



KONGSBERG

Kongsberg Norcontrol

Vessel Traffic Management & Services

Complete solutions for maritime domain awareness
Vessel Traffic Services | Local Port Services

Kongsberg Norcontrol

For over 40 years, Kongsberg Norcontrol has been a pioneer in maritime domain awareness, delivering cutting-edge solutions that enhance safety, security, efficiency, and environmental protection.

Since providing the world's first Vessel Traffic Service (VTS) system at Teesport, UK, in 1979, we have grown into a trusted provider of advanced maritime solutions. Our expertise spans VTS, Earth Observation, LRIT, Maritime Security, Critical Maritime Infrastructure protection, and Offshore Energy monitoring.

With over 300 solutions deployed worldwide, we enable ports, coastal authorities, and maritime stakeholders to improve safety and efficiency. By integrating real-time data from advanced sensors such as radar, AIS and satellites, we provide a comprehensive maritime picture to support operators in critical decision-making.

Our vision

We strive to stay at the forefront, continuously driving innovation and excellence in maritime domain awareness. Through technology and dedication, we deliver smarter, safer, and more efficient solutions for the maritime industry.

Our values

Determined – We complete what we start and deliver solutions that make a real difference.

Innovative – We push the limits of maritime technology, redefining excellence.

Collaborative – We work closely with customers and partners to strengthen maritime safety and efficiency.

Reliable – Trust and responsibility guide us in delivering on our promises.

Part of the KONGSBERG Group

Kongsberg Norcontrol is part of KONGSBERG Group, a globally renowned technology corporation with strong Norwegian roots. With over 200 years of innovation, KONGSBERG delivers advanced solutions for challenging environments at sea, in defense, and in space, supporting critical industries for global security and resource management.



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Vessel Traffic Services & Local Port Services

Complete solutions for maritime domain awareness

Kongsberg Norcontrol delivers comprehensive solutions for Vessel Traffic Services (VTS) and Local Port Services (LPS). Built to serve ports, coastal areas, and inland waterways worldwide, our solutions boost safety, strengthen security, drive efficiency, and protect the environment in the maritime domain.

Vessel traffic management and services

Maritime traffic is a critical component of global trade, with over 90% of the world's goods transported by sea, according to the World Economic Forum. As maritime traffic continues to grow, shoreside maritime authorities require advanced tools to effectively manage a wide range of scenarios, ensuring safety, efficiency, risk mitigation, and environmental protection.

Vessel traffic services (VTS) are typically established to ensure the safety and efficiency of ship traffic throughout the VTS area. Our VTS solutions comply with and exceed the relevant IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) recommendations for VTS systems.

