





Table of Contents

1. REPORT OBJECTIVE	4
1.1 Executive summary	
3. OPERATIONAL ASSISTANCE	8
3.1 Network of Stand-by Oil Spill Response Vessels	8
3.1.1 Network of Stand-by Oil Spill Response Vessels	
3.1.2 Vessel Network User Group	
3.1.3 Maintaining the Service: Drills and Exercises	
'	
3.2 Response to Marine Pollution from Oil and Gas Installations	38
3.3 CleanSeaNet Satellite Service for Oil Spill Monitoring	40
3.3.1 Introduction	40
3.3.2 The Operational Use of CleanSeaNet	
3.3.3 Support to CleanSeaNet Users	
3.3.5 Cooperation with External Organisations	
3.4 Support to Coastal States and the Commission for Accidental Spills	
4. COOPERATION AND COORDINATION	52
4.1 Introduction	52
4.2. Consultative Technical Group for Marine Pollution Preparedness an 4.2.1 8 th Meeting of the CTG MPPR	
4.2.2 Technical Correspondence Group on Dispersants	
4.3 Cooperation with Regional Agreements and the IMO	
4.3.1 Meeting of the Regional Agreements	
4.5.2 9 Meeting of the Secretariats of the Regional Agreements	
4.4 Financial overview: Cooperation and Coordination	55
5. INFORMATION	56
5.1 Introduction	56
5.2 Activities with regard to Hazardous and Noxious Substances (HNS)	56
5.2.1 MAR-ICE Network: Information Service for Chemical Emergencies	
5.2.2 Development of MAR-CIS datasheets (MARine Chemical Information D	
5.2.3 Environmental data for predicting the trajectory and fate of oil and HN 5.3 Inventories of Member States Policies and Operational Response Capacities	
5.5 Inventories of Member States Folicies and Operational Response Capacities	3
5.4 Activities with regard to dispersants – Update of the DUET	58
5.5 2015 INTERSPILL Conference and Exhibition	58
	=-
5.6 Financial overview: Information	
6. TOTAL EXPENDITURES FOR POLLUTION PREPAREDNESS	
RESPONSE ACTIVITIES	60

1. Report Objective

The European Maritime Safety Agency has been given a Multi-annual Funding envelope for its 'anti-pollution' activities. One of the conditions for receiving this is that the Agency submits a report to the Commission and the Administrative Board, by 31 January each year, concerning the financial execution of the detailed plan (comprising separate Action Plans) for the Agency's pollution preparedness and response activities and gives an update of the status of all actions funded under that plan (Regulation 2038/2006/EC¹, Article 7).

1.1 Executive summary

The activities of the Agency in the field of marine pollution preparedness and response are focussed on providing operational assistance and information to Member States. The main service pillars are:

- The Network of Stand-by Oil Spill Response Vessels distributed along the European coastline;
- CleanSeaNet: the satellite based oil spill and vessel detection and monitoring service;
- The MAR-ICE (Marine-Intervention in Chemical Emergencies) Information Service in case of chemical spills at sea;
- Cooperation and coordination with the EU Commission, EU Member States, EFTA/EEA
 Coastal Countries, Candidate Countries, Acceding Countries, Regional Agreements and
 other relevant international organisations such as the International Maritime
 Organization (IMO);
- The provision of information through publications and workshops.

At the end of 2012, three new contracts were awarded to enhance the response capacity for the Bay of Biscay and to replace existing capacity along the Southern Atlantic coast and in the Central Mediterranean Sea. In mid-2013, a new contract was awarded to replace existing response capacity in the Western Mediterranean Sea.

Following a Preparatory Phase, four vessels became operational in 2013:

- The tanker *Monte Arucas,* based in Ferrol, Spain, providing new capacity in the Bay of Biscav:
- The tanker *Bahia Tres*, based in Sines, Portugal, providing replacement capacity in the Southern Atlantic coast;
- The tanker *Santa Maria*, based in Malta, providing replacement capacity in the Central Mediterranean Sea;
- The tanker *Brezzamare*, based in Genoa, Italy, providing replacement capacity in the Western Mediterranean Sea.

At the end of 2013, following the established public procurement process, four new contracts were awarded. Two were to replace existing capacity along the Northern Atlantic coast (James Fisher Everard pool of vessels based in Cobh, Ireland) and in the Aegean Sea (*Aktea OSRV* based in Piraeus). The other two contracts enhance the response capacity in the Northern North

¹ Regulation 2038/2006 of the European Parliament and the Council on multi-annual funding for the action of the European Maritime Safety Agency in the field of response to pollution caused by ships and amending Regulation 1406/2002 published on 18 December 2006.

4

Sea and the Adriatic Sea. These ships will undergo a Preparatory Phase of modifications, which is expected to be completed by mid-2014. All the vessels will be certified to recover oil with a flash point below 60°C.

2013 also saw the renewal of one contract awarded in 2009 to Arctia to provide response capacity in the Northern Baltic Sea area.

The first term of the contract with the bunker tanker *Sara* expired in April 2013 and was not renewed due to the relocation of the vessel on the ship owner's initiative. In order to provide storage and maintenance services for the equipment under the contract two consecutive procurement procedures were concluded with companies in Portland, UK (replacing storage capacity from the contract for the Channel which was terminated early).

Following a technical assessment of operational needs and opportunities to upgrade the response capacity of the Network, three new improvement projects were launched. In order to accomplish these projects, the framework contracts concluded with different companies in 2011 for the purchase of oil pollution response equipment were implemented.

In order to maintain a high level of preparedness across the service network, in 2013, 69 drills were conducted on board EMSA contracted vessels. Six were acceptance drills related to entrance of new contracted vessels in service and/or improvement projects.

To further strengthen the operational cooperation with Member States and marine pollution Regional Agreements², ten EMSA contracted vessels participated in nine Operational Exercises covering all European seas.

In addition, 10 Notification Exercises aiming at the signature of 11 Incident Response Contracts were conducted with Member States.

As of 1 March 2013, with the entry into force Regulation (EU) No 100/2013 EMSA has a new mandate to respond to marine pollution caused by oil and gas installations. For the first time, EMSA vessels participated in the operational exercise dedicated to response to pollution occurring during offshore operations in the western Black Sea.

In preparation to implement this new task, EMSA cooperated with stakeholders to develop the Action Plan for Response to Marine Pollution from Oil and Gas Installations. The Action Plan was approved by the Agency's Administrative Board in November 2013. Subsequently, EMSA began the preparation of public procurements to acquire the appropriate services.

CleanSeaNet, the Agency's satellite oil pollution and vessel detection monitoring service, has been operational since 2007. In 2013, the Agency had to adapt to the loss of the Radarsat-1 satellite. The operational impact on end users was mitigated by an increase in the number of other satellite images acquired. In addition to providing images to Coordinated Extended Pollution Control Operations (CEPCO), EMSA, in cooperation with the Bonn Agreement, provided support to the 'Tour d'Horizon' aerial operations for platform monitoring in the North Sea. In

_

² 'Regional Agreements' refer to the agreements signed by countries around a particular sea area to plan for pollution preparedness and coordinate responses in case of a large-scale marine pollution incident. The EU has an official role in some, but not all, of these. Regional Agreements have been developed for all the sea areas along the European coastline: the North Sea (Bonn Agreement), the Baltic Sea (HELCOM), the Mediterranean (the Barcelona Convention), the Black Sea (Bucharest Convention for which EMSA has observer status), and the North East Atlantic (Lisbon Agreement, not yet in force).

³ The Bonn Agreement Contracting Parties have adopted a plan for all coastal states to conduct periodic and random surveillance flights for the detection of spillages in the offshore oil and gas industry areas in the North Sea. Irrespective

June, 69 participants from Member States and international organisations attended a Workshop on Illegal Discharges in the Marine Environment. The document 'Addressing Illegal Discharges in the Marine Environment', prepared by a Working Group of interested stakeholders and finalised during the Workshop, was published on the EMSA website in October 2013.

The Consultative Technical Group for Marine Pollution Preparedness and Response (CTG MPPR), established in 2007, continued its work in 2013 with its annual meeting, updating the Rolling Work Programme activities, organising two training courses on marine pollution surveillance and one joint workshop with participants from national administrations responsible for at-sea and shoreline pollution response.

The MAR-ICE (Marine-Intervention in Chemical Emergencies) Network, which provides expert information and advice during hazardous and noxious substance (HNS) spills supported four 'table top' chemical pollution exercises in 2013. The Network's second Evaluation meeting was held in September with participation from the MAR-ICE partners Cedre and Cefic.

Funding of Actions

The Budgetary Authorities provided EMSA with EUR 23, 30 million in commitment and EUR 18, 93 million in payment appropriations for its pollution preparedness and response task for 2013⁴. In terms of budget execution, 99.6% was achieved for commitments and 99.9% for payments.

The table below provides an overall summary of commitments and payments.

	Commitments	%	Payments	%
TOTAL allocation	23,297,564.00	100	18,930,055.00	100
TOTAL utilisation	23,549,717.85	99.6	19,238,767.89	99.9

The vast majority of appropriations (98.39% are spent on contracted operational pollution response services provided by EMSA in support of Member States. Actions in the fields of cooperation and coordination and information, in spite of the broad range of activities, are mostly provided through EMSA staff and have a significantly lower impact on external expenditures.

	Commitments	%	Payments	%
Operational assistance	23,170,027.53	98.39	18,827,608.02	97.86
Cooperation and Coordination	132,638.91	0.56	119,567.62	0.62
Information	133,060.31	0.57	188,782.24	0.98
Related missions of EMSA staff	113,991.10	0.48	102,810.01	0.53

of the main aim, all other suspected polluters are also to be identified and reported. These surveillance flights are entitled 'Tour d'Horizon Flights'.

⁴ In addition to budget allocated in 2013, € 317,188.96 were assigned as C4 funds in CA and PA and € 15,424.25 were assigned as C5 funds in CA

2. Introduction

The European Maritime Safety Agency (EMSA) was established⁵ to address a broad range of maritime issues with the overall purpose of ensuring a high, uniform and effective level of maritime safety, maritime security, and prevention of pollution by ships within the European Union. Following the sinking of the oil tanker Prestige, the Agency was given additional tasks in the field of marine pollution preparedness and response in 2004. The initial framework for such activities was described in the Action Plan for Oil Pollution Preparedness and Response⁶ and the Action Plan for Hazardous and Noxious Substances Pollution Preparedness and Response⁷. The activities identified in the Action Plan are updated annually and approved by EMSA's Administrative Board as part of the annual Work Programme. With the adoption of Directive 2005/35/EC as amended on ship-sourced pollution⁸, the task of monitoring spills was elaborated and incorporated into the Action Plan. Furthermore, following the Macondo incident and with the entry into force of Regulation (EU) No 100/2013 in March 2013, amending the Founding Regulation (EC) No 1406/2002, EMSA's mandate for operational assistance was enlarged to also include response to marine pollution caused by oil and gas installations. The framework for this new task was described in the Action Plan for Response to Marine Pollution from Oil and Gas Installations⁹. The activities identified and defined in this latest Action Plan will be updated annually and approved by EMSA's Administrative Board as part of the annual Work Programme. The Agency's activities build upon existing cooperation frameworks and the mandate of Regional Agreements.

On the basis of a Commission proposal, the European Parliament and the Council adopted Regulation 2038/2006/EC, which reserves a financial envelope for the implementation of these tasks for the duration of the current 2007-2013 Financial Perspectives¹⁰. As part of the provisions of this Multi-annual Funding framework, the Agency is obliged to present annually the financial execution of its plan and the status of all funded actions. This is the seventh annual report and covers the year 2013. EMSA's activities under the umbrella of the Multi-annual Funding Regulation are presented, and described in more detail in these three categories:

- Operational Assistance;
- · Cooperation and Coordination; and
- Information.

⁵ See Founding Regulation 1406/2002/EC, Article 1 (Objectives).

⁶ EMSA *Action Plan for Oil Pollution Preparedness and Response* as adopted by the Agency's Administrative Board in October 2004. It can be downloaded from the EMSA website: www.emsa.europa.eu

⁷ EMSA *Action Plan for HNS Pollution Preparedness and Response* as adopted by the Agency's Administrative Board in Jun 2007. It can be downloaded from the EMSA website: www.emsa.europa.eu

⁸ Directive 2009/123/EC of 21 October 2009 amending Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements (OJ L280, 27/10/09)

⁹ EMSA *Action Plan for Response to Marine Pollution from Oil and Gas Installations* as adopted by the Agency's Administrative Board in November 2013. It can be downloaded from the EMSA website: www.emsa.europa.eu

 $^{^{}m 10}$ A financial perspective is a seven-year spending framework of the European Union.

In the event of an oil or chemical spill from any type of source, various socio-economic and environmental resources will be put at risk of contamination. The individual importance of such resources and the associated prioritisation for their defence during an incident is clearly within the competence of the affected Member State and may be detailed in their national contingency plan.

