

# CARIS Process

## Bringing Efficiency to Survey Operations

Built on decades of hydrographic data processing expertise, and supported by the highly scalable CSAR framework, **CARIS Process** module of **Onboard360** enables users to apply automated processes to their data in near real-time. Field processing results in confidence of complete data acquisition before leaving the site and expedites analysis. Large volumes of data are automatically imported and the trusted **HIPS and SIPS™** algorithms are applied. It can be easily configured to output data products such as DEMs and image mosaics, which are kept up to date as new data is automatically processed.

By making the processed products available to staff during survey operations, CARIS Process helps improve survey efficiency, reduces the deliverable turnaround time and allows skilled workers to focus on the tough stuff.

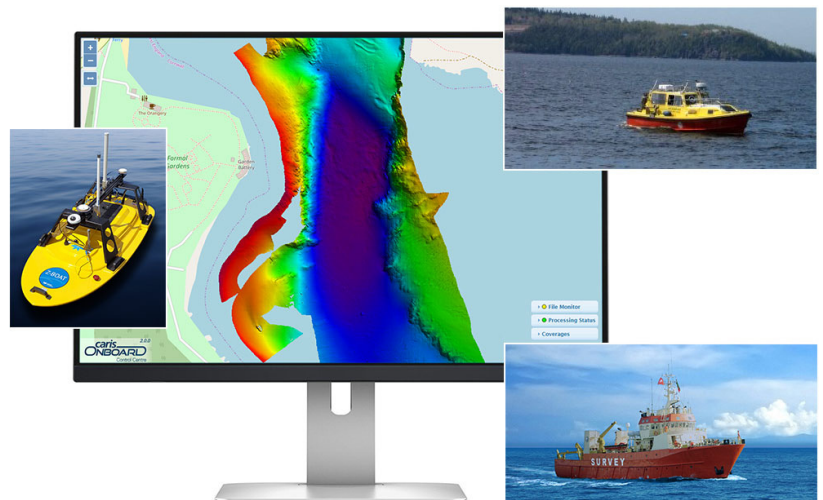


### NEAR REAL-TIME QC

In order to process data automatically on the vessel and to provide information about survey operations to the surveyor in near real-time, the high-volume raw data must be reduced to information products which are small enough to be easily shared over a low bandwidth connection. Teledyne CARIS has released Onboard360 with this exact goal in mind. Running on the survey vessel, the CARIS Process module automatically processes the raw sonar data, along with positioning, motion, tidal and sound velocity data, and generates a processed surface / mosaic which provides information about the surveys quality and coverage by providing access to depth, density, standard deviation and uncertainty bands.

As CARIS Process is web enabled, it can be accessed and controlled from any PC networked to the survey platform. The available communication between base and the platform will vary depending on the operating environment, but is typically a long-range radio, cellular modem, or satellite internet. The amount of available bandwidth from the platform to the support vessel will vary depending on the communication technology, and the bandwidth requirements for the vessel operations. To take advantage of the varying degree of bandwidth available, CARIS Process provides a selection of methods for connecting to the information products which have a sliding scale from higher bandwidth and more information, to lower bandwidth and less information.

Between all three methods of connecting to the surface/ mosaic generated and served by CARIS Process (CARIS App, Control Centre, Control Centre Lite), the surveyor has the ability to scale the amount and frequency of information, to match the amount of bandwidth available to use at any point during operations. This ensures that the surveyor is able to have a clear representation of how operations are progressing.



## 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, SEG Y 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
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
Grid Exports	ASCII, CSAR, BAG, GeoTiff
Imagery Exports	GeoTiff, JPEG, STL, PNG

## ADDITIONAL INFORMATION

Several articles on different AUV and USV use cases are available to download on the Onboard360 product page [www.teledynecaris.com/onboard360](http://www.teledynecaris.com/onboard360)

For the latest in Teledyne CARIS webinars visit [www.teledynecaris.com/en/events/webinars](http://www.teledynecaris.com/en/events/webinars)

For additional information about Onboard360 contact our sales team at [www.teledynecaris.com/contact](http://www.teledynecaris.com/contact)