Key benefits

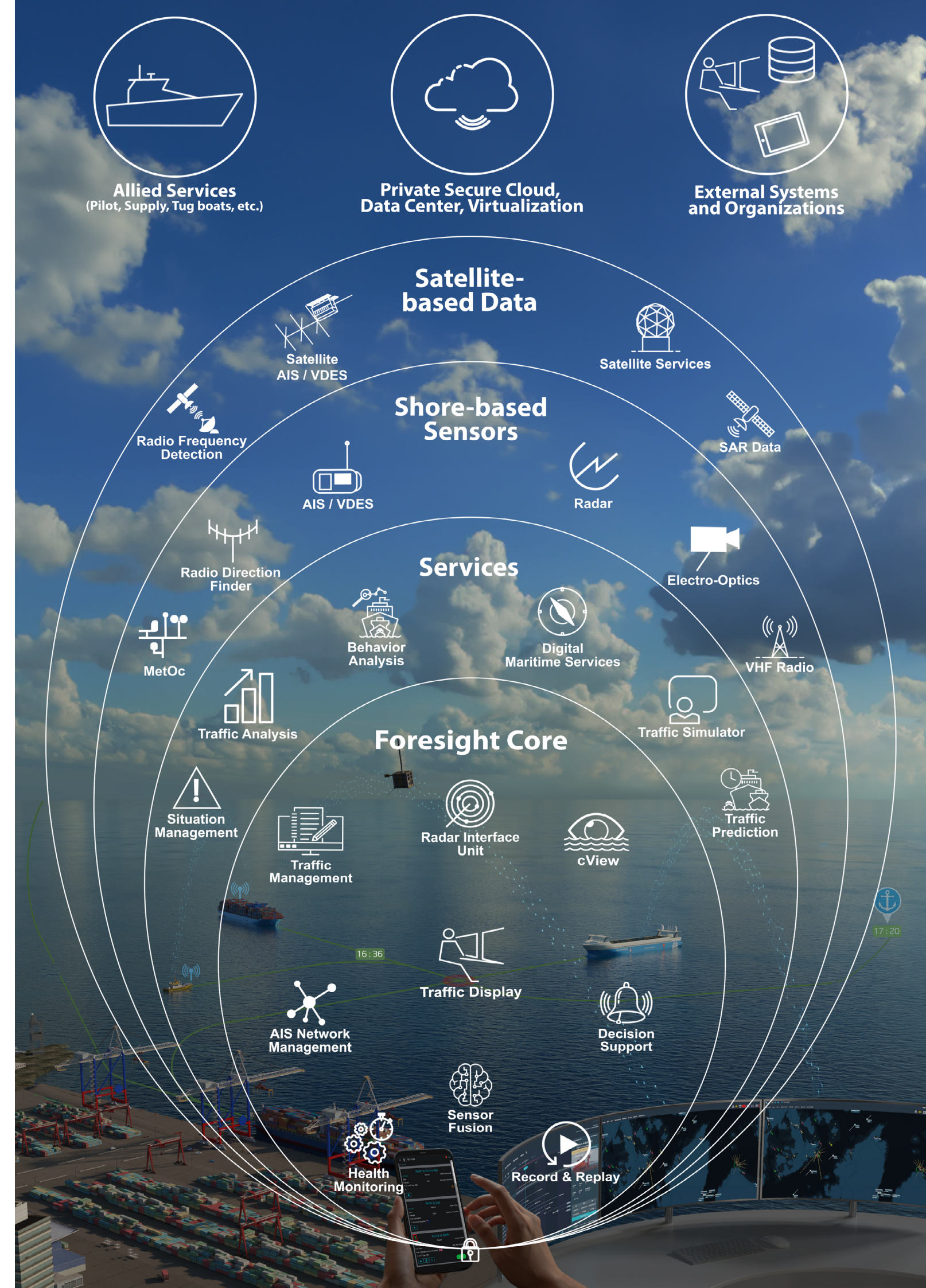
- Improved traffic flow and efficiency
- Just-in-time arrival optimization
- Resource utilization optimization
- Enhanced security and risk reduction
- Intuitive user interface
- Environmental protection
- AI driven decision support
- Compliance with IALA VTS guidelines
- 3D visualization of traffic picture
- Seamless integration with existing various sensors,
- 24/7 customer support

Shaping the future of maritime domain awareness

Kongsberg Norcontrol is a leader in providing VTS systems to ports, coastal areas, and inland waterways. Our solutions ensure safe navigation and efficient operations across the maritime domain. For ports without VTS responsibilities, we offer state-of-the-art management systems for monitoring and managing vessel traffic.

We deliver highly customizable, flexible, scalable, and user-friendly solutions. They consist of advanced sensors, proprietary software, third-party systems, project management, and expert Managed Services, seamlessly integrated with existing maritime infrastructure. Each implementation is tailored to the specific needs of our customers, ensuring optimal performance and customer satisfaction.

VTS responsibilities vary greatly depending on factors such as port size, traffic density, environmental conditions, and threat levels. Responsibilities range from basic information exchange on vessel positions and potential hazards to managing intense ship traffic in busy areas. In some VTS areas, only a few ships enter or leave per day, while others may oversee thousands of vessels.



From seabed to outer space

Our solutions can integrate a range of land-based high technology sensors such as radar, AIS and camera along with world-class satellite capabilities providing a near complete maritime picture. Having several sensor sources communicating with each other ensures global coverage and accurate situational understanding.

Seamless integration

Our solutions can be integrated into existing system structures, including software systems and sensors. Depending on the condition of the current system and the necessary upgrades, we implement solutions that complement the existing setup, ensuring that customer needs are met without unnecessary costs or upgrades. We work closely with customers to evaluate the benefits of any system enhancements.

Sensor fusion

Kongsberg Norcontrol's Sensor Fusion technology integrates multiple sensors—such as radar, AIS, sonar, and electro-optics—into a single, unified track. This blending of data ensures high-quality, accurate tracking and an optimized common operating picture, enabling precise decision support.

By improving range resolution and extending maximum radar tracking range from 98 km to 150 km, even in challenging conditions, our solution offers enhanced monitoring of narrow waters, channels, and rivers, as well as larger vessels previously beyond tracking limits. With automatic compensation for differing sensor reporting rates and the ability to integrate any sensor, the system provides seamless coverage across wide geographical areas, ensuring reliable and comprehensive maritime surveillance.

