



GlobalMapper

# LiDAR Module

CASE STUDY

## Service Hydrographique et Océanographique de la Marine

Mapping the Coastal Zone (Litto3D®) with the help of Global Mapper

### Case Study Overview

#### INDUSTRY

Hydrography and Maritime Cartography

#### CUSTOMER PROFILE

The Service Hydrographique et Océanographique de la Marine (SHOM) is a branch of the French Ministry of Defense responsible for the collection, processing, and distribution of hydrographic data to both naval and civilian mariners.

#### PRODUCT

Global Mapper and the Global Mapper LiDAR Module

#### CHALLENGES

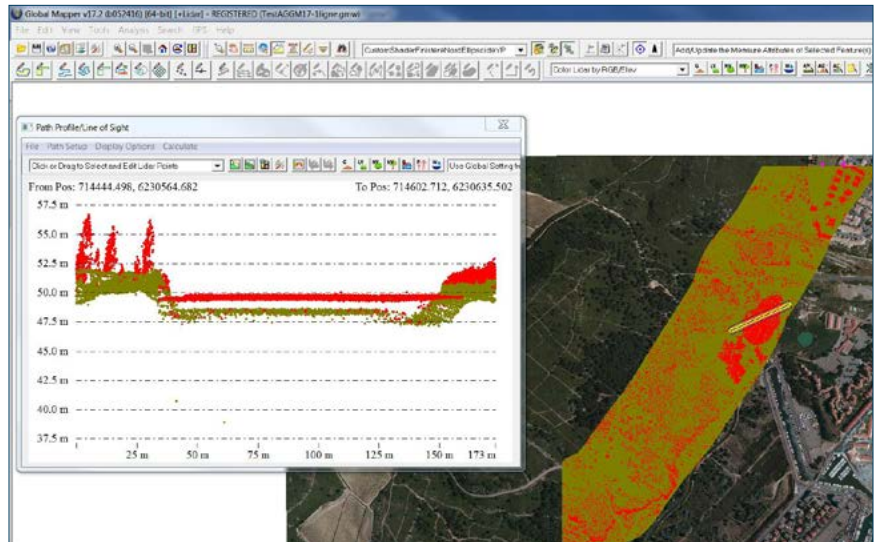
Finding an easy-to-use tool capable of processing large volumes of data in a variety of formats and helping with the management of the project.

#### SOLUTION

Global Mapper offers just the right level of functionality for each stage of a data collection and distribution process from project planning to quality control of the final product.

#### BENEFITS

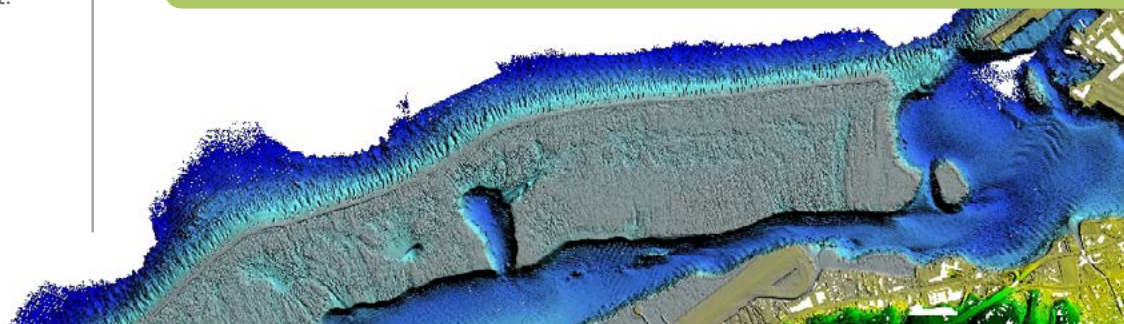
- Ease of use
- Format support
- Powerful functionality
- Workflow scripting



### BACKGROUND

Operating under the administration of the French Ministry of Defense, the Service Hydrographique et Océanographique de la Marine (SHOM) provides a public service in the fields of hydrography and maritime cartography. Working in partnership with IGN (Institut national de l'information géographique et forestière), SHOM has embarked on an ambitious project to create a seamless, high-resolution elevation model incorporating both bathymetric and topographic coverage for the entire coastline of France as well as French Overseas Territories. Utilizing both airborne LiDAR and multibeam data collection techniques, the Litto3D® project generates enormous quantities of raw data covering the swath of coastline from 10 meters above to 10 meters below sea level and extending at least 2 kilometers inland.

For more information on SHOM, visit [www.shom.fr](http://www.shom.fr)



## CHALLENGES

In order to efficiently process the huge amount of acquired data, technicians at SHOM need a versatile and powerful tool that supports all of the required data formats including the raw point cloud data as well as DTM and other raster files. To streamline the data processing and production workflow, the software must be accessible to both experienced GIS professionals as well as those who are relatively new to the field.

