

Seminar EMSA-SAFEMED III

EMSA's Pollution Response Services

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Background



Establishment and tasks

- Post Erika (2002: EMSA established)
- Post Prestige (2004: new task Marine Pollution Preparedness & Response)

Decentralised Agency of the European Community

- Own legal identity
- No legislative role
- Technical and operational support
- 250 staff and approx. 54 mEUR annual budget

Legal basis

Regulation 1406/2002 as amended (amendment from 2013 – a new task related to offshore installations' spills)



Fields of competence





Maritime safety

Prevention of pollution caused by ships





EMSA's objectives

Maritime security



Response to pollution caused by ships




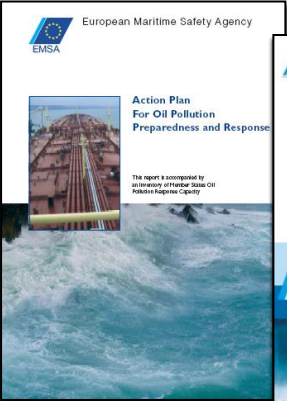


Response to pollution caused by oil and gas installations

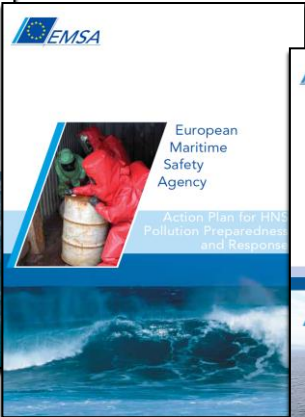
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Pollution Response Services - Action Plans

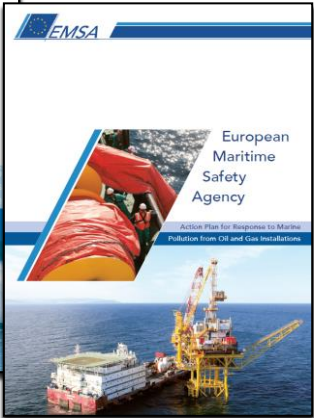




Action Plan OPRP 2004



Action Plan HNS 2007



Action Plan Oil and Gas Installations 2014

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EMSA's Pollution Response Services

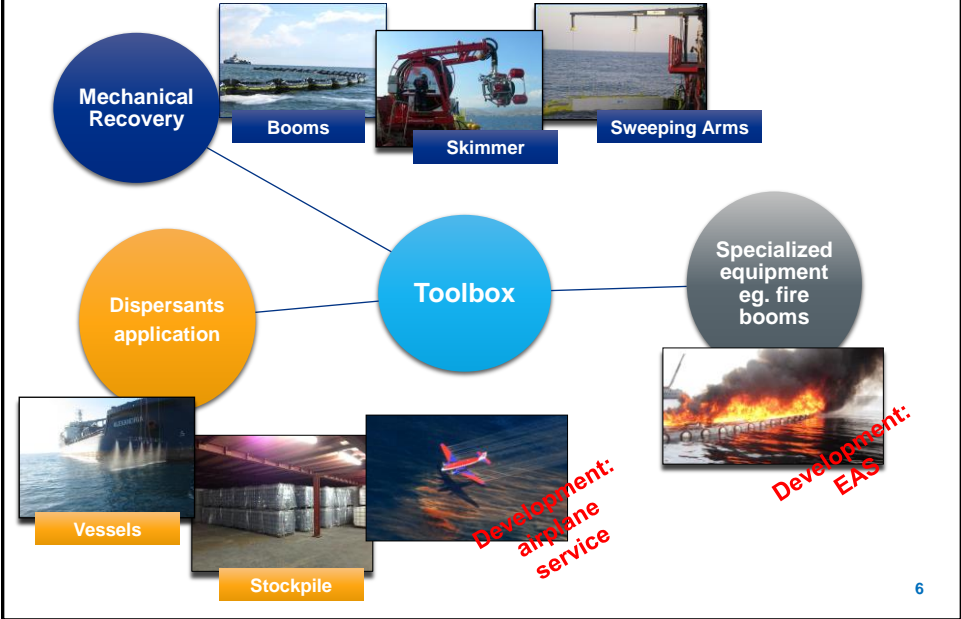


- Network of Stand-by Oil Spill Response Vessels
- CleanSeaNet and Illegal discharges
- HNS Operational Support: MAR-ICE Network
- Experts: On-site/Office-based