A complete KONGSBERG solution

As part of the wider KONGSBERG group, we have access to a vast array of advanced sensors and technologies, creating a complete KONGSBERG solution that spans from the deep sea to outer space. This includes subsea sensors such as UAVs and Hugin AUVs, as well as the entire satellite value chain—from satellite production and ground-based stations to advanced data analysis and display systems.

By delivering a fully integrated solution, KONGSBERG ensures complete control over the supply chain, maintaining the highest levels of safety, security, and reliability. This full-spectrum approach allows us to offer the most technologically advanced and future-proof solutions available in the market, tailored to meet the complex needs of the maritime domain.



“By delivering a fully integrated solution, KONGSBERG ensures **complete control** over the supply chain, maintaining the highest levels of safety, security, and reliability”

Customer testimonial

The Norwegian Coastal Administration

The Norwegian Coastal Administration (NCA) is the national agency responsible for coastal management, maritime safety, and emergency preparedness against acute pollution along Norway’s extensive and challenging coastline. With a demanding climate, a vulnerable natural environment, and complex traffic patterns, maintaining navigational safety is of utmost importance.

Since 1981, Kongsberg Norcontrol has developed, delivered, and maintained NCA’s Vessel Traffic Service (VTS) solutions, integrating its proprietary Foresight software with advanced sensors such as radar, AIS, MetOc, cameras, and satellite technology.

This long-standing collaboration has driven continuous technological advancements, enabling us to solve new safety and security challenges quickly and efficiently while ensuring a modern, future-proof solution.

Today, NCA operates six VTS areas—Horten, Brevik, Kvitsøy, Fedje, Kinn and Vardø—each equipped with Kongsberg Norcontrol’s surveillance solutions. These centers play a critical role in monitoring vessel traffic, pilotage, managing traffic control, and preventing incidents in high-risk areas.

To support these operations, NCA has an extensive Managed Services contract with Kongsberg Norcontrol, covering support, maintenance, and system upgrades. This ensures reliability, cybersecurity, and optimal system performance. Additionally, NCA and

Kongsberg Norcontrol collaborate on several research and development projects for instance on vessel behavior analysis and anomaly detection.

“NCA has a long-standing relationship with Kongsberg Norcontrol, recognizing them as a trustworthy, reliable, and committed partner. Systems and sensors delivered are experienced as robust, high-quality, and high-performing, with minimal downtime recorded year after year”, says Jon Leon Ervik, Head of Department for Navigation Technology and Pilotage Management, Norwegian Coastal Administration.



Understanding the maritime traffic picture

The Foresight product family

Foresight is our in-house family of software products for maritime domain awareness. Comprising several complementary products, it provides a unified platform for managing vessel traffic and enhancing operational safety and efficiency.

Foresight provides a common operating picture that allows maritime authorities to identify and proactively manage risks. This high-performance geographic information system ensures that the right information is presented at the right time, enhancing decision support for operators.

By integrating data from a range of advanced sensors, Foresight consolidates information into a single, user-friendly, and intuitive display. It is designed with the user in mind, offering a seamless, customizable, and adaptive interface. Information is delivered precisely, quickly, and accurately. By combining real-time data with advanced analytics, we help human operators better understand complex situations, enhancing situational awareness and operational response.

A typical VTS system collects vast amounts of data, which can be overwhelming for operators to process manually. Historically, they relied on sampling and intuition, leaving significant data unexamined. Advanced analytics changes this by analyzing all available information, identifying patterns, correlations, and anomalies that might be missed by human operators. This allows operators to focus on high-priority situations, significantly improving both efficiency and risk management.



Proactive traffic management

Kongsberg Norcontrol leverages advanced AI-based models trained on historical and real-time AIS (Automatic Identification System) data to accurately predict future ship routes. By integrating data from systems like SafeSeaNet—Norway's national ship reporting system—the solution offers precise predictions of vessel positions over time.

This capability provides shore-based operators with a forward-looking traffic picture, enabling proactive planning to prevent collisions, groundings, or even detect potential illegal activities. Should a vessel deviate from its expected path, the Foresight system alerts operators to assess and respond effectively.

Route prediction also plays a critical role in optimizing operations in congested areas like ports, canals, and narrow waterways. By analyzing traffic patterns, bathymetry, and weather conditions, the system enables ships to plan just-in-time arrivals, avoiding unnecessary idling and reducing fuel consumption. This is especially valuable for autonomous vessels, which rely on pre-defined routes to ensure safe and efficient navigation.