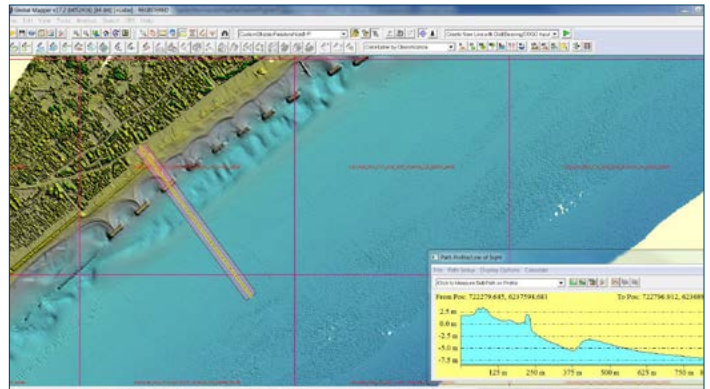
Beyond simply visualizing the data, the application must be capable of performing both routine data processing tasks and more involved analytical procedures that improve and add value to the data.

In the current fiscal climate with departmental budgets being significantly trimmed, the initial cost as well as the long term return on investment are important considerations. In order to satisfy this requirement, these costs must not only meet the initial budgetary constraints but the software must add a tangible and quantifiable value to the overall project.

## SOLUTIONS

To meet these challenges, the hydrography team at SHOM selected Global Mapper, the versatile GIS application from Blue Marble Geographics. To supplement the application's point cloud processing capabilities, the team also employed the LiDAR Module, a powerful set of tools for performing advanced editing and analysis of LiDAR data.

Global Mapper has developed a loyal following within the worldwide GIS community because of its inherent versatility, its affordability, and its interoperability with support for over 250 spatial data formats. With the implementation of Global Mapper into the Litto3D®



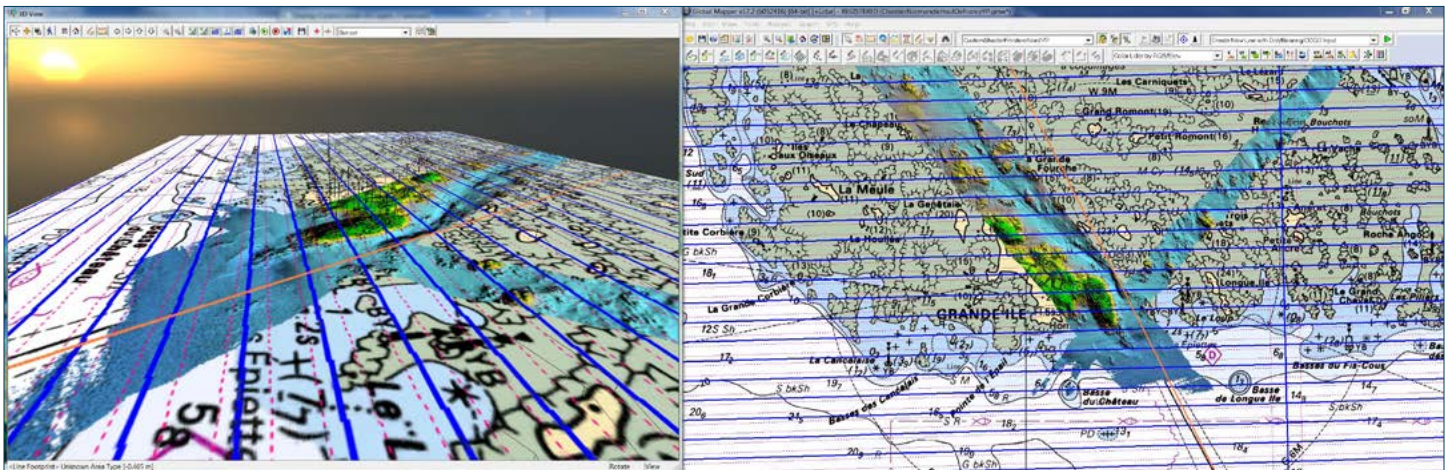
project, hydrographers at SHOM have been able to meet the challenges of processing large quantities of data and of exporting the required files for delivery to the project partners, and more largely to the public under an open data license. Access to this data is available through an online viewer (<http://data.shom.fr>) and through direct download of the files (<http://diffusion.shom.fr>).

## GLOBAL MAPPER AT WORK

The value that Global Mapper provides to the Litto3D® program is evident throughout all phases of the project; from mission planning to field activity management to data processing to file export and delivery.

Initially, Global Mapper provides a platform for visualization of the project area and for the establishment of optimal flight paths. This step involves the analysis of nautical charts, aerial imagery, and coastal surveys. Shoreline buffers are created to delineate the extent of the project area.

