLine_45Colours.cmi contained invalid information that would cause errors when the Colour Editor was used. It has been replaced with a correct version of the file.

Reference	Description
Side Scan Editor	
	Colour maps without a colour map inflection file (*.cmi) now display a "File is read-only" message when the Edit command is selected from the Colour Properties for Side Scan Editor.