Right information at the right time

Predicting future risk with AI driven behaviour analysis

Key features and benefits

Optimizing safety & efficiency

Digitalized maritime services

Kongsberg Norcontrol provides all three sides of the IMO e-navigation coin; ship systems, shore-based infrastructure and communications technology. As the leading developer of shore-based e-navigation technologies, we aim to improve safety in the maritime environment and increase overall efficiency in operations.

We enable VTS and coastal authorities to become e-navigation maritime service providers by offering off-the-shelf and customized solutions, as well as the platform and applications through which to deliver. We help port and coastal authorities to realize the benefits that digitalized maritime services can bring to operations, be it delivering critical safety information directly to bridge systems, providing ships the means to report automatically and electronically, or planning a port arrival that is coordinated with berth availability and arrival service providers.

Collision prevention/grounding

By studying normal ship behavior and identifying anomalies, our system detects and informs of high-risk situations, allowing the operator to take action before accidents occur. Research has shown that ships often exhibit unusual behavior, such as unexpected maneuvers or speed changes, prior to accidents like collisions or groundings. Recognizing these early warning signs allows VTS operators to take proactive measures to mitigate risks and enhance maritime safety. We also integrate weather data to provide even greater accuracy and situational awareness for anomaly detection.

Port operational efficiency

Kongsberg Norcontrol's Port Management Information System (PMIS) ensures seamless berth allocation by managing all aspects of a vessel's visit from a centralized platform. This includes handling pre-arrival notifications for waste, cargo, and ISPS compliance, tracking vessel movements such as arrivals, berth shifts, and departures, and managing any delays. The system also allows integration with VTS for automated movement detection, enhancing accuracy and efficiency. Services like tug assistance and resources such as pilot assignments are allocated directly within the PMIS, providing a comprehensive and efficient approach to berth management.

Operator stress management

Foresight's HMI is based on the ISO human-centered design standard to reduce operator workload and administrative burden. Information is highly accessible and operations are easily performed. For example, tracks can be configured in a way that allows operators to see, at a glance, the information that is most important, whether that is static data about the track, such as its vessel type or draught, or operational information, such as marking vessels that have reported at a mandatory reporting point, or whether a vessel is in-bound or out-bound. Integration between the Traffic Display and Traffic Management further reduces workload by allowing operators to create reports from the Traffic Display, thus eliminating the need to search for the correct vessel in Traffic Management.

Mooring and berthing

Research highlights that while ports excel at planning, the execution phase of a ship's arrival often

faces challenges, such as berth or service provider unavailability. Kongsberg Norcontrol's Just-in-Time Arrival service addresses this by enabling seamless collaboration among arrival service providers and Vessel Traffic Services (VTS) through a single, integrated solution.

Leveraging cutting-edge route-sharing capabilities, progressive web technology, and deep integration between the Foresight Traffic Management and Foresight Traffic Display solutions, this service allows providers to communicate readiness, manage services, and monitor arrival progress in real time via tablets, laptops, or smart devices. Bridge teams, charterers, and agents also benefit from a full, transparent view of the voyage and arrival progress.

By fostering a common, shared situational awareness among all stakeholders, Kongsberg's Just-in-Time Arrival service ensures that vessel arrivals are truly optimized, reducing inefficiencies and enhancing the coordination required for smooth port operations.

Core advantages

- **Proactive collision prevention:** Detects early anomalies in vessel behavior to enable timely intervention and risk reduction.
- **Streamlined port efficiency:** Centralizes berth allocation and vessel tracking to enhance overall operational efficiency.
- **Reduced operator workload:** Features an intuitive, human-centered interface that simplifies data access and reporting.
- **Optimized mooring and berthing:** Enables real-time collaboration and Just-in-Time Arrival management for smooth vessel operations.





Protecting the environment, preparing for the unexpected

At Kongsberg Norcontrol, we are committed to advancing greener, safer seas. Our solutions combine cutting-edge technology with a deep understanding of maritime operations to support both environmental protection and emergency preparedness.

Environmental dashboard

With our Environmental dashboard, authorities and operators gain real-time insights into vessel emissions and environmental performance. Drawing on comprehensive ship databases, we analyze key data such as engine type, horsepower, cargo, and speed to assess emission levels. High-emitting vessels are flagged, while ships with low environmental impact may benefit from incentive-based programs—encouraging cleaner operations across the board.