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Agency's pollution response toolbox



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Framework for Service Network of Stand-by Oil Spill Response Vessels



- “Top-up” Member States pollution response capabilities
- “European Tier” of resources
- Mobilisation by EMSA at request of MS/EFTA/CC or Commission
- Channelled through “EU Community Mechanism”
- Emergency Response Coordination Centre (ERCC) managed by DG ECHO (former MIC)
- Under “operational control” of the affected coastal State

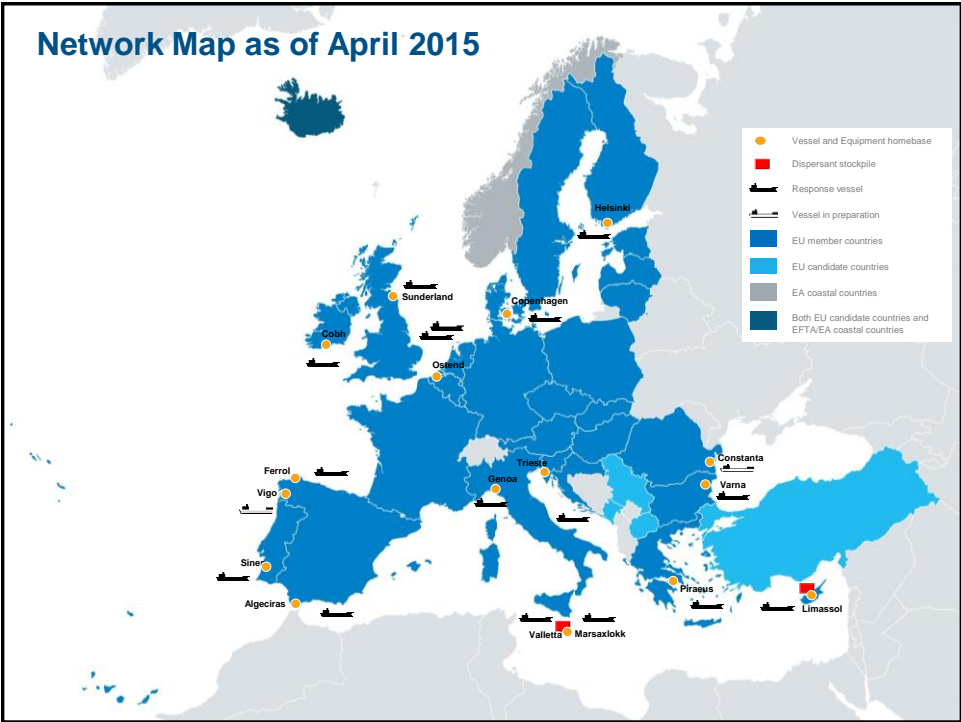
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Adaptations of the Network



- Relocation of response arrangements to areas of higher risk of oil spill, i.e. the Adriatic Sea, the Northern North Sea, Canary Islands (Vessel tender ongoing, expected operational in 2016).
- Equipment purchase or upgrade for response to oil spills from oil installations as well as higher safety requirements for vessels (Class Notation for recovery of oil with a Flash Point < 60°).
- Use of oil dispersants.