3. Operational Assistance

EMSA provides three main operational assistance services to coastal States with regard to marine pollution preparedness and response:

- The Network of Stand-by Oil Spill Response Vessels distributed along the European coastline and tasked to recover oil from the sea surface;
- CleanSeaNet: the satellite based oil spill and vessel monitoring and detection service;
 and
- Pollution response expertise to provide operational and technical assistance for oil and HNS incidents.

3.1 Network of Stand-by Oil Spill Response Vessels

The Network of Stand-by Oil Spill Response Vessels, which provides an at-sea oil recovery service, has been built up and maintained through annual procurement procedures starting in 2005. Accordingly, 2013 saw two main activities in relation to the Network namely:

- Bringing into operation the four vessels contracted at the end of 2012 and beginning of 2013 to establish new capacity for the Bay of Biscay and replacement of existing capacity in the Southern Atlantic Coast, Central Mediterranean Sea and West Mediterranean Sea;
- Securing replacement capacity for expiring contracts in the Atlantic North and Western Mediterranean and Aegean Sea and establishing new capacity for the Northern North Sea and Adriatic areas through a public procurement procedure.

Associated activities included:

- Maintaining the service level for operational contracts primarily through:
 - Monitoring and evaluating vessel/equipment/crew performance during quarterly drills;
 - Participation of the contracted vessels in operational at-sea exercises organised in cooperation with EU member states and/or Regional Agreements;
- Identifying and implementing appropriate technical improvements to the Network, and developing projects to upgrade the management of the service as a whole.

It is worth reviewing the key considerations behind this particular service to coastal States. Mindful of the principle of 'subsidiarity' and the roles and responsibilities of Member States, this operational service should be a 'logical part' of the marine pollution response mechanisms of coastal States requesting support, i.e. it should 'top-up' the national response capacity of the affected Member State. It is clear that Member States have the prime responsibility regarding response to pollution incidents in their waters. Consequently, the State requesting assistance will have the EMSA resources at its disposal under its operational control. Importantly, the Network of pollution response vessels is provided in a cost-efficient manner and will be

channelled to requesting states through the Emergency Response Coordination Centre (ERCC) of the European Commission in Brussels.¹¹

In the field of marine pollution response, the 'tiered response' approach founded on cooperation and mutual support reflects the spirit of the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 1990), as ratified by the majority of coastal Member States. Accordingly, EMSA pollution response vessels can be seen as a 'European tier' to provide assistance to coastal States on the basis that these Agency resources are:

- A 'reserve for disasters' to assist Member States responding to an incident beyond national capabilities;
- Under the operational command of the affected Member State;
- Provided in a cost efficient manner;
- Utilise 'state of the art' large scale at-sea oil recovery technology.

Using the experience acquired from previous major oil spills, the most appropriate approach at the European level is to remove the spilt pollutant from the marine environment using mechanical at-sea oil recovery techniques. The main concept of the service, provided through the Agency, is to ensure the availability of commercial vessels (for example bunker and product tankers) to carry out at-sea oil recovery services following a request for assistance from a coastal State.

Such vessels are 'pre-fitted' and certified for oil recovery operations by an appropriate Classification Society (Recognised Organisations in accordance with Directive 94/57/EC¹² as amended). Following a spill, and the associated request for assistance from an affected Member State, a vessel ceases its normal commercial activities and is transformed rapidly into a fully operational spill response vessel.

3.1.1 Network of Stand-by Oil Spill Response Vessels

At the end of 2013 EMSA maintained contracts for 18 fully equipped Stand-by Oil Spill Response Vessels available, upon request, to assist coastal States in oil spill recovery operations.

Two fully equipped vessels for the Atlantic Coast, one for the Western Mediterranean and a vessel for the Aegean Sea operating for EMSA under contracts, will expire at the beginning of 2014. The vessels for the Atlantic Coast and Aegean Sea have been re-contracted.

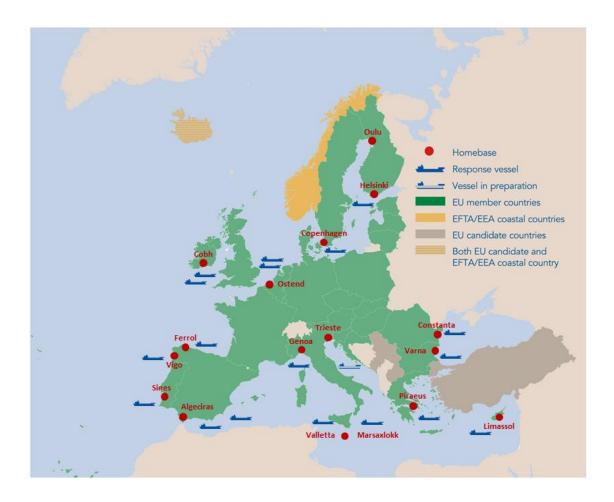
Two additional contracted vessels are currently in the Preparatory Phase and are expected to be operational also by mid-2014. This will ensure, at the end of 2014, a total number of fully equipped vessels of 18. The average storage capacity for recovered oil of the EMSA contracted vessels is $3,650 \, \text{m}^3$.

9

¹¹ The Emergency Response Coordination Centre (ERCC) is the heart of the Community Mechanism for Civil Protection. It is operated by DG Humanitarian Aid & Civil Protection (DG ECHO) of the European Commission and accessible 24 hours a day. It plays key coordination role during emergencies.

 $^{^{12}}$ Council Directive 94/57/EC as amended of 22 November 1994 on common rules and standards for ship inspection and survey organizations and for the relevant activities of maritime administrations, OJ L 319, 12.12.1994, p. 20.

The current Network provides at-sea oil recovery services from vessels based in all the regional seas of Europe. It should be noted that all vessels are at the disposal of all Member States regardless of their actual area of operation. The map below shows the distribution of vessels and equipment stockpiles around Europe. More technical and operational specifications of all the contracted services are available on the Agency website www.emsa.europa.eu.



The EMSA Network of Stand-by Oil Spill Response Vessels and Member States vessel at the end of 2013

Within the framework of the Agency's annual Work Programme, 2013 saw a further procurement procedure to maintain the service network. A 'Negotiated Procedure following publication of a Contract Notice in the Official Journal of the European Union (OJEU)' was finalised covering the following geographical areas:

- Northern North Sea;
- Atlantic North;
- Western Mediterranean Sea;
- Adriatic Sea;
- Aegean Sea; and
- English Channel and Southern North Sea.

As in previous years, the Negotiated Procedure had two different phases and is effectively a yearlong project in itself. Following the procurement procedure, contracts for response capacity were awarded for all geographical areas except for the English Channel and Southern North Sea lot, where no suitable offer was found.

In parallel, one new vessel and two re-contracted vessels contracted at the end of 2012 successfully completed the Preparatory Phase and became fully operational in 2013:

- The tanker *Monte Arucas,* based in Ferrol, Spain, providing new capacity in the Bay of Biscay;
- The tanker *Bahia Tres*, based in Sines, Portugal, providing replacement capacity in the Southern Atlantic coast;
- The tanker *Santa Maria*, based in Malta, providing replacement capacity in the Central Mediterranean Sea.

In 2012, the contract established with the Maltese company Tankship Management Ltd for the provision of Stand-by Oil Spill Response Services by the vessel *Salina Bay* for the Mediterranean West area was terminated. A new procurement procedure for the replacement of this capacity was launched at the end of 2012. The tanker *Brezzamare* (based in Genoa, Italy), which was contracted in mid-2013 to replace the response capacity in the Western Mediterranean Sea completed the Preparatory Phase at the end of 2013.

Successful completion of this phase means that the vessels were modified, equipped and the crew trained for their pollution response task. Following certification of the vessel for oil recovery operations by an appropriate Classification Society (Recognised Organisation in accordance with Directive 94/57/EC as amended), the vessels were accepted into the Stand-by Phase of the contract and are now available to respond to a request from a coastal State for assistance.

The Baltic Sea

The ice breaker *Kontio* with an on board storage capacity of 2,033 m³ and operating in the Gulf of Bothnia, had its contract renewed for three years period as from 14 April 2013.

The Baltic Sea is also served by the bunker vessel *OW Copenhagen* through the Contractor OW Tankers which has a total net storage capacity of 4,450 m³.

The total contracted on board storage capacity for oil recovery during response operations for the Baltic Sea is now almost 6,500 m³.

The North Sea

The North Sea is one of the sea areas with the highest tanker traffic density. Two hopper dredgers are serving in this area, trading sand along the Belgian and Dutch coastlines, the *Interballast III* (storage capacity 1,886 m³) and *DC Vlaanderen 3000* (storage capacity 2,744 m³). These two ships provide a combined recovered oil storage capacity of more than 4,500 m³.

The current contract signed in 2007 with the British company James Fisher Everard Limited will expire in April 2014 without possibility of further renewal. This contract consists of a pool of three vessels and two equipment arrangements located in Cobh, Ireland and will be divided in two parts.

One part of the equipment will be relocated to Northern North Sea. Following a procurement procedure at the end of 2013, a new 4-year contract was awarded to James Fisher Everard Limited. This new arrangement will be based in Sunderland, UK and consists of a pool of two sister tankers (*Mersey Fisher* and *Thames Fisher*), trading around the East coast of UK, one of which can be mobilised at any time.

The *Thames Fisher* is currently undergoing the Preparatory Phase. The other vessel – *Mersey Fisher* – will have its equipment arrangement overhauled after the expiration of the existing contract with EMSA. The recovered storage capacity under this contract is 5,028 m³. The Standby Phase is expected to begin in the second quarter of 2014.

The other equipment arrangement will remain in the Atlantic area as referred in the Atlantic Coast section below.

By the end of 2014 the total contracted on board storage capacity for oil recovery during response operations for the North Sea will be more than $9,500 \text{ m}^3$.

Atlantic Coast

The first term of the contract with the bunker tanker *Sara* expired in April 2013 and was not renewed due to the relocation of the vessel on the ship owner's initiative.

Following a successful procurement procedure for the Bay of Biscay area, at the end of 2012 a new 4 - year contract was awarded for the provision of at-sea oil recovery services to the Spanish company Ibaizabal. The tanker *Monte Arucas* based in Ferrol, Spain, has a storage capacity of 2,952 m³ and entered into the Stand-by Phase in July 2013.

The existing arrangement (pool of 3 vessels) based in Cobh, Ireland, through the Contractor James Fisher Everard, will expire in 2014. One set of equipment will be relocated to the Northern North Sea as referred above and the other set will be under a new Contract consisting of a pool of two sister tankers (*Forth Fisher* and *Galway Fisher*), trading around the West coast of Ireland, one of which can be mobilised at the time. The equipment will remain stored in Cobh (Ireland).

Following the expiration of the existing contract the vessels will not need any additional works as both vessels are already pre-fitted but the associated equipment will undergo overhauling and servicing works. The recovered storage capacity under the new contract will be 4,754 m³. These vessels will re-enter the operational service in the second quarter of 2014.

The Bay of Biscay area is also served by the supply ship *Ria de Vigo*, which has an on board storage capacity of 1,522 m³ and operates out of Vigo, Spain.

The bunker vessel *Bahia Tres,* based in Sines, Portugal, which has 7,413 m³ of on board recovered oil storage capacity, was re-contracted following a public procurement procedure in 2012. Following the Preparatory Phase, the vessel entered into the Stand-by Phase in July 2013.

By the end of 2014 the total oil storage capacity under contract in the Atlantic coast will therefore be more than $16,500 \text{ m}^3$.

Mediterranean Sea

The contract with Mureloil for the tanker *Bahia Uno* in the West Mediterranean will expire in December 2013 without possibility of further renewal. This response capacity will be relocated to the Adriatic Sea and the oil spill response equipment will be transferred to a new contractor.

In this regard a new 4-year contract was awarded in 2013 to the Italian consortium RTI Castalia/Giuliana Bunkeraggi for the provision of at-sea oil recovery services in the Adriatic Sea. The tanker *Marisa N*, with a storage capacity of 1,562 m³ is currently under the Preparatory Phase. The Stand-by Phase is expected to begin in the last quarter of 2014.

Following a successful procurement procedure for the Western Mediterranean area, in mid-2013 a new 4-year contract was awarded for the provision of at-sea oil recovery services to the Italian company Ciane SpA, for the replacement of existing response capacity in the same area due to termination of the contract. The tanker *Brezzamare* based in Genova, Italy, has a storage capacity of 3,288 m³ and entered into the Stand-by Phase of the contract in November 2013.

The tanker *Santa Maria*, contracted from the Maltese company SL Ship Management (Falzon group), based in Malta, with a storage capacity of 2,421 m³ was re-contracted at the end of 2012. Following the Preparatory Phase the vessel entered into the Stand-by Phase in June 2013.

At the end of 2013 a new 4-year contract was awarded to the Greek company Environmental Protection Engineering S.A., for the replacement of existing response capacity in the Aegean Sea. The tanker *Aktea OSRV* ensures the availability of a total net storage capacity of 3,000 m³. The Stand-by Phase is expected to begin in the first quarter of 2014.

With regard to this regional sea basin, the following arrangements are also in place:

- Monte Anaga, based in Algeciras, Spain;
- Balluta Bay, based in Malta;
- Alexandria, based in Limassol, Cyprus.

