

# VESSEL TRAFFIC SERVICES (VTS)



Specialization, commitment and innovation in solutions for the maritime safety and management

## DESCRIPTION

### INTEGRATED SOLUTIONS

Indra's solutions for the implementation of Vessel Traffic Services provide an integrated operational traffic scenario in real time that enables the improvement of navigation safety, the efficiency in traffic planning, the water environmental protection and the security of port infrastructures.

Our technological solution covers the integration of a wide variety of sensors such as:

- Radars.
- CCTV (day/night).
- AIS.
- RDF.
- Radio Communications and voice integrator.
- GMDSS.
- Meteo/hydro stations.
- Other sensors per customer request.

### TURNKEY SOLUTIONS: EFFICIENCY, FUNCTIONALITY AND SCALABILITY

Indra provides turnkey solutions from the initial consulting, integration (including existing systems), civil works, installation, commissioning and after sales support. Our solutions are based on consolidated fieldproven hardware and software elements with a modular and open architecture based on COTS hardware components and the use of open standards. It creates a system highly flexible on its functionality, scalable and easy for maintenance purpose.

### RECOGNIZED MEMBER BY THE MAIN MARITIME INSTITUTIONS

Indra's VTS solutions, as being our company an IALA industrial member, meet the recommendations from the IMO and IALA: Basic, Standard and Advance configurations.



## OUR SOLUTION

### iMARE

iMARE is our software product, it has been fully developed by Indra in order to cover all the VTS functionalities.

It provides the operator with a clear and concise vision of the maritime scenario that gathers and fuse all the sensor information on a friendly user Man-Machine interface. It provides the necessary automatic tools to track vessels, aid the navigation and generate automatic alerts.

### SENSOR INTEGRATOR

Module that makes the connection, driver and interface with the VTS sensors.

### MST

Multi sensor tracker, module that connects with all the radars and AIS information to fuse it in a unique scenario.

### ENC

Electronic Navigation charts based on IHO standards: S-57, S-63 and future S-100. Other standards are integrated into our solution.

### AUTOMATIC ALARMS

Real-time intelligent alarms calculation to avoid risky situations: collisions, grounding lines, security areas, anchoring, speed limits, etc.

### ROUTING MONITOR

Real-time routing monitoring and reporting at port areas.

### RECORDING SUBSYSTEM

Synchronized live recording: radar/AIS, CCTV video, radio communications, meteo/hydro data and user actions for replaying and inspection.

### TRAINING SIMULATOR

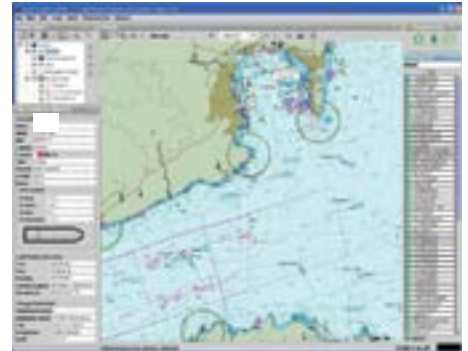
Recreation of different scenarios for operator's training.

### EXTERNAL SYSTEM CONNECTOR

iMARE is ready to interconnect other systems such as different VTS, PMIS, Pilots systems, etc.

### DATA BASE AND PMIS

Reporting based on the VTS data base. Port Management Information System connected to real VTS scenario: pre-arrival, invoicing, cargo operation, etc.



## MAIN REFERENCES

Indra provides VTS solutions based on our experience in several ports, among of which, the **Port of Southampton** is one of the busiest and most successful deep-water ports in the World.

In this project, iMARE system will be in charge once again of gathering all the information provided by the radar sensors (where Indra provides 4 new and integrates an existing one) and integrating it with the data provided by the Automatic Identification System (AIS), the Digital Selective Calling (DSC) mayday system, as well as the weather and hydro stations. It will also access to various cameras that have been installed in order to visually verify the information gathered by sensors.

Another main reference is the National VT MIS solution for the Polish Coast. Indra's VT MIS solution was chosen by the **Polish Maritime Authority** to manage the maritime traffic, safety and PMIS of three different areas (all the coast and 100km. of Oder river), with 4 Coordination Centers, one back up Center and up to 11 ports.

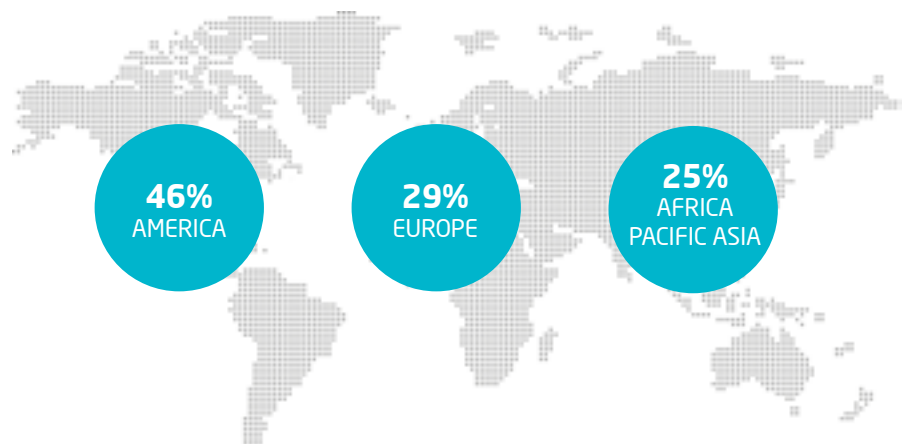
Besides the two references already described, Indra has deployed VT MIS solutions for the following Ports:

- Port of Mohammedia (Morocco).
- Port of Cadiz (Spain).
- Port of Valencia (Spain).

All the said references share most of the technology with coastal surveillance systems (CSS). In this field, Indra is a World reference after having integrated over 100 radars in more that 20 Command and Control Centers located in several countries:

- Hong Kong SAR CSS.
- Latvia CSS.
- Romania CSS. (SCOMAR Project).
- Portugal CSS (SIVICC Project).
- Spain CSS (SIVE Project).

Indra is a global Company that operates in more than 128 Countries all over the World



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