

Ship Traffic Control Solutions





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Coordinated, Global Approach

Fully connected maritime traffic control and tools for coordinated monitoring and decision support among relevant stakeholders



Real-time data exchange



Extend the coverage of individual systems



Avoid repeated identification of targets (already identified by the neighbouring system)



Improve safety of navigation via Decision Support Systems and analytical tools



Receive information in advance and improve the efficiency of port operations (pilot, berthing, stevedoring, etc.)



300 STC
INSTALLATIONS
IN **55** COUNTRIES



LEADING THE PROGRESS IN GLOBAL SHIP TRAFFIC CONTROL

Ship Traffic Control Solutions, with the support of automated self-learning decision support technologies, make it possible to operate a ship traffic control model similar to that available to the aviation industry. Ship movements can be advised and controlled by a country, even beyond territorial waters.

A new generation of Ship Traffic Control and Management Solution is required to extend safety and efficiency of navigation far beyond the limits of traditional coastal systems.

ESTABLISHING PORT-TO-COAST-TO-COUNTRY-TO-COUNTRY MONITORING, CONTROL AND SUPPORT SYSTEMS

All technologies can be connected through one central operating system enabling the data to be available across the whole operational ecosystem.

COMPLETE SOLUTIONS

Collect and process various streams of data



Integrate it into a common operational picture



Share between all relevant stakeholders

Vessel Traffic Services

COORDINATION OF VESSEL TRAFFIC AND PORT CALLS



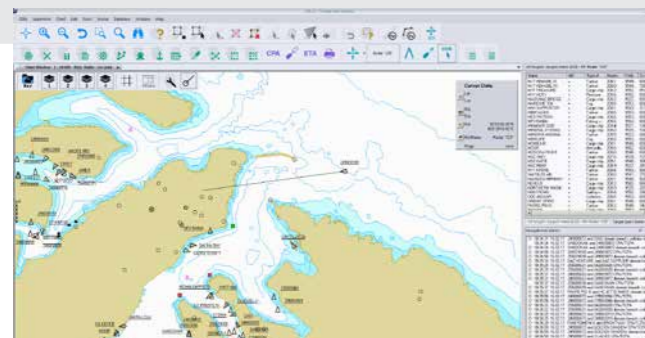
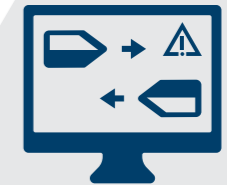
Scheduling approaching vessels optimizes port load and **INCREASES EFFICIENCY**

Distribution of common data to several operations stations improves VTS **TEAMWORK**



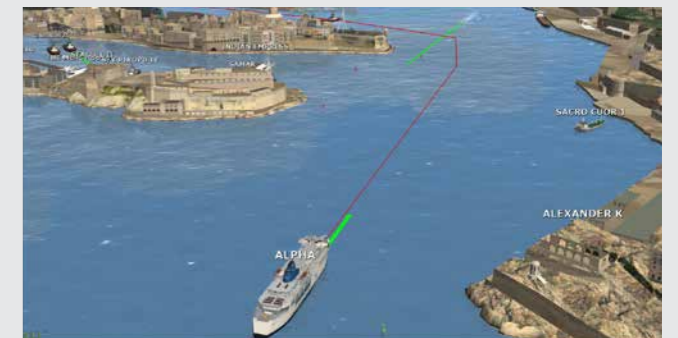
Operator receives **FULL INFORMATION** about VTS area as the result of automatic processing and fusion of data from various sensors, such as radars, AIS, CCTV, RDF, GMDSS, weather stations

Advanced decision support system helps operators to recognize a dangerous situation long before it escalates, and thus increases **SAFETY**



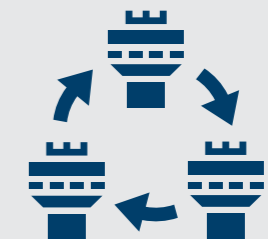
Electronic chart overlay, combined with vessel positions and sensor data, provides a **FULL TRAFFIC IMAGE**

3D VTS significantly enhances **SITUATION AWARENESS**



Traffic management tools provide a basis for **TRAFFIC COORDINATION**

Open interfaces enable **INFORMATION EXCHANGE** between VTS and other services



COMMUNICATION EQUIPMENT allows interaction with vessels

Recording system stores **ALL DATA** for debriefing and accident analysis



Coastal Surveillance Systems

CREATION OF A COMMON OPERATIONAL PICTURE



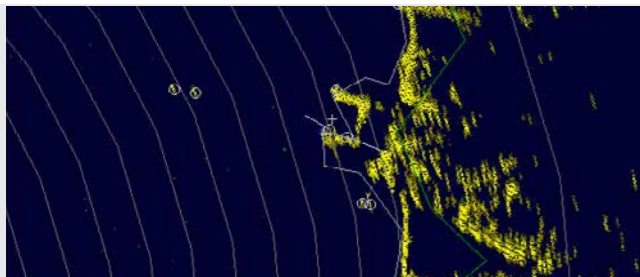
Integration of local and regional operations centres into a national scale system improves the **CHAIN OF COMMAND**



