

*Workshop on Vessel Traffic Monitoring
and its dimension Mediterranean dimension*

**"VESSEL TRAFFIC MONITORING ISSUES:
GREECE'S VIEWPOINT "**

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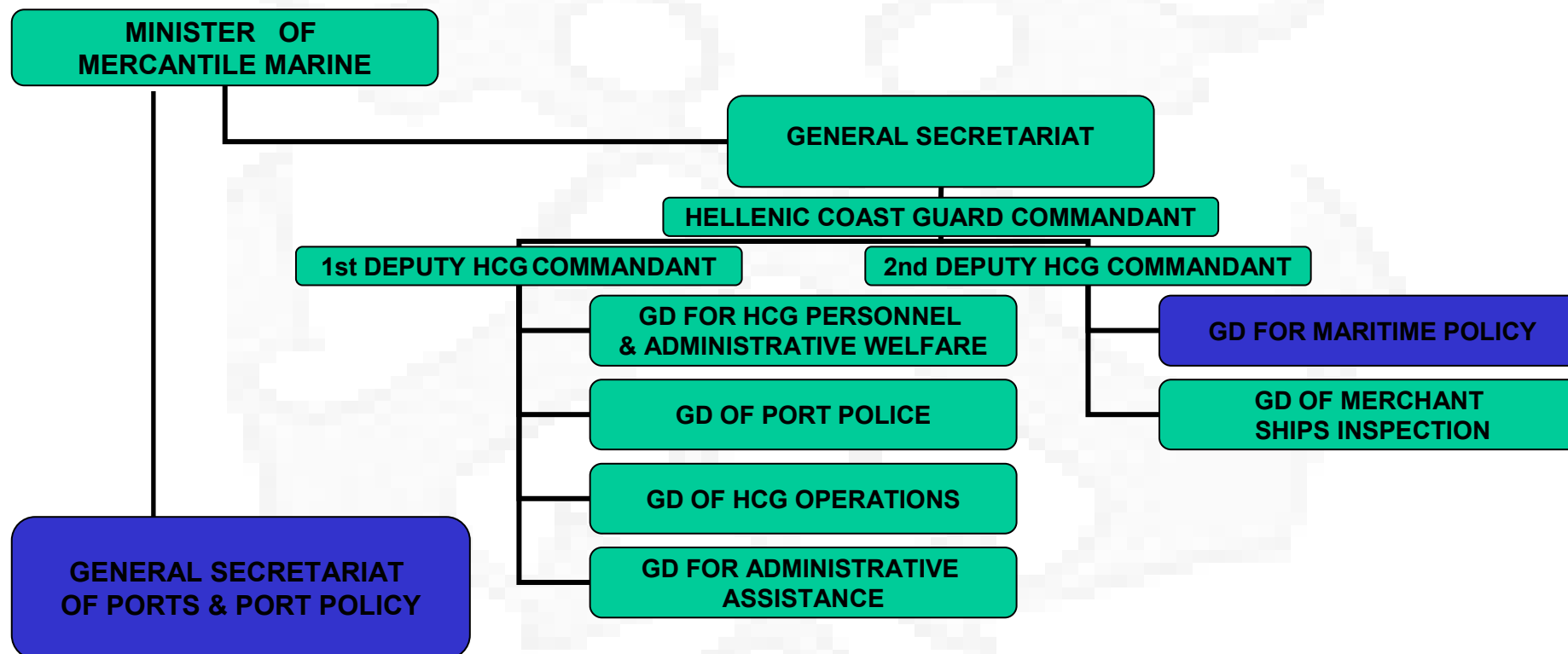


OUTLINE OF PRESENTATION

- Part 1:** Description of the Ministry of Mercantile Marine
- Part 2:** Safety and Security Challenges
- Part 3:** Vessel Traffic Monitoring Issues from the Greek viewpoint
- Part 4:** Implementation of Directive 2002/59/EC in East Mediterranean countries



STRUCTURE OF THE MINISTRY OF MERCANTILE MARINE (MMM)



ROLE AND DUTIES OF THE MMM

The Ministry of Mercantile Marine is responsible for:

- ✓ organization, improvement, protection and development of shipping; linking it to the national economy,
- ✓ the policing of Hellenic territorial waters;
- ✓ the facilitation of travel by sea;
- ✓ the protection of human life and property at sea;
- ✓ the safety of vessels at sea and the security of ports;
- ✓ the formulation and implementation of the national port policy;
- ✓ the supervision of the management, organization, and operation of Greek ports;
- ✓ the environmental protection of sea and ports within a framework of sustainable development of maritime transport;



SAFETY AND SECURITY CHALLENGES

GREECE

- ❖ extended (16.000 Km) and partly difficult coastline,
- ❖ more than 3.000 islands
- ❖ More than 1000 ports and harbours
- ❖ areas with lower and higher traffic density including transports of dangerous cargo
- ❖ Mixed commercial traffic with a considerable amount of pleasure crafts
- ❖ An accident with environmental pollution could have extraordinary negative results on tourism, which is considered as one of the most important sectors of national economy



VTM IN GREECE

Objectives:

- **Control of Mercantile traffic**
- **Reduction of Marine Accidents as a result of this control**
- **Improved Search and Rescue capabilities**
- **Protection of the marine environment through the reduction of marine accidents**
- **Prevention of illegal acts (illegal immigration – drug and gun trafficking – smuggling etc)**
- **Correct application of National and International shipping legislation**



VTM IN GREECE

PHASE I 1992 - 1999

Research – Experiment – Preparation

1. Feasibility Study

- To detect technical and financial issues related to the implementation of the VTS

2. First Pilot Piraeus VTS which covered Piraeus Port

3. International Call for Tender



VTM IN GREECE

PHASE II 1999 - 2005

Construction – Development

2000	This project has been contracted in early 2000 and concerned <ul style="list-style-type: none">▪ a wide area spread system of four (4) modern VTSS▪ a supervisory National centre defined as VTMISS▪ appropriate display equipment on-board five (5) Hellenic Coast Guard (HCG) patrol boats
2002	The National VTMISS centre is in place and the three (3) Ionian VTSSs have been completed and set in operation
2003	Technical-Financial Study and Pilot Application for the Incorporation of the National Vessel Traffic Management Information System (VTMISS) within the Transportation Management Information System



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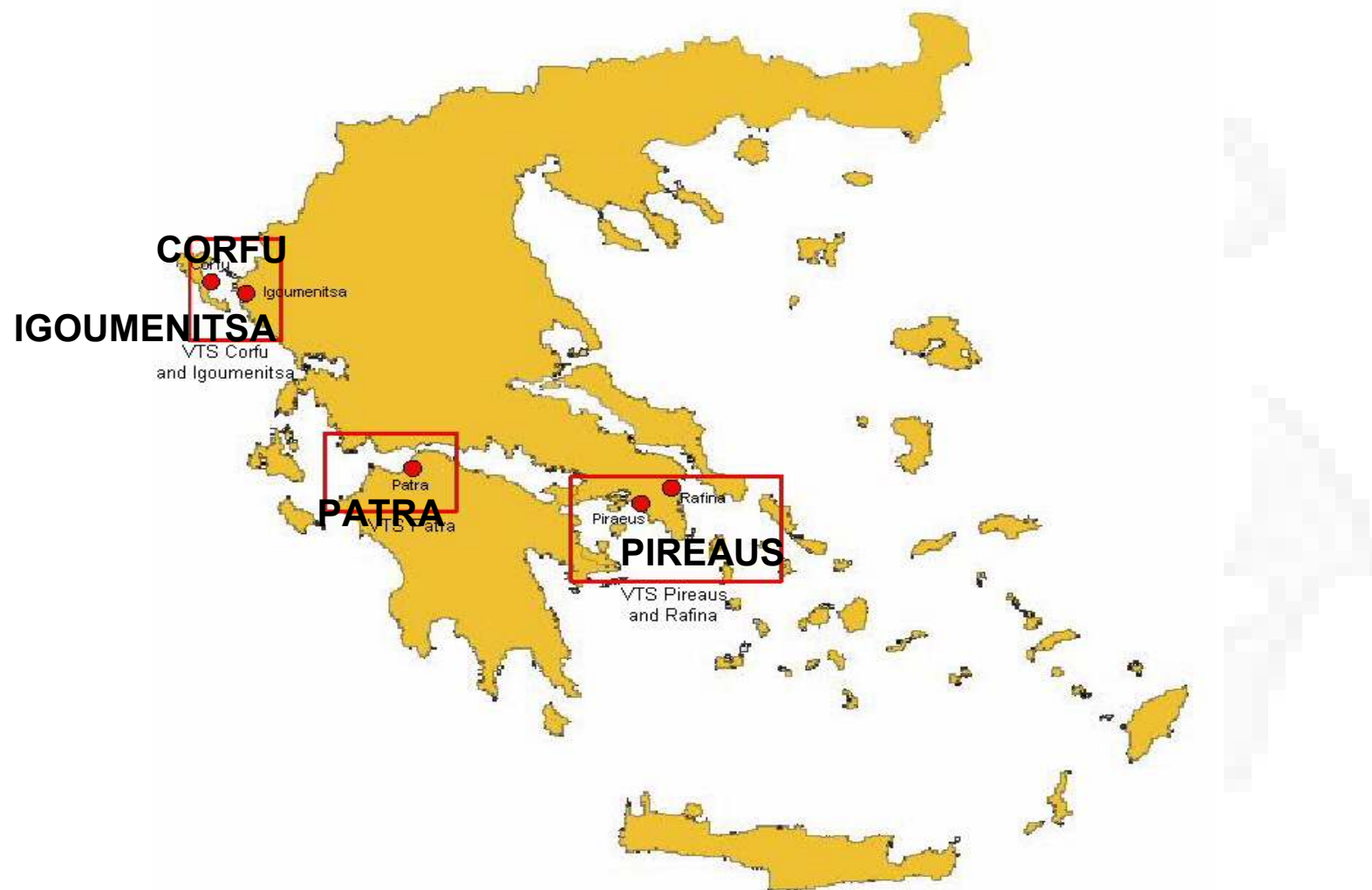


Figure : General coverage of the VTSs



SPECIFIC VTMISS –VTS GOALS

NATIONAL CENTRE VTMISS	<ul style="list-style-type: none">•VTMISS has a rather strategic role, offering a valuable tool for collectively analyzing national traffic data, performing strategic planning of maritime developments and helping in the establishment of new traffic rules and regulations.•In the future will be the main participant to other peer National or European agencies of the same nature.
PORT OF PATRA	<ul style="list-style-type: none">•the facilitation of navigation in a narrow passage which experienced a temporal (4 year long) heavy cross traffic created by numerous barges and construction boats working for a major bridge construction in the Rio-Antirio area.
PORT OF IGOUMENITSA	<ul style="list-style-type: none">•the safe passage of cargo and passengers through a narrow fairway surrounded by shallow waters•The management of this “choke point” especially in view of future traffic demand increase when the port will become part of a major European commercial corridor connecting rest of Europe with Turkey via the Egnantia Motorway.
PORT OF CORFU	<ul style="list-style-type: none">•the speed control of high-speed ferries sailing along the beaches, which seasonally are full of swimmers enjoying the natural beauty of the island



SPECIFIC VTMIS –VTS GOALS

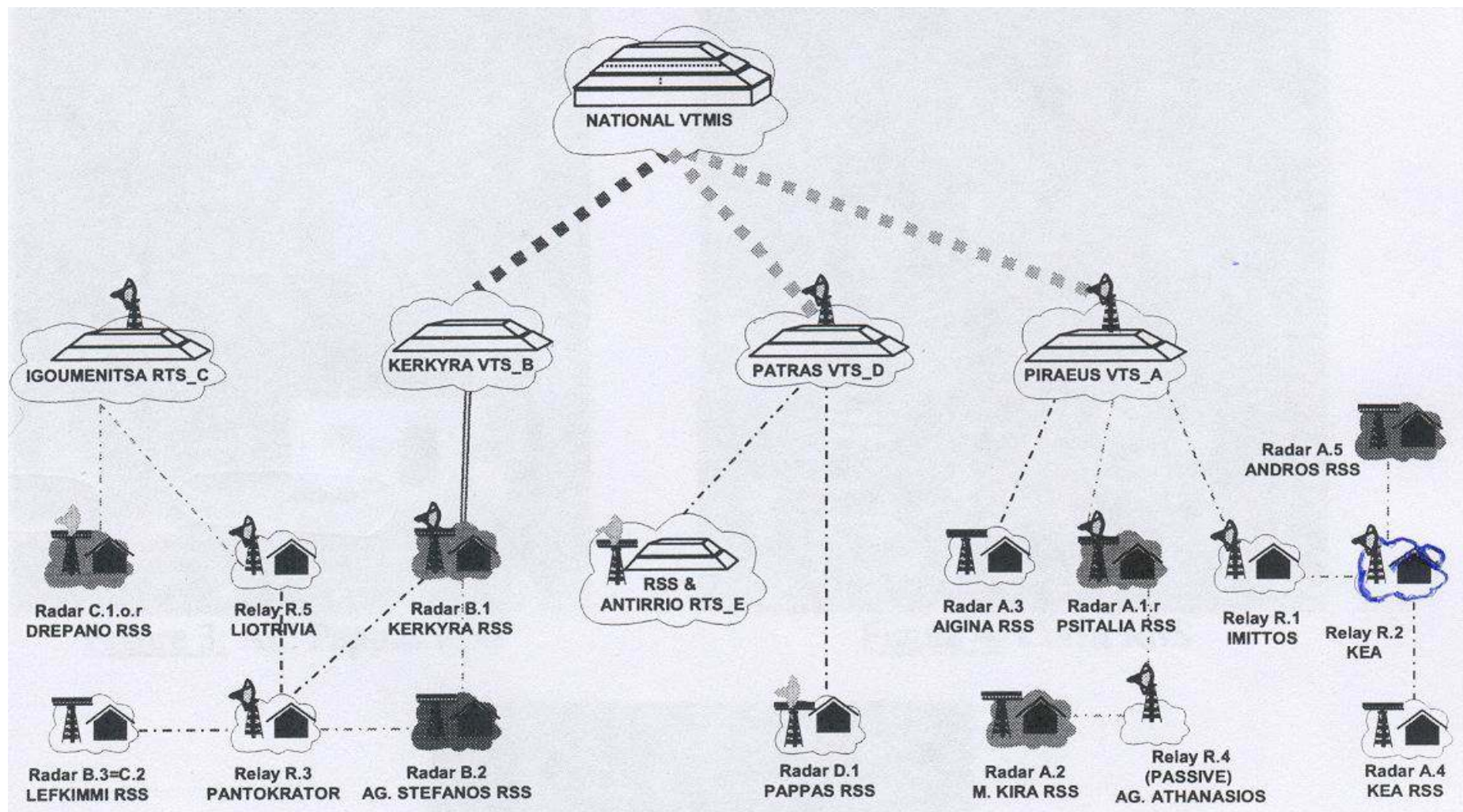
PORT OF PIRAEUS

To face all traffic related problems of a big port which annually serves

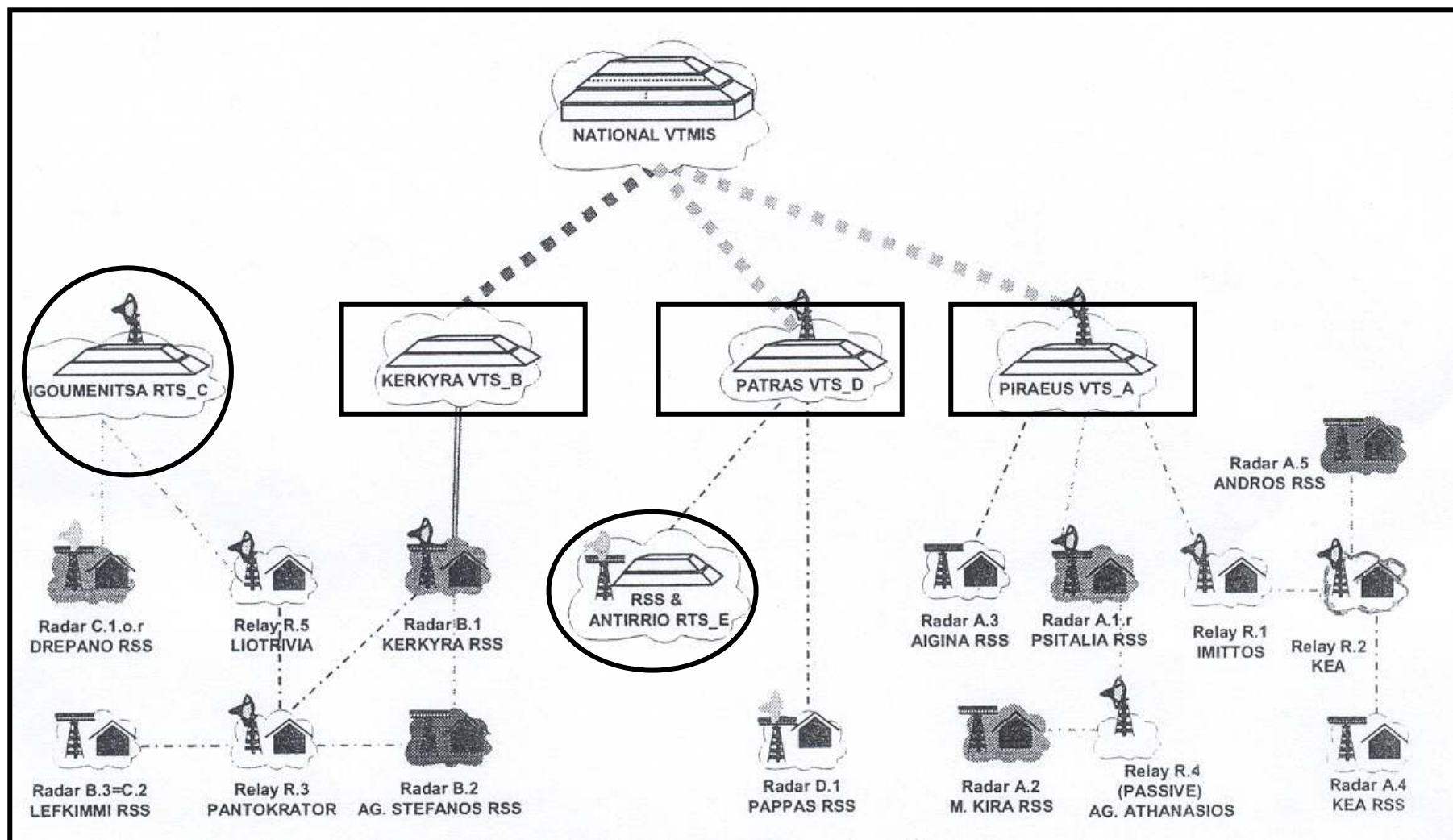
- more than 100 thousands ships arrival
- more than 16 million metric tones of cargo
- More than a million TEUs
- 14 million people
- 87% of Greek external trade



NATIONAL VTMISS SYSTEM ARCHITECTURE



NATIONAL VTMIS SYSTEM ARCHITECTURE



TECHNOLOGICAL DIFFERENCE BETWEEN VTS - RTS

VTS

•Every VTS center processes all local data of the vessels moving within its area of responsibility (AOR) and acquires them from a number of unmanned *Remote Sensor Sites* (RSSs). There are eleven (11) RSS.

RTS

•RTS does not have its own database server, instead uses the server of a nearby VTS center.

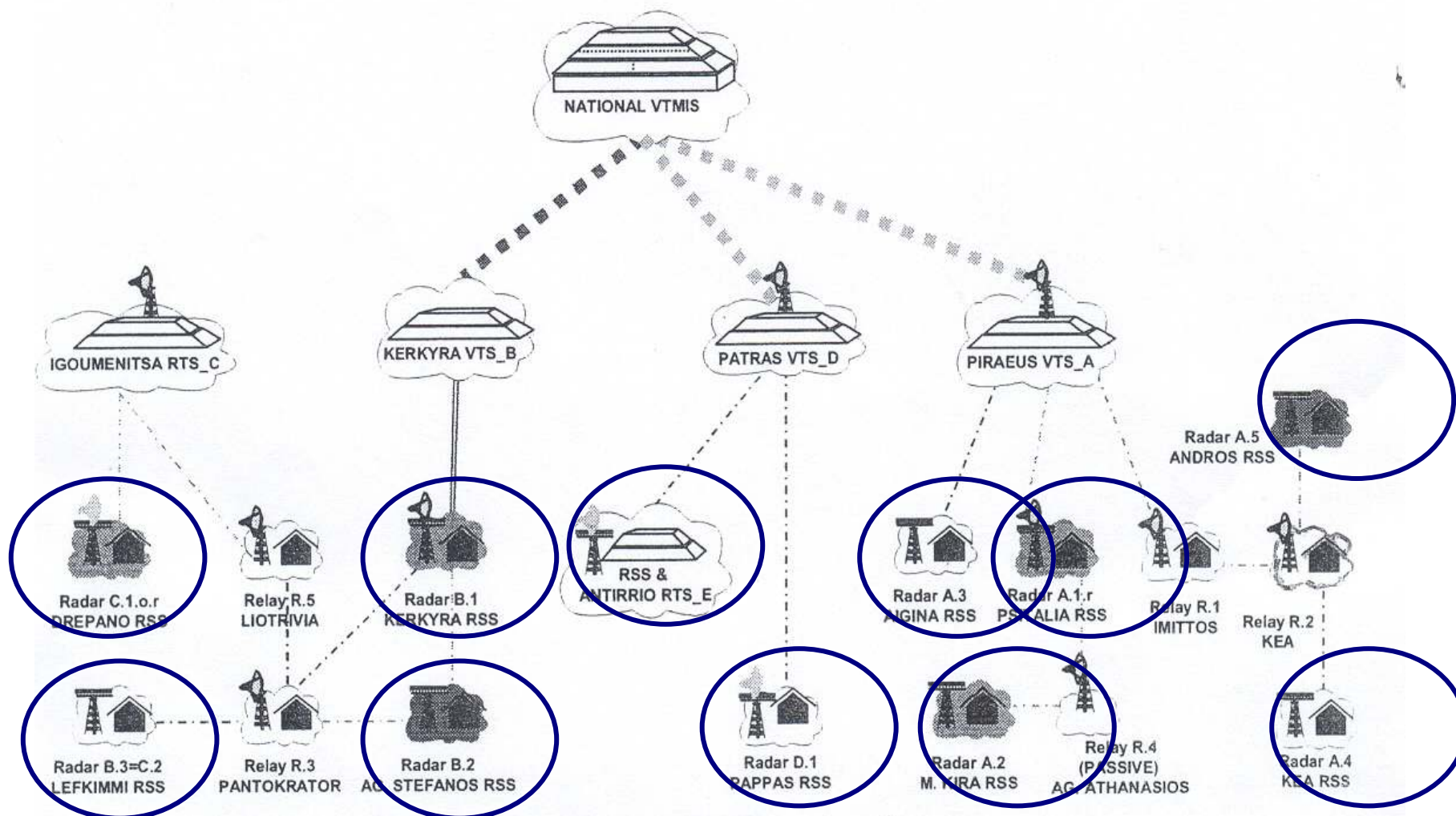
The connection between the VTSs and the RSSs necessitated the employment of five (5) unmanned remote relay station



REMOTE SENSOR SITE (RSS)



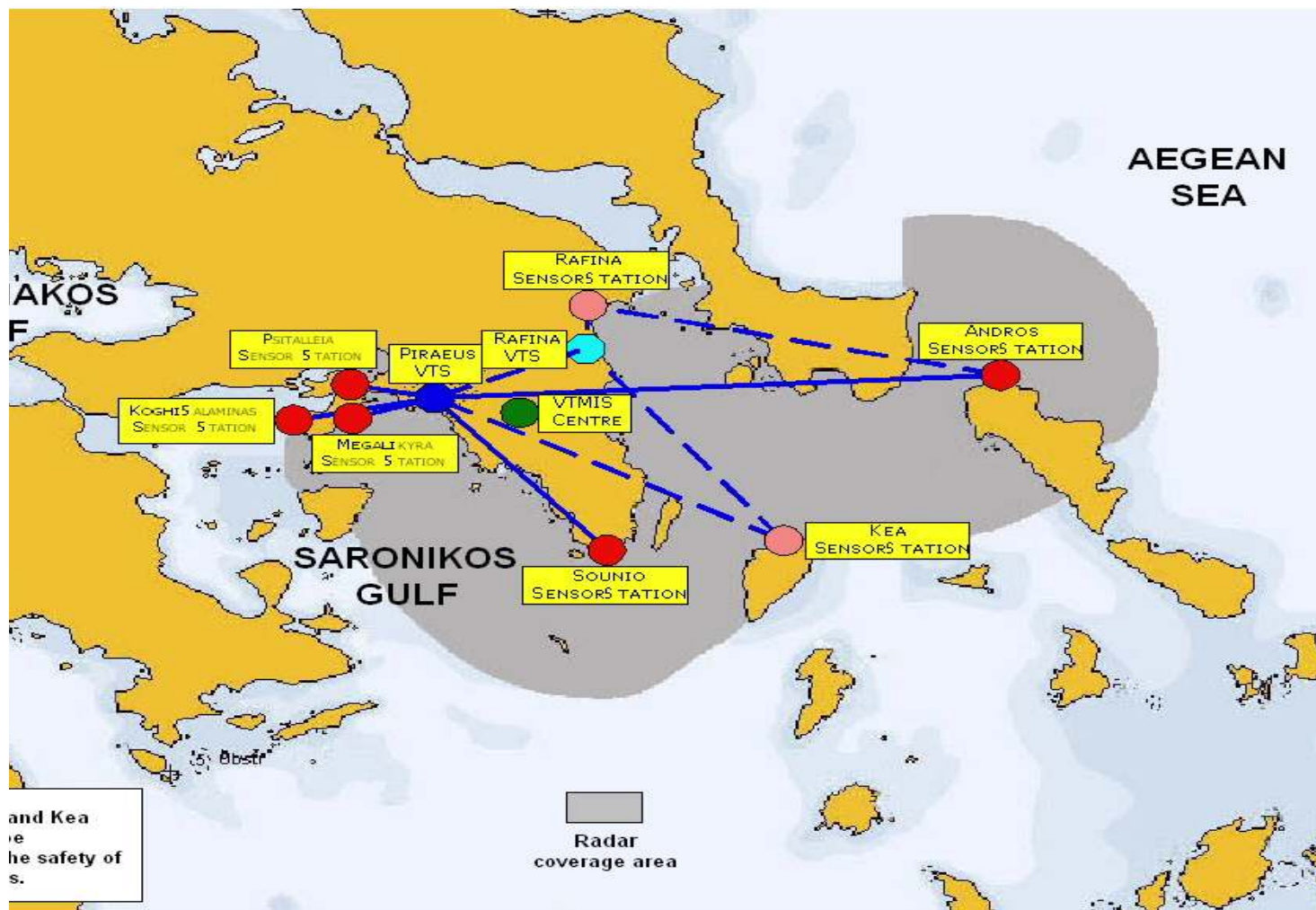
NATIONAL VTMISS SYSTEM ARCHITECTURE



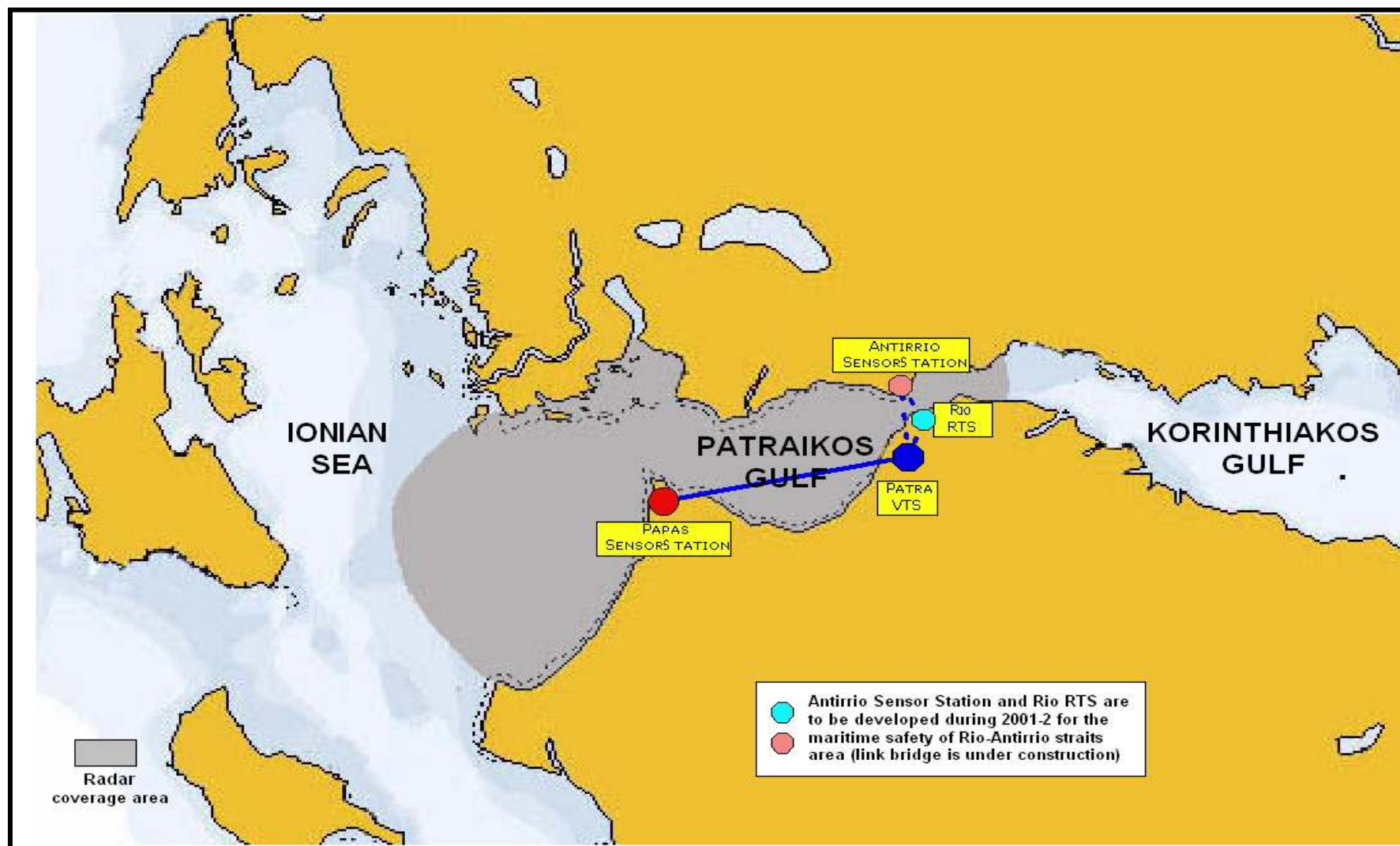
VTMIS/MMM



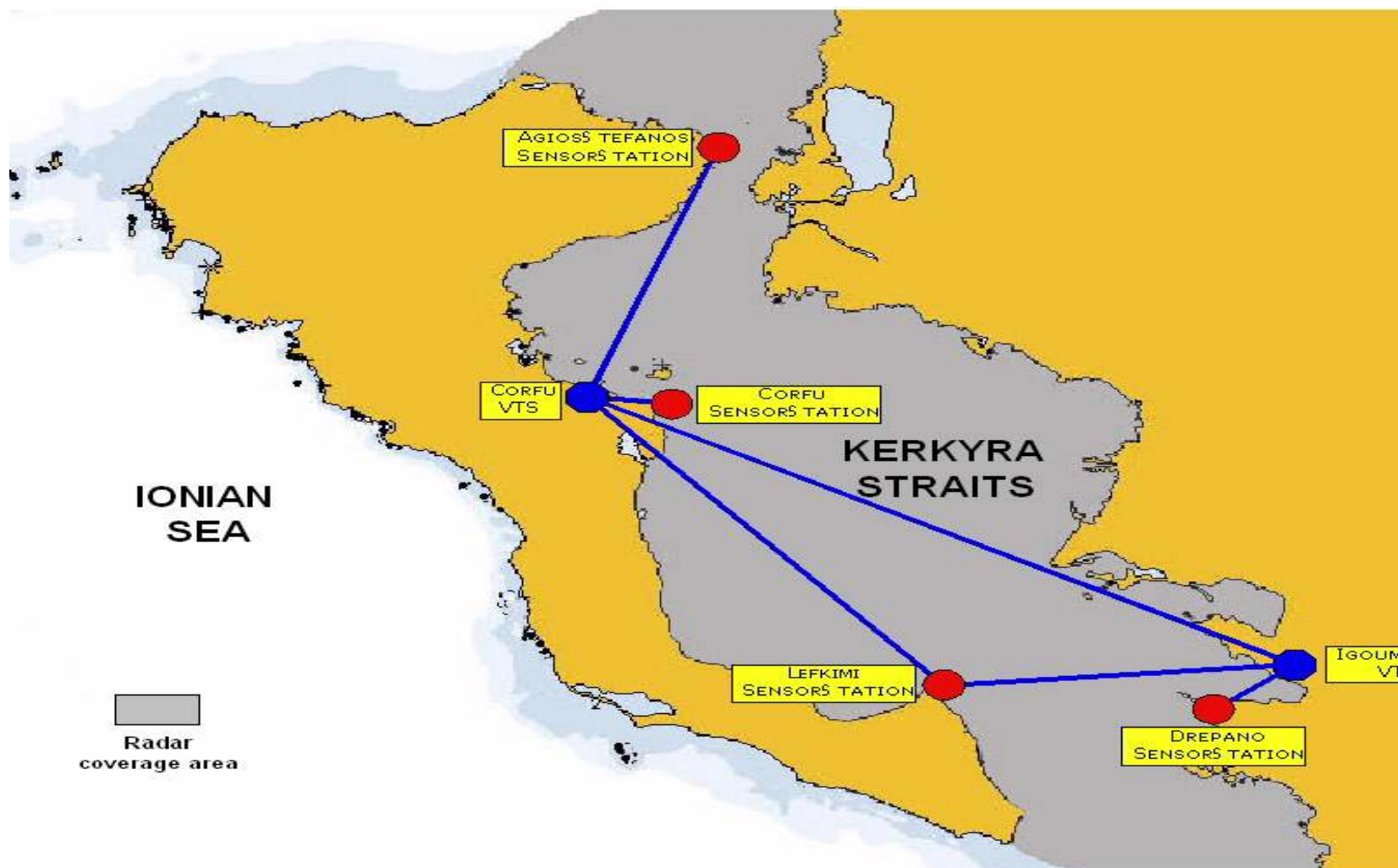
OPERATING AREA OF PIRAEUS VTS



OPERATING AREA OF PATRA VTS



OPERATING AREA OF CORFU VTS



CORFU VTS



System Architecture (1)

- High priority has been given to the system design concepts including the system reliability, availability, flexibility, expandability and maintainability.
- The system design incorporates a high level of redundancy and a completely distributed system with a “no single point of failure” philosophy as far as possible.
- The VTS comprises a number of sensors and systems and the essential elements include
 - a radar system,
 - an Extractor and Tracking System,
 - a Multi-Sensor-Tracking System,
 - a display system with operator workstations,
 - Local Area Network (LAN) / Wide Area Network (WAN) and other supporting equipment.
- Also the sensors include AIS, CCTV, direction finder and meteorological sensors



System Architecture (2)

- The VTS operational areas are sectorised and each operator takes care of the area for which he is responsible for traffic surveillance.
- The real-time target track, digitized radar video and other track information are displayed on the operator workstation.
- The tracked target data is also passed to a marine information database and identified vessel's particulars and movement details are extracted from this information system.



System Architecture (3)



Figure : Typical VTS console



VTM IN GREECE

PHASE III 2005 beyond

Extension

- The extension of the VTS will include the design and development of the system so as to cover all areas of the Aegean Sea as well as those of the Ionian Sea.
- According to the plan, will initially aim at developing a system which will cover the eastern and southern borders of the country. Specifically, the above expansion the phase will include 9 new VTS/RTS centers (on islands of Limnos, Chios, Samos, Kos, Mytilene, Rhodes and Crete (2) and southeast Peloponnese) as well as 24 sensor stations.
- Introduction of newly developed Satellite Technologies in control and Surveillance
- Continuous training of H.C.G personnel in innovative technologies in the field of Control & Surveillance
- Full Cooperation with neighbours and other countries in the fight against illegal activities, in particular in the field of information exchange



" VESSEL TRAFFIC MONITORING ISSUES: VIEWPOINT OF GREECE"



HELLENIC MINISTRY OF MERCANTILE MARINE
GENERAL SECRETARIAT OF PORTS AND PORT POLICY

Slide: 26/
2005

Implementation of Directive 2002/59/EC in East Mediterranean countries

According to Article 9 §2 of Directive '.....Member States shall ensure that appropriate equipment for relaying the information to and exchanging it between the national systems of Member States shall be operational at the latest by the end of 2008'.

In order to comply with this article of directive Member States of East Mediterranean should:

- Have close cooperation
- Define deadlines for every step that has to be made
- Develop their national VTM systems in a way that will allow cooperation not only between them but also with other EU regions.
- Use the experience of other countries-regions in this field (e.g the Baltic example).
- Assure funding in order to make the development of the Exchange Information System feasible.



Thank you for your attention



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