



# VTMIS

Vessel Traffic Management Information System

## INTEGRATED SOLUTIONS FOR MARITIME SAFETY, SECURITY, AND SURVEILLANCE



- ▶ Homeland security
- ▶ Coastal surveillance
- ▶ Port surveillance
- ▶ Surface control in coastal and deep sea
- ▶ River and narrow waters surveillance

**COMPREHENSIVE AND EXPERIENCED SYSTEM INTEGRATION SOLUTIONS TO ITS SHORE-BASED INTEGRATED SYSTEMS WITH ADDITIONAL WATERBORNE AND AIRBORNE INTERACTING COMPONENTS FOR SUPPLY, INSTALLATION, COMMISSIONING AND AFTER-SALE LOGISTIC SUPPORT THROUGHOUT THE LIFESPAN OF THE SYSTEM.**

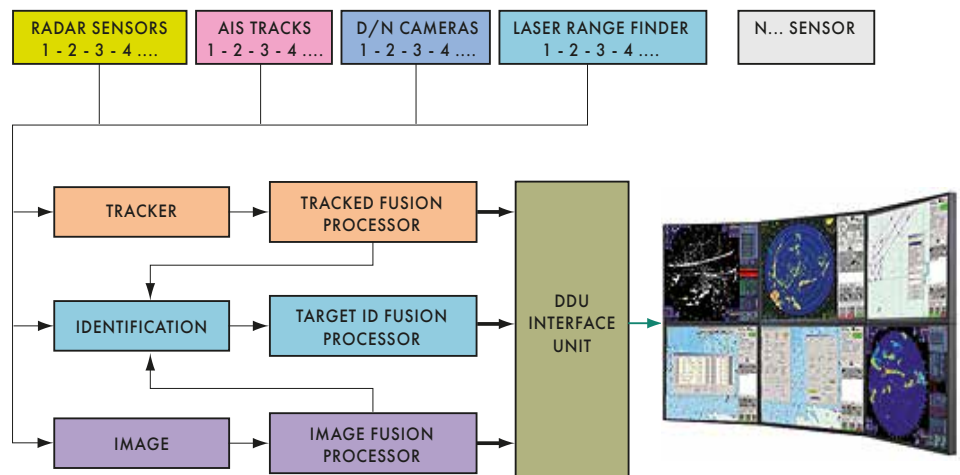


**GEM IS INTEGRATOR AND DIRECT SUPPLIER OF MAIN SYSTEM ITEMS, SUCH AS: SOFTWARE RADAR TV/IR SYSTEMS PROCESSING, THEREBY AVOIDING ANY RISK OF INTEGRATION & COMMISSIONING AND INTEGRATED LOGISTIC SUPPORT.**



- ▶ IALA Adv. level of recommendation radar detection and tracking
- ▶ IALA compliant AIS solutions
- ▶ Turn-key solution for either civil or defense applications extended to full EEZ monitoring and surveillance
- ▶ Multi sensor tracking and fusion
- ▶ Mixed telecommunications backbone to allow timely data/info streaming
- ▶ Picture-in-picture display
- ▶ Record and Play
- ▶ Interface to external Systems
- ▶ Reports generation and management
- ▶ Multi purpose Data Bases Management
- ▶ Automatic and reconfigurable record on mass storage supports
- ▶ WEB interface and external system connection as per IALA V-145
- ▶ Additional interface to other systems (fence protection, access protection, fleet tracking system, vessel monitoring system)
- ▶ Environmental Protection and Monitoring (oil spill detection, marine research and analysis)

To obtain superior performance of the systems, increased surveillance capability and reduced information uncertainty GEM elettronica offers automatic multi-sensor data fusion technologies and management system. Combined information assists the operators to detect, track, identify critical targets at any time, in the sea, undersea, land, air and all under weather conditions rendering a more complete scenario of the system.