By the end of 2014 the total net storage capacity under contract for the Mediterranean Sea will be in excess of $24,000 \text{ m}^3$.

The Black Sea:

The offshore supply vessel Enterprise is serving this area. This vessel is based in Varna, Bulgaria and has a storage capacity of 1,374 m 3 .

The vessel *GSP Orion*, operating out of Constanta, Romania, is also under contract with the Agency for the Black Sea area. The contracted storage capacity is 1,334 m³.

The total contracted on board storage capacity for oil recovery for the Black Sea is more than $2,700 \text{ m}^3$.

Financial overview: vessel contracts		
	Commitments	Payments
Contracts 2006 (Atlantic Coast)	0.00	212,000.00
Contracts 2009 (Mediterranean East, Atlantic Channel, Northern Baltic Sea)	0.00	401,769.89
Contract 2010 (Aegean Sea, Atlantic Coast, Mediterranean West, Mediterranean East)	0.00	3,164,245.45
Contracts 2011 (Black Sea, Bay of Biscay, Western Mediterranean Sea, Southern Baltic Sea, Central Mediterranean Sea)	0.00	3,447,332.83
Contracts 2012 (Bay of Biscay, Atlantic, North Sea, Central Mediterranean Sea)		1,553,841.07
Contracts 2013 (Western Mediterranean Sea, Adriatic Sea, Aegean Sea, Atlantic North, Northern North Sea, Renewal North Baltic)	17,866,459.20	3,441,882.88
Associated activities (e.g. Tender Clarification Meetings)	8,079.56	6,062.92
Other (e.g. Flags, Tablets, Storage of Equipment, Labelling Services and Consultancy Services)	80,667.00	12,292.00
Sub-total 3.1.1	17,955,205.76	12,239,427.04

3.1.2 Vessel Network User Group

The 3rd Vessel User Group was held on 24 October 2013 at EMSA's premises. The meeting was attended by delegations from 22 Member States, two EU Candidate Countries and two EFTA/EEA Coastal Countries. DG ECHO and DG MOVE were also represented.

During the meeting the main following topics were discussed:

- Classification of Oil Recovery Vessels: overview of rules from the European Classification Societies;
- Equipment technical parameters for oil recovery booms;
- Policies, strategies and experiences with regard to management and replacement of equipment;
- Feedback from the at-sea and notification exercises conducted in 2013.

During the second half of the meeting a Table Top exercise took place. This exercise was organised for the first time and consisted of interactive discussions with a simulated scenario but without actual mobilization of personnel or equipment.

The objective was to test and train the mobilisation of EMSA's Stand-by Oil Spill Response Vessels (from the assistance request to the signature of the Incident Response Contract) at the request of one individual EU Member State within the context of the response to a large pollution incident.

During the exercise the participants had the opportunity to monitor and discuss the functionalities of SafeSeaNet and CECIS platforms.

The 4th Vessel User Group meeting will take place on 23 October 2014.



Participants of the 3rd Vessel User Group meeting at EMSA

3.1.3 Maintaining the Service: Drills and Exercises

3.1.3.1 Drills

In order to maintain the appropriate level of readiness during the Stand-by Phase of the contracts, the companies and vessels concerned carry out different types of activities. The primary activity is the vessel/crew drills, which take place on a quarterly basis. Each drill verifies that the capability of the vessel and specialised equipment, and the skill of the crew, is at an appropriate level.

These drills are primarily an internal event between the Agency and contractors, however Member State representatives and journalists have taken part in drills and the Agency encourages such participation.

In 2013, a total of 63 Quarterly Drills were performed by the vessels under contract to the Agency. Additionally, six Acceptance Drills related to entrance of new contracted vessels in service and/or improvement projects were conducted. The Acceptance Drills are of particular importance as they are the major milestone for new vessels to enter into the Stand-by Phase of a contract.

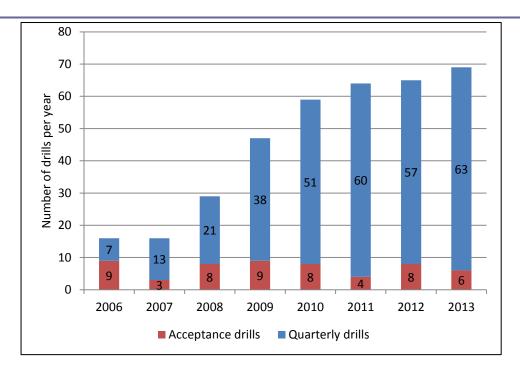
Acceptance Drills conducted by the Agency in 2013

Acceptance Drill	Remarks
Newly contracted vessels: Monte Arucas	New capacity: Entry into Stand-by Phase of the Contract for the Bay of Biscay (vessel stationed in Ferrol, Spain)
Brezzamare	Replacement capacity: Entry into Stand-by Phase of the Contract for the Western Mediterranean Sea (vessel stationed in Genoa, Italy)
Re-contracted vessels: Bahia Tres	Entry into Stand-by Phase of the Contract for the Southern Atlantic coast (vessel stationed in Sines, Portugal
Santa Maria	Entry into Stand-by Phase of the Contract for the Central Mediterranean Sea (vessel stationed in Marsaxlock, Malta)

Acceptance Drills are also used in order for any technical improvements to the Network to be recognised as operational. In 2013, two technical improvement projects were subject to acceptance tests:

- Improvement of the pollution response capacity of the *Monte Anaga* for the Westerm Mediterranean Sea. A high capacity skimmer was added to the equipment arrangement;
- Improvement of the pollution response capacity of the *Alexandria* for the Eastern Mediterranean Sea. A high capacity skimmer was added to the equipment arrangement.

The summary of all drills performed by EMSA contracted vessels during the period 2006-2013 is shown in the chart below.



Number of drills per year

3.1.3.2 Exercises

In addition to the abovementioned drills, a range of exercises were conducted. These types of event are, in addition to being a useful method of maintaining pollution response skills, an important tool for identifying potential areas that could be improved. At-sea operational exercises in particular greatly assist the integration of EMSA's resources within the response mechanisms of Member States, improving the necessary coordination and cooperation of the EMSA vessels with the coastal State response units. In the course of 2013, 10 EMSA Stand-by Oil Spill Response Vessels participated in at-sea operational exercises, organised in cooperation with EU member states and/or Regional Agreements, in the Baltic Sea, North Sea, Bay of Biscay, Atlantic Coast, Mediterranean Sea, Aegean Sea and Black Sea.

As of 1 March 2013, with the entry into force Regulation (EU) No 100/2013 EMSA has a new mandate to respond to marine pollution caused by oil and gas installations. With this regard for the first time, EMSA vessels participated in the operational exercise dedicated to response to pollution occurring during offshore operations in the western Black Sea. Exercise RIGEX 2013 was arranged and hosted by the Romanian Naval Authority.

At-sea operational exercises in chronological order in 2013:

EXERCISE NAME	DATE, LOCATION	PARTICIPATING PARTIES	EMSA VESSELS
BONNEX 2013	16/05/2013 Dunkerque, France	France, Germany, Belgium, The Netherlands, EMSA	Interballast III
BALEX DELTA 2013	13/06/2013 Warnemünde, Germany	Germany, Denmark, Latvia, Lithuania, Estonia Finland, Poland, Sweden, EMSA	OW Copenhagen
SASEMAR-EMSA ATLANTIC 2013	26/07/2013 Vigo, Spain	Spain, EMSA	Ria de Vigo
MALTEX 2013	18/09/2013 Valleta, Malta	Malta, EMSA	Balluta Bay
GUARDEX 2013	25/09/2013 Cascais, Portugal	Portugal, EMSA	Bahia Tres
SASEMAR-EMSA TARIFA 2013	26/09/2013 Algeciras, Spain	Spain, EMSA	Bahia Uno
RAMOGEPOL 2013	10/10/2013 Corsica, France	France, Italy, Monaco, Spain, EMSA	Monte Anaga
RIGEX 2013	17/10/2013 Costanta, Romania	Romania, EMSA	Enterprise, GSP Orion
POLMAR 2013 BAY OF BISCAY	26/11/2013 La Rochelle, France	France, EMSA	Monte Arucas

Operational exercises usually involve the release of simulated oil (often popcorn), the deployment of pollution response vessels from the participants, and the establishment of a unified command structure and lines of communication. In addition, full-scale oil recovery operations at the site of the accident, including actual deployment of oil containment booms and skimming equipment, may be undertaken. In 2013 the total number of Exercise Days with the participation of EMSA contracted vessels was 10.

In connection with the operational exercises, 10 Notification Exercises involving 11 different EMSA contracted vessels, aiming to evaluate the agreed emergency and notification procedures between EMSA, Member States, EMSA contractors and the ERCC¹³, were organised by the Agency.

BONNEX 2013

Place and date

Dunkerque, France, 16 May 2013.

¹³ The Emergency Response Coordination Centre (ERCC) is the heart of the Community Mechanism for Civil Protection. It is operated by DG Humanitarian Aid & Civil Protection (DG ECHO) of the European Commission and accessible 24 hours a day. It plays key coordination role during emergencies.

Organiser

The exercise was organised by the French Préfecture maritime de la Manche et de la Mer du Nord.

Background for the exercise

The exercise was performed within the framework of the Bonn Agreement (Contracting Parties are Belgium, Denmark, France, Germany, Ireland, Netherlands, Norway, Sweden, UK and EU).

Participants

France, Germany, Netherlands and Belgium, EMSA.

Objective of the exercise

The overall aim of this exercise was to train the participants to manage a major event at sea in close cooperation with European Union and Bonn Agreement partners.

The objectives of the exercise were to test the alarm procedures, the response time and capability of the Bonn Agreement Contracting Parties and EMSA participating units to deal with oil pollution at sea.

The objectives for this exercise related to the participation of the EMSA contracted vessel *Interballast III* were:

- Testing the established mobilisation procedures between ERCC, France, EMSA and DC Industrial to request the assistance by EMSA contracted vessels;
- Actual "oil recovery" exercise at sea, deploying response equipment.

Scenario of the exercise

On 15 May, two vessels collide in the vicinity of the Dover Straights Traffic Separation Scheme (TSS), North East of Dunkirk, France: *M/T Pop-Corn* (on its way to Northern Europe with a cargo of Medium Fuel Oil [MFO]) and a general cargo vessel *Incognito* about to cross the TSS to rally Dover from Dunkirk.

M/V Incognito hits M/T Pop-Corn on her starboard. The integrity of her hull and fuel oil transport tanks are compromised. Following the collision, the tanker is still adrift. After investigation, it appears that M/T Pop-Corn is taking in water and that her cargo could potentially spill.

The crew investigates the extent of the damages in cooperation with the commercial operator in order to assess the extent of the damages and to find any potential hull breaches leading to spills. At first, no spill is detected but *M/T Pop-Corn* appears to be taking in a lot of water. This situation will lead to the following issues being addressed: assistance to a vessel in distress and counter pollution at sea.

Participating vessels

More than 15 vessels took part in the exercise: 12 French ships, three vessels from Germany, Belgium and the Netherlands as well as some fishing boats and tugboats from Dunkerque harbour. It should be pointed out that a significant number of aircraft were involved for the surveillance of the area: two fixed wing airplanes and a helicopter from France, two airplanes from Belgium, one Dutch and one from Oil Spill Response Limited.

FRANCE: Alcyon, Flamant, Elan, Abeille Languedoc, Le Petit Pêcheur, Sansesi,

and a number of tug-boats and fishing vessels based in the Harbour of Dunkerque

GERMANY: Eversand

NETHERLANDS: Frans Naererbout

BELGIUM: Zeetijger EMSA: Interballast III

Task for the EMSA vessel

There were three main tasks for the EMSA vessel:

- 1. Completion of the Notification Exercise including signing of Incident Response Contract (IRC) between France and the EMSA contractor DC Industrial;
- 2. At-sea oil recovery operations: *Interballast III* deployed her sweeping arms undertaking oil recovery operations;
- 3. Simulation of Ship-to-Ship Transfer by the *Interballast III* and the German pollution response vessel *Eversand*.

Performance of the EMSA vessel

Interballast III fulfilled the role assigned by the Member State organising this exercise (France) and also met the expectations of the Agency. The EMSA contracted vessel performed well and crew showed high levels of motivation.

The instructions given by the State On-Scene Coordinator (SOSC) to the Master of the *Interballast III* were very limited but clear; SOSC gave the vessel the freedom to operate in the defined area of responsibility as it wished.

General conclusion from the exercise

The BONNEX 2013 Exercise was well organised. The significant number of aircraft involved in the air surveillance of the area should be noted.

The main advantage of the exercise is for the Agency to strengthen the integration of EMSA vessels at the operational level with Member State ships and the command structure.

The communication between SOSC and the participating units ran smoothly. The communications between SOSC and the participating French units were in French and in English to/from *Interballast III*.

Due to the large exercise area, the units had some difficulties in following the work of other teams and the progress of the whole operation.

The appearance of the popcorns, used for simulating oil spill, was visible from a long distance compared to some other oil simulating materials e.g. rise husks or turf.



