

# **Study on Real Time Data Exchange Information Systems (RTDIS)**

**Med – E States Workshop  
Brussels 21 and 22 November 2005**



## Study RTDEIS

The study is legally based on :

The preamble (17) of the Directive 2002/59 whereby “information management centers ought to be set up in the Community’s maritime regions so as to facilitate the exchange or sharing of useful data in relation to traffic monitoring and the implementation of this Directive”.

Article 5 of Regulation (EC) No. 1406/2002 whereby “at the request of the Commission, the Administrative Body may decide, with the agreement of the M.S. concerned, to establish the regional centers necessary in order to carry out related to monitoring of navigation and maritime traffic, as provided for in Directive 2002/59/EC”.

## Conclusions of the traffic monitoring workshop

**Certain Member States have already taken initiatives and defined the specific framework for the data exchange between their national traffic monitoring systems by adopting commonly accepted technical solutions and practices (Baltic and North Sea). The workshop supported the concept of developing the regional traffic monitoring centres in “virtual” mode (national centres sharing the same “traffic image” without creating a physical “central centre”. Some of the benefits of the concept are :**

- a. The full real traffic image of all vessels fitted with AIS and sailing in the selected area would be relayed between the coastal stations in real time mode.**
- b. The Member States of the region will be able to elaborate on statistics on traffic entering and leaving a specific area and to identify general navigation patterns. This would enable proper risk assessment in specific areas, and help to improve the decision-making process regarding recommended safety of navigation measures.**

**The development of a physical centre needs to be further studied in regard to technical, financial and administrative implications.**

## SafeSeaNet areas



## INTRODUCTION

### Study RTDEIS

### “Real Time Data Exchange Information Systems”

- Date of dispatch : 12/07/2005.
- Budget : 300.000 Euros
- Contract duration : 10 months.
- Contract signing : on .....
- Execution of the tasks : expected to launch in December 2005.

## STUDY OBJECTIVES

- develop a methodology, guidelines and examples for the development of RTDEIS network in technical, administrative, financial and legal aspects
- prepare a specification for an appropriate system architecture
- design tools for enhanced network operations allowing for interoperability of individual local or regional solutions. Both “virtual” and “physical” mode RTDEIS shall be studied;
- steer further development of the network towards an E.U. wide vessel traffic management and information system.

## **General Requirements (layers 1+2+3)**

Three (3 layers:

Layer 1 : national - Layer 2 : regional - Layer 3 : EU/EMSA

For all layers of the system:

- Staff structure, management structure and IT policy of organisations participating in the RTDEIS network
- Communications structure
- Safety and security
- Privacy and Legal issues



## General Requirements (layers 1+2+3)

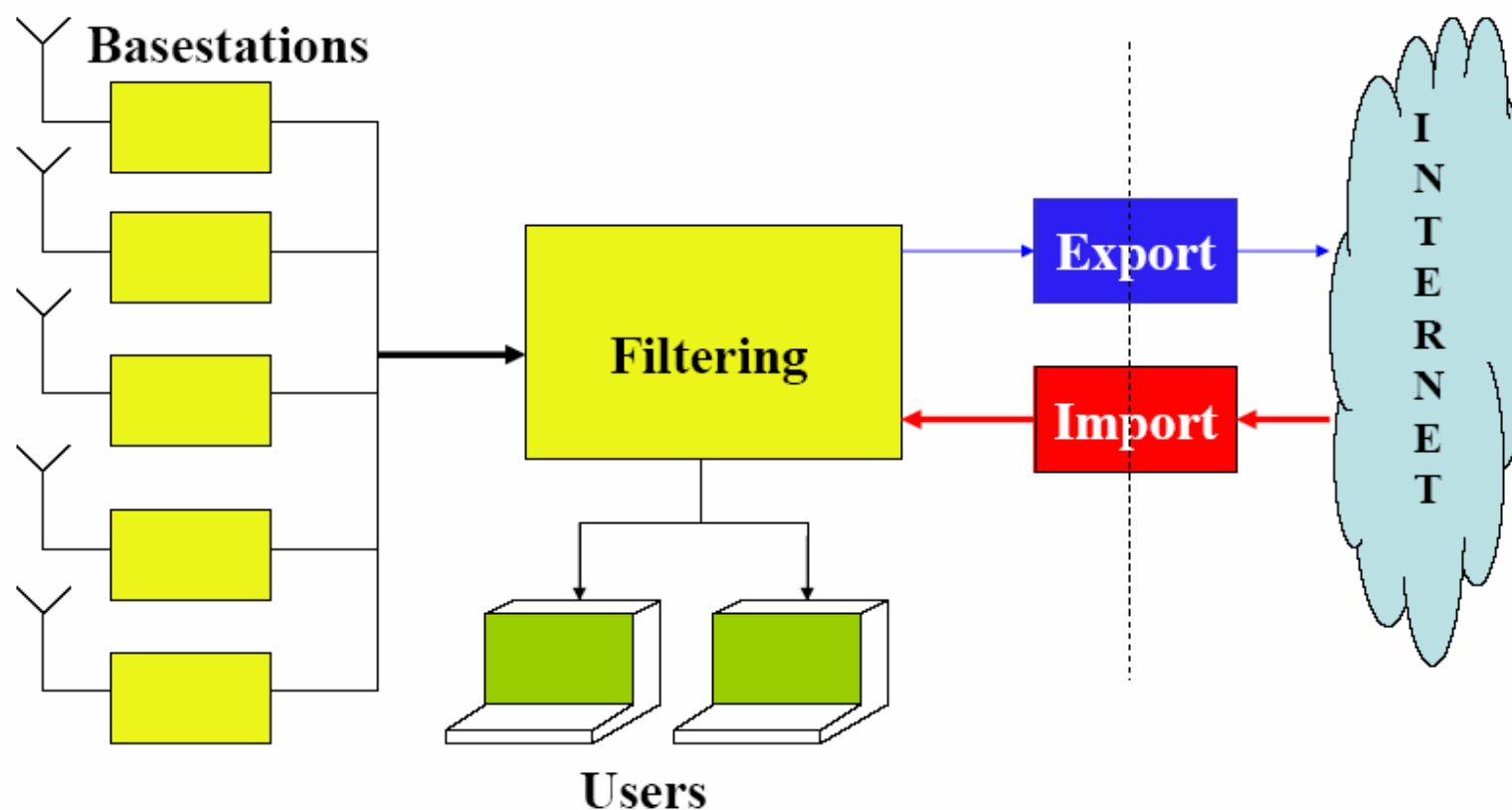
Identify the functional requirements relevant to the **technical environment** of the system, including those referring to :