*Open architecture and huge choice of sensors and processors:*

• System integration	:	GEM	<b>SoftWare</b>	Suite
• Radars	:	GEM	<b>Sentinel</b>	Family
• EO/TV (LRF extension on request)	:	GEM	<b>EOSS</b>	Family
• Sensor alignment	:	GEM	<b>POLARIS</b>	Family
• AIS	:	COTS	} integrable	
• Weather	:	COTS		
• Power generation (Diesel, Wind, Solar Cells)	:	COTS		
• TLC (Wireless, Satcomms, Web, Fiber Optic)	:	COTS		
• VoIP Comms (HF/VHF/UHF)	:	COTS		

**EXTENSION TO TYPICAL EEZ AND PERIMETRIC SECURITY BY INTEGRATION OF GEM elettronica**

## Software key features according with:

- IALA VTS Manual, year 2016
- IALA Guideline n. 1111 - Ed.1 Preparation of Operational and Technical Performance Requirements for VTS Systems\_May 2015
- IALA V-125 USE AND PRESENTATION OF SYMBOLOLOGY AT A VTS CENTRE (INCLUDING AIS) - Edition 3.0 - June 2012
- IALA V-145 THE INTER-VTS EXCHANGE FORMAT (IVEF) SERVICE - Edition 1.0 - June 2011
- IALA V-120 VESSEL TRAFFIC SERVICES IN INLAND WATERS Edition 2.0 December 2013
- IMO Circ. 243 "GUIDELINES FOR THE PRESENTATION OF NAVIGATION RELATED SYMBOLS, TERMS AND ABBREVIATIONS"
- IMO FAL 1 to 7 FORMS
- IMO\_SN1\_Circ. 289 "Guidance on use of AIS ASM"
- Fully compliant ECDIS functions, management and presentation



ALSO VIA WEB



### Maritime and Situational Awareness: this's the enquiry.

No more sensor alignment and control, no more additional processing, no more sensor presentation. GEM's integrating to software does really make real the new VTS/VTMIS operator concept: immediate availability of information, synthetic and comprehensive data presentation, awareness of the system's health and status, connection to the external world. And last, but not least, interactive tools and modules for aiding decision making.



The GEM VTMIS Software package covers at least both the requirements of a Port or Harbour VTS (PMIS) and a Coastal VTS (VTMIS) delivering a complete number of services and functionalities.

- Life Cycle Products Support
- Total Configuration Control
- Upgrade Sustainability

- Comprehensive technical manuals with complete trouble shooting and corrective maintenance procedures
- Operators guides
- Inventory and spare part lists

## INTEGRATED LOGISTIC SUPPORT

- National & International Service
- Installation, Start up & Field Engineering
- Repair & Test
- Inventory & Spare Parts
- Obsolescence management

- In-factory training courses for operators and maintenance personnel using hardware and software installed at GEM premises
- On the job training courses for operators and maintenance personnel
- Refreshments courses during system life





**CARGO MANAGEMENT  
AND ASSISTANCE**



**PROTECTION AGAINST  
ILLEGAL ACTIVITIES**



**PATROLLING**



**OIL SPILL**



**NATIONAL  
AUTHORITIES**  
VTMIS DATABASE  
& SOFTWARE

DEPARTURES  
PLANNING  
&  
CONTROLS

PILOT  
DISPATCH  
CENTRE

PORT AUTHORITY

COAST GUARD  
OPERATING CENTRE

VTS CENTERS



**HYDRO  
SURVEY**



**VHF  
COMMUNICATION**



**RADAR  
SYSTEM**



**AIS  
AUTOMATIC  
IDENTIFICATION  
SYSTEM**



**WEB  
PLATFORM**



**TRAFFIC  
CONTROL  
AND  
ASSISTANCE**



**VHF-DF  
SYSTEM**



**CONSOLE  
OPERATION**



**LRIT**



**ANCILLARIES  
INFRASTRUCTURES**



**TV / IR  
CAMERAS**



**SENSOR'S  
DATA LINK**



**METEOROLOGICAL  
AND  
HYDROLOGICAL  
SENSORS**



**UNMANNED SCIENTIFIC RESEARCH**



**PILOT PORTABLE UNIT**



**CRUISE ASSISTANCE AND CONTROL**

