

# The Sulina Canal

Romania

## BACKGROUND

In the wake of the Ukrainian conflict, maritime logistics across Eastern Europe faced new and sudden challenges. With Ukraine's Black Sea shipping lanes compromised, especially for grain exports, Romania's Sulina Canal emerged as a crucial alternative for moving goods to and from Ukraine's river ports, Reni and Izmail.

Yet, the Sulina Canal infrastructure was underdeveloped for such demand. Operating only during daylight hours, the canal could accommodate just eight ships per day—a bottleneck in desperate need of clearing.

To address this, AFDJ Galati initiated the PRIMUS project: a comprehensive effort to modernize the Sulina Canal's navigation infrastructure with state-of-the-art Aids to Navigation (AtoNs), including AIS-enabled buoys, beacons, and lanterns.



## APPLICATION

Supply of buoys and marine lanterns to Romania's Sulina Canal

## PRODUCTS

SL-B1750  
SL-B2600  
SL-C310 with AIS

## CLIENT

R.A. A.F.D.J Galati  
Navtron

## LOCATION

The Sulina Canal  
Romania

## DATE

November 2023

## THE CHALLENGE

The client faced a twofold challenge. First, due to global tensions and trade disruptions, particularly the blockade of Ukrainian grain shipments, traffic volume on alternative Danube routes surged. The Sulina Canal, a key artery for regional logistics, was not equipped to handle this surge efficiently.

Second, operational limitations were restricting traffic flow. The canal lacked the navigational infrastructure necessary for nighttime or low-visibility transit. This significantly limited throughput, particularly in winter when daylight is scarce.

The stakes were high: economic relief for Ukrainian exports, improved logistical fluidity for Europe, and reduced geopolitical tension via non-military infrastructure reinforcement. The solution needed to be reliable, compliant, and fast.



## SOLUTION

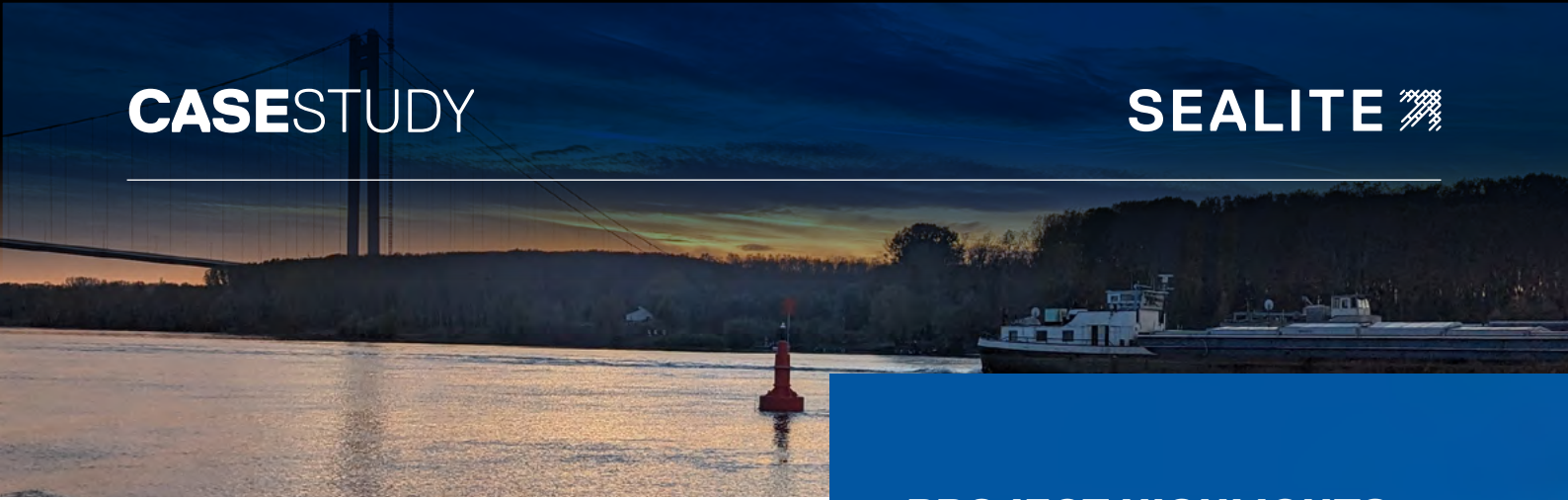
The project was initiated via a public tender released by AFDJ Galati. Requirements were defined in granular detail, encompassing environmental tolerances, material specifications, AIS standards, and integration protocols.

From these, we developed fully compliant configurations tailored to:

- ◆ Operate in shallow and saline environments
- ◆ Deliver 360° visibility across 3–10 nautical miles
- ◆ Maintain function at wind speeds of 12–15 m/s and waves up to 4m
- ◆ Transmit AIS messages per IMO and IALA standards

The modernization effort centered on high-performance floating aids SL-B1750 (1.75m Ocean Class Buoy, 183 total deployed) and SL-B2600 (2.6m Ocean Class Buoy, 12 total deployed).

These buoys were manufactured in Tallinn, Estonia: one of the two European based SPX AtoN facilities serving the EU market. They were rotationally moulded and assembled with their structural elements.



The buoys were accompanied by 235 cutting-edge SL-C310 Solar Marine Lanterns, equipped with integrated AIS.

The lanterns were manufactured and assembled in Somerville, Australia, leveraging onsite vertically integrated CNC machining, injection molding and manufacturing lines. In Tallinn, the lanterns were fitted with AIS, then configured and tested to ensure their full commercial functionality.

The complete setup allowed for real-time positioning, remote diagnostics, and continuous operation even in adverse environmental conditions.

## IMPLEMENTATION

Despite logistical hurdles, the assembly and shipment pipeline held firm. Real-time tracking and proactive QA checkpoints ensured consistency between the Tallinn and Somerville facilities. Local crews received training in Romanian, including operation, diagnostics, and repair of the structures and devices.

One of the key technical risks was ensuring remote visibility and interoperability of the AIS signal within the regional vessel tracking network (VTMIS). All lanterns were tested against IEC and IALA E-200-1 standards, with configurations adapted onsite via IR remote and USB-connected platforms.

The deployed solar marine lanterns were added to improve visibility for safe operations in both day and night navigation. This ensures the buoy's visibility when passing the AtoNs at night and in foul weather, providing clear routes for vessels traversing the narrow channel.

## PROJECT HIGHLIGHTS

The PRIMUS project pushed the envelope on both timeline and technical ambition: The contract was signed in mid-August 2023, and all units were delivered and ready by November 2023.

Components were sourced and assembled across two continents within a compressed four-month period.

The project represents one of the largest deployments of AIS-enabled AtoNs on any river in the world.





The PRIMUS project ensured that a vital waterway stayed open, safe, and efficient during a time when the world needed it most. With eyes already on future expansion, PRIMUS stands not just as a completed project, but as a blueprint for intelligent infrastructure in uncertain times.”

**Adam Gazzola**

Product Manager, SPX Aids to Navigation

## OUTCOME

The impact was measurable and immediate:

- While vessel traffic increased from 2,003 ships in 2021 to 4,523 ships in 2023, the number of incidents decreased. After implementation, severe accidents have decreased from 2 to 0 and minor incidents have decreased from 8 to 4.
- Operable hours for the canal increased from 8-12 hours to up to 24 hours, thanks to nighttime navigation capabilities.



## Product Links

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