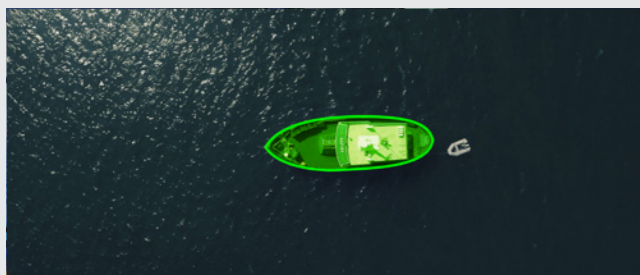
Blending data from many sensors types allows for **DETECTION OF EVEN SMALL TARGETS**



Integrated CCTV/EOS helps to **VISUALLY IDENTIFY UNKNOWN TARGETS**



Advanced radar processing system **TRACKS HIGH-SPEED MANEUVERING TARGETS**



Multipurpose target classification (friend or foe) improves **AWARENESS**



Long-range sensors can **EXTEND COVERAGE** up to the edge of an Exclusive Economic Zone (EEZ)

Mobile sensor sites **IMPROVE SURVEILLANCE**



ANOMALY DETECTION module picks out targets exhibiting suspicious behavior amongst all vessel traffic



Enhanced monitoring and control of own assets **FACILITATES INTERCEPTION**



Data is stored for **HISTORIC TRENDS ANALYSIS AND STATISTICS**



Full all-component redundancy provides **CONTINUOUS OPERATIONS**

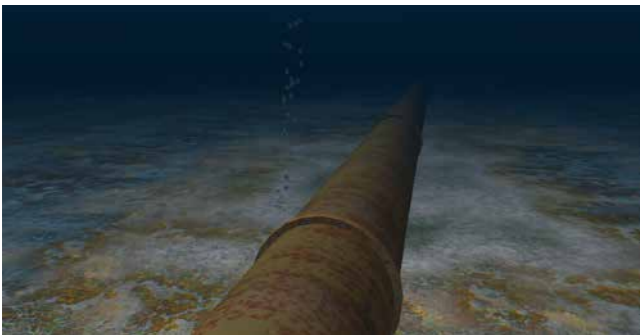


Offshore Solutions

EFFECTIVE MONITORING AND TRACKING OF ACTIVITY AT OFFSHORE INSTALLATIONS



Advanced strike prediction module provides **EARLY WARNING** for all approaching unauthorized vessels of any type



Anchoring detection system helps to **PROTECT UNDERWATER INSTALLATIONS**, such as cables or pipelines, from damage



Special tools help operators to improve **COORDINATION OF MARITIME OPERATIONS**

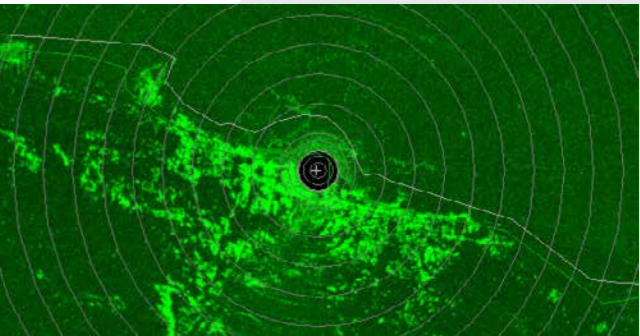


Long range detection of even small targets provides **SECURITY OF THE INSTALLATION AREA**



CLEAR AUDIO AND VISUAL PRESENTATION of alarms allows asset coordination to be combined with other tasks

Integration of **OIL SPILL DETECTION** system protects the environment



Virtual AtoN broadcast improves **SAFETY OF INSTALLATIONS**



Integration of multiple sensors allows **SEVERAL INSTALLATIONS TO BE PROTECTED FROM ONE CONTROL CENTRE**



