

Scaling Bathymetry: Data Handling for Large Volumes

Mark Masry, CARIS
Corey Collins, CARIS

The last few years have seen a dramatic increase in the volumes of data produced by multibeam sonar systems. Bathymetric processing software must evolve to accommodate these increased data volumes and provide new modalities for interacting with it. In an effort to address these trends, improve the productivity of its users and permit more sophisticated data analysis, CARIS is currently developing new storage technology that will allow its users to store, process and visualize very large volumes of data.

CARIS has traditionally handled gridded and point data and has also offered the ability to visualize relatively large grids in 3D along with smaller volumes of point data. It has become apparent, however, that these formats are not well suited to the task of handling the much larger volumes of data produced by modern sensors. This fact, coupled with a demand for decreased ping-to-product times has prompted CARIS to re-examine traditional approaches for data storage.

CARIS is implementing the next generation storage technologies using a clean sheet design with high volume data and fast visualization in mind. These formats also facilitate efficient spatial queries and data access over a network, and are designed to allow users to open a file see their data as quickly as possible. These new technologies will be incorporated into CARIS applications such as HIPS and SIPS. The Bathy DataBase is also being upgraded to take advantage of these formats, which will allow remote visualisation of the data stored in the database. CARIS is also extending its web-based applications to take advantage of these visualization capabilities, making it much easier to access and view high volume bathymetry over the web. This paper will describe some of the technical details of our system, provide use cases and visualization results and examine data volume and access time benchmarks for several data sets.