Vessels exercising during the BONNEX 2013 Exercise

BALEX DELTA 2013

Place and date

Warnemünde, Germany, 13 June 2013.

Organiser

The exercise was organised by the German Central Command for Maritime Emergencies (Havariekommando) with the financial support of the EU Commission (DG ECHO);

• Background for the exercise

The exercise was carried out within the framework of the Helsinki Convention (Contracting parties are Denmark, Estonia, EU, Finland, Germany, Latvia, Lithuania, Poland, Sweden and Russia).

Participants

Units from Denmark, Latvia, Lithuania, Finland, Germany, Poland, Sweden and EMSA took part in the exercise. Russia did not attend.

Objective of the exercise

The aim and objective of the exercise was to test the alarm procedures, the response time and capability of the HELCOM Contracting Parties and participating units to deal with oil pollution at sea.

Scenario of the exercise

"On the 12 June 2013 at 09:00 hrs local time a collision between the outbound vessel *MV Spiekeroog* and the inbound trawler *MV Seewolf* has occurred in vicinity of the port of Warnemünde at position: 54° 15,0`N 012° 00,0`E. *MV Spiekeroog* reports to VTS Warnemünde Traffic a leakage of its starboard storage tank No. 3 with a capacity of 2,500 m³ Intermediate Fuel Oil (IFO) 180, and continuous outflow with an estimated rate of 10 m³ per hour. In addition, *MV Spiekeroog* reports that it has dropped anchor at the mentioned position. Crew on board *MV Spiekeroog* are unharmed, no injuries reported. *MV Spiekeroog* intends to seal the leak itself. *MV Seewolf* reports major damage at its bow, no injured persons and may continue her voyage to the port of Rostock."

Participating vessels

FINLAND: Louhi

GERMANY: Arkona, Bottsand, Strelasund, Vilm, Baltic, Fairplay 25, Groemitz, Sturmmoewe,

Fairplay II, Fairplay V

POLAND: Kapitan Poinc, Czeslaw I

SWEDEN: KBV 001 Poseidon

LATVIA: A-90 VARONIS, Valpas

LITHUANIA: Sakiai

ESTONIA: PVL 202-Kati

DENMARK: MHV 806, MHV 810, MHV 901, Gunnar Thorson

EMSA: OW Copenhagen

Task for the EMSA vessel

OW Copenhagen was tasked to deploy the oil boom in J formation with assistance from the vessel *Sturmmöwe* and to recover oil with the skimmer.

Performance of the EMSA vessel

During the deployment the boom was damaged. In the fabric of the boom was a cut of approximately 30 cm. The compressor could compensate the air loss and kept the boom afloat. Nevertheless this damage led to a reduced freeboard of the boom. The *OW Copenhagen* was the first vessel to approach the popcorn slick and was able to collect all of the popcorn at once. Due to current and wind conditions the slick does not spread at all. The reduced freeboard of the boom led to the loss of the popcorn at the apex of the boom.

OW Copenhagen fulfilled the role assigned by the Member State organising this exercise (Germany) and also met the expectations of the Agency. The EMSA contracted vessel performed well and crew showed high levels of motivation.

General conclusion from the exercise

The BALEX DELTA 2013 exercise was well organised. The scenario was realistic, taking into account the vessel traffic in the Gulf of Warnemünde, in particular to the oil terminal Rostock.

The exercise was a positive experience for all the participants. The coordination between the different participating countries and response units was positively tested.

The communication (mainly in English) between SOSC/NSOC and the participating units ran smoothly.

Due to the rather large exercise area, strike teams had some difficulties in following the work of other teams and the progress of the whole operation.

The appearance of popcorn, used for simulating oil spill, was clearly visible from a long distance.



Vessels exercising pollution response during BALEX DELTA 2013 Exercise

SASEMAR-EMSA Atlantic 2013

Place and date

Vigo, Spain, 27 July 2013.

Organiser

Spanish Maritime Safety Agency (SASEMAR).

Background for the exercise

This was a joint SASEMAR - EMSA exercise. A Notification Exercise took place on 25 July 2013.

Participants

Spain, EMSA.

Objective of the exercise

General Objectives:

- Evaluation of the performance of the vessels, crews and response coordinators;
- Reinforcing and encourage closer cooperation between SASEMAR-EMSA in Spill Response;
- Verifying Oil Spill Response equipment functionality and preparedness.

Specific Objectives:

- Training of the crew and personal on board;
- Reinforcing coordination between the assisting boat and the EMSA vessel, in the boom deployment and the Maritime Rescue Coordination Centre (MRCC), OSC and operational activities;
- Reinforcing and verifying safety standards are maintained during the exercises;
- Launching of special buoys and markers to be used as tools for prediction and monitoring of the pollution trajectory. Estimation of the simulated spilled oil drift;
- Launching of the Notification exercise and testing of CECIS for reporting, requesting and providing assistance in cooperation between EMSA and Spain.

Scenario of the exercise

"The Vehicle Carrier of 163 m length is drifting dangerously to the Southeast Island of Cies. The Captain responds to MRCC-Vigo they have Engine problems. *María Pita* is mobilised to the area. Finally, the engine starts to work and no towing is necessary.

Simulation: (26 July 2013 08:00 L.T): The engine can't be restored and finally the vessel runs aground against Islas Cies (approximately Playa de Roda). A HFO leakage occurs, but the vessel does not report the incident. The Chief Engineer attempts to minimise the leakage. Not long after, a spill is detected at 42° 13.37' N 8° 50.1' W by a sailing boat. It is estimated there is a spill of approximately 500 tonnes of HFO."

Participating vessels

The following Spanish vessels were involved in the exercise: *B/S María Pita* and *E/S Salvamar Mirach* from the Spanish Maritime Safety Agency (Sasemar) and *Serra de Barbanza* from Xunta da Galicia. EMSA participated with the *Ria de Vigo*, contracted from Remolcanosa, based in Vigo, Spain.

The oil recovery actions had the support of aerial surveillance. One helicopter from Xunta da Galicia (*Pesca I*) was flying over the exercise area, simulating the detection and monitoring of the oil spill.

Task for the EMSA vessel

Ria de Vigo deployed her oil boom and the Transrec Skimmer System to simulate oil recovery operations.

Performance of the EMSA vessel

Ria de Vigo fulfilled the role assigned by the Member State organising this exercise (Spain) and also met the expectations of the Agency. The EMSA contracted vessel performed well and the crew showed high levels of motivation.

General conclusion from the exercise

The SASEMAR-EMSA Atlantic 2013 Exercise was well organised and went according to expectations.



Ria de Vigo deploying the Transrec High Capacity Skimmer System during the SASEMAR-EMSA Atlantic 2013 Exercise

MALTEX 2013

Place and date

Valetta, Malta 18 September 2013.

Organiser

Ministry of Transport Malta, Ports and Yachting Directorate.

Background for the exercise

National exercise in conjunction with a notification exercise the day before.

Participants

Malta, EMSA.

Objective of the exercise

The main purpose of this exercise was to train Member State's command and communications system and pollution response operations, practical use of recovery equipment and cooperation of participating units.

• Scenario of the exercise

The OSC gave the scenario via radio. An unquantified, but large, amount of HFO 380 was spilled at the initial exercise position.

Participating vessels

MALTA: Tug Spinola, Tug Felicia, Pilot boat Echo, Tug St. Roccu, Patrol Boat P32

EMSA: Balluta Bay

Task for the EMSA vessel

The tugs *Spinola* and *Felicia* performed an open U-formation with 100 m boom. *Balluta Bay* deployed the sweeping arms and followed the formation.

Performance of the EMSA vessel

The performance of EMSA vessel was good and according to expectations.

General conclusion from the exercise

Due to the unfortunate weather conditions (swell 2.5 m, wind 26 knots) it was not possible to perform the exercise at sea. The exercise area was moved into the shelter of Valletta harbour. Due to limited space and ship traffic it was only possible to deploy 100 m of boom. Navigation in the narrow space of the harbour was challenging for the boom formation and *Balluta Bay*. It was not possible to perform a 180° turn. Nevertheless the exercise was a positive experience for all participants. Coordination between the different parties was tested positively.



Exercise Maltex 2013. Tugs Spinola and Felicia towing the boom in "U" formation

GUARDEX 2013

Place and date

Cascais, Portugal, 25 September 2013.

Organiser

Marinha Portuguesa, Portugal.

Background for the exercise

National Pollution Response Plan. During the exercise, the organiser launched the relevant procedures and mechanisms for international assistance within the European Union Civil Protection Mechanism. Accordingly, the Portuguese authorities requested assistance by EMSA contracted vessels through the ERRC (using CECIS).

Participants

Portugal, EMSA and France (invited).

Objective of the exercise

The pollution response exercise was integrated within a multidisciplinary scenario, including rescue operations, dealing with refugees (some with health issues) and oil pollution (at-sea and on-shore). The exercise scenario was quite ambitious. Many resources needed to be deployed and coordination between a large number of institutions organised.

Scenario of the exercise

The tanker *CASCGUARD* collides with a rocky bottom and starts spilling IFO 180 near Cascais, Portugal. The amount of oil spilled is estimated to be 750 m³. The total amount of oil on board the vessel in distress is approximately 1,500 m³.

Participating vessels

FRANCE: BSAD Argonaute

PORTUGAL: NRP Viana do Castelo, NRP Jacinto Candido, NRP D. Carlos I, NRP Auriga, NRP

Bacamarte, Maritime Patrol Aircraft, P-3C SAR

EMSA: Bahia Tres.

Task for the EMSA vessel

Pollution Response using the Sweeping Arm System.

Performance of the EMSA vessel

The *Bahia Tres* performance during the exercise was up to the expected standards, particularly taking into account the adverse weather conditions.

General conclusion from the exercise

The GUARDEX 2013 exercise was a fruitful experience for all the participants and a good opportunity to strengthen cooperation. Overall, the level of coordination was good.



Exercise Guardex 2013. Bacamarte following the Bahia Tres

SASEMAR-EMSA Tarifa 2013

Place and date

Tarifa, Spain, 26 September 2013.

Organiser

Spanish Maritime Safety Agency (SASEMAR).

Background for the exercise

This was a joint SASEMAR – EMSA exercise. A Notification Exercise took place on 24 September 2013.

Participants

Spain, EMSA.

Objective of the exercise

The overall aim of this exercise was to test the performance of the participating units including crews, to reinforce cooperation between SASEMAR and EMSA during oil recovery operations and to verify the functionality and preparedness of the pollution response equipment.

• Scenario of the exercise

"The vessel X of 144 m length was drifting dangerously to the South Tarifa Island. The Captain informed MRCC – Tarifa that the vessel had engine problems. The engine could not be restored and finally the vessel grounded. A HFO leakage started to occur. There was a final slick of approximately 500 tonnes of HFO."

Participating vessels

The two SASEMAR's vessels were involved in the exercise: the emergency response and anti-pollution tug boat *Luz de Mar* (50 m) and the search and rescue vessel *Alkaid* (21 m). EMSA participated with the *Bahia Uno*, contracted from Mureloil, based in Algeciras, Spain.

Task for the EMSA vessel

Bahia Uno deployed the oil boom with skimmer and both sweeping arms to simulate "oil recovery" operations.

Performance of the EMSA vessel

Bahia Uno fulfilled the role assigned by the Member State organising this exercise (Spain) and also met the expectations of the Agency. The EMSA contracted vessel performed well and the crew showed high levels of motivation.

• General conclusion from the exercise

The exercise was well organised and met the objectives.



Luz de Mar following the Bahia Uno during the SASEMAR-EMSA Tarifa 2013 Exercise

RAMOGEPOL 2013

Place and date

Ajaccio, France, 10 October 2013.

Organiser

France, Préfecture Maritime de la Méditerranée.

Background for the exercise

This pollution response exercise was hosted and organised by the French authorities, within the framework of the RAMOGE agreement (France, Italy and Monaco). Spain was also invited to participate within the framework of the Lyon Plan (France and Spain).

Participants

France, Italy, Spain and EMSA.

Objective of the exercise

The main goals of the exercise were to:

- Train staff at French and Italian maritime headquarters
- Verify and improve national procedures
- Train the involved air and nautical units
- Improve the coordination between state and non-state organizations
- Promote international cooperation (RAMOGE, REMPEC, EMSA).

Scenario of the exercise

A collision occurs west of the Strait of Bonifacio. One of the ships *FS Clara* is adrift with main engine and steering gear failure. No damages are sustained by the second vessel. Tug operation of *FS Clara* by *Abeille Flandre* tug is stopped due to the leakage of IFO 180 from *FS Clara*.

Participating units

Air assets:

FRANCE: F406 POLMAR Localisation and monitoring of fuel slicks

ITALY: ATR42 Localisation and monitoring of fuel slicks

SPAIN: CASA C-235 Localisation and monitoring of fuel slicks OSRL: Hercules C130 POLMAR Simulation of Dispersants Spraying

Maritime assets:

SPAIN: SV Clara Campoamor

ITALY: SV Castalia, CP 905, Patrol Boat Sirio, Cassiopea, Class 200

FRANCE: SV Jason, DF 12; MT Cap Pinède, RNBB motor boat, Louis Gaby, The Score,

HarbourTug Persevero, Gravone and DF 12 or (DF14)

EMSA: MT Monte Anaga

Task for the EMSA vessel

Monte Anaga deployed the oil boom with skimmer and both sweeping arms to simulate "oil recovery" operations.