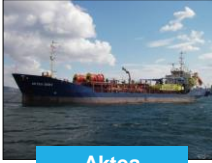
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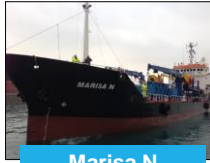
EMSA Network in the Mediterranean Sea					EMSA	
Name	Type	Area of Economic Operation & Equipment Depot		Tank Capacity (m³)	Class Notation Flashpoint	
Monte Anaga	Oil Tanker	Mediterranean West Algeiras, Spain		4096	FP > 60° C	
Brezzamare	Oil/Chemical Tanker	Mediterranean West Genoa, Italy		3348	FP < 60° C	
Balluta Bay	Oil Tanker	Mediterranean Central	Valletta, Malta	2800	FP < 60° C	
Santa Maria	Oil Tanker	Mediterranean Central Marsaxlokk, Malta		2421	FP < 60° C	
Marisa N	Oil Tanker	Adriatic Sea Trieste, Italy		1562	FP < 60° C	
Aktea OSRV	Oil Tanker	Mediterranean East (Aegean Sea) Piraeus, Greece		3000	FP < 60° C	
Aegis I (back-up)	Off-Shore Supply	Mediterranean East (Aegean Sea) Piraeus, Greece		950	FP > 60° C	
Alexandria	Oil Tanker	Mediterranean East Limassol, Cyprus		7458	FP < 60° C	

Net storage capacity in the Mediterranean: 25.635 m³

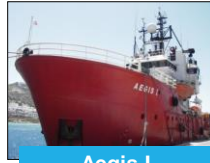
EMSA Network in the Mediterranean Sea



Aktea



Marisa N



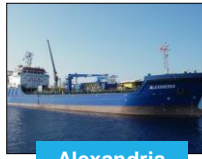
Aegis I



Santa Maria



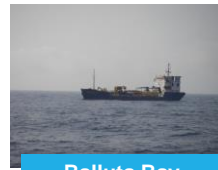
Brezzamare



Alexandria



Monte Anaga



Balluta Bay

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What do we understand by Mechanical Recovery at EMSA?



We consider the use of physical barriers to contain and collect, and mechanical devices to redirect and remove heavy/medium oil from the surface of the marine environment at open sea.

- **It is clean**

Spilled oil is removed from the environment to be recycled or disposed of at appropriate facilities

No further pollution is added to the environment

- **It has an extended time window**
- **It has a limited weather window**
- **It is a difficult and highly specialised task**

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EMSA Equipment for Mechanical Recovery



- **Booms**
- **Skimmers and High Capacity Skimmers**
- **Sweeping Arms**
- **Weir-Booms**

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EMSA Equipment for Mechanical Recovery – Booms



Booms are temporary floating, physical barriers which slow the spread, contain and accumulate the spilled oil to facilitate the recovery.

- Parts: Floating chamber, freeboard, skirt, ballast and towing lines
- Ancillaries: power supply, storage reel
- Types: depending on material (PVC/Neoprene) and operation (SPI, segmented, both)
- Limitations: wind 20 knots, wave 3 meters

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EMSA Equipment for Mechanical Recovery – Booms



EMSA Equipment for Mechanical Recovery – Skimmer



Self-propelled devices for the recovery of oil from the sea surface

- Parts: floating device, propellers, skimmer, umbilical cord and pumps
- Ancillaries: power supply, storage reel and crane (vessel or integrated in the system)
- Types: brush, disc or weir
- Limitations: wave 1 meter

EMSA Equipment for Mechanical Recovery – Skimmer

EMSA



EMSA Equipment for Mechanical Recovery – High Capacity Skimmer

EMSA

Advance version of the normal skimmer with integrated telescopic crane, longer umbilical, exchangeable or double skimmer heads and increased pumping capacity for single-man operation



EMSA Equipment for Mechanical Recovery – Sweeping Arms



Rigid floating device that, deployed from the side of a vessel, can recover the spilled oil contained between itself and the vessel hull

- Parts: Collecting panel, skimmer, pump and towing lines
- Ancillaries: power supply and crane
- Types: brush or weir
- Limitations: wind 20 knots, waves 2 meters

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EMSA Equipment for Mechanical Recovery – Sweeping Arms



EMSA Equipment for Mechanical Recovery – Weir-Boom



Boom especially designed for mass oil recovery which includes a floating tube, a ballast tube and a transfer tube with integrated skimmers and pumps. It can simultaneously contain and recover.

- Parts: boom, integrated recovery skimmers and pumps, water ballast pump and towing lines
- Ancillaries: power supply, storage reel and container
- Limitations: wind 10 knots, wave 2 meters

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EMSA Equipment for Mechanical Recovery – Weir-Boom



EMSA Equipment for Mechanical Recovery – Oil Slick Detection System

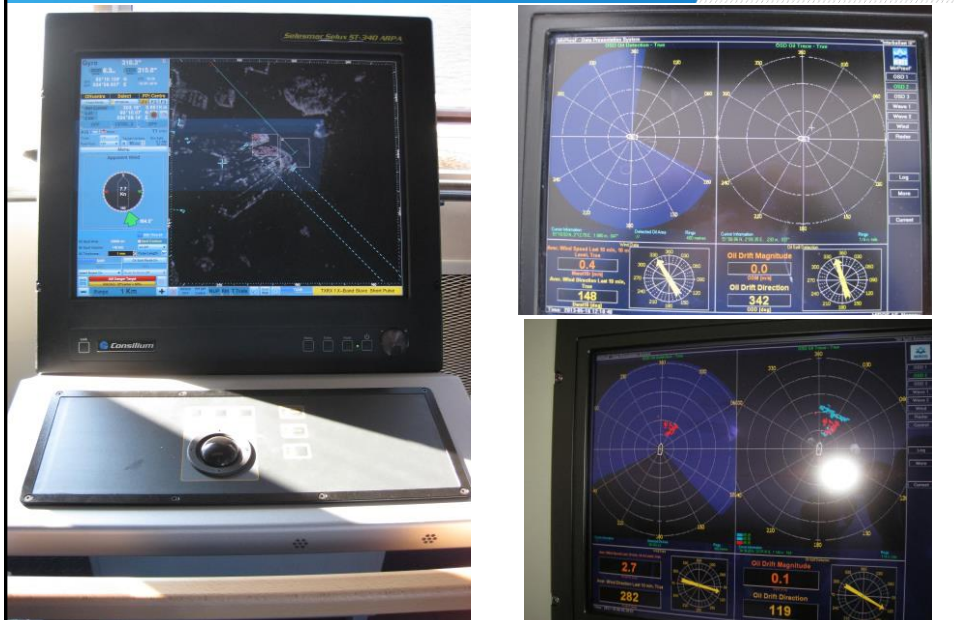


Radar base system for remote sensing of oil spills allowing recovery operations under all kinds of visibility conditions

- Parts: antenna, radar, interface and junction boxes, display unit and software
- Ancillaries: wind sensors
- Limitations: 3-4 nautical miles range, sea conditions (wave 3-4 meters)

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EMSA Equipment for Mechanical Recovery – Oil Slick Detection System



Overall potential benefit and risk of dispersant use:

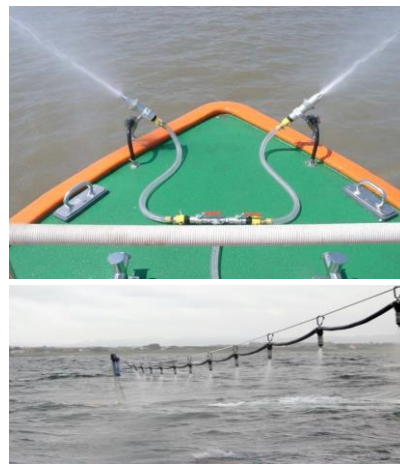
➤ The potential benefit: oil is removed from the sea surface and will not drift into shallow water or ashore. The effect of dispersing spilled oil is beneficial to those habitats and organisms that will not be contaminated by the spilled oil.

➤ The potential risk: marine organisms might be exposed to higher levels of dispersed oil (and soluble components from the dispersed oil) than with natural occurring dispersion. The degree of harm is a dependent on exposure conditions (dispersed oil concentration, duration of exposure and the rate of dispersion and dilution), plus the inherent sensitivity of the particular organism to dispersed oil.

Dispersant application systems:

➤ Seaborne application systems used on-board vessels:

- ❖ Fixed spray booms;
- ❖ Portable single spray nozzles;
- ❖ Spray hoses with floating buoys.



Dispersant application systems:

➤ Airborne application systems used on-board aircrafts:

- ❖ Fixed spray arms;
- ❖ Fixed single spray nozzles;
- ❖ Helicopter buckets.



Setting-up the Service

Preparatory Phase

- Purchase/transfer of oil spill response equipment
- Pre-fitting the vessel for equipment installation
- Crew Training

Stand-by Phase

- Vessel available and ready to respond within mobilisation time (24h.)
- Equipment maintenance
- Drills and Exercises

Vessel Availability Contract (VAC)



Between EMSA and the Contractor

- 4 Years + Renewable once = Maximum 8 years total

It secures:

- Requirements for vessel(s), equipment and crew
- Stand-by / availability
- Drills and participation in exercises
- Mobilisation time
- Mandatory use of the Incident Response Contract

Vessel Availability Contract



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Vessel Network - Activities 2014



Main outputs:

- 62 Quarterly Drills
- 6 Acceptance Drills Vessels:
 - 2 new: *Marisa N*, *Thames Fisher*
 - 4 re-entry service: *Aktea OSRV*, *Aegis I*, *Forth/Mersey/Galway Fisher*
- 3 Improvement projects, High Capacity Skimmer: OW Copenhagen, Weir Boom: Enterprise, Ria de Vigo
- Seaborne dispersant application projects: Malta and Cyprus
- 12 Operational Exercises
- 12 Notification Exercises

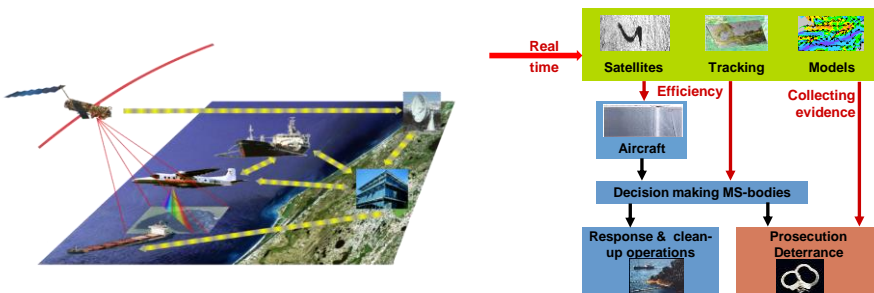


<http://www.emsa.europa.eu/news-a-press-centre/external-news/item/2328-network-of-stand-by-oil-spill-response-vessels-drills-and-exercises-annual-report-2014.html>

CleanSeaNet Service



- The European satellite based oil spill monitoring and vessel detection service
- Provides routine monitoring of all European waters, supporting the identification of polluters by combining information from SAR images and Vessel traffic information
- Linked into national/regional response chains which strengthens response to spills and allows taking the right decision at the right time.



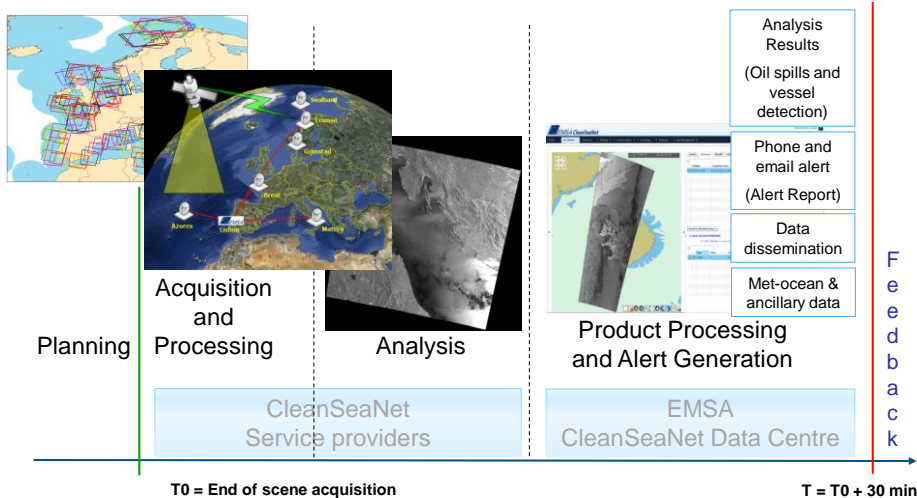
CleanSeaNet Fact Sheet



- Based on the analysis of Synthetic Aperture Radar (SAR) satellite images
- Operational since April 2007
- 2.100 analysed satellite images per year
- 26 countries (23 EU coastal states, Iceland, Norway and Turkey) - over 400 users
- Complete service chain from the collection of coverage requirements to the provision of operational results
- Distributed Service-Network approach via regional service providers (acquiring and processing satellite data)
- NRT: 30 minutes* end product delivery
- Alert passed to response authorities (Coast Guard, Customs, Navy, ...)

* Satellite images are acquired in segments up to 1400 km long. 30 min are for a 400 km long image

CleanSeaNet: Near Real Time service: 30 min



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Information services for Chemical/HNS releases: MAR-ICE Network



MAR-ICE Network - Marine Intervention in Chemical Emergencies

- Cooperation with chemical industry establishing the Network
- 3-parties MoU: Cedre¹, Cefic², and EMSA
- Operational since January 2009; Availability 24/7
- Remote assistance upon request for chemical spills or drills
- 28 MSs, coastal EFTA/EEA and EU Candidate Countries

¹ Centre of Documentation, Research and Experimentation on Accidental Water Pollution

² European Chemical Industry Council

MAR-ICE Network: Service provided



Network of marine pollution response & **chemical** experts

Product specific expert information

Expert advice for chemical incidents

- **Single MAR-ICE contact Point**
- MSDS & other product-relevant documentation
- Remote information & advice
- Risk Assessment
- 3-D chemical model results
- Contact with knowledgeable chemical company

MAR-CIS



Compile relevant and concise information for HNS responders

► Added value:

- Include maritime specific information
- Include information on solubility in seawater through lab. tests

► Deliverables:

- Database/pdf datasheets of ~200 substances
- Access to datasheets via a display menu (search, print, e-mail datasheet)
- Available now via MAR-ICE Network

MAR-CIS user interface

Other decision support tools: Dispersant Usage Evaluation Tool (DUET)

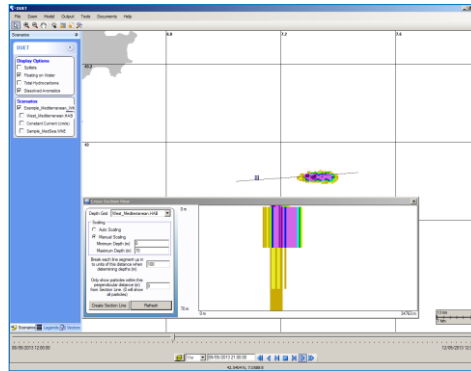


DUET applications:

- Support national decision-making process
- Contingency planning
- Training & drills

MSs experts have been trained on the tool's functionalities

Tool is currently being updated/enhanced



Expert support provided by EMSA



In-house knowledge & expertise on marine pollution preparedness and response issues

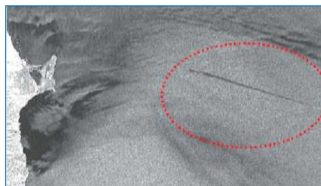
- Expertise available 24/7, via the ERCC¹
- Upon request of a MS or the Commission
- Office-based or on-site (case-by-case)
- During real incidents

¹ ERCC: Emergency Response Coordination Centre (European Commission)

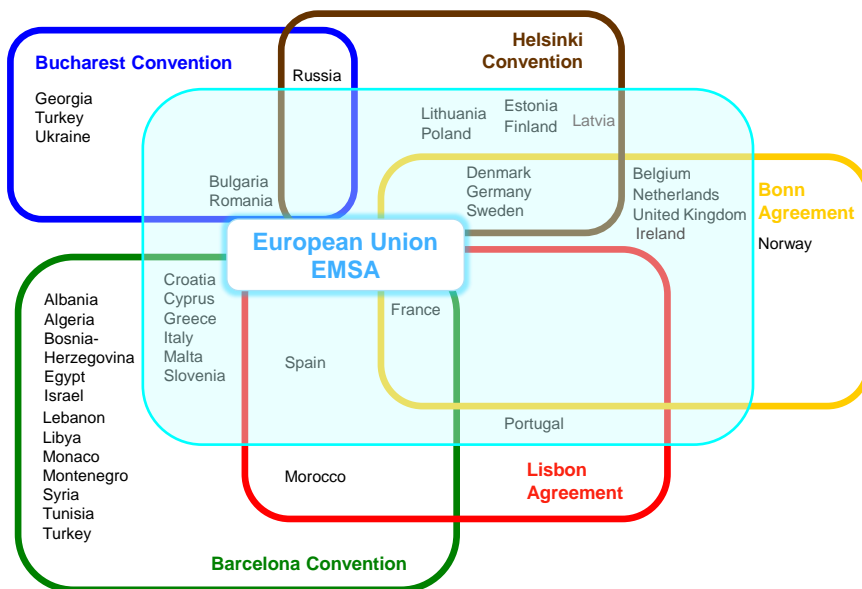
Fields of EMSA expertise/knowledge



- Contingency planning
- Co-ordination of pollution response operations
- Pollution response strategies & techniques (use of dispersants; oil recovery equipment)
- Oil spill modelling, fate & behaviour
- Environmental impacts of pollution
- Satellite image processing & interpretation for oil spills



Framework of Co-operation: Regional Agreements



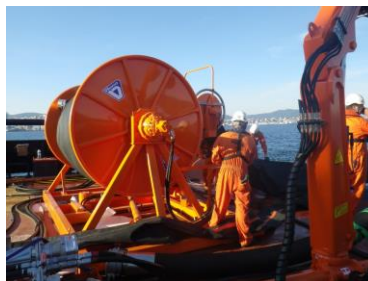
SAFEMED III Project

Activity 4: Protection of the Marine Environment



Activities link to the Vessel Network:

- EMSA's training/oil pollution response exercise (April 2015 Spain)
- Seminar on EMSA's Pollution Response Services (held 13-14 May 2014)
- 1 operational exercise foreseen for 2015/2016



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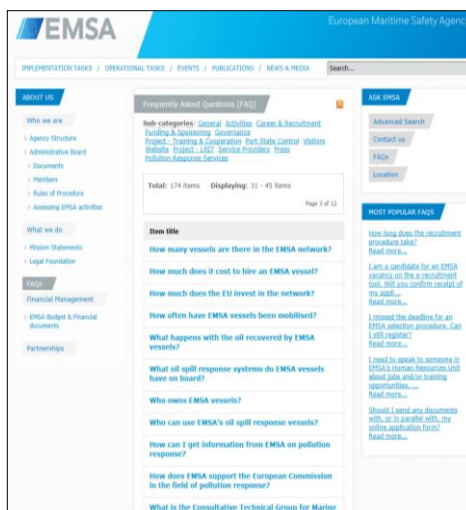
Latest publications



<http://www.emsa.europa.eu/oil-recovery-vessels/documents/item/1439-network-of-stand-by-oil-spill-response-vessels-and-equipment-handbook->



<http://www.emsa.europa.eu/faq-pollution.html>



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