

Foundation of Bulgarian Sea and River Ports Infrastructure Built with GIS Technology

Bulgarian Ports Infrastructure Company is a state company of the Bulgarian Ministry of Transport, Information Technology and Communications, which manages the infrastructure of the public transport ports of national importance. The agency supports construction, rehabilitation, and reconstruction, as well as the maintenance of new access channels, port water areas, and sea and river depots for dumping of dredging mass, piers, and protective installations.

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Gateway to world trade

The geographic location of Bulgaria places it as a key transportation crossroads to Europe, Asia, and Africa. In Europe, the Danube River forms the northern boundary of Bulgaria. The Black Sea forms the eastern border of Bulgaria, connecting sea transport to Asia and Africa through the Aegean and Mediterranean Seas. The Danube River flows through 10 countries, providing a major water transportation network to Europe. The Danube River is one of the principal rivers feeding into the Black Sea, which links Eastern Europe with world markets.

Because of this important position that Bulgaria holds in the world market, Bulgarian Ports Infrastructure Company wanted to make sure to keep up with technological advances and comply with the principles of the European Union market economy.

Bulgarian Ports Infrastructure Company needed to collect data from a wide range of data sources, track vessel movements, and perform assessments of activities and assets of the country's sea and river ports.

Geospatial solutions continue to play a critical role in port and infrastructure management on a global scale. By leveraging and visualizing geospatial data, it is possible to dramatically enhance operations, improve infrastructure conditions, and streamline overall decision-making processes.

Recognizing the power of geographic information systems (GIS) to manage geospatial data, analyze it, and organize layers of information into maps, Bulgarian Ports Infrastructure Company selected GeoMedia® and GeoMedia WebMap as the geospatial framework to design and build a GIS system. Using this GIS system, Bulgarian Ports Infrastructure Company monitors movements of boats and ships on the Danube River, and on other waterways and maritime spaces in the country, including the Bulgarian Black Sea region.

Implementing a foundation

In partnership with TechnoLogica, a leading Bulgarian software company, Hexagon's products are being used for maintaining geospatial data around port infrastructure, land, buildings, structures, road and rail terminals, warehouses, and adjacent water areas.

The GIS system has established the foundation for common spatial object models for the port infrastructure facilities, as well as for maintaining an operational picture of the state of infrastructure and water areas, with an overall goal of improving shipping conditions in the region.

Through the use of GeoMedia, the Bulgarian Ports Infrastructure Company provides powerful functionality for creating, maintaining, analyzing, and visualizing port data, as well as for enhancing the exchange of information between internal and external systems.



The information system supports the following functions:

- Spatial data management
- Inquiries & analyses
- Web client support
- Digital drawings & schemas archive
- Material asset management
- INSPIRE Directive-compatible portal as a part of the national SDI model

Built with open and scalable architecture, the system can handle a variety of data sources and connect to external systems, ensuring that the information is current.

This effort supports the future development, reconstruction, and modernization of the port infrastructure, and the importance of incorporating advanced telecommunications and information technologies.



Geography of Bulgaria



New Europe Bridge over the Danube River at Vidin, Bulgaria

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Hexagon's Geospatial division creates solutions that visualize location intelligence. From the desktop to the browser to the edge, we bridge the divide between the geospatial and the operational worlds.

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