

CARIS

# BEAMS



## Navigation Channel Maintenance Made Easy

Ports and waterways are managing and processing large volumes of hydrographic survey data.

When a survey is carried out, the information from millions of soundings can serve several purposes ranging from selected soundings that will appear on a chart, to dense bathymetry data that will be used by engineers for channel maintenance operations.

To meet the technical needs of engineers as well as provide management with the results needed to make decisions, CARIS has designed a management tool, BEAMS (Bathymetric Engineering And Management System), that can integrate the many engineering tasks associated with bathymetric-derived products.

### Centralized Data Management

BEAMS offers the benefit of handling hundreds of individual surveys over time in a seamless environment. It is often useful, if not necessary, to perform analyses from season to season, or pre and post-dredging; so maintaining more than one timeline of your surveyed areas could be of great convenience. BEAMS maintains a dynamic, centralized bathymetric model allowing multiple users to import, edit and maintain individual surveys belonging to a larger model.

### Integrated Bathymetric Analyses

BEAMS generates results based on engineering models of bathymetry, channels and other features such as voyages.

Some of these products are calculated values (e.g. volume quantities), some are graphic (e.g. seabed intersection with maintained channel) and some can be exported to databases or exchange files in S-57 format for use in external systems. If you already use CAD or other GIS formats for maintaining your base mapping, BEAMS can use that same information as background. Since BEAMS is always accessing the most accurate, up-to-date bathymetric model, all of its analyses can be done in a matter of minutes. With a few clicks of the mouse, professional reports can be published, printed, distributed by email, or geographically linked to a map.

### Streamlining Information Distribution

In most operations, it is critical to share the most recent bathymetric information available with others. The up-to-date bathymetric model itself, as well as many of the published products generated by BEAMS (e.g. notices to mariners, work orders, etc.), can be Web-enabled within your network and to the outside world using CARIS PORTIS. With PORTIS, your clients, contractors and field workers can securely login and view your detailed hydrographic information once BEAMS has added it to the model.

CARIS BEAMS is the result of many years of close collaboration worldwide with various port and waterway authorities including the Canadian Coast Guard and the United States Army Corps of Engineers to name a few.

# CARIS BEAMS Features

## Data Management

- Maintain a seamless bathymetric model over time
- Multi-user access
- Import singlebeam and multibeam hydrographic survey data from CARIS HIPS and generic ASCII XYZ
- Support for data densification
- Full support for metric and imperial unit systems
- Multi-format base mapping including: S-57 ENC, BSB, GeoTIFF, MrSID®, TIFF/TFW, TIFF/IGA, CARIS, DGN, DWG, DXF, MIF/MID, Shapefile and geospatial point data with multi-media linkage through ODBC
- Dynamic reprojection
- Bathymetric model maintenance tools: archiving, extraction, compression, etc.

## Data Analyses

- Automatic water level correction
- Profiles of multiple surveys with channel framework
- Numerous filters, colour representations, and resolution settings for various seabed representations
- TIN surface creation with long edge filters, breaklines, and bounding channels
- Bathymetric volumes (TIN and grid-based)
- Channel shoaling and condition reports
- Surface differences with sedimentation prediction
- Reference depth viewing
- Voyage analyses
- Contours and depth area creation
- Selection and measurement tools

## Channel Design

- Reference Model Editor (RME) application included for channel design and editing
- Import features from existing drawings, vector charts or ASCII XYZ
- Reference Model features include: channel framework (limits and controlling depth), alignments and stationing, breaklines, profiles, water level zones, routes and voyages

## Reporting Results

- Publication Designer application included for building professional templates to be used by BEAMS (e.g. work orders, notices, volume reports, reports with maps inserts, etc.)
- Save publications to PDF for easy distribution or send to print

## Data Distribution

- Export various types of products to S-57 format including soundings, contours, depth areas and channel framework information
- Web-enable the bathymetric model, channel framework and published reports via PORTIS

## BEAMS Production Workflow



**CARIS**  
115 Waggoners Lane  
Fredericton, New Brunswick  
E3B 2L4 Canada  
Tel +1.506.458.8533  
Fax +1.506.459.3849  
info@caris.com

**CARIS BV**  
Mgr. van Oorschotstraat 13  
PO Box 47 5473 ZG  
Heeswijk The Netherlands  
Tel +31.413.296010  
Fax +31.413.296012  
info@caris.nl

**CARIS USA**  
503 2<sup>nd</sup> Street NE  
Washington, DC  
20002 USA  
Tel +1.410.418.8907  
Fax +1.410.418.8957  
carisusa@caris.com

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For more information visit our website [www.caris.com](http://www.caris.com)