# CARIS HIPS and SIPS

Trust the Most Comprehensive Hydrographic Data Processing System

Backed by over 25 years of excellence, the HIPS and SIPS™ suite of products offers essential capabilities and professional grade tools for hydrographic data processing. Supporting over 40 industry standard data formats, HIPS and SIPS can easily integrate into any workflow. It enables you to simultaneously process multibeam, backscatter, side scan sonar, single beam and lidar data. It incorporates the latest in 3D visualization technology for the purpose of hydrography, oceanography and marine science. As part of the Ping-to-Chart workflow, HIPS and SIPS can be easily expanded to meet your wider geospatial needs.

SONAR NOISE CLASSIFIER

We invite you to bring the noise with the first CARIS Mira AI offering, the Sonar Noise Classifier! The Sonar Noise Classifier automatically identifies the vast majority of sonar noise, resulting in a reduction of manual cleaning effort by a factor of up to 10× at an accuracy of 95%.
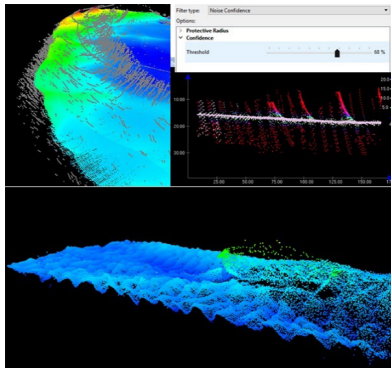
The Sonar Noise Classifier is trained to identify a variety of noise patterns from acoustic sensors. The algorithm assigns confidence values for all soundings on a scale of 0 to 100% with 100% indicating the classifier's highest confidence that the sounding is noise. Soundings can be rejected while running the Sonar Noise Classifier by setting your confidence threshold value. Subset editor can be used to review noise classification values by coloring by Confidence and editing the threshold for sounding rejection. Allow us to help you tackle your data backlog, save your personnel for the tasks a machine cannot do.

AUTOMATION

Automation is a core philosophy for HIPS and SIPS and is leveraged to improve both workflow efficiency and ease of use. The Process Designer provides a powerful tool for graphically building automated workflows which allows users to streamline and ensure consistency throughout data processing. The available Python API also provides increased flexibility for organizations looking to incorporate HIPS and SIPS into a larger specialized workflow.

SIPS BACKSCATTER

CARIS has been advancing the SIPS backscatter engine to make a simple and autonomous process for creating artifact-free and robust backscatter products. This is achieved through the combination of several industry leading tools such as multi-mode beam pattern, and Area based AVG corrections. During most surveys, the focus is on collecting quality depth information using dynamic sonar settings, and the SIPS Backscatter engine provides the necessary tools to easily generate high quality mosaics via a single process at the end of your bathymetry processing workflow.
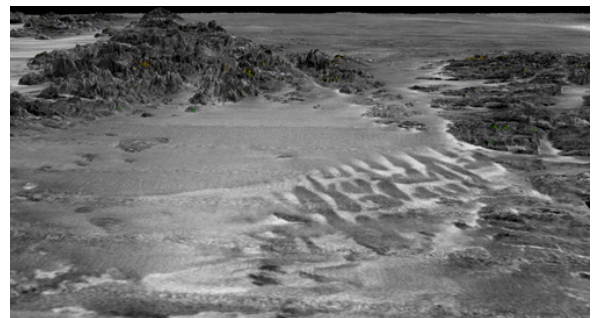
SCALABLE SOLUTION

By building on top of the CARIS GIS platform, HIPS and SIPS is designed to process and manage large amounts of sonar and multidimensional data allow extensive datasets from various platforms and sensors to be managed in a single project. HIPS and SIPS utilizes a combination of the HIPS file, an SQLite database for history tracking and quality assurance, along with the CARIS storage framework, called CSAR (for CARIS Spatial ARchive), as a portable file format for the storage of terabytes of gridded, variable resolution, or point cloud data with associated metadata to meet all processing needs. HIPS and SIPS ensures data security and stability for the growing industry.

www.teledynecaris.com/hips-and-sips

Part of the Teledyne Imaging Group

SPECIFICATIONS

Inputs	
Supported Systems	Single Beam, Multibeam, Side Scan, LiDAR, Synthetic Aperture Sonar, Interferometric
Input Formats	Atlas SDA/ASD/ACF, Bathyswath SXI/SXP/SXR, Chirpscan 3D BRF, CMAX CMX/CM2, Coda, Edgetech Midas/JSF/EGG260, Eiva SBD, Elac XSE, Furuno, GeoAcoustics RDF/RFF, GSF, Hypack RAW/HSX/HS2, Imagenex D1P/83P/83M, Klein, Kongsberg KMALL/ALL/OUT/RAW/DEPTH, Kraken TIL, LADS CAF, MarineSonics MST, ProSAS IMG, QMIPS DAT, Seabeam, SEGY Singlebeam, SHOALS OUT/HOF/TOF, SPAWAR DAT, Teledyne TDY, Teledyne Reson S7K/PDS, Winfrog RAW, XTF
Acquisition System Support	Eiva, Hypack, SIS, QPS, PDS2000, native sonar systems

Processing	
Sound Velocity Correction	Multiple Profile Correction Support using Time/Distance/Distance+Time
Vertical Adjustment	Observed/Modelled with tidal network support, GPS Vertical + Separation Model
Sounding Cleaning	Depth/Range Filters, CUBE, CARIS Mira AI, 3D Subset
Gridding	Swath Angle, Uncertainty, CUBE, Shoal Depth True Position
Gridding Bands	Deep, Density, Depth, Mean, Std Deviation, Shoal, Uncertainty, Hypothesis Count, Hypothesis Strength
Multibeam Back	SIPS Backscatter Engine
Side Scan Processing	Layback and slant range corrections
Side Scan Mosaicing	SIPS Sidescan with weighted blending corrections for beam pattern, gain normalization, TVG, despeckle

Visualization	
Background Format Support	DXF/DWG, BSB/KAP, BAG, DGN, DEM, ECW, ESRI ASC/ADF/FLT, ESRI Shape, GRIB, GML, GIF, CHR, Intergraph COT/CRL/RLE/CIT, JPEG/JP2, Mapinfo MIF, SID, NOAA NGS BIN, NTF, NetCDF NC/GMT, PNG, S-57 000, TIF/TIFF, VPF DHT/LAT/LHT, BMP, Gridded XYZ, OGC WMS/WMTS/WCS, TMS, Kongsberg SIS Grid
2D Visualization	Yes
3D Fly-through Movies	Yes
Aread Based 3D View	Yes

Geodesy	
Supported Systems	EPSG

Exports	
Full Sounding Export	ASCII, GSF, FAU
Grid Exports	ASCII, CSAR, BAG, GeoTiff, GeoPDF
Imagery Exports	GeoTiff, GeoPDF, JPEG, STL, PNG

ADDITIONAL INFORMATION

View the latest video hightlights and download related articles on the HIPS and SIPS product page
www.teledynecaris.com/hips-and-sips

For the latest in Teledyne CARIS webinars visit **www.teledynecaris.com/en/events/webinars**

For additional information about HIPS and SIPS contact our sales team at **www.teledynecaris.com/contact**