



SAAB



MANAGE THE WATERS WITH EASE

PROVEN EFFICIENCY AND PROTECTION
WITH MARITIME **CONTROL**™

MANAGE YOUR WATERWAYS WITH CONFIDENCE

The vast majority of global trade takes place through shipping. That is why it is critical for waterway authorities to have a solid system in place that provides them with the means to guide, assist and manage all shipping within their areas of responsibility.

Vessel Traffic Services (VTS) and Vessel Traffic Management and Information Systems (VTMIS) play an important role in supporting the global supply chain. Without them it would be impossible for authorities to make a 24/7 economy a reality, as operations would come to a standstill in bad weather or poor visibility.

SAFETY AND SECURITY WITH VTS

An important purpose of VTS is to ensure the safety of life at sea. Our solution warns of hazardous situations, such as groundings or collisions. VTS also protect the marine environment, adjacent shore area, work sites and offshore installations from the possible adverse effects of maritime traffic.

In addition to this, VTS play a vital role in security, alerting operators to suspect behaviour, such as ships entering restricted areas or deviating too far from their assigned route. Each waterway is inherently different and the requirements for effective navigation

vary considerably. Authorities need information they can rely on to ensure secure passage of cargo in all conditions and situations.

EXTENDING THE POSSIBILITIES WITH VTMIS

Extending the capacity of VTS, VTMIS go above and beyond in the form of an Integrated Maritime Surveillance system – with a management information system holding extensive information on vessels, their cargo and their sailing plans. Using data links, VTMIS allow authorities to directly share VTS data in order to increase the effectiveness of maritime activity operations.

PRESENTING MARITIMECONTROL™

MARITIMECONTROL is Saab's latest implementation of VTMISS, building on the success of CoastWatch and V3000. It is designed for authorities responsible for waterways, ports and coastal regions. It is an essential tool to maximise the continuity of vessel traffic in all visibility and weather conditions.

The solution aims to simultaneously improve:

- Safety (in line with the International Maritime Organization's zero incident aim)
- Security
- Efficiency
- Environmental protection

MARITIMECONTROL also aims to continually improve itself. The solution is highly scalable, with room to grow and develop while maintaining the benefits of those investments already made.

The system supports the standardised services defined by the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA).

IALA-DEFINED SERVICE	SUPPORT FROM MARITIMECONTROL
<p>Information Services (INS) Provide essential and timely information to assist the on-board decision-making process.</p>	<p>A real-time validated traffic image that makes optimal use of radar, the Automatic Identification System (AIS) and other data sources, along with information on meteorological and hydrological situations that could affect vessel traffic.</p>
<p>Traffic Organisation Services (TOS) Prevent the development of dangerous maritime traffic situations and allow the safe and efficient movement of vessel traffic.</p>	<p>Tools to separate traffic flows and to prevent dangerous situations from occurring. Timely alerting for many situations, such as impending groundings, collisions and anchor drifting.</p>
<p>Navigational Assistance Services (NAS) Provide essential and timely navigational information to assist the on-board decision-making process and to monitor its effects.</p>	<p>Full situational awareness of traffic and environment. Tools for planning safe arrivals and departures, as well as efficient sailing speeds.</p>
<p>Maritime Assistance Services (MAS) Handle incidents of vessels in difficulty.</p>	<p>Search and Rescue (SAR) tooling and the means for the VTS operator to co-ordinate emergency services.</p>

This list is by no means complete. MARITIMECONTROL supports VTS operators in many other ways as well.

ADDRESSING USERS' NEEDS

MARITIMECONTROL addresses key end-user needs by providing a solution that supports daily operations:

- Predicts Closest Point of Approach (CPA), taking assigned routes into account to help prevent dangerous passage
- Offers flexibility in definition and on-the-fly activation of operator roles and permissions, sectors, user interfaces and workstation set-up
- Provides clarity by:
 - Easily distinguishing vessel types
 - Using track markings for status indication of dangerous goods, anchoring, special sailing procedures (blue board), lock assignment and radio contact establishment



TAILORED FOR PRECISION

Incorporating over 30 years of development, Saab's MARITIMECONTROL solution is a field-proven, solid VTS system. Its features are diverse and tailored to the needs of waterway authorities.

USER-FRIENDLY APPROACH

MARITIMECONTROL has been developed in close co-operation with our customers. User-friendliness is inherent to our approach in building the system.

INTEGRATION WITH EXTERNAL SYSTEMS

MARITIMECONTROL integrates Saab and external systems to deliver a comprehensive solution for the management of waterways.

In building MARITIMECONTROL, we have drawn on our expertise and long experience in providing maritime solutions. Optional components of the solution include the TactiCall integrated communication system, the SAFE incident management and decision support system, and the base stations and transponders of the R-series AIS.

Saab has also partnered with external systems and suppliers to deliver the best solution to our customers. As a 'supplier agnostic' organisation, Saab is proud to work with suppliers of sensors, radios and information systems, and we have extensive experience in interfacing with existing systems.

EXPERT TARGET TRACKING

Target tracking forms the foundation on which all functionality of

VTMIS rests. The quality of safety functions is directly related to the quality of target tracking; any weaknesses in this will extend to all functionality in the system. Good-quality target tracking will therefore result in low false alarm rates and timely warnings of hazardous situations or accidents.