Oil spill

Leverage near real-time satellite imagery to detect and monitor oil spills, even in the most challenging conditions, such as low-light or cloudy weather. This cutting-edge capability ensures continuous surveillance and reliable detection regardless of environmental factors. When an oil spill is identified, the system automatically highlights the affected area on the map and generates detailed reports. These alerts enable relevant authorities to respond swiftly, mitigating the environmental impact and safeguarding marine ecosystems. By combining innovation with actionable insights, Kongsberg Norcontrol's technology supports efficient and effective spill management for a safer, cleaner maritime environment.

JIT arrival

Just-in-Time (JIT) arrival at ports significantly reduces the environmental impact of maritime operations. By optimizing ship routes and arrival times, vessels can reduce fuel consumption, leading to lower greenhouse gas emissions. *Eliminating loitering near ports minimizes noise pollution, protecting marine life sensitive to sound. Additionally, reduced idling and more efficient scheduling decrease air pollution in and around port areas, contributing to cleaner and healthier environments for both marine ecosystems and nearby communities.*

Emergency preparedness

Localized weather

Our system strengthens emergency preparedness by seamlessly integrating real-time and localized weather information. In the event of weather emergencies, operators can access detailed data such as temperature, wave height, and wave length at specific locations by simply placing a pin on the map. Alerts can be generated to warn about potential issues, enabling timely responses to mitigate risks. This comprehensive approach ensures that maritime operations remain safe and informed, even in challenging weather conditions.

Fast deployable standalone mobile sensor

Our mobile radar sensor container provides a highly versatile and flexible solution for rapid deployment in maritime surveillance and security applications. Engineered to accommodate a wide range of customizable sensors, it is ideally suited for temporary or emergency use in scenarios such as environmental disasters, seasonal monitoring, or testing new radar sites. This adaptability ensures that the container meets the unique demands of various maritime operations.

Designed to adjust seamlessly to a wide array of operational needs, the container can be configured for short-term surveillance or deployed as a rapid-response tool in critical situations. Its flexibility allows users to scale the system to match the complexity of the mission, making it both a cost-effective and reliable option for enhancing maritime domain awareness. Whether integrated into an existing surveillance network or used as a standalone unit, this mobile solution empowers swift, informed decision-making in both routine monitoring and emergency situations.

Security concerns

Our system is designed to tackle critical security concerns, including unauthorized access and smuggling, using cutting-edge technology. Satellite-based monitoring combined with AIS spoofing and jamming detection ensures vessels are accurately identified, even when malicious actors attempt to mask their presence. Radar detection capabilities enable tracking of swimmers and small craft, while our drone monitoring system, IRIS, provides aerial surveillance for hard-to-reach areas.

Cyber security

Kongsberg Norcontrol prioritizes cyber security to ensure safe and reliable maritime operations. Our proprietary software is developed with strict adherence to industry standards, including NIS2 and ITIL frameworks, providing advanced protection against cyber threats. As a NATO-certified provider, we deliver solutions trusted by the most demanding security environments. These measures ensure the integrity, confidentiality, and availability of critical systems, enabling stakeholders to operate with confidence in an increasingly digital maritime domain.

Hybrid threats

Addressing modern security challenges



Managed services

Managed services

Annual software upgrades

- Predictable long term support packages
- Dedicated in house support team
- Partnership

Kongsberg Norcontrol offers a comprehensive range of Managed Services to ensure your maritime domain awareness solution remains up to date and performs at its best. By entrusting us with specific processes and functions, designed to enhance operations and reduce costs, you mitigate risk while gaining predictability in cost, safety, and efficiency. Our subscription-based model means that the customer retains ownership or oversight of the system, while we deliver Managed Services through a service-level agreement.

Together with the customer, we create a tailored package of services to meet unique needs—whether it’s a basic support contract or a complete solution where we manage the entire system operation. Contact us today to explore how this package can be customized for your requirements. Key benefits include improved efficiency, predictable costs, guaranteed system availability, swift implementation, regular updates, and expert support, allowing you to focus on your core business while we manage the rest.

Key benefits

- Improve efficiency with a consistent, high performing system
- We assume and manage most of the risk
- Gain control of your costs by only having to worry about a fixed, predictable sum which can be easily budgeted with each year
- Guaranteed system availability, avoid system downtime which can be detrimental and cause huge losses
- Swift implementation
- Always have the latest technology with regular system updates
- Fast, efficient and professional support
- Focus on your core business and let us do the same

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