Integration with ADS-B displays **HELICOPTER TRAFFIC**



Moving of infrastructure to onshore premises **REDUCES INSTALLATION COSTS**

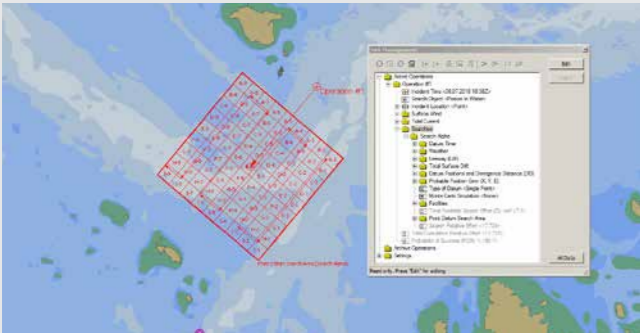


Search and Rescue Solutions

HELPING CONDUCT SAR OPERATIONS
WITH OPTIMAL RESOURCE ALLOCATION



Multiple sensor inputs facilitate more rapid
RECEPTION OF DISTRESS CALLS



System helps the assigned mission coordinator to **IDENTIFY SEARCH AREAS** and **CALCULATE SEARCH PATTERNS**



Resource management tools allow more **EFFICIENT ALLOCATION OF RESOURCES** in SAR operations



Real-time display of all search resources and surrounding traffic improves **SEARCH EFFICIENCY**



Automatic report generation **SIMPLIFIES MANDATORY REPORTING** requirements

River Information Systems

SAFE AND SECURE NAVIGATION ALONG RIVERS

Inland module displays
RIVER ELECTRONIC CHARTS



Inland AIS messages provide
ADVANCED INFORMATION ahead of vessel arrival



Automatic Transmitter Identification System (ATIS) VHF helps to **IDENTIFY VESSELS** communicating with the VTS

On-route monitoring allows for **NAVIGATIONAL ASSISTANCE** for vessels



Pilot Management Solutions

SAFE AND EFFICIENT PILOTAGE



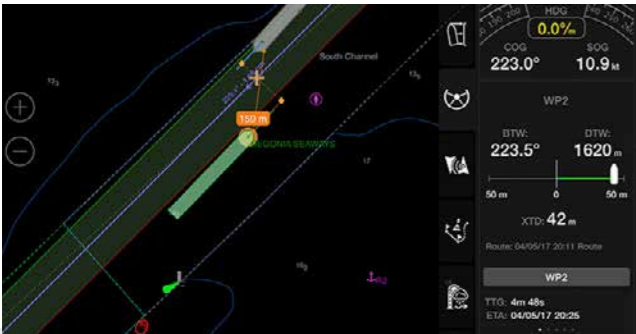
Light-weight and user-friendly PPU brings **FREEDOM** and **MOBILITY** on the bridge

Coordination of pilotage operations
INCREASES EFFICIENCY and
ENHANCES COMMUNICATIONS
between all port services



SITUATIONAL AWARENESS
via onboard sensors
over AIS Pilot Plug

AUTOMATED REPORTING reduces
amount of VHF communications
and administrative burden



Pilot specific functions and powerful tools
provide **DECISION SUPPORT** on board

NAVIGATIONAL INFORMATION
through using official, local
and bathymetric data



COMMON OPERATIONAL PICTURE
through information exchange between
VTS and other services, including
Weather and Tidal Level data

IMPROVED SAFETY of pilotage by using
high-precision Independent PPU sensors



DATA LOGGING and **RECORDING**
for incidents investigation

Can be used for **DEEP-SEA, CHANNEL,**
HARBOUR and **RIVER** pilotage



VTs Simulation and Training Solutions

BRINGING TECHNOLOGY, EXPERTISE AND CONTENT TOGETHER



Full scale simulator allows provision of IALA V-103 training in a realistic environment



Simplified edition is suitable for on-the-job training within installed VTS or CSS system



Online training offers operators flexibility in choosing where and when they familiarise themselves with the software



Integration with other simulators provides possibility for joint exercises for VTS operators and bridge teams



Project Execution, Support and Service

BUILDING LONG-LASTING RELATIONSHIPS

Project team oversees full project cycle from system design to implementation



Our installation teams work around the world from Arctic coasts to tropical areas, including installations offshore, on board vessels, as well as in high-risk areas



24/7 support team ensures swift reaction to customer requests



Remote monitoring and support program (if agreed with customer) allows for speedy resolution of technical issues



Ship Traffic Control

● MONITOR

COLLECT AND PROCESS THE DATA
CREATE COMMON OPERATIONAL PICTURE
DISTRIBUTE DATA TO CLIENTS

● ALERT

ANALYSE TRAFFIC
DETECT DANGEROUS TRAFFIC SITUATIONS
INCREASE SITUATIONAL AWARENESS

● RESPOND

PROVIDE DECISION SUPPORT SERVICES
ENSURE SHIP TO SHORE COMMUNICATIONS

SMART MARINE ECOSYSTEM

Wärtsilä is a global leader in smart technologies and complete lifecycle solutions for the marine and energy markets. By emphasising sustainable innovation, total efficiency and data analytics, Wärtsilä maximises the environmental and economic performance of the vessels and power plants of its customers.

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