Performance of the EMSA vessel

The *Monte Anaga* performance during the exercise was up to the expected standards, particularly taking into account the adverse weather conditions. The equipment was positively tested in a very demanding environment.

General conclusion from the exercise

The sweeping arms sustained minor damages that were unavoidable in these conditions. The contractor took appropriate measures to repair the damage and to prevent/minimise similar damage in the future.

Representatives from France, Italy, Monaco and Spain recognised the importance of EMSA presence in the exercise. The level of understanding of the Agency's tasks showed a clear improvement from previous editions of this exercise (i.e. RAMOGEPOL 2011).



Monte Anaga during RAMOGEPOL 2013 Exercise

RIGEX 2013

Place and date

Central Production Platform, 50 nautical miles (nm) off Constanta, Romania, 17 October 2013.

Organiser

Romanian Naval Authority (RNA) and Grup Servicii Petroliere (GSP).

Background for the exercise

The regional exercise was held in conjunction with a notification exercise conducted the day before (16 October 2013).

Participants

Romania, EMSA.

Objective of the exercise

The main purpose of this exercise was to train the Member State command and communication system and pollution response operations, practical use of recovery equipment, and cooperation of participating units, for the response to an oil spill from an offshore installation.

Scenario of the exercise

The scenario involved spilling of 700-800 tonnes of oil from an offshore production platform located 50 nm away from shore.

Participating vessels

ROMANIA: GSP King, GSP Alcor, SAR Opal;

EMSA: GSP Orion, Enterprise;

Task for the EMSA vessels

The *Enterprise* was tasked to tow 500 m of oil booms together with *GSP King* in an open U-formation. The *GSP Orion* was tasked to recover the oil with the sweeping arms following the boom formation.

Performance of the EMSA vessels

The weather conditions were difficult. The winds of 24-30 knots and the 2.0 - 2.5 m waves made the deployment of oil spill equipment unsafe. The forecast for the following hours showed a deterioration of the weather conditions, therefore, to avoid injuries and/or damage to the equipment, the Romanian Naval Authority (RNA), in agreement with all involved parties, took the decision to stop the exercise.

General conclusion from the exercise

The RIGEX 2013 was a positive experience for all the participating units to improve the coordination and communication during the first offshore platform oil spill exercise attended by EMSA. The exercise was a good opportunity to test the communication (using of VHFs, e-mails and mobile phones) and coordination between RNA, Central Production Platform, MRCC, EMSA vessels and different units involved.



GSP Orion conducting pollution response exercise in the vicinity of the Central Production Platform

POLMAR 17

Place and date

La Rochelle, France, 26 November 2013.

Organiser

France - Préfecture Maritime de l'Atlantique.

Participants

France, EMSA.

Objective of the exercise

The objective of the exercise was to test the national/local emergency response procedures, train personnel and exercise cooperation between response units, including EMSA assets.

Scenario of the exercise

A pollution slick was detected off the coast of the Pertuis of Antioch. The Maritime Prefecture decides to send to the zone the *Alcyon BSAD*, chartered fishing vessels, a harbour tug and shellfish vessels to intervene alongside the *Alcyon*. EMSA services were requested and *Monte Arucas* was mobilised to the area. The pollution response action was under the coordination of

the Centre of Practical Expertise in Pollution Response (CEPPOL), and the On Scene Coordinator (OSC).

Participating vessels

Air assets:

FRANCE:

F406 POLMAR Helicopter DAUPHIN SP

Maritime assets:

FRANCE:

BSAD *Alcyon*Fishing vessels
Harbour tug

EMSA:

MT Monte Arucas

Task for the EMSA vessel

Monte Arucas was tasked by the OSC to locate the oil slick (at given position) and to recover oil using the sweeping arm system.

Performance of the EMSA vessel

Monte Arucas performed well. The vessel found the oil slick using the on board Miros slick detection system. Oil was successfully recovered by means of sweeping arm system.

Monte Arucas fulfilled the role assigned by the exercise command and also met the expectations of the Agency.

General conclusion from the exercise

The POLMAR 17 Exercise was a positive experience for all the participants. The coordination between the different units was positively tested.

The communications between the participating French units were in French and in English to/from *Monte Arucas*.

The exercise strengthened the integration of EMSA vessels at the operational level with the French ships and the command structure.

The rice husks, used to simulate oil, was noted to be more appropriate and suitable than popcorn used for the same purpose. Due to its colour and visibility, the spill simulation was visible on the MIROS (slick detection system on board *Monte Arucas*).



Monte Arucas recovering oil simulant during POLMAR 17 Exercise

Financial overview: exercises

	Commitments	Payments
Exercises 2013	306,663.02	306,663.02
Sub-total 3.1.3	306,663.02	306,663.02

3.1.4 Improvements to the Network Service

3.1.4.1 Acceptance of improvement projects launched in 2013

Two technical improvement projects launched in 2012 were successfully completed in 2013:

- Upgrade of the response capacity of the Alexandria, contracted from Petronav, for the area of the East Mediterranean Sea. Following an Acceptance Test in July 2013, a NorMar 250TI¹⁴ high-capacity skimmer was added to the equipment arrangement;
- Upgrade of the response capacity of the *Monte Anaga*, contracted from Naviera Altube, for the area of the West Mediterranean Sea. Following an Acceptance Test in June 2013, a NorMar 250TI high-capacity skimmer was added to the equipment arrangement.

In order to accomplish these projects, the framework contracts concluded in 2011 with different companies were implemented. Accordingly, specific contracts for the supply of oil pollution response equipment have been signed between EMSA and the equipment suppliers.



New Normar 250 TI skimmer system on board Monte Anaga

3.1.4.2 Technical improvement projects launched in 2013

Following a technical assessment on the operational needs and opportunities to upgrade the response capacity of the Network, three new improvement projects were launched in 2013:

¹⁴ The NorMar 250TI high-capacity skimmer is a self-contained system equipped with two different skimmer heads (weir and brush) in order to ensure optimal operation under different oil viscosity and weather conditions. The main advantages of this skimmer in relation to the "traditional" offshore skimmers are increased recovery capacity, integrated telescoping crane, extended length of the floating umbilical, and the one-man operation.

- Upgrade of the response capacity of the OW Copenhagen, contracted from OW Tankers, for the area of Southern Baltic Sea. A NorMar 250TI high-capacity skimmer will be added to the equipment arrangement, and it is expected that the Acceptance Test will take place in mid-2014.
- Upgrade of the response capacity of the *Ria de Vigo*, contracted from Remolcanosa, for the area of the Bay of Biscay. A Vikoma Weir Boom 180 will be added to the equipment arrangement. It is expected that the Acceptance Test will take place in mid-2014.
- Upgrade of the response capacity of the Enterprise, contracted from Bon Marine, for the
 area of Black Sea. A Vikoma Weir Boom 180 will be added to the equipment
 arrangement. It is expected that the Acceptance Test will take place in the beginning of
 2014.

Financial overview: equipment improvement 2013

	Commitments	Payments
Improvements made in 2012 to the pre-existing arrangements (carry-over of payments)	0.00	2,040,593.00
Improvements made in 2013 to the pre-existing arrangements	850,920.48	276,898.10
Sub-total 3.1.4	850,920.48	2,317,491.10

3.2 Response to Marine Pollution from Oil and Gas Installations

In order to effectively carry out the new task of responding to marine pollution caused by oil and gas installations, EMSA drafted an Action Plan to establish the framework for its pollution response activities in the context of the amended Regulation and in line with its technical and operational capabilities and resources, in the same vein as the Action Plan for Oil Pollution Preparedness and Response and the Hazardous and Noxious Substances (HNS) Action Plan.

In order to obtain feedback on the draft Action Plan, EMSA consulted relevant stakeholders. Two separate meetings were organised in June 2013 at EMSA's premises. The first meeting was held on 20 June and was attended by 16 representatives of oil industry associations, oil companies and environmental NGOs, as well as the European Commission (DG MOVE). The second meeting was held on 21 June and was attended by 14 representatives of National Administrations from EU Member States, one coastal EFTA/EEA Country and one (at that time) Candidate Country. The European Commission (DG MOVE, DG ECHO, and DG ENER) also attended this meeting. The draft Action Plan was sent to the participants in advance of the meeting in order for them to familiarise themselves with EMSA's new task and to prepare for the consultation. In addition, a consultation paper was also circulated in advance so that EMSA would receive structured and specific feedback with regard to the draft Action Plan.

As an outcome of the two meetings, EMSA's stakeholders endorsed the Agency's activities in relation to the new task. The EU Member States stated their strong support to EMSA and acknowledged the Agency's pivotal role in the area response to pollution from oil and gas installations, particularly in view of the lack of sufficient resources to tackle Tier 2 and Tier 3 accidents in some of the countries currently developing offshore oil and gas operations. The

way was paved for future cooperation between EMSA and the oil and gas industry operating in Europe, especially with regard to the exchange of information. During the consultation meetings discussion took place regarding the use of dispersants, the provision by EMSA of additional pollution response equipment as stand-alone, and the consideration of the potential use of insitu burning. In particular, the establishment of aerial and vessel dispersant capability by EMSA was extensively discussed as a new tool that could be used upon request in topping-up the Member States' capabilities.

All the participants' comments and suggestions were considered in revising the draft Action Plan. In September, EMSA transmitted the draft Action Plan to the European Commission in order to initiate the procedure of the Consultation of the Commission as per Article 15.2.ab of EMSA's Founding Regulation as amended by Regulation (EU) No 100/2013¹⁵.

The EMSA Administrative Board approved the 'Action Plan for Response to Marine Pollution from Oil and Gas Installations' in its 13-14 November meeting.

The main axes of EMSA's potential intervention in the field of response to pollution from oil and gas installations were identified as follows in the Action Plan:

Adaptation of the Network of Stand-by Oil Spill Response Vessels:

The geographic distribution of vessels shall be revised, where necessary and possible. In addition, equipment could be purchased or appropriately modified to be suitable for response to oil spills from oil installations.

Monitoring and evaluation tools, including adaptation of the CleanSeaNet service:

The satellite monitoring service shall be used also for oil and gas installations within the currently available number of images, while additional images shall be provided only during emergencies. In parallel EMSA shall explore suitable tools for the monitoring and evaluation of spill hazards (primarily atmospheric gas plumes), taking into account the particularities of the spill and the environmental conditions.

Use of oil dispersants:

EMSA shall purchase limited quantities of dispersants as well as dispersant application systems (airplane- and vessel-mounted).

Provision of specialised equipment:

EMSA shall develop suitable contractual arrangements to provide its oil pollution response equipment for use on suitable vessels of opportunity. Furthermore, the Agency may purchase additional pollution response equipment to be used as stand-alone, either for mechanical recovery, dispersant application or in-situ burning.

¹⁵ As per this Article, EMSA's Executive Director shall prepare the detailed plan for the Agency's pollution preparedness and response activities and submit it to the Administrative Board after consultation of the Commission at least eight weeks before the relevant Administrative Board meeting, taking into account views and suggestions made by the members of the Administrative Board.

3.3 CleanSeaNet Satellite Service for Oil Spill Monitoring

3.3.1 Introduction

CleanSeaNet, the European satellite based oil spill monitoring and vessel detection service, was launched in 2007. The service was set up to support Member States' actions to combat deliberate or accidental pollution in the marine environment in the framework of Directive 2005/35/EC (amended by Directive 2009/123/EC) "on ship-source pollution and on the introduction of penalties, including criminal penalties, for pollution offences" and in particular Article 10^{16} .

The service is available to 27 coastal States, including all European Union coastal States, as well as Turkey, Iceland, Norway and Montenegro. Users have access to the CleanSeaNet service via a web portal hosted at EMSA. The service is based on the near real time¹⁷ analysis of Synthetic Aperture Radar (SAR) satellite images for oil pollution and vessel detection. The acquisition and analysis of satellite images is contracted to four European companies, which deliver the images and the results of the analysis to EMSA. As soon as these are received, the CleanSeaNet data centre automatically generates alerts which are sent to authorities in the coastal States. The alert report contains all the necessary information for coastal States to instigate follow-up (e.g. sending aerial surveillance to confirm possible spills reported, requesting inspection of suspected vessel in the next port of call).

Related products (images, oil and vessel detection information, etc.) are immediately made available through the portal.

In cases of accidental pollution, coastal States can request support from the service in the form of additional images and monitoring of major spills over time.

3.3.2 The Operational Use of CleanSeaNet

CleanSeaNet uses satellite SAR images to undertake routine monitoring of all European waters for illegal discharges. The service detects spills and vessels possibly linked to spills, and supports the identification of polluters by combining the CleanSeaNet images with vessel traffic information available through SafeSeaNet and EMSA's technical platform for combining data, the Integrated Maritime Data Environment (IMDatE).