An independent side-by-side comparison of the three leading VTS system suppliers demonstrated that Saab's vessel target tracker outperformed its rivals in every aspect.

Tracking continuity is also important for minimising the amount of necessary operator involvement. It leads to low workload and stress levels, while benefiting operator productivity. This is critical in a 24/7 working environment that requires highly qualified professionals.

A TRUSTED SAFETY NET

MARITIMECONTROL acts as a safety net by extensively monitoring for and alerting to hazards that the VTS operator may have missed, such as potential grounding, anchor drift, collisions, entering restricted areas, travelling over or under speed and route deviations.

RELIABLE ANALYSIS

MARITIMECONTROL allows for detailed analysis of incidents. The OpsAnalyser tool provides statistics, through analysis of traffic patterns, to determine waterway usage and the effect of changes in policy procedures or routes. It is also an essential tool for incident investigation, plotting the details of how an incident developed. If needed, it is possible to export a data recording to use as court evidence, so that it can be analysed and shown outside the customer organisation in a controlled manner without needing the VTS system itself.

INFORMATION SHARING

The system supports collaborative decision making by allowing parties in the port to co-operate for greater efficiency. Information can be made available through a web-based application on a need-to-know basis and shared through integration with a Port Management Information System (PMIS) and Terminal Operating System (TOS). This allows the real-time exchange of data to mutually benefit these systems.

Saab is also an active participant in the Sea Traffic Management (STM) e-navigation initiative, which was set up to create a safer and more efficient maritime sector. STM connects and updates the maritime community in real time, with effective information exchange. By doing so, it overcomes many of the challenges of communication and information sharing between stakeholders in the maritime transport industry.

What sets MARITIMECONTROL apart from other solutions is the flexibility to configure the system to the way you are accustomed to working, along with your established procedures.



CUSTOMISATION THROUGH CONFIGURATION

MARITIMECONTROL is a standard solution that we configure to match our customers' way of operating and local environment. Its modularity and design give the user the freedom to mix and match the facets of the system that are relevant to them.

The design and services of MARITIMECONTROL are future-proofed to anticipate the needs of users in years to come as technologies expand and challenges evolve. Innovation is central to

its approach; for instance, Saab's Remote Tower that is used in air traffic control could be applied in the maritime world using the capabilities MARITIMECONTROL offers.

Cyber security is a constant point of focus in the development of our system. Given that VTS systems become critical infrastructure in many cases, a system being compromised can have far-reaching consequences.

By default, MARITIMECONTROL is delivered in a high-availability configuration, with multi-level resilience against hardware failures and proven

availability of at least 99.995 percent. It is a fully scalable solution, ranging from single user configurations to transnational multi-port, multi-centre environments.

Saab's solution uses a wide range of surveillance sensors, such as:

- Radars
- AIS networks
- Cameras
- Direction finders
- Hydro/meteo displays

Multi-sensor fusion brings sensor data together and provides a validated traffic image.

PROVIDING THE EDGE

INNOVATION FROM EVOLUTION

MARITIMECONTROL offers an update and upgrade plan to all customers. Effectively acting as an extended warranty, the update plan ensures that any non-conformities discovered in the system are resolved in a timely fashion, while the upgrade plan gives customers the option to install the latest version of the software. There are new releases in both the spring and autumn of each year.

THERE WHEN YOU NEED US

A support desk is available 24/7, providing the essential operational

continuity required. Our customers are invited to annual user group meetings, where they can provide input into which direction our VTMIS should develop in and which aspects should be prioritised.

TRAINING AND DOCUMENTATION

An optional true-to-life VTS simulator is available, which allows you to build training scenarios based on actual traffic recordings. It uses the same traffic display software as the operational system and is therefore always up to date.

OUR QUALITY PROMISE

Saab is ISO 9001 certified. MARITIMECONTROL is fully compliant with IALA recommendations, guidelines and manuals as applicable, including the 2016 edition of the VTS Manual.

MARITIMECONTROL AND PORTCONTROL IN USE TODAY



ABOUT SAAB

Saab's Maritime Traffic Management department delivers a wide range of integrated solutions to maritime users around the world. These solutions allow our customers to:

- Manage safety and efficiency of traffic on waterways
- Protect the environment
- Run efficient ports
- Support law enforcement and coastguards

- Perform underwater surveys
- Carry out precise navigation

AN ACTIVE PARTICIPANT

Saab is an active member of the following organisations:

- American Association of Port Authorities (AAPA)
- Comité International Radio-Maritime (CIRM)
- International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA)

- International Association of Ports and Harbors (IAPH)
- International Electrotechnical Commission (IEC)
- International Harbour Masters Association (IHMA)

These memberships allow us to gain the most up-to-date information about the relevant issues waterway authorities face around the world today. This puts us in the driving seat in terms of using our in-depth market awareness to deliver the services our customers need most.





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“ONE OF THE THINGS THAT HAS **ALWAYS** CONTINUED TO **WORK** IN OUR PORT IN THE PAST **TWO DECADES** IS THE **SAAB VTS SYSTEM.**”

Robert De Maere, Telecommunication Manager, Port of Antwerp

For more information about how MARITIMECONTROL can help you manage your waterways, contact us at mtminfo@saabgroup.com or visit saab.com/maritime for more information.

saab.com/maritime