



Vessel Traffic Management System Development Case Study

Monitoring sea traffic to prevent vessel collisions,
detect oil spills and poaching



Vissim protects its customers' marine assets with Vector Software



Headquarters	Norway
Industry	Maritime
Company size	11-50
Client since	2016
Website	vissim.no



The project

The Vessel Traffic Management System



The idea

Modernize existing software

Vissim already had an operational radar-based tracking system, but it was built using older technologies, and this created obstacles in developing essential new functions

Track personnel

One of the important functions to be developed was tracking not just vessels, but also personnel boarding and unboarding, their schedules, and compliance

Predict and prevent vessel collisions

The new system should be able not just to track a vessel, but to predict its path to make sure vessels pass each other with safe distance

The challenge

Lack of competence

Existing developers did not have competence in target technologies required to rebuild the system

Hard to hire locally

Local professionals were in deficit and average time required to hire a team was more than 6 months

Slow time-to-market

All of the above resulted in extended period of time required to build the end product and bring it to market

The solution



Technologies used



TypeScript



{ REST }



Services provided

IT Consulting

Vissim's management system was prepared by Vector Software experts to move from in-house development team to distributed software development and delivery

Distributed Development Team

Vector Software has selected and hired highly-skilled professional software developers for all required technologies and formed a development team in Lviv, Ukraine

Functional Design

The solution is designed for big data analytics and is able to analyze traffic situations in real time, with cross-system and cross-discipline collaboration where data easily can be shared with other systems onshore, offshore, or onboard vessels

System Development

Vector Software has provided 100% project ownership allowing Vissim to set high-level business goals and delivering market-ready software achieving these goals

Customization and Post-Production Support

Vissim works with lots of clients in different countries, and Vector updates the application constantly, customizing it for each client's needs

Features

One installation is monitoring 6,000—200,000 vessels in real time



Vessel location tracking

Vissim Vessel Traffic Management Application integrates data from sensors such as radar, AIS, CCTV and drone, VHF, Metocean sensors and satellite data, and provides real-time detection, tracking and monitoring of sea traffic and vessels' information to produce situational awareness



Oil spill detection

Vissim Oil Spill Detection Module is a fully automated, real time detection software which processes data from raw radar images



Port management

Vissim Port Management is a cloud based software tool which helps port operators to plan shipvisits, port resources and report resource usage efficiently to a billing system or the country's national single window



Emergency prediction

Vissim Vessel Traffic Management Application predicts the potentially crossing paths of vessels, vessel movement pattern irregularities and allows to take preemptive measures to prevent emergencies



Personnel location tracking

Vissim Logistics Module supports the planning of manifests and real time personnel transfer operations of the entire lifecycle of offshore installation and operation.

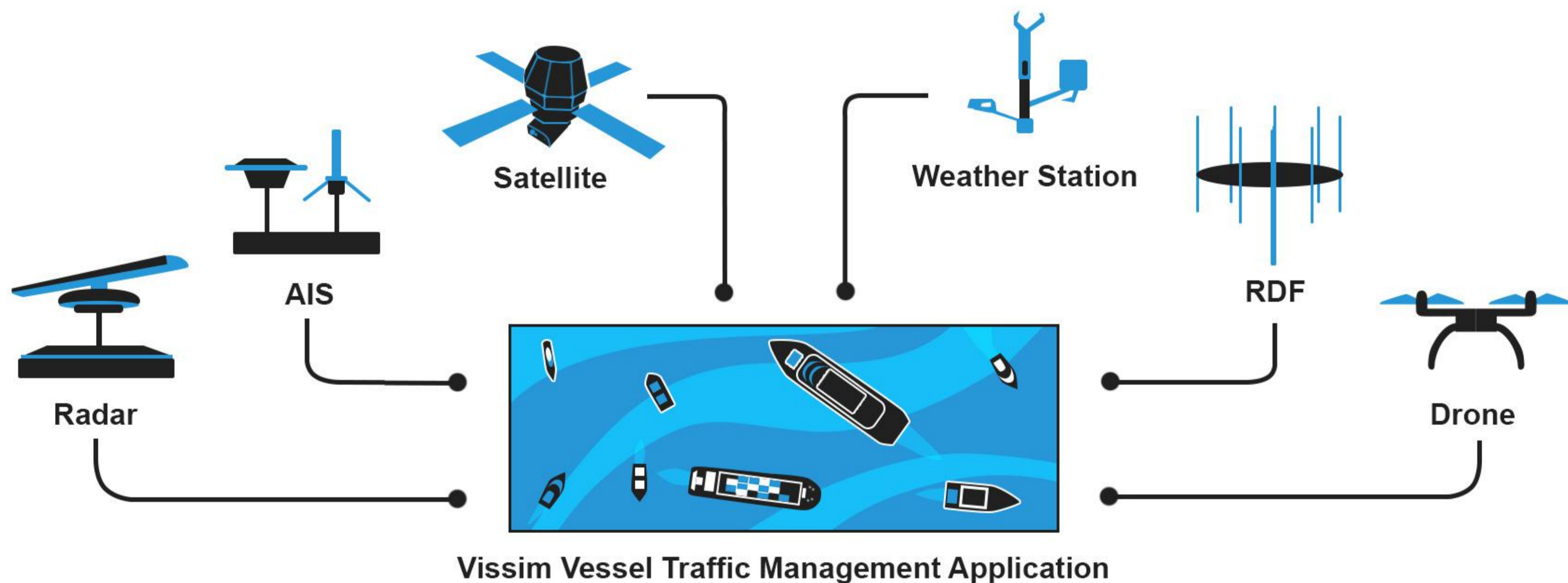
The result

The system has a personal workstation for each operator and a common 24-display wall to show and track each vessel in the monitored area



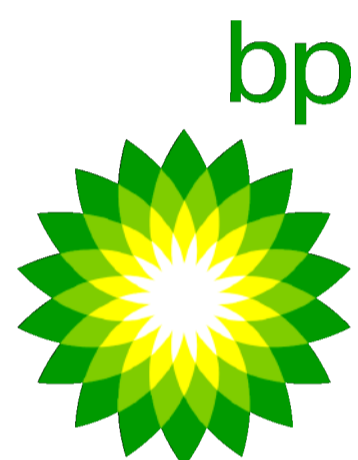
Integrations

The system collects and processes input from multiple data sources from radars to drones, satellites and voice communication systems



Installations

Vissim's technologies lie behind some of the world's largest and most complex vessel traffic management and surveillance systems



Effects



What exactly Vissim gained from this partnership

3x faster staffing

Vissim's usual staffing cycle is 6+ months. Vector Software has built the required development team in 2 months.

2x faster delivery

Vector Software team delivers results 2 times faster than existing in-house developer team

100% product ownership

Vissim gives their dedicated product manager high-level problems, and Vector Software provides ready-to use solutions

100% satisfaction

What I would like to mention is that despite all the difficulties that came to our life in 2020, all the teams did a great job with producing and delivering to our customers Vissim products in accordance with the promises given in contracts.

Thank you all for your hard work, your dedication, your involvement! Thank you for your ideas, efforts, inputs and feedback. Thank you for design, analysis, developing, testing, verification, management, organising, and all kind of activities in the ongoing projects.

Alex Legkikh, Chief Architect



Contact us

Book an intro call to tell us about your project and hear about our capabilities

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Let's do something amazing!



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