Satellite acquisitions for routine monitoring

Between the start of the service in 2007 and April 2012, CleanSeaNet used three polar orbiting SAR satellites: Envisat, Radarsat-1 and Radarsat-2. Since May 2012, Envisat images are no longer available, as the satellite mission ended when contact was lost with the satellite. In March 2013, Radarsat-1 experienced a technical problem, and in May it was confirmed that the satellite was no longer operational. To adjust to these changes, in 2012 EMSA signed a contract for the provision of COSMO-SkyMed (CSK) SAR images. The CleanSeaNet data centre was upgraded to enable it to process these products. Since May 2013, EMSA orders CSK images to complement Radarsat-2 acquisitions in the Mediterranean Sea and the Black Sea.

¹⁶ Article 10 tasked EMSA to 'work with the Member States in developing technical solutions and providing technical assistance in relation to the implementation of this Directive, in actions such as tracing discharges by satellite monitoring and surveillance.'

 $^{^{17}}$ For satellite images covering 400 km by 400 km, the analysis is provided in maximum of 30 minutes. For images of different dimensions the time varies slightly. CleanSeaNet data centre has the capacity to acquire satellite images of up to 1400 km long.

Regular CleanSeaNet services have continued to be provided, mainly by Radarsat-2 and occasionally by CSK. There has been limited operational impact on the fulfilment of coverage requirements of the coastal States. However the use of CSK for routine pollution detection is limited by a number of factors, particularly the fact that images are only confirmed the day before, as priority is given to providing images for defence purposes. As a result, it is difficult to integrate CSK images in routine monitoring, as coastal States have problems timing their aerial surveillance operations based on image acquisition. Nevertheless, CSK can complement other satellites on an ad hoc basis for specific surveillance operations or to support response operations in case of accidental spills.

The European Space Agency's new SAR satellite Sentinel-1, is expected to launch in 2014. The satellite will be extremely important to ensure the full capacity of the service on a sustainable basis.

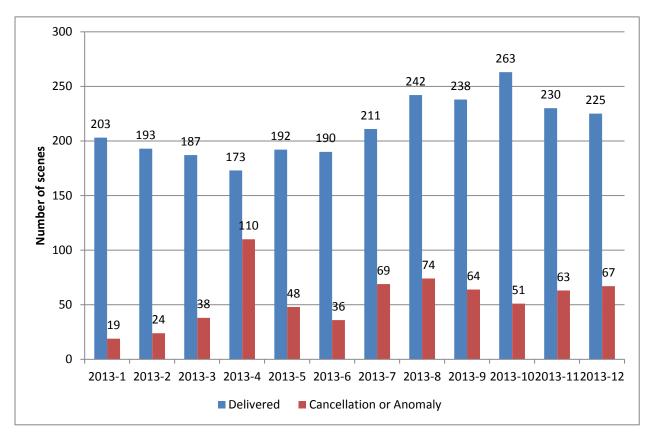
Year: 2013				
Satellite	Status	Nº Images	Delivery Rate	
RADARSAT-1	Ordered	350	60%	
KADAKSAT-1	Delivered	209	00%	
RADARSAT-2	Ordered	2363	93%	
KADAKSAT-2	Delivered	2201	9370	
COSMO-SkyMed ¹⁸	Ordered	245 (497 DTOs))	56%	
COSMO-Skymed	Delivered	137	30%	
Total	Ordered	2958 (3210)	86%	
	Delivered	2547	60%	

CleanSeaNet 2013: Number of ordered images per satellite

_

¹⁸ Note: For each COSMO-SkyMed request, on average two data take opportunities (DTOs) are ordered but only one image is delivered and the other is cancelled. The delivery rate in the table above is calculated based on the expected number of deliveries. The low delivery rate for RADARSAT-1 is due to malfunctions following the official loss of the satellite in April 2013.

Delivery statistics are present in figures below (breakdown per satellite and monthly evolution).



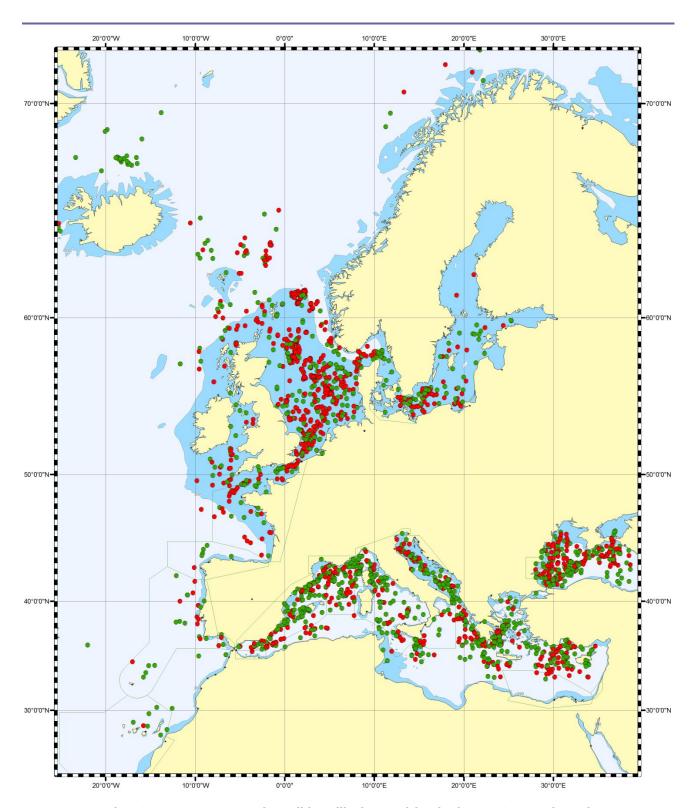
CleanSeaNet 2013: Number of monthly ordered images

Radars can take measurements during night and through cloud cover. The presence of oil changes the characteristics of the sea surface, and consequently the way radiation from satellite radar is scattered. It dampens down the wind-generated waves on the sea surface, reducing the reflected power measured by the radar: for this reason, oil slicks, some of which are just micrometres think, appear as dark areas on an otherwise brighter sea. This means that SAR satellites used by CleanSeaNet, including the upcoming Sentinel-1, are able to detect oil leaking from vessels or platforms even during the night or in bad weather conditions, thus ensuring enhanced monitoring frequency and early detection capabilities.

However, not all dark areas on images are necessarily oil, and so it is important to note that CleanSeaNet does not detect 'oil spills' but 'possible oil spills'. Other substances with a similar effect include, for example, fish or vegetable oil, ice, algae, or other look-alikes.

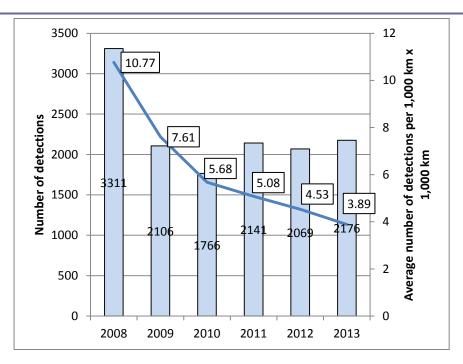
Spills reported by service providers are separated into two classes:

- Class A the detected spill is most probably oil (mineral or vegetable/fish oil) or a chemical product;
- Class B the detected spill is less probably oil (mineral/vegetable/fish oil) or a chemical product.



CleanSeaNet 2013: map of possible spills detected (Red: Class A; Green: Class B)

In 2013, on the 2,547 images delivered, a total of 2,176 possible oil spills were detected (1,096 Class A spills and 1,080 Class B spills). 3.89 possible spills have been detected per million $\rm km^2$ (1,000 km x 1,000 km) monitored.



CleanSeaNet 2008 - 2013: trends in possible pollution detected

The overall trend has been a reduction in the number of possible spills detected. The decrease was sharp from 2008 to 2010. Over the last three years, the decrease has continued but at a lower rate.

Combating illegal discharges in the marine environment

The CleanSeaNet service is only one of the tools at the disposal of national enforcement authorities to detect pollution of the marine environment. Successful enforcement requires a range of actions by competent actors in coastal and/or port States.

A working group comprising representatives from the Regional Agreements, international organisations, and Member State administrations, met in 2012 and 2013 to draft a document entitled 'Addressing illegal ship-source pollution in the marine environment'. The draft document was submitted to all Member States at a workshop on illegal ship-source discharges in the marine environment on June 4-5 2013. The final version of the document was published online in October 2013.¹⁹

The June 2013 Workshop on Illegal Discharges brought together participants from three different stakeholder groups: operational actors responsible for spill detection and response, authorities responsible for vessel inspections in port, and administrative and judicial enforcement authorities. The workshop consisted of presentations, exercises and roundtable discussions, focusing on areas where an exchange of views between the three communities would bring added value, and on particular enforcement challenges.

The role of CleanSeaNet as part of the law enforcement chain: examples

Two recent examples illustrate the contribution of the CleanSeaNet service to the detection and pursuit of ships discharging illegally.

¹⁹ The document is available online on the EMSA website: http://emsa.europa.eu/publications/guidelines-manuals-and-inventories.html

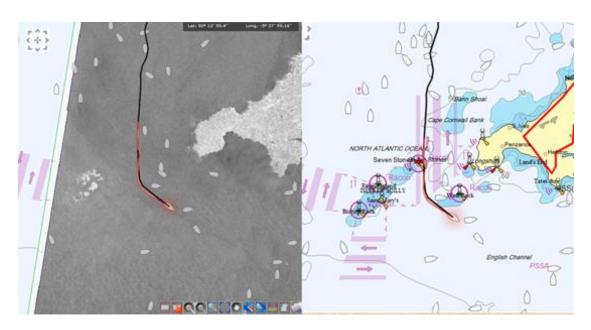
1. CleanSeaNet images: evidence in court

Satellite images should always be combined with supporting information when prosecuting a maritime pollution case, but the images themselves may be admitted as primary evidence.

On 25 February 2012, EMSA detected a possible pollution on a satellite image of the waters off the coast of Cornwall, UK. By combining the satellite image with AIS vessel track information from SafeSeaNet, the vessel was identified as the tanker *Maersk Kiera*, registered to Singapore Private, Ltd.

The vessel was contacted by the UK's Maritime and Coastguard Agency, and initially denied that it was trailing a slick. It then admitted to cleaning the tank and discharging waste (palm oil and tank cleaning solution) but stated that this was outside the 12 nautical mile zone (i.e. more than 12 nautical miles from the shore, where such discharges are legal). Evidence from the satellite image showed that the slick was inside the 12 nautical mile zone, and that the discharge was illegal.

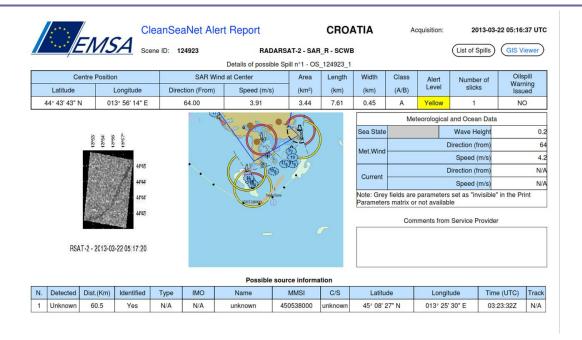
Following the court case, on 4 October 2013 the owner of the vessel was found guilty and fined. According to the investigating officer of the Maritime and Coastguard Agency's enforcement unit, it would not have been possible to lead the prosecution without the satellite evidence.



Maersk Kiera trailing a spill

2. Combining CleanSeaNet images with data from other EMSA services

On the 22 March 2013, a possible pollution was detected by CleanSeaNet in Croatian territorial waters. Based on information available in SafeSeaNet, the possible source was identified (MMSI number), and vessel track generated. This information was added to THETIS, the EMSA information system that supports the new Port State Control inspection regime system. This made an inspection in the next port of call (identified in THETIS based on SafeSeaNet information) mandatory. The inspection found evidence that illegal discharge of oily waste had taken place (oil residues in the Oil Water Separator, and oil spots on starboard side hull), and imposed a fine on the vessel.



CleanSeaNet Alert Report, 22 March 2013, showing spill detected in Croatian waters

Support to Aerial Surveillance operations

Countries that are members of the Bonn Agreement conduct aerial surveillance operations at regular intervals to monitor oil and gas platforms in the North Sea. In 2013, EMSA supported six of these "Tour d'Horizon" operations with 30 images. Bonn Agreement Contracting Parties appointed Belgium as the focal point for coordinating the support provided by EMSA through CleanSeaNet. A procedure has been proposed by EMSA to standardise Tour d'Horizon requests.

In 2013, the Agency also provided satellite-monitoring support during two Coordinated Extended Pollution Control Operations (CEPCO); these are multilateral joint operations organised to monitor ship-source marine pollution in high density traffic areas. One miniCEPCO was organised by Finland on 10 May, and one superCEPCO organized by Germany, from 12 to 15 August.

