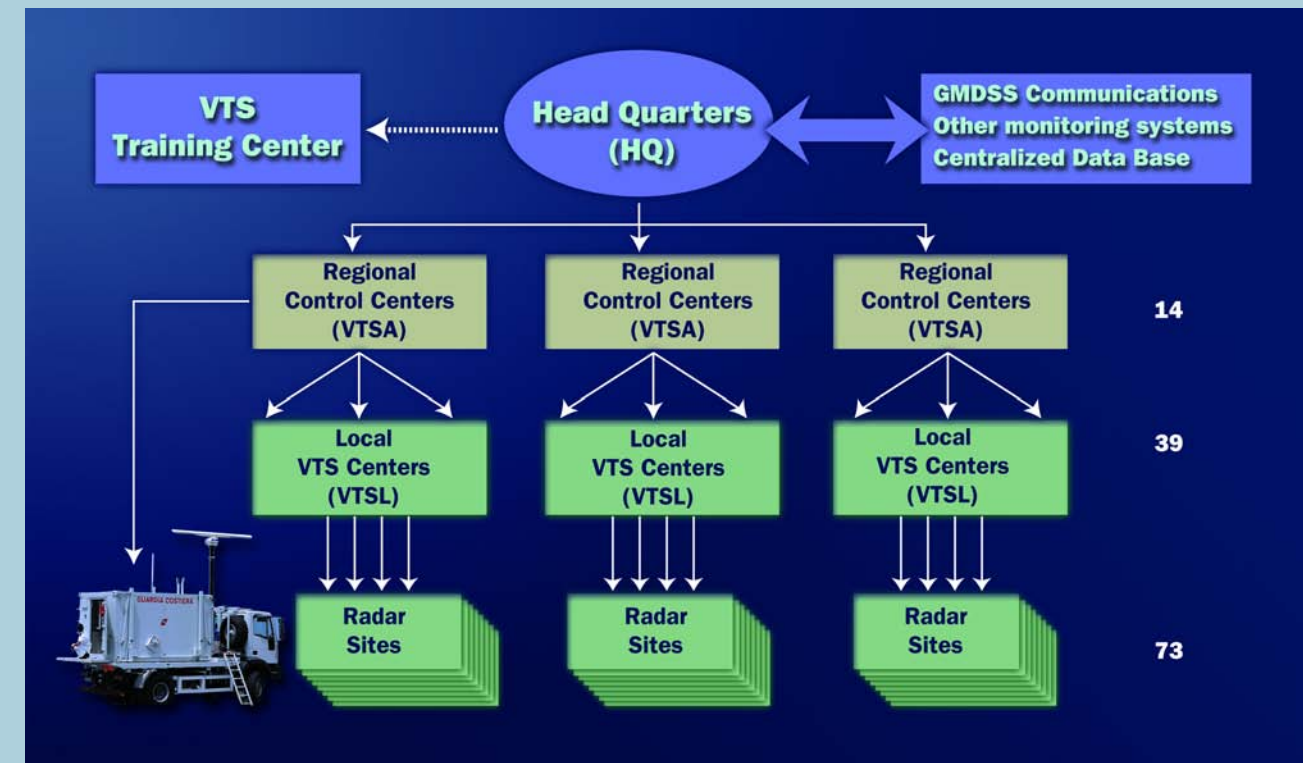
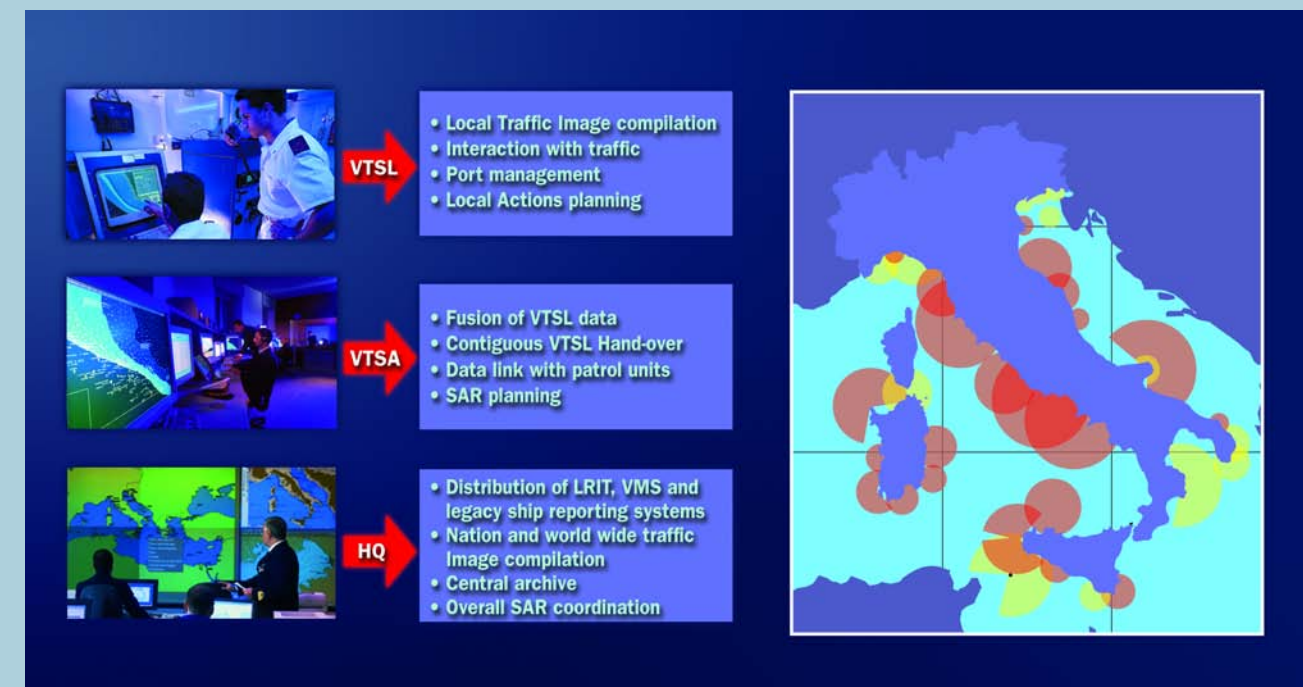


The Italian Nation-wide VTS System:

The most comprehensive integrated system in the world for maritime traffic control:
73 radar sites, 39 VTS Control Centres, 14 Regional Centres, 3 Mobile Units, 1 National Headquarter.
The system is based on a three-layer netcentric architecture.



The VTS service is assigned to local centres.
The Regional and Central levels are responsible for coordination, but do not interact directly with maritime traffic, which is the exclusive responsibility of the local centres.

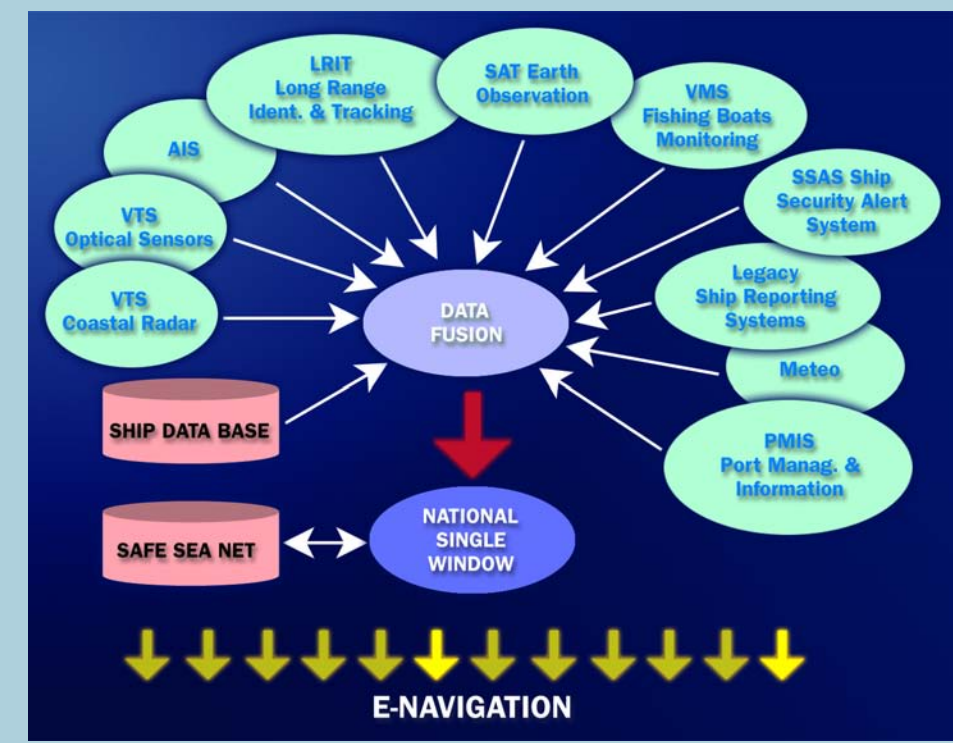


Vessel Traffic Management Systems



Predictable results for unpredictable threats

SELEX Sistemi Integrati: Maritime Domain Awareness Mission



- Maritime traffic control requires an integrated response, to provide governments with "turn-key" solutions to:
- Guarantee safety of human lives at sea
 - Prevent environment pollution
 - Improve the efficiency of commercial traffic
 - Fight illegal activities at sea

The architecture of the net-centric and service-oriented system developed by SELEX Sistemi Integrati is based on the modern e-navigation and National Single Window concepts and fully responds to these requirements.



Via Tiburtina Km 12,400
00131 Roma - Italy
T +39 06 41501
F +39 06 4131133

www.selex-si.com
© SELEX Sistemi Integrati
All right reserved

Published by
SELEX Sistemi Integrati
External Relations
June 2008



The role of SELEX Sistemi Integrati in the Finmeccanica Group



SELEX Sistemi Integrati is Prime Contractor in the Finmeccanica Group for the design, production and maintenance of the national VTMS (Vessel Traffic Management & Information System), developed for the Italian Ministry of Transport and managed by the Italian Coast Guard, and all the VTS systems for use on foreign markets.
This role endows SELEX Sistemi Integrati with a wide range of technology, products and skills, both its own and of other companies in the Group. The synergies thus created within the Group include:

- sensors
- telecommunications
- information systems
- logistics

General architecture

The general system architecture is modular and compliant with the requirements of individual port VTS and the overall integrated VTMS at a national level. The system's "open" architecture facilitates integration with other pre-existing structures and enables rapid expansion and/or modification of the system to adjust it to the needs of the maritime sector, the characteristics of which are continuously changing.

A long tradition in C4I systems

SELEX Sistemi Integrati VTS are the result of a long-lasting and consolidated tradition in the field of C4I systems, ranging from systems for air traffic and airport management to land and naval military command and control systems.

The ability to design and produce complex systems based on radar and other types of sensors, to increase knowledge of the areas to be monitored, is SELEX Sistemi Integrati's 30-year track record in the sector.



The new LYRA radar

SELEX Sistemi Integrati VTS can now be equipped with the new LYRA radar, the first in the world which is entirely solid state and coherent in terms of different frequencies on multiple frequencies, developed specifically for VTS systems.

Coherence enables the best use of the impulse compression technique, which ensuring super radial resolution even in long range mode. Solid state components eliminate the need to periodically replace the magnetron and simplify maintenance operations. The range of frequencies available increases the performance of the sensor and improves its resistance to clutter and other disturbances.

Multi sensor fusion

The heart of the system is the Multi Sensor Fusion (MSF) process, namely the ability to best use the "track" data from several sensor sources, first and foremost from radars, the only sensors capable of continuously detecting any object on the surface of the sea, independently of its physical characteristics and/or its intention to be localised. The integration of the AIS enables positioning and identification of all the vessels

involved. SELEX Sistemi Integrati VTS are capable of accepting and integrating all the information provided by other maritime traffic control systems, such as VTS (surveillance of fishing boats), Long Range Identification and Tracking (LRIT) and obviously all the information provided by manual ship-reporting procedures. The system appropriately weighs to all information and provides the best possible traffic detection image from the available data.

Safety first

Specific functions are dedicated to the preventive identification of possible critical situations, such as collisions, running aground and passages under bridges or restricted areas. More severe safety margins are applied in the case of vessels carrying dangerous goods. During SAR operations, the VTS provide the Coast Guards with specific tools for supporting decision making procedures.

Traffic management

In navigation through straits, traffic separation lanes and access areas to ports there often is high density traffic, which requires precise allocation of times and space for manoeuvring. With its overall view of traffic and weather and sea situation, VTS is an ideal support for ship masters.

Indeed, VTS does not only help ships, but guarantees the best possible use of waterways in terms of transport capacity and economic returns.



Security and law enforcement

SELEX Sistemi Integrati VTS enable the definition of any criteria and level of navigation control based on the position, speed and type of vessel involved, or on any sort of Boolean combination. Should a rule of navigation be breached, the system generates an appropriate alarm. Other types of control can also be implemented, which are aimed at supporting the identification of suspect situations, such as trace splitting, rendez-vous in deep waters, and coastal approaches in areas with no surveillance posts.

The complete overview of traffic provided by the Multi Sensor Fusion process, and the data gathered by the individual sensors, are continuously recorded on highly reliable mass memory devices with pretty much unlimited memory.

Port Management

SELEX Sistemi Integrati VTS include a powerful PMIS (Port Management and Information System) enabling the "just-in-time" allocation of resources, even via WEB and provide port authorities with intelligible complete and up-to-date information concerning the navigation plan of ships, their arrival times, their load sheets and all the data that enables the optimisation of port management operations.

Human Machine Interface

The standard operator workstation is based on three monitors, which can all be used for an overview of the maritime traffic, or to host windows with other camera images, the PMIS, databases, etc.. Both S-57 and S-63 cartography can be used. Particular care has been taken in the reproduction of raw radar video images, so as to obtain the same quality as traditional PPI. The electronic control systems can be remote-controlled from an equipment room, which is advantageous in terms of reducing noise levels and air-conditioning requirements.

Turn key solutions

SELEX Sistemi Integrati is the ideal partner for customers who want to tailorise of their VTS configuration. Total

support is provided during the definition of these requirements and the identification of the best location for the sensors and is capable of dealing with all civil aspects of the system. SELEX Sistemi Integrati's capabilities also include updating existing systems, and progressive transition towards new systems, thus reducing to a minimum the problems or limitations placed on the system during the transition.

Total reliability

For over 30-years SELEX Sistemi Integrati air traffic control and management systems have ensured the air traffic control worldwide, 24 hours a day, 365 days a year. The VTS systems are designed and produced by SELEX Sistemi Integrati on the basis of the same logic:

- Simple and robust architecture
- Redundancy of all components
- Automatic reconfiguration
- Implementation of "gradual degrading" policies
- Remote diagnostics and easy "real time" maintenance

Service Support

SELEX Sistemi Integrati monitors its VTS Systems for their entire life-cycle, through the Customer Support Business Unit, which provides standard services such as field engineering and industrial repairs as well as innovative ones such as WEB Service, obsolescence monitoring and remote assistance.

The latter is the responsibility of in ILSS (Informative Logistical Support System) centre located in Giugliano and equipped with a test bed comprising a complete VTS Centre capable of replicating any operational conditions and simulating any system failure.

Training

In collaboration with the Italian Ministry of Transport, SELEX Sistemi Integrati can provide its customers with complete training courses held at the Italian Coast Guard VTS Training Institute in Messina. This is a major centre located at the heart of the Mediterranean basin, equipped with an operations VTS which is part of the Italian National VTMS and includes the most modern training technology available.