In the post-collection phase and in tandem with an array of dedicated tools, Global Mapper is employed in the visualization and processing of the raw point cloud files to guarantee quality and coverage. Global Mapper's





intuitive scripting process ensures that many routine and time-consuming procedures are streamlined saving time and ensuring consistency.

As the implementation and utilization of Global Mapper in the Litto3D® project expands, technicians are exploring the viability of adapting the LiDAR Module's automatic ground point detection and reclassification process for creating a more precise model of the near-shore sea floor. This powerful tool applies a series of algorithms to an unclassified point cloud to determine which of the points are likely to constitute bare earth. This effectively identifies anomalies in the surface allowing straightforward filtering and cleanup of the data. While primarily intended for topographic applications, technicians at SHOM are examining the use of this tool for bathymetric analysis.

## BENEFITS

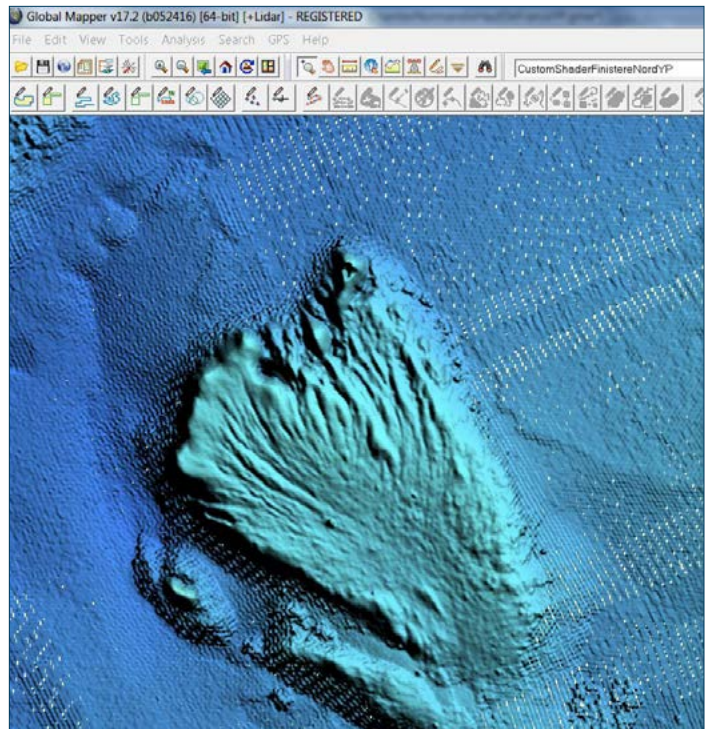
The value that Global Mapper provides to the Litto3D® project can be summarized as follows:

- Interoperability
- Ease of use
- Advanced data processing functionality

SHOM selected Global Mapper for the Litto3D® project because it offers powerful data processing functionality in an affordable and easy-to-use package. According to Yves Pastol, a senior hydrographer in charge of the bathymetric LiDAR activities, "Global Mapper is a perfect tool for our needs. It is both easy to learn and to use and it provides a surprisingly powerful collection of data processing tools."

## ABOUT GLOBAL MAPPER

Global Mapper is an affordable and easy-to-use GIS application that offers access to an unparalleled variety of spatial datasets and provides just the right level of functionality to satisfy both experienced GIS professionals and beginning users. Equally well suited as a standalone spatial data management tool and as an integral component of an enterprise-wide GIS, Global Mapper is a must-have for anyone who deals with maps or spatial data. The supplementary LiDAR Module provides a powerful set of tools for managing point cloud datasets, including automatic point classification and feature extraction.



*"Global Mapper is a perfect tool for our needs. It is both easy to learn and to use and it provides a surprisingly powerful collection of data processing tools."*

**Yves Pastol** | Senior Hydrographer

## ABOUT BLUE MARBLE GEOGRAPHICS

Trusted by thousands of GIS professionals around the world, Blue Marble Geographics is a leading developer of software products and services for geospatial data conversion and GIS. Pioneering work in geomatics and spatial data conversion quickly established this Maine-based company as a key player in the GIS software field. Today's professionals turn to Blue Marble for Global Mapper, a low-cost, easy-to-use yet powerful GIS software tool. Blue Marble is known for coordinate conversion and file format expertise and is the developer of The Geographic Calculator, GeoCalc SDK, Global Mapper, LiDAR Module for Global Mapper, and the Global Mapper SDK.



**Blue Marble** GEOGRAPHICS

*Mind the gap between world and map*

22 Carriage Lane, Hallowell, ME, 04347 USA  
+1 (207) 622-4622 | 800-616-2725  
info@bluemarblegeo.com

[www.bluemarblegeo.com](http://www.bluemarblegeo.com) | Follow us