CleanSeaNet also provided support to the following requests:

- Monitoring two bunkering operations in Ireland (28 July and 20 August), for which two high resolution COSMO-SkyMed images and one Radarsat2 image were delivered;
- UAV campaign for pollution detection in Algarve, Portugal (12 July) for which one high resolution COSMO-SkyMed image was delivered;
- The RAMGEPOL exercise in Corsica (9-10 October), for which two Radarsat-2 images were provided. Two of the vessels involved in the exercise, including the EMSA contracted vessel *Monte Anaga*, could be identified in the images.

Financial overview: satellite image licenses and processing

	Commitments	Payments
Satellite image licences	1,685,660.00	1,489,195.00 ²⁰
Satellite image processing and oil detection services	1,760,000.00	1,723,934.16
Sub-total 3.3.2	3,445,660.00	3,213,129.16

3.3.3 Support to CleanSeaNet Users

The CleanSeaNet User Group

In order to ensure that CleanSeaNet meets the operational needs of the users, EMSA has set up the CleanSeaNet User Group, which gathers together representatives from the participating States operationally involved in oil pollution monitoring and surveillance. The main objective of the meeting is to exchange views on the operational use of the service and to decide with the end users priorities for further improvements and evolution of the service. The 12th CleanSeaNet User Group met on 10 and 11 April 2013.

Coastal States Training

In 2013, for the first time, an advanced training focusing on 'User Management', 'Planning' and 'System Configuration', targeting advanced users with management roles, was developed and provided.

In 2013, the following trainings on the CleanSeaNet service were provided:

- CleanSeaNet Basic Training: three sessions of 1½ days between 7 and 11 October 2013 at EMSA, for 40 participants;
- CleanSeaNet Advanced Training: two sessions of one day on 6 and 7 November at EMSA, for 19 participants.

Furthermore, the CleanSeaNet team delivered a one-day information session on the service to representatives of seven countries, in the context of the SAFEMED III project (assisting the beneficiary countries with the implementation of the Regional Transport Action Plan for the Mediterranean).

Financial overview: CleanSeaNet user meetings, training and workshops

	Commitments	Payments
CleanSeaNet User Group meetings	15,058.70	15,058.70
CleanSeaNet User trainings and workshops	97,148.45	95,887.62
Sub-total 3.3.3	112,207.15	110,946.32

 $^{^{20}}$ The contract concluded between ESA and EMSA for the provision of satellite images from GMES contributing missions was used to mitigate the loss of ENVISAT. Services were financed under this contract for a total amount of 400,000 €.

3.3.4 CleanSeaNet service improvements

The CleanSeaNet services are based on framework contracts with satellite owners and distributed service providers, which have a duration of four year. The present contracts will end in 2014; EMSA has therefore launched the relevant procurement procedures to ensure an uninterrupted service delivery in 2014 and beyond. These new contracts provide more flexibility and a new pricing model common to all types of images, whether high or medium resolution, radar or optical.

In 2013, the CleanSeaNet data centre was upgraded to, among other things, accommodate optical images and to improve the polluter identification reporting. The CleanSeaNet data centre will need to be adapted to cope with changes foreseen with the new contracts for services and the integration of Sentinel-1. A contract was signed in October 2013 for these enhancements. The contract will also cover preparations for the development of the future CleanSeaNet Graphical User Interface using the Integrated Maritime Data Environment (IMDatE).

3.3.5 Cooperation with External Organisations

Based on the continued cooperation between the European Space Agency (ESA) and EMSA, EMSA has access to the satellites managed by ESA in the framework of the Global Monitoring for Environment and Security (GMES – now called Copernicus) Data Warehouse agreement. This agreement enabled EMSA to provide a continuous service even after the loss of Envisat in April 2012 and of Radarsat-1 in April 2013, and during emergency situations.

EMSA will be a core user of the Sentinel-1 satellite, expected to be launched by ESA in the first quarter of 2014. Sentinel-1 will be the major source of radar satellite data for CleanSeaNet in the future. EMSA has therefore been making the necessary preparations and updates in order to be able to process Sentinel-1 data. Furthermore, EMSA has been actively contributing to the definition of operational Sentinel-1 scenarios, taking into account needs of coastal State marine pollution response users. Together with the Swedish Meteorological and Hydrological Institute (SMHI), the Royal Belgian Institute of Natural Sciences (RBINS), and model operators in the Mediterranean, EMSA is further developing cooperation in the fields of oil spill modelling through the exchange of EMSA CleanSeaNet oil spill detection data and numerical modelling results of detected spills. All partners will benefit from this cooperation, which has the objectives to improve 1) the identification of vessels responsible for illegal discharges, and 2) the prediction of spill drift and fate in order to support decision-making processes for pollution response activities.

Financial overview: CleanSeaNet operation

	Commitments	Payments
CleanSeaNet Data Centre maintenance & running costs	0.00	70,000.00
CleanSeaNet Data Centre improvements	341,892.20	370,612.46
CleanSeaNet Services improvements	102,000.00	134,110.00
CleanSeaNet support tools and ancillary costs	49,216.72	58,966.72
Sub-total 3.3.4 and 3.3.5	493,108.92	633,689.18

3.4 Support to Coastal States and the Commission for Accidental Spills

In 2013, five requests for additional support from EMSA's Operational Pollution Response services (Stand-by Oil Spill Response Vessels and CleanSeaNet) were received from coastal States addressing accidental spills and emergencies.

MV Lybov Orlova, Ireland, February 2013

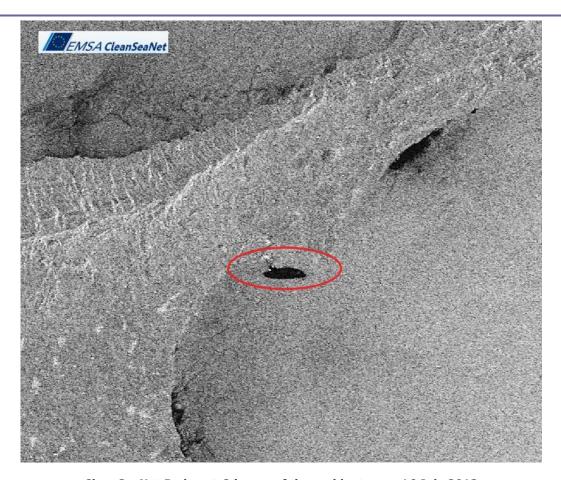
A number of Radarsat-2 and COSMO-SkyMed images were ordered to support Ireland's attempts to track the vessel *MV Lybov Orlova*. At the end of January 2013, the vessel's towline broke. Although a tow was re-established, this was later released due to severe weather conditions. The vessel was adrift in international waters in the North Atlantic from the beginning of February. Based on information that the vessel may be drifting towards Ireland, Irish authorities were keen to ensure that the vessel did not enter European waters unnoticed. Vessel drift model predictions were used for the acquisition planning of the CleanSeaNet images.

AKSA power plant, Cyprus, July 2013

On the night of 16 July, a major oil spillage from AKSA Power Plant occurred in Famagusta, Cyprus, as consequence of a refuelling accident. Oil was being offloaded from an oil tanker to the electricity generating plant when pressure built up in a pipe which subsequently burst. Oil was discharged from the burst pipe for approximately 10 minutes, releasing over 100 tonnes of oil into the sea, covering an area of 5 km^2 .

The mobilisation of the EMSA Stand-by vessel *Alexandria*, based in Limassol, Cyprus and/or part of the equipment on board, i.e., the Normar high capacity skimmer was considered, but eventually the decision was taken not to use these pollution response assets. However, additional satellite images were provided through the CleanSeaNet service.

The spill was clearly visible on a CleanSeaNet routine image acquired on 16 July at 03:55 UTC, taken about 90 minutes after the accident occurred. Three Radarsat-2 images and one COSMO-SkyMed image were delivered over the following days. Image analyses confirmed that most of the oil was beached along the coast, as reported by the local authorities, and predicted by drift modelling (MEDSLICK results and in-house run simulation with the OILMAP tool).



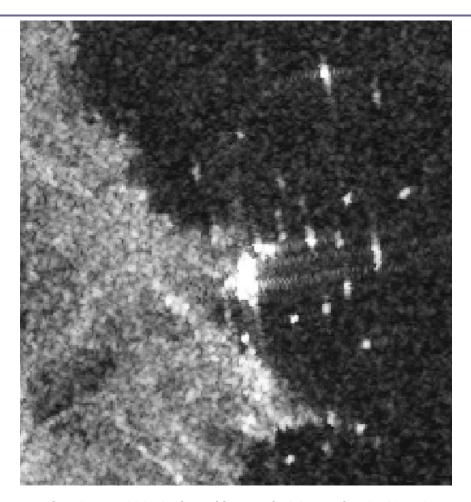
CleanSeaNet Radarsat-2 image of the accident area, 16 July 2013

Bianca Maria, Italy, July 2013

Following the grounding of the fishing vessel *Bianca Maria* in the Adriatic on 30 July, containing a considerable amount of fuel, Italian Coast Guard decided to monitor the area to detect possible leakage from the wreck. Two Radarsat-2 ScanSAR Narrow and three COSMO-SkyMed images (two huge and one wide) were delivered in the subsequent days. No pollution was detected around the coordinates of the grounded vessel.

Costa Concordia, Italy, September 2013

Support was requested to monitor a re-floating operation on 16 September by the Italian Coast Guard. One Radarsat-2 Standard and one COSMO-SkyMed image (Wide Region) were delivered over the area of Isola del Giglio. The purpose was to ensure early identification of any possible leaks as a consequence of the operation. No spills were detected.



CleanSeaNet COSMO-SkyMed image of 16 September 05:09 UTC

North Sea offshore area, United Kingdom, September 2013

A spill of 50 km in length in the vicinity of platform installations was detected on a Radarsat-2 image on 11 September, and confirmed by aircraft surveillance. The UK's Maritime and Coastguard Agency requested additional satellite images over the area of interest (12 September). Four COSMO-SkyMed images (Huge Region) were successfully delivered.



CleanSeaNet Radarsat-2 image of 11 September 17:35 UTC, with confirmed oil spill detection in the UK offshore area

4. Cooperation and Coordination

4.1 Introduction

The work of the Consultative Technical Group for Marine Pollution Preparedness and Response (CTG MPPR) continued in 2013 as detailed below. EMSA also continued its cooperation with the pollution response experts of EU Member States, EFTA/EEA coastal Countries, EU Candidate Countries, the Regional Agreements Secretariats (Bonn Agreement, HELCOM, REMPEC, Black Sea Commission and Lisbon Agreement), the Commission (DG ECHO) and, on behalf of the Commission, with the International Maritime Organization (IMO).

4.2 Consultative Technical Group for Marine Pollution Preparedness and Response

The Consultative Technical Group for Marine Pollution Preparedness and Response (CTG MPPR) was established by EMSA in 2007. The CTG MPPR provides an EU level platform for Member States to contribute to the improvement of preparedness and response to accidental and deliberate pollution from ships. It is composed of marine pollution response experts from EU Member States, EFTA/EEA coastal States (Iceland²¹ and Norway), EU Candidate Countries (Turkey and Montenegro), the Regional Agreements' Secretariats and the European Commission represented by DG ECHO and DG MOVE. The CTG MPPR is intended to enable and

_

²¹ Iceland is also an EU Candidate Country

strengthen the exchange of information, views and opinions, share best practice and define the current and future priority actions in this field among the national experts, as defined in its Rolling Work Programme. This is done through dedicated workshops, training, technical studies, guidelines and reports.

4.2.1 8th Meeting of the CTG MPPR

The status of on-going priority actions and planned activities agreed for 2012-2013 was reviewed at the 8th meeting of the Group held on 23 October 2013 and new projects were included in the CTG MPPR Rolling Work Programme for 2014 after a comprehensive discussion and assessment. A summary of the status of the main on-going and planned activities of the CTG MPPR for the coming year is provided below.

4.2.2 Technical Correspondence Group on Dispersants

The Technical Correspondence Group on Dispersants (TCG Dispersants), comprised of Member States' and EMSA dispersants experts was established in 2012 under the CTG MPPR framework. This group is mandated to address two main objectives:

- To compile a list of and review dispersant studies related to the *Deepwater Horizon* spill and define in a report which output and lessons learned from these is of relevance for Europe; and
- To better understand the current status and possible way forward related to mutual acceptance of dispersant testing procedures in Europe and draft recommendations in this regard.

In 2013, the Group completed, through correspondence, its first task by reviewing 50 documents addressing varied aspects of the dispersant applications during the *Deepwater Horizon* spill response on the basis of eight specific areas of interest and by drafting a Report summarising the outcome of this literature review. The Report was disseminated to the CTG MPPR for information and further comments in December 2013. The TCG Dispersants is expected to start implementing its second task 2014 with a dedicated working group meeting scheduled for February 2014.