- system design & architecture,
- user workstations
- configuration/ maintenance workstations
- servers and peripheral devices

Relevant technical constraints should be identified



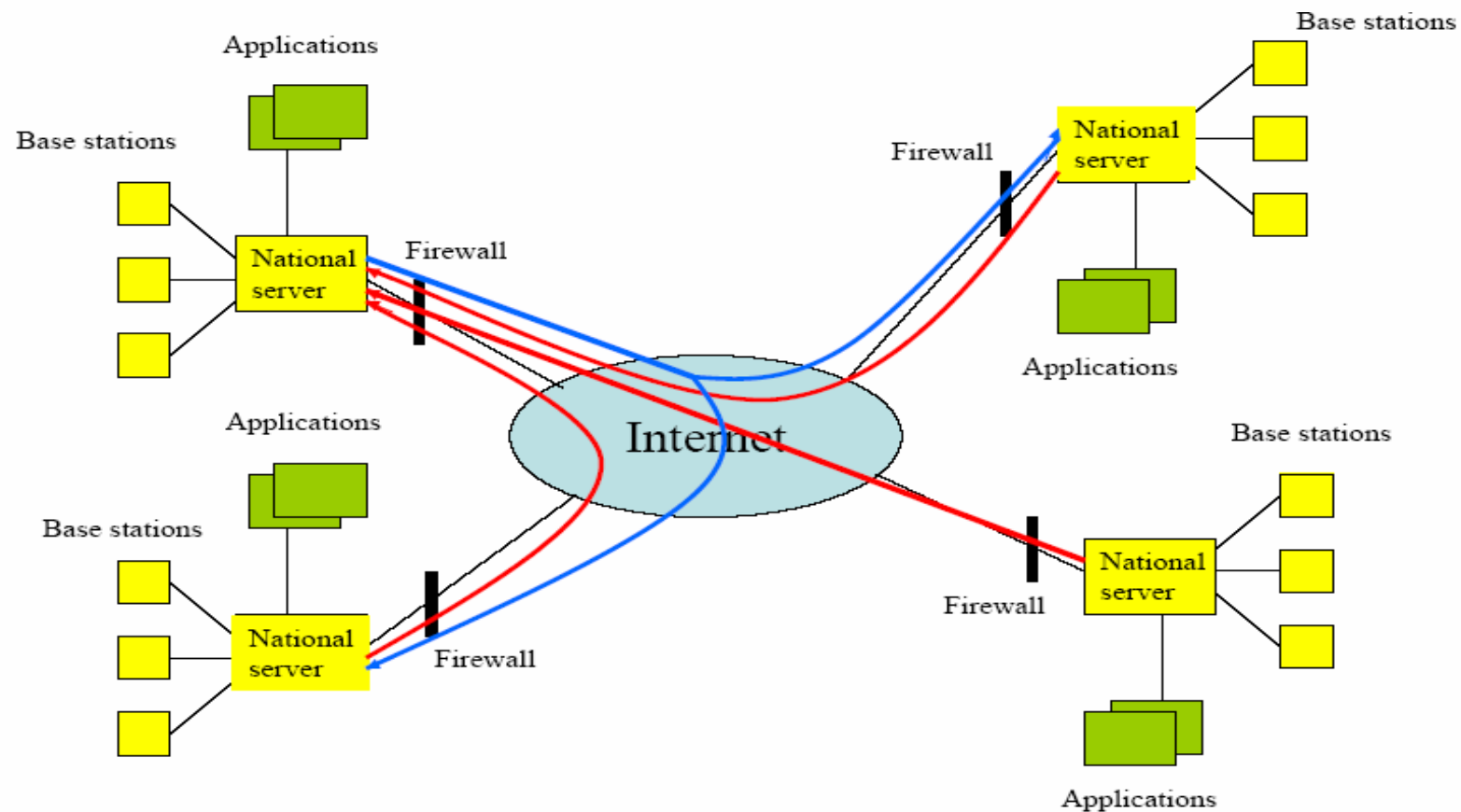
## Requirements relevant at national layer of the RTDEIS network (layer 1)



## **Requirements relevant at national layer of the RTDEIS network (layer 1)**

- Record all the requirements imposing changes to the technical/ organisational/ physical environment of NTMIs with respect to the introduction of RTDEISs.
- Provide guidelines and recommendations on interventions required at technical level. Indicate the available technical solutions and best practices available to the Member States.
- Indicate the alternative options and provide elements for consideration including cost.

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## **Specific study requirements relevant the international layer of the RTDEIS network (interface between layers 1 and 2)**

Analyse information flows and examine all of the procedures relevant to data collecting / processing / storing and displaying. The following items shall be addressed:

- Possible data types and messages (associated to AIS, VTS, SSN, MRS)
- Content of info according to the existing international and national regulations
- Types of ships participating in traffic monitoring schemes, types of reports and reporting obligations / procedures
- Definition of types of AIS binary messages to be exchanged.
- Update rates (min and max)

## **Specific study requirements relevant the international layer of the RTDEIS network (interface between layers 1 and 2)**

- Handling duplicated info
- Synchronization method for traffic image data compiled from a number of sources
- Backup / restore procedures
- Database management
- Bandwidth requirements
- System administration / configuration and status monitoring
- Network security policies

## **Specific study requirements relevant to the international layer of the RTDEIS network (interface between layers 2 and 3)**

Specify the interfaces for near real time data exchange and sharing:

- Between the RTDEIS centres of the network
- Between a given RTDEIS centre and the national traffic monitoring infrastructure of countries monitored by the RTDEIS
- Between each one of the RTDEIS centres and EMSA node

## **Requirements relevant to the participation of EMSA into the RTDEIS network (layer 3)**

Capture requirements, specify solutions, propose architecture and provide technical specifications for the EMSA node within the RTDEIS regarding :

- Data processing techniques
- Synchronization method for traffic image data compiled from a number of sources
- Backup / restore procedures
- Database management
- Bandwidth requirements
- Network security policies



## **Specific issues to be addressed and other requirements of the study**

- Operational concept for Long Range Identification and Tracking (LRIT) units / Possibility for integrating LRIT in the RTDEIS network
- Whether it is feasible to put RTDEIS network under SSN umbrella
- How RTDEIS could contribute to reducing the reporting obligation of ships' masters

## **Phase I "Data collection / analysis" (month 1 to month 5)**

- Current situation in the E.U.
- Existing regional systems (e.g. Baltic and North Sea)
- Current practices in other modes of transport within the E.U.
- Relevant studies conducted in the E.U.
- Data analysis

## **Phase II "Development of draft guidelines / Experts' review No. 1" (month 5 to month 7)**

- Prepare guidelines regarding the system's architecture and the functional specifications.
- Draft the possible alternative solutions and the priorities regarding the functions of the RTDEIS as well as a proposal for the proof of concept.
- Perform an expert review of the proposed approach (by presenting it, for approval, to the Member State representatives, the Commission and EMSA).

## **Phase III "Development of a system architecture / Proposal for proof of concept" (month 7 to month 9)**

### **Development of a system architecture corresponding to the agreed models for RTDEIS deployment in each region**

- Propose system architecture (physical, logical) for each one of the RTDEISs.
- Re-assess the costs and benefits associated with the implementation of the each RTDEIS as well as the Pan-European RTDEIS network.
- Propose guidelines and recommendations on technical, organizational and legal measures need to be taken at national level in order to enable interoperability with other Member States in both scenarios: a "virtual" model for RTDEIS organisation and with the physical RTDEIS node in the area.

## **Phase III "Development of a system architecture / Proposal for proof of concept" (month 7 to month 9)**

### **Proposal for "proof of concept" (demonstration of the operation of RRDEIS in one of the regions)**

- Draw up the terms of reference for a pilot project (future contract to demonstrate the proposed solution and architecture).
- Propose more than one demonstration project based on the following alternative scenarios:
  - The demo could be based on simulation and should not involve actual Member States' systems.
  - In collaboration/ consultation with at least three Member States operating in European regions where one of the RTDEISs would likely be set.

## **Phase IV "Experts' review No. 2 / Final report" (month 9 to month 10)**

- Expert review of the proposed approach (by presenting it to the Member State representatives, the relevant Commission services and EMSA).
- A workshop shall be organised, by EMSA, with the objective to receive feedback from the Member States and to verify or adjust the proposed solutions according to the Member States', Commission's and EMSA feedback.

**Thank you very much  
for your attention**