

Tracking marine vessels in real time to enforce Common Fisheries Policy

| Irish Naval Service | *Republic of Ireland*

Known as the Emerald Isle for its lush scenery, the Republic of Ireland has rolling hills and striking sea cliffs spanning 70,000 square kilometers (over 27,000 square miles). Its 26 counties are home to over 5 million residents who work in various industries, including agribusiness, advanced technology and life sciences.

Off the south coast is Haulbowline, a small island in Cork Harbour, where the Irish Naval Service, part of the Irish Defence Forces, is based. The agency’s responsibilities include “defending territorial seas, deterring intrusive or aggressive acts, conducting maritime surveillance, maintaining an armed naval presence, ensuring rite of passage and protecting marine assets.”



The Naval Service is also tasked with enforcing the European Union (EU) Common Fisheries Policy (CFP) throughout Irish waters. This policy regulates the management of European fishing fleets and the conservation of fish stocks.

To enforce the CFP, the Naval Service needed a modern, web-based solution to track fishing vessels in real time, with enhanced reporting and analytics capabilities. The agency turned to longtime Hexagon partner IMGS to replace its unsupported legacy solution with one built on M.App Enterprise, Hexagon's unified geospatial enterprise platform.

COTS solution streamlines workflows

The Naval Service's previous system ran on unsupported hardware and was extensively customised through many years of coding. Implementing updates was burdensome and expensive. Additionally, the agency relied on three loosely coupled systems, making data viewing tedious, as end users had to move from one system to another. Manual reporting processes could take days to complete.

The solution provided by IMGS is built on M.App Enterprise. The commercial off-the-shelf (COTS) platform replaced all three systems and provides a common operating picture (COP) of fishing activity for all Naval Service users, on shore or on patrol vessels, covering the agency's entire scope of work.

The use of M.App Studio Workflow Manager, a low-code solution, to create forms resulted in a significant reduction in development costs and a more sustainable platform for future enhancements. Improved reporting and analytics have resulted in substantial time savings.

"The solution provided by IMGS and Hexagon streamlines our enforcement of the Common Fisheries Policy," said Lieutenant Wieste Buwalda, system engineering manager for the Naval Service. "Working in one system has improved workflows, and we are benefiting from cost and time savings."

How the system works: Monitoring fishing activities in real time

Extending 320 nautical kilometers (about 200 miles) from a country's coastline is the Exclusive Economic Zone (EEZ). This area, defined by international law, grants a coastal state special rights and jurisdiction over the exploration and utilisation of its marine resources. The Fisheries Monitoring Centre (FMC) is a specialised unit of the Irish Naval Service that oversees the surveillance of vessels with a vessel monitoring system (VMS) within Ireland's EEZ and adjacent waters, as well as manages data, handles reporting and collaborates with other agencies.

The M.App Enterprise solution is hosted in the Irish Defence Forces Data Centre at McKee Barracks in Dublin. The FMC in the Naval base in Haulbowline uses the solution to monitor fishing activities in Irish waters and the activities of Irish registered fishing vessels in European waters.

The central database receives live position updates of Irish vessels from VMS transponders on Irish fishing vessels. The central database also receives updates of European vessels via flux interface from other EU FMCs. With this data, the Irish Naval Service and civilian staff can analyse and monitor fishing in Irish waters.

Because the area is vast and there are many fishing vessels, analysts rely on the solution to detect areas of concern using advanced querying and alarm tools built into M.App Enterprise. Naval patrol vessels also have access to this data, which is replicated to patrol vessels via satellite links. Patrol vessels carry out inspections, boardings and detentions at sea to help enforce fishing policies. They are also supported by the Irish Air Corps, which monitors fishing activities via the air.

Realised benefits

"With the solution, the Naval Service is equipped to fulfil its diverse defence roles," said Buwalda. "By embracing a modern web-based solution, we have seamlessly transitioned from multiple disparate systems to a streamlined, single operating platform that efficiently covers operations. This has reduced maintenance and administrative costs, as well as increased productivity."

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