EMSA

European Maritime Safety Agency

EMSA operational services

EurOcean 2nd Technical Consultation,
9. November 2009

1

Dr. Olaf Trieschmann

Satellite based monitoring services

Olaf.trieschmann@emsa.europa.eu

EMSA

/ European Maritime Safety Agency

European Maritime Safety Agency - EMSA - in a nutshell

EMSA's mandate refers to "ensuring a high, uniform and effective level of maritime safety, maritime security […], prevention of pollution and response to pollution by ships within the Community"

Set up of EMSA under Regulation (EC) Nº 1406/2002 of 27.6.2002

2

EMSA

/ European Maritime Safety Agency

Objectives of EMSA

Within the fields of maritime safety, pollution prevention from ships and ship security, EMSA has the following main objectives:

- To ensure the proper **implementation of EU maritime legislation** by Member States
- To foster **technical cooperation** and development and disseminate best practice
- To provide **technical advice** to the Commission and Member States
- To **provide assistance** to top-up Member States' capabilities for **oil pollution response**

EMSA

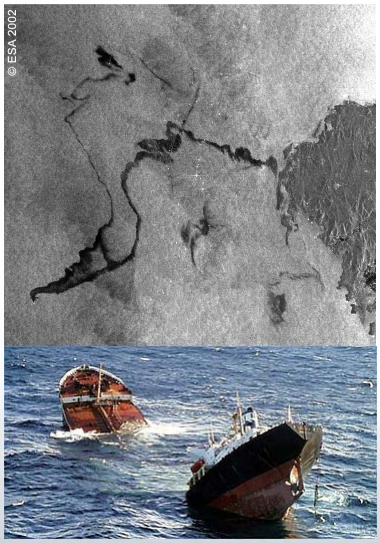
/ European Maritime Safety Agency

Legal basis

- Founding Regulation of EMSA:
  …develop and operate any information system necessary for attaining the objectives of [the EU traffic monitoring] directive
- EU Directive on ship-sourced pollution:
  …providing technical assistance … in actions such as tracing discharges by satellite monitoring and surveillance
  - *Regulation 1406/2002/EC, Article 2,d,ii*
  - *Directive 2005/35/EC, Article 10,2,a*

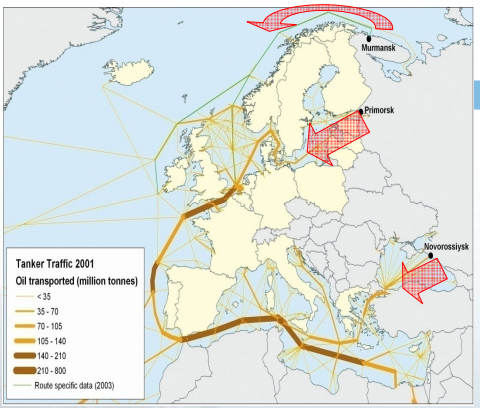
1. CSN (CleanSeaNet)

European Maritime Safety Agency



The "PRESTIGE"-case

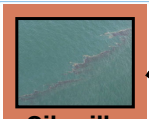
Increase in maritime transport along European shipping routes



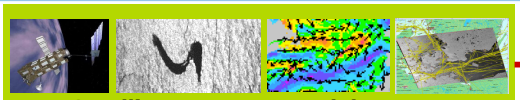
5

Vision for an integrated system

European Maritime Safety Agency



Oil spill



Satellites Models Tracking

Efficiency

Response support

Real time

Aircraft Vessels

Collecting evidence

6

MS-bodies:
- Coastguard,
- Border control, ...

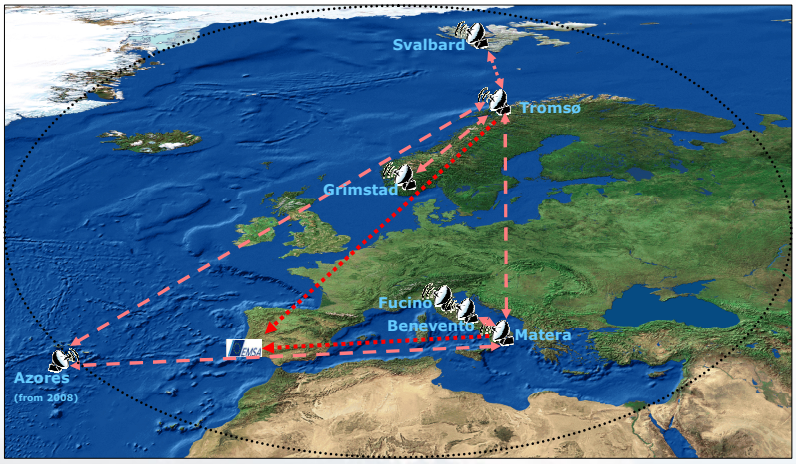
Integrated system to strengthen the national/regional response chain for accidental spills and deliberate discharges from ships

Early warnings, response & clean-up operations

Prosecution, Deterrence

CleanSeaNet service : network

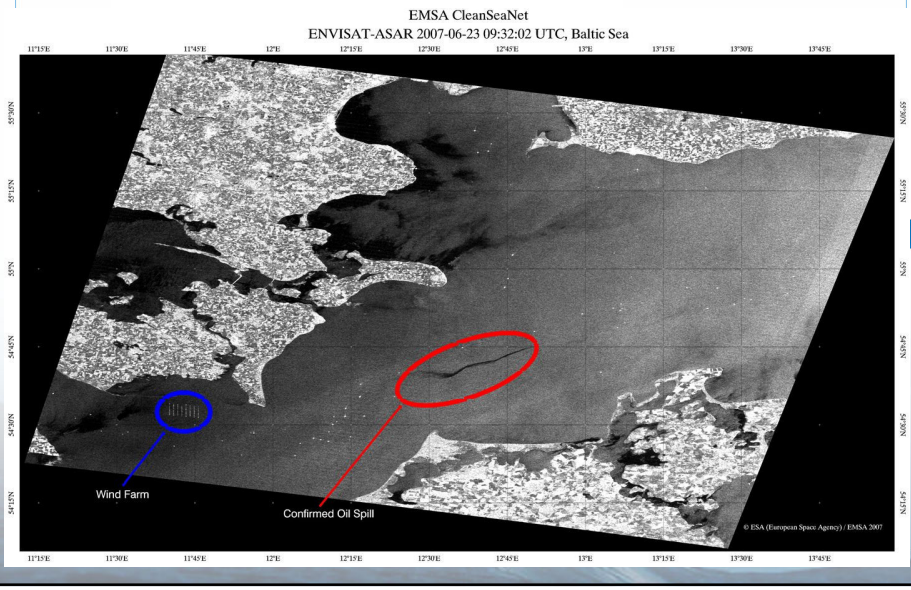
/ European Maritime Safety Agency



- In co-operation with the European Space Agency, Canadian Space Agency and European Industry
- **30 min. data delivery time**

CleanSeaNet service : SAR image

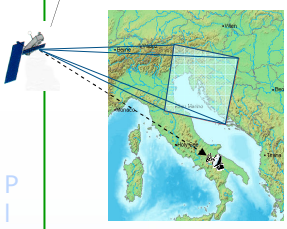
/ European Maritime Safety Agency

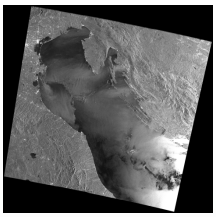


EMSA

/ European Maritime Safety Agency

CleanSeaNet : Near Real Time service – 30 min.

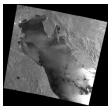




Phone and email alert

Oil Service Report

Image (LR, HR)



Ancillary data

Planning

Acquisition and Processing

Oil Spill Analysis

Alert & Product Delivery (Web Browser, EMSA)

Feedback

T0 = End of scene acquisition

T = T0 + 30 min

EMSA

From R&D to operational services

/ European Maritime Safety Agency

Institutional demands
- Int. agreements (e.g. MARPOL)
- European Directives and Regulations

R&D
- National/Int. research EU Framework Program
- Shows feasibility
- Provide extended parameterisation capabilities
- Scientific
- Experimental/Pre-cursor systems

PROJECTs
- To provide flexibility

demands

solutions

Operational services
- Focus on system stability
- NRT services
- „One-stop-shop"
- Constant quality
- Sustainability

PROCURMENTs
- To ensure quality

EMSA

/ European Maritime Safety Agency

Service evolution life cycle

- Principle investigation — 1980's
- Applied research — 1990's
- Development
- (Pre-)operational services — 2000-2007
- CSN Operational service — 2007
- Certification, QoS, QoD — open issue
- Integration in int. programs — ongoing

feasibility → transition → operational

ENVISYS
OCEANIDES
ROSES
MARCOAST
and others

GMES, …

EMSA

/ European Maritime Safety Agency

What we have achieved

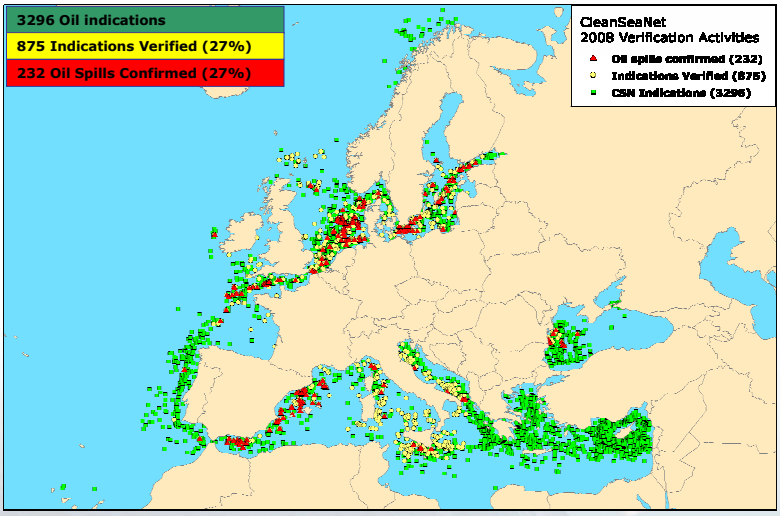
- European standardised service
  - Covering all European waters
  - Comprehensive information easy to access
- Sustainability
- Cost Sharing
  - Sharing of images between EU Member States
  - Economy of scale
- Co-Operation

  "Oil spill surveillance is a cross border activity"
  - Mutual benefits for coastal states

EMSA

/ European Maritime Safety Agency

CleanSeaNet Results – All European areas



EMSA

/ European Maritime Safety Agency

What's next

- Remote sensing is a unique technology to identify illicit pollutions, but with
  - integration of modelling and vessel information

  the systems allows
  - to determine potential polluters, to provide elements for the chain of evidence, to support clean-up operations
- Co-ordination with law enforcement to improve prosecution and deterrence
- CleanSeaNet's 2nd generation in 2009/2010
  - Data Centre at EMSA premises
  - New service contracts with satellite service providers for oil spill detection

2. LRIT (Long Range Identification and Tracking)

International, world-wide system of **Communication Satellite networks** receiving positioning information from ships.

Ships link to a LRIT Data Centre, where every 6 hours messages are collected.

Legal basis
- IMO SOLAS Chapter V Reg 19-1
- Council Resolution of 2 Oct 07 and 9 Dec 08
- Directive 2009/17/EC

EMSA
/ European Maritime Safety Agency

LRIT: for safety, security, SAR and environmental protection

- Flag state
  - Receives 4 messages per day on the position of its vessels worldwide, higher frequency possible
- Coastal state
  - Receives the position of all vessels within 1.000 nautical miles of its coast (through its LRIT Data Centre)
- Port state
  - request the position of a vessel (or vessels) coming to its port(s) based on Notice of Arrival
- SAR
  - request LRIT information in relation to the SAR

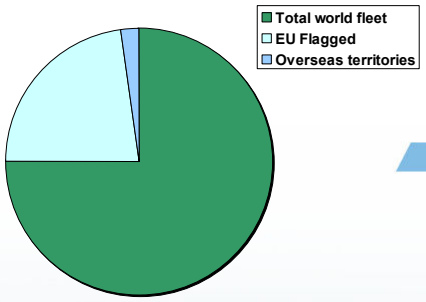
EMSA

/ European Maritime Safety Agency

Significance of EU LRIT Data Centre Operational since June 2009

- **EU Flagged ships**
  - ✓ Approximately 10 000 vessels
- **Overseas territories**
  - ✓ Approximately 1000 vessels

Status Sept. 2009:
7025 ships in EU DB



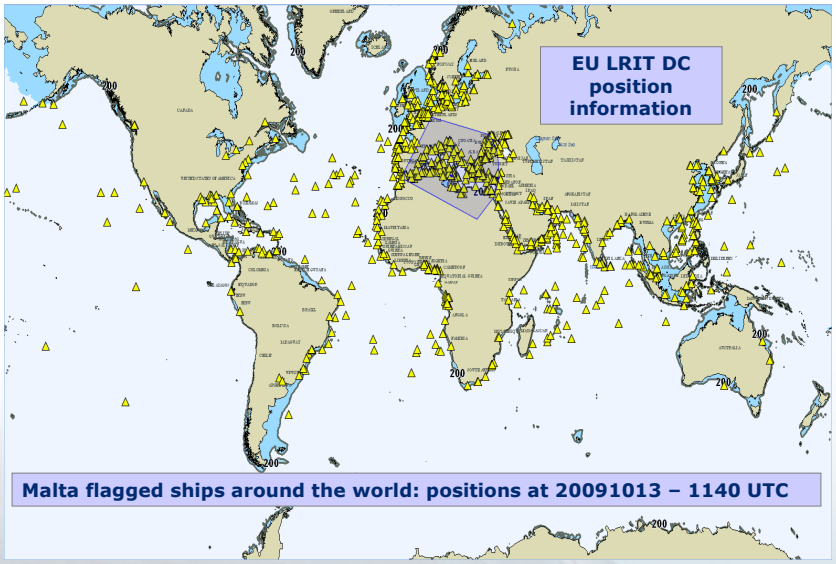
Status Sept. 2009:
7025 ships in EU DB

EU LRIT DC to cover about 25% of world's fleet

35 EU/EFTA states, Overseas Territories and third countries participating

EMSA

/ European Maritime Safety Agency



EMSA

/ European Maritime Safety Agency

3. SafeSeaNet

- A data exchange network and a standardisation of the main information available on ships (all flags) and their cargo
- Providing a clear picture of traffic in EU coastal waters, with an improved monitoring of ships in transit (position update at 6 min. interval)
- EU shore-based network of AIS stations receiving automatic identification radio messages from ships (on board AIS) and Mandatory Reporting Systems (MRS)
- Reporting of incidents and accidents at sea
- Development started in 2004, latest version operational since June 2009

Legal basis

EU Vessel Traffic Monitoring Directive 2009/17/EC

EMSA

/ European Maritime Safety Agency

SafeSeaNet information sources/users

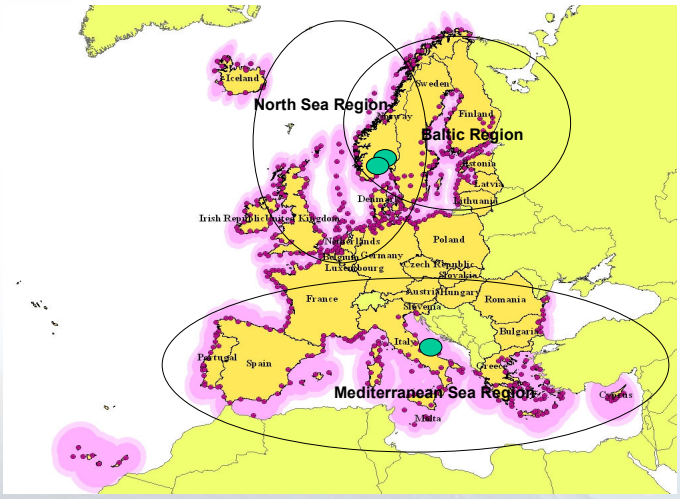
Data providers

- AIS: on board AIS and shore based networks
- Ships' movements and cargoes: ships' masters, owners, agents
- Incidents and accidents reporting: VTS's, MRCC's, Port Authorities, Coast Guards, Pollution survey centres

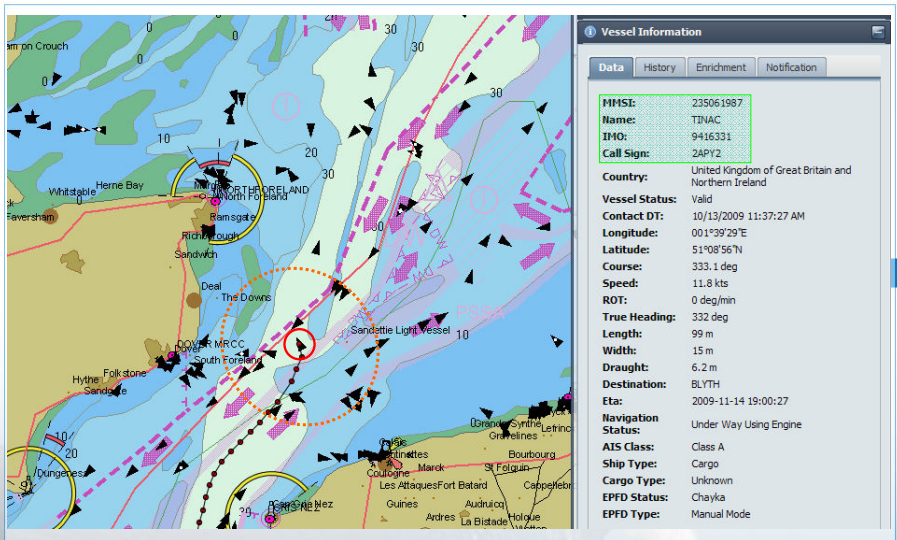
Data users

- 2326 authorities participating in SafeSeaNet from all Member States
- 556 authorized users having direct access to information

SafeSeaNet: European AIS Coastal Stations



March 2008:
727 Stations



Real-time monitoring and collision avoidance capabilities

EMSA

/ European Maritime Safety Agency

Thank you very much!

olaf.trieschmann@emsa.europa.eu

http://cleanseanet.emsa.europa.eu