4.2.3 Training courses on 'The use of surveillance systems for marine pollution detection and assessment'

As agreed at the 7th CTG MPPR meeting and following the pilot training hosted by EMSA in 2011, two training courses on marine pollution surveillance systems were held regionally in 2013 for delegates from the EU Member States, EFTA/EEA coastal countries and EU Candidate Countries: one was hosted in Finland in August for the northern European countries and the other in France in October for the remaining European countries. The same training curriculum was used for both trainings and was delivered by the same instructors. The curriculum covers varied aspects of marine pollution surveillance, including legislation and pollution sources, surveillance tools, pollution reporting formats and assessment of oil volumes, and focusing on operational aspects through a combination of presentations and practical exercises. The training courses were well attended by surveillance aircraft operators with limited to medium experience and the CTG members expressed their interest in having at least one such surveillance training course organised also in 2014 (possibly two, depending on budget availability).

4.2.4 3rd Joint Workshop on coordinated at-sea and shoreline pollution response

The 3rd Joint workshop in coordinated at-sea and shoreline pollution response, co-organised between EMSA and DG ECHO, was hosted by EMSA in Lisbon on 12-13 February 2013. This workshop addressed three distinct topics over two days:

- (i) Occupational Safety and Health (OSH) during marine pollution response operations;
- (ii) National training standards in Europe for responders and volunteers and the management of volunteers;
- (iii) International exchange of experts (during major pollution incidents) and their integration in the operations of the host country.

The workshop, which was co-facilitated by Norway, Germany, France and Spain, was well attended by experts from marine pollution organisations, civil protection authorities, industry and relevant agencies such as the US OSHA and the European Agency for Safety and Health at Work (EU-OSHA). Constructive discussions were held in small working groups and the workshop's conclusions highlighted the lack of clear guidance and technical support in regard to OSH-issues for marine pollution responders in Europe; the large difference in training requirements and in the use and management of volunteers for pollution response operations; the variety of training materials, standards and requirements for responders and the lack thereof in many European countries; the challenges of managing and integrating international experts in the host country's response operations were also acknowledged.

The CTG discussed the possibility for further work to be undertaken on developing guidance on occupational safety and health of pollution responders at-sea under the CTG framework, in close cooperation with the EU-OSHA. Such work may commence in 2014.

4.2.5 Claims Management and Cost Recovery – EU States Claims Management Guidelines

Following the publication of the Version 2 of the Guidelines in early 2013, the Claims Management Working Group has met at EMSA to address further developments of the Guidelines, and a dedicated email address (ClaimsManagement@emsa.europa.eu) has been established by EMSA, to be used by national claims handlers as a support tool for questions regarding the interpretation of the 'EU States Claims Management Guidelines'. The Working Group will continue its work in 2014.

4.2.6 EMPOLLEX: EMSA Marine Pollution Expert Exchange Programme

The EMSA Marine Pollution Expert Exchange Programme (EMPOLLEX) was launched in 2008 under the CTG MPPR umbrella. The main objectives of EMPOLLEX are to promote the exchange of best practices between the Member States and to enhance contacts, networking and cooperation between Member States in the field of marine pollution with a view to improving national preparedness and capabilities for response. Within the EMPOLLEX framework, national experts from participating States are given the opportunity to travel to other EMPOLLEX countries in order to gain or share professional experience.

While the EMPOLLEX Programme had relatively low, but consistent interest from participants during the first years of operation, the unpredictable and relatively low level of interest in the

Programme in the past couple of years has led to difficulties in the implementation of the allocated budget. As a result, it was agreed by the CTG MPPR to 'freeze' the EMPOLLEX Programme for the year 2013 and utilise available budgetary resources to support other priority activities under the CTG MPPR framework. Subsequently, no EMPOLLEX exchanges took place in 2013.

4.3 Cooperation with Regional Agreements and the IMO

EMSA continued its cooperation with the International Maritime Organization (IMO) on issues of common interest within the framework of its Oil and HNS Action Plans. The Agency regularly participates and contributes, as part of the European Commission delegation, to the MEPC OPRC/HNS Technical Group meetings, which are the main technical IMO forum on marine pollution preparedness and response. One meeting of the Technical Group was held in May 2013. Of particular interest was the work of a Correspondence Group developing Guidelines for International Offers of Assistance in case of catastrophic oil spills, in which EMSA actively participates. The need for such guidelines was recognised following the *Deepwater Horizon* incident in the Gulf of Mexico in 2010. The work on this subject is also of interest to DG ECHO; EMSA kept the Commission informed, and incorporated their comments.

4.3.1 Meeting of the Regional Agreements

With respect to the Regional Agreements, the Agency also provides technical support to the European Commission, as part of the European Union delegation, during relevant meetings. For example, in addition to participating in the HELCOM Response Group, EMSA is also a member of HELCOM IWGAS (Informal Working Group on Aerial Surveillance), which meets once a year. EMSA contributes to these meetings by submitting papers, participating in discussions and also by involvement in the various operational exercises organised around Europe. In advance of the accession of the European Union to the Bucharest Convention, the Agency also participates in relevant Black Sea Commission meetings.

4.3.2 9th Meeting of the Secretariats of the Regional Agreements

Representatives from the Bonn Agreement and Black Sea Commission Secretariats, REMPEC, the Lisbon Agreement, as well as the Chairpersons of the groups OTSOPA and HELCOM Response, along with DG ECHO and EMSA representatives met in Lisbon in late February 2013 for the 9th Inter-Secretariat meeting. These meetings are held annually, with the aim of exchanging information on marine pollution preparedness and response activities and projects undertaken within the various Regional Agreements, while promoting the dissemination of best practices in this field.

4.4 Financial overview: Cooperation and Coordination

	Commitments	Payments
CTG Meeting and workshops; VUG meeting	94,454.76	57,624.08
IMO / Regional Agreements	0.00	3,205.99
Sub-total for Cooperation & Coordination	132,638.91	119,567.62

5. Information

5.1 Introduction

The Agency continued collecting and disseminating information in the field of marine pollution preparedness and response in support of EU and EFTA/EEA Member States, EU Candidate Countries and the EU Commission. The Agency's information service for chemical emergencies (MAR-ICE Network) was used several times during national notification and alert exercises.

EMSA continued in 2013 implementing three previously tendered projects on: 1) developing chemical response datasheets, which will further strengthen MAR-ICE; 2) updating and enhancing the Dispersant Usage Evaluation Tool (DUET), and; 3) procuring specialised software to predict the fate and trajectory of spilled chemicals.

Furthermore, and in line with Regulation (EC) No 2038/2006, EMSA continued to update its inventories of Member States pollution response capacities.

5.2 Activities with regard to Hazardous and Noxious Substances (HNS)

5.2.1 MAR-ICE Network²²: Information Service for Chemical Emergencies

EMSA's HNS Action Plan outlines the establishment and maintenance of a network of experts, who can support and advise the Member States during the response to a chemical spill, as priority activity for the Agency. When dealing with an incident involving HNS, the identification of hazards and an assessment of the risks posed by a stricken vessel and its cargo to responders, the public, the environment, and to socioeconomic assets, is critically important. The primary factors which determine these risks relate to the chemical and physical properties of the material spilled and its physical fate in the environment. 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 the MAR-ICE Network (MARine Intervention in Chemical Emergencies) in 2008.

Since its inception, the MAR-ICE service has been utilised in six real incidents and ten exercises. Discussions with Cedre and the CEFIC members on the feasibility of extending the MAR-ICE service to the provision of chemical experts on site continued in 2013

The MAR-ICE service continues to provide rapid information regarding chemical substances involved in marine pollution emergencies remotely by e-mail and/or fax. To this effect, EMSA met with its MAR-ICE partners (Cefic and Cedre) in September 2013 for the second thorough review and evaluation of the service provided by the Network since its establishment. The meeting was fruitful and concluded in the identification of certain actions aimed at improving the service provided, and enhancing awareness of the service among the various stakeholders (Member States authorities, chemical companies). It also reconfirmed the intention of the three partners to continue with the Network beyond 2014. The second MAR-ICE Evaluation Report has been published on EMSA's website.

²² MAR-ICE Network is an information service for use in marine chemical emergencies, established by EMSA with the support of CEFIC (European Chemical Industry Council) and Cedre (Centre of Documentation, Research and Experimentation on Accidental Water Pollution). The MAR-ICE Network provides EU Member States, coastal EFTA/EEA countries and EU Candidate Countries upon request, remote product-specific information and advice on chemicals involved in marine pollution incidents.

5.2.2 Development of MAR-CIS datasheets (MARine Chemical Information Datasheets)

Information on the short term fate and behaviour of chemical substances is fundamental for emergency responders to carry out a first evaluation of the hazards and risks arising from the accidental release of chemical substances at sea and on board vessels. EMSA has developed a database with specialised datasheets of chemical substances for marine pollution response (MAR-CIS datasheets). Their purpose is to gather concise and relevant information on the behaviour and properties of chemical substances including marine specific information (e.g. IMDG code²³, IBC code²⁴, GESAMP²⁵, seawater solubility, case histories, etc.) for supporting emergency responders to plan response operations safely and to minimise the potential adverse impacts to the environment and to the public.

This four-year project completed its third year of execution covering to date 133 datasheets, of which 20 include seawater solubility values determined in the laboratory. Seawater solubility of chemicals and its resulting dispersion over the marine environment is a widely recognised "knowledge gap" as the available information covers freshwater solubility only.

The selection of substances covered by this project was based on a combination of factors: the most transported substances in European waters, substances involved in past incidents, and substances with high toxicity. The focus has been on bulk liquid chemicals.

From the beginning of 2014 onwards, the MAR-CIS datasheets will be made available to EU/EFTA/EEA Member States and EU Candidate Countries marine pollution authorities' through EMSA's MAR-ICE Network. Upon activation and in case there is a datasheet for the substance(s) involved, the MAR-ICE service will send it/them to the requester as part of the first-hand MAR-ICE service information.

5.2.3 Environmental data for predicting the trajectory and fate of oil and HNS spills

Information on the potential trajectory and fate of oil and chemical spills at sea is a commonly used decision support tool applied during drills, exercises, training and contingency planning for mobilising and optimising the deployment of pollution response means. EMSA has modelling software licenses for predicting the trajectory and fate of oil and chemical spills at sea, which require input parameters such as real-time wind and currents information.

EMSA acquired access to online environmental data that provides automatic input to the modelling software wind and currents forecast information. The environmental information is 24/7 available with a worldwide coverage guaranteeing the continuous operation of the modelling software.

²³ IMDG: International Maritime Dangerous Goods code.

²⁴ IBC: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk.

²⁵ GESAMP: Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection.

5.3 Inventories of Member States Policies and Operational Response Capacities

The Agency is tasked by Regulation (EC) No 2038/2006 to "draw up on a regular basis a list of the private and state pollution response mechanisms and response capabilities in the various regions of the European Union". These inventories are intended to provide a general description of the status of preparedness and response capacities of all coastal EU Member States and EFTA/EEA Contracting Parties (Iceland and Norway) to marine spills of oil and HNS. They also include contact information of the competent national authorities, the policies, and the preparatory arrangements of each Member State. In 2013, EMSA published its *Inventory of EU Member States' Policies and Operational Response Capacities for Hazardous and Noxious Substances Marine Pollution 2013*. Furthermore, the Agency collected and compiled updated information of the *Inventory of national policies regarding the use of oil spill dispersants in the EU Member States*, which will be published in early 2014.

5.4 Activities with regard to dispersants – Update of the DUET

The DUET (Dispersant Usage Evaluation Tool) software programme, developed for EMSA in 2008, is a numeric model that simulates oil spills and dispersant applications. The model estimates the trajectory and fate of the oil, including water concentrations of naturally - and chemically - dispersed oil and dissolved hydrocarbons, as well as the surface area impacted by floating oil. It allows the comparison of scenarios with and without dispersant use, which is fundamental for decision-makers.

Following the signature of a Framework Contract for the update and enhancement of the DUET in 2012, in 2013, EMSA implemented the first contract for the update of the DUET software programme, needed in order to allow its use on current and future operating systems such as Windows 7 and 8. In addition, other upgrades (e.g. layout, pre-loaded databases) of the tool were carried out and training for delegates of the EU and EFTA/EEA Member States and EU Candidate Countries on the use of this decision support tool was provided in September 2013. The updated DUET was sent to the Member States' relevant administrations in December 2013. In 2014, EMSA will tender the second specific contract for further enhancements of the DUET, taking into consideration the Member States' feedback provided during the training.

5.5 2015 INTERSPILL Conference and Exhibition

The Agency continues to support the major marine pollution conference and exhibition event in Europe, INTERSPILL, as a member of the event's Steering Committee²⁶, recognising the importance of sharing spill response experience and disseminating best practice. EMSA continued its active role in the Steering Committee in 2013, in planning the next Interspill Oil Spill Conference and Exhibition event, to be held at RAI Amsterdam, over 24-26 March 2015 and in particular in the Conference Programme Committee with the aim of ensuring EU and EFTA/EEA Member States' issues are represented at an appropriate level.

²⁶ Since 2007, EMSA has been a party to the MoU between the event's Steering Committee members to organise the conference and exhibition on a "not-for-profit" basis.

5.6 Financial overview: Information

	Commitments	Payments
Information dissemination	133,060.31	188,782.24

6. Total Expenditures²⁷ for Pollution Preparedness and Response Activities

Activities		_
	Commitments	Payