



# POLLUTION RESPONSE SERVICES

SUPPORTING POLLUTION  
RESPONSE FOR CLEANER  
EUROPEAN SEAS

# EMSA'S POLLUTION RESPONSE SERVICES

The European Maritime Safety Agency offers a range of services to support EU coastal states to respond quickly, effectively and efficiently to marine pollution from ships as well as oil and gas installations.

These services can be described as a 'toolbox' from which requesting states can pick and choose the response means most suitable to their immediate needs. By developing these services at EU level, EMSA aims to complement and top up the response resources available at national and regional level through targeted cost effective and efficient support.

EMSA makes sure that these services remain fully operational and organises their mobilisation at short notice when requested. Once activated, the specific services come under the control and responsibility of the requesting party. The service is available to EU member states, EFTA/EEA countries and non-EU countries sharing a regional sea basin with the EU.

## EMSA'S RANGE OF SERVICES

The response to oil pollution at sea may call on several techniques, i.e. containment and mechanical recovery of the pollutant on the sea surface, dispersion in order to facilitate the transfer of the pollutant into the water column where it is broken down by natural processes, or in situ burning. The choice of technique depends on the physical/chemical properties of the pollutant and the prevailing meteo-oceanic conditions of each incident, as well as on the national policies in place authorising or prohibiting such techniques. It is also important for the affected state to benefit from regular aerial or satellite pictures of the polluted area in order to conduct an effective response.

When responding to incidents involving hazardous and noxious substances (HNS) or chemical spills, the first concern is to identify the substances involved in order to assess their behaviour and the hazard they may create for the crew, the nearby population, and the marine environment.

Questions such as How will the substance spread in seawater?, What are the existing safeguards on board the ship?, Can the situation be controlled? need to be answered in order to identify and prioritise the hazards and associated risks before deploying emergency response teams.

To support the affected coastal states in the response to oil or chemical marine pollution incidents, EMSA offers the following operational services:

- A network of stand-by oil spill response vessels, with different types of oil-combatting equipment arrangements
- Lightweight Remotely Piloted Aircraft Systems (RPAS) to support pollution monitoring and detection operations from vessels
- An equipment assistance service, offering dedicated stockpiles of stand-alone pollution response equipment
- A satellite-based oil spill monitoring service known as CleanSeaNet
- The MAR-ICE network, a service for chemical emergencies providing expert information and advice
- The MAR-CIS database of substance-specific marine chemical information sheets.

## NETWORK OF OIL SPILL RESPONSE VESSELS

EMSA has established a network of stand-by oil spill response vessels through contracts with commercial vessel operators. EMSA's contracted vessels have been adapted for oil spill response operations and are on stand-by, carrying out their usual commercial activities. In the event of an oil spill, the selected vessel will cease its normal activities and will be made available to the requesting party fully-equipped for oil spill response services under established terms and conditions and tariffs. Following a request for assistance, the maximum time for the oil spill response vessel to be ready to sail is 24 hours. Regardless of their area of commercial operations, all vessels in the EMSA network can be mobilised to respond to an oil spill anywhere in European waters and shared sea basins.

### KEY ASPECTS OF THE VESSEL NETWORK

EMSA currently maintains 16 fully equipped stand-by oil spill response vessels around Europe. Each of EMSA's contracted vessels has the following characteristics:

- Speed of 12 knots for prompt arrival on scene as well as low speed manoeuvrability for response operations
- Large storage capacity for recovered oil
- On-board capability to decant excess water thereby maximising the use of on-board storage capacity
- Ability to heat recovered cargo and use high capacity pumps to facilitate the discharging of heavy viscous oil mixtures to facilities ashore
- Oil slick detection system to facilitate the positioning of the vessel in the thicker oil slicks, and to enable operations at night.

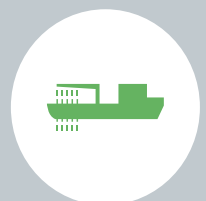
All vessel arrangements comprise two different containment and mechanical recovery options available for response operations depending on the weather conditions and type of pollutant:

- Sweeping arms
- Ocean-going booms and an offshore skimmer (on certain vessels there are also high-capacity skimmers and weir booms available).

The average individual oil storage capacity of EMSA's contracted vessels is in the region of 3 600 m<sup>3</sup>, while the total storage capacity of all the vessels in the network is around 60 000 m<sup>3</sup>.

In addition to the mechanical oil recovery options, seaborne dispersant application systems and dispersant stockpiles are available through five of the network's vessel arrangements, in Bulgaria, Cyprus, Malta, Portugal and Spain. Each of these established stockpiles currently has 200 tonnes of dispersant, available to be used on EMSA's specially equipped vessels anywhere in European waters and shared sea basins.

The requesting party can also choose to mobilise only part of the pollution response equipment on the vessel or the dispersant stockpile without mobilising the whole vessel arrangement.



## SUSTAINING THE OPERATIONAL READINESS OF THE SERVICES

To maintain a proper level of preparedness for its at-sea oil spill response services, EMSA has established a programme for drills and exercises:

### ■ Drills

All stand-by oil spill response vessels undergo regular drills under the supervision of EMSA in order to test the readiness of the vessels and the functioning of the oil spill response equipment, and to train the crews. A similar programme (i.e. equipment condition tests) is in place for the EAS arrangements.

### ■ Exercises

In order to work under an international command and control structure, which is the most likely scenario during a major oil spill, each stand-by oil spill response vessel participates in regular at-sea spill response exercises with other response units organised at national and regional level. During such exercises and for the same purpose, the EAS equipment is also regularly deployed. Furthermore, EMSA frequently checks the readiness of its oil spill response services and tests their activation procedures through the performance of table-top exercises.

## EQUIPMENT ASSISTANCE SERVICE

In selected areas around Europe, EMSA has established an Equipment Assistance Service (EAS) consisting of stockpiles of stand-alone oil pollution response equipment. These stockpiles are designed to complement and top up the existing resources of individual member states and to make available high capacity, state-of-the-art equipment. EMSA's EAS equipment is on stand-by in storage, ready to be mobilised around-the-clock for an oil spill anywhere in European waters and shared sea basins.



## KEY ASPECTS OF EAS

EMSA currently maintains three operational EAS stockpiles, one in Gdansk, Poland (EAS Baltic Sea), in Ravenna, Italy (EAS Adriatic sea), and one in Tolkkinen, Finland (EAS Northern Baltic). Following a request for assistance, the maximum time for the mobilisation of equipment (i.e. equipment loaded on trailers and ready to be shipped) is 12 hours, excluding the transit time. The requesting party may choose one or multiple equipment sets from those available through the EAS. Dispersant stock and portable application systems for vessels of opportunity are also available from the EAS for the Adriatic Sea. In addition to the equipment, the requesting party can also hire technical support personnel to assist in the equipment handover and familiarisation process.



## REMOTELY PILOTED AIRCRAFT SYSTEMS

EMSA has contracted several lightweight RPAS quadcopters capable of taking off and landing on vessels in order to give an aerial view of the surrounding area. The service allows users to check the extent to which an oil spill has spread and to monitor the deployment of response equipment (sweeping arms, booms, skimmers, etc.).

As the RPAS is equipped with both visual and infrared cameras, the response coordinator may better direct the clean-up operations as well as to analyse the effectiveness of any dispersant which may have been applied.

The RPAS service can be deployed:

- From one of EMSA's pre-prepared standby oil pollution response vessels, in which case deployment can take place within 24 hours
- From a vessel of a member state or agency user, in this case some integration tests are required.

This category of RPAS is particularly useful for rapid deployment as only a simple registration of the quadcopter and pilot is required (i.e. rather than a specific permit to fly).



RPAS on board oil spill response vessel



Oil spread as captured by the quadcopter



Oil detected by an RPAS infrared camera

## SATELLITE-BASED OIL SPILL MONITORING SERVICE

Data from Earth Observation satellites can provide routine, cost effective, wide area maritime surveillance, or can be pointed to a targeted location for monitoring specific events. One of the main functions supported by EMSA through the Agency's Earth Observation services is pollution detection and monitoring, which is provided to users via the CleanSeaNet service.

CleanSeaNet is a European satellite-based oil spill and vessel detection service which offers assistance to participating states for the following activities:

- Identifying and tracing oil pollution on the sea surface
- Monitoring accidental pollution during emergencies
- Contributing to the identification of polluters.

The service is primarily based on Synthetic Aperture Radar (SAR) satellites, which provide day and night coverage of maritime areas independent of fog and cloud cover. Data from these satellites is processed into images, and analysed

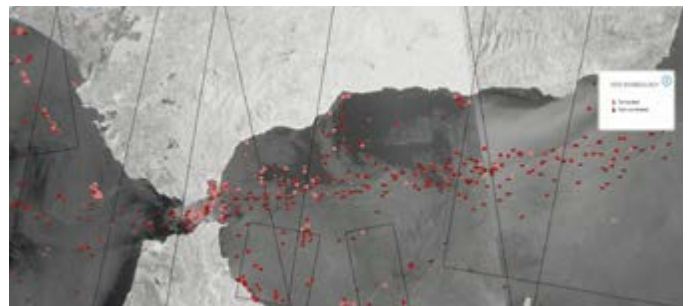
for oil spill and vessel detection information including spill location, spill area and length, and supporting information on the potential source of the spill (i.e. detection of vessels and oil and gas installations). Optical satellite images can also be acquired on request, depending on the situation and context.

Under the routine CleanSeaNet monitoring service, as soon as spill information is available, an alert report is generated and sent to participating states. Analysed images, including detected spills, are usually available within 30 minutes of the satellite image acquisition and are sent to the national authority who then follows up on the alert report.

In case of a major accidental oil spill at sea, EMSA, at the request of the affected coastal state, can acquire additional satellite images to monitor the spill area over an extended period of time, capturing the evolution of the spill and providing support to response and recovery operations.

### KEY ASPECTS OF CLEANSEANET

The CleanSeaNet service offers reliable, high quality information in a user-friendly format. Images are available with a resolution of less than one metre. Scene sizes vary considerably, from 5 x 10 km, up to 400 x 1 600 km for monitoring large areas. A standard 200 x 200 km image takes less than 30 minutes to be acquired, processed, analysed, and delivered to the end-user via CleanSeaNet. More than 3 000 images per year are delivered to end-users by the CleanSeaNet service.



## EMSA'S SERVICES FOR MARINE CHEMICAL EMERGENCIES

EMSA's chemical pollution response services offer support to requesting parties in their decision-making process during an emergency by rapidly providing them with expert information and advice on specific chemical substances.

Both the MAR-ICE network and the MAR-CIS information sheets facilitate rapid access to product and incident-specific information and specialist advice on chemicals and their associated risks and complement existing information sources at national and regional level.

### MAR-ICE NETWORK

EMSA, in close cooperation with the European Chemical Industry Council (Cefic) and the Centre of Documentation, Research and Experimentation on Accidental Water Pollution (Cedre) established a network of experts (MAR-ICE network) who provide information and specialist advice on chemicals involved in maritime emergencies. National authorities benefit from rapid access to a network of marine pollution response and chemical experts, via a dedicated single-contact point.

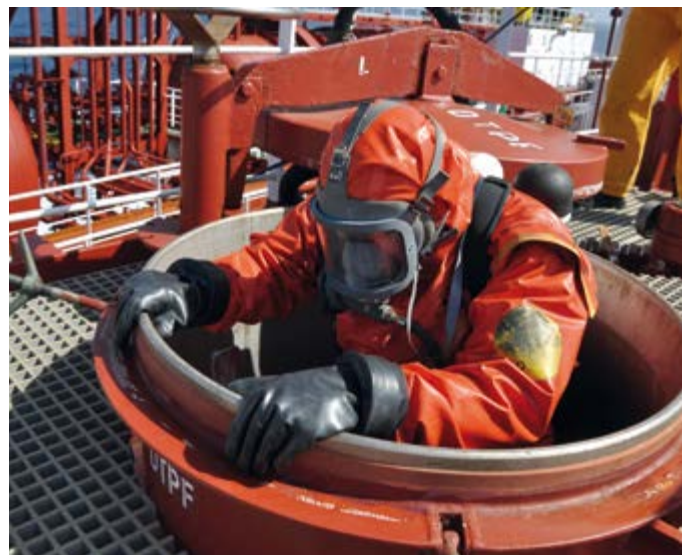
### KEY ASPECTS OF THE MAR-ICE NETWORK

The MAR-ICE network offers rapid access (via email or phone) to a chemical expert who can provide product and incident-specific information and expert advice within one hour of the request and more detailed information shortly thereafter. The information provided includes:

- Relevant substance-specific documentation
- Additional expert advice on specific product properties and hazards through direct contact with a knowledgeable chemical company.

Furthermore, and on a case-by-case basis, the service provides:

- Risk assessment for responders and the environment
- Drift and weathering modelling results, indicating areas potentially impacted by the released chemical
- Advice on response methods and options.



## MAR-CIS: MARINE CHEMICAL INFORMATION SHEETS

The MAR-CIS information sheets provide concise, substance-specific and maritime relevant information on chemicals. The information is designed to assist competent authorities during the initial stage of the response to maritime incidents involving such substances.

The information sheets have been made available to the relevant national competent authorities and can also be provided through the MAR-ICE network. Access to MAR-CIS is possible through:

- The MAR-CIS web portal
- The MAR-CIS application for mobile devices for both online and offline use
- EMSA's Central Hazmat Database, containing a list of dangerous or polluting goods that have to be notified in the EU's maritime information and exchange system (SafeSeaNet) and relevant details from the applicable International Maritime Organization Conventions and Codes.

### KEY ASPECTS OF THE MAR-CIS

MAR-CIS information sheets have been developed for 217 chemical substances. The data for each substance can be easily viewed and exported by the database user. The information categories covered in MAR-CIS include:

- Substance identification, including physical and chemical properties
- Shipping information (maritime transportation codes, GESAMP profile)
- Hazards and risks (health hazards, environmental hazards, substance intrinsic hazards)
- Emergency measures (health measures, response measures, environmental protection measures).



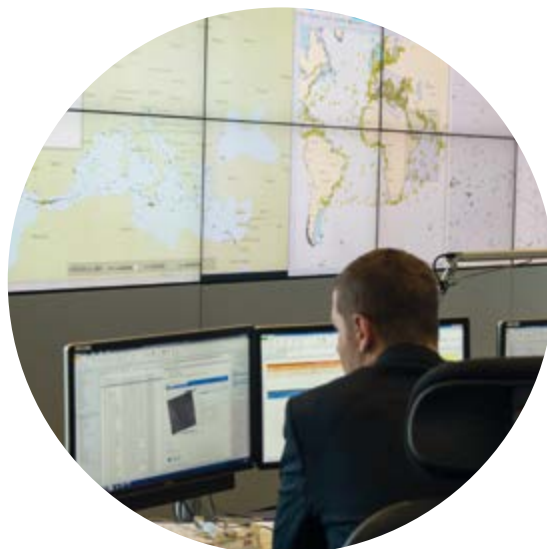
## ACCESSING AND REQUESTING EMSA'S POLLUTION RESPONSE SERVICES

EMSA's pollution response services are available to requesting parties across EU and EFTA/EEA member states, EU candidate countries and non-EU countries sharing a regional sea basin with the EU.

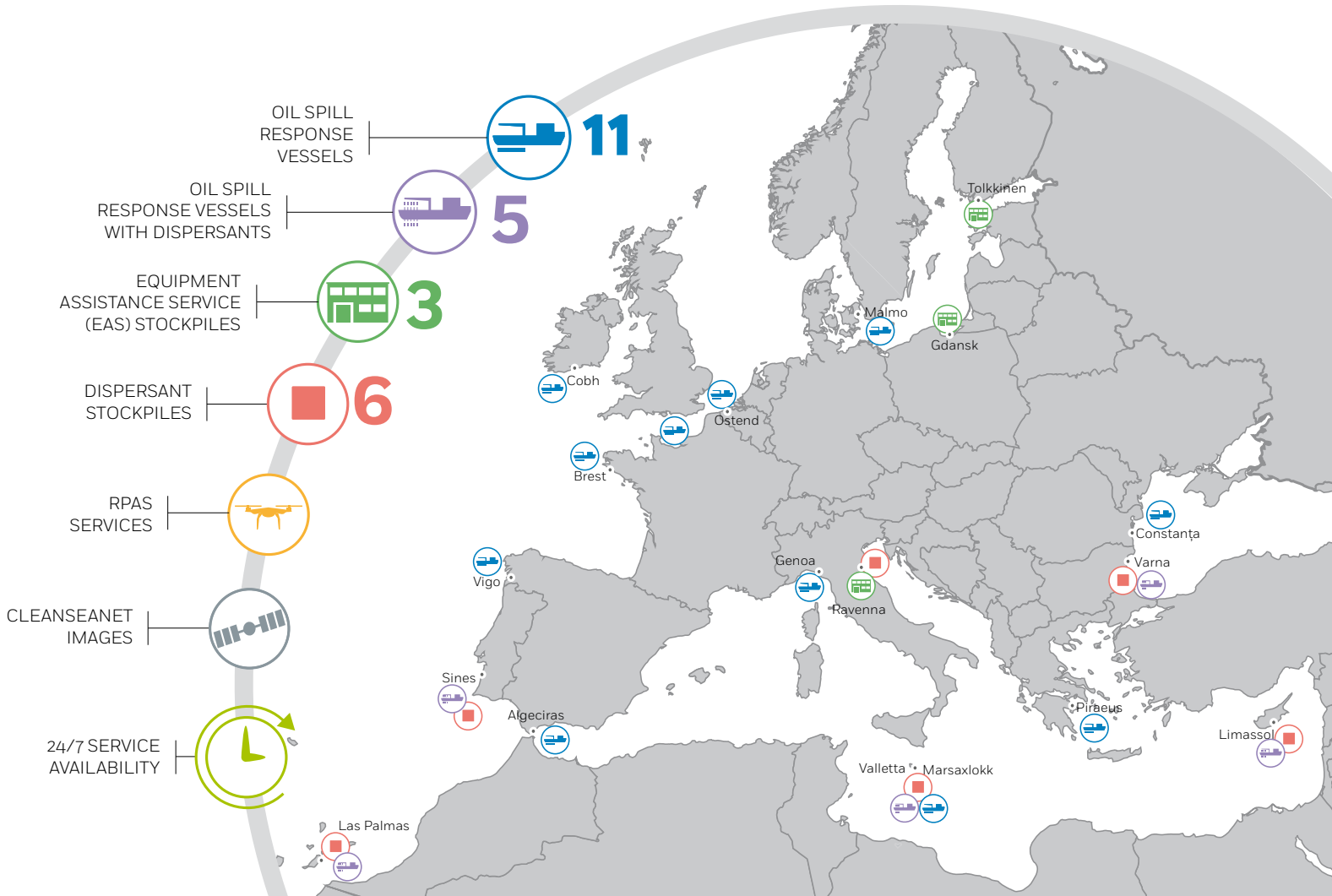
The 24/7 access to EMSA's pollution response services is provided to the requesting parties through the Emergency Response Coordination Centre (ERCC) of the European Commission in Brussels, by entering a request in the Common Emergency Communication and Information System (CECIS) or alternatively by contacting the ERCC or EMSA's Maritime Support Services by email, telephone and/or fax.

The activation and mobilisation procedures of EMSA's services have been communicated to the relevant national authorities.

More information on EMSA's pollution response services can be found on our website: [emsa.europa.eu](https://emsa.europa.eu).



## EMSA'S MARINE POLLUTION RESPONSE SERVICES



## ABOUT THE EUROPEAN MARITIME SAFETY AGENCY

The European Maritime Safety Agency is one of the European Union's decentralised agencies. Based in Lisbon, the Agency's mission is to ensure a high level of maritime safety, maritime security, prevention of and response to pollution from ships, as well as response to marine pollution from oil and gas installations. The overall purpose is to promote a safe, clean and economically viable maritime sector in the EU.

### Get in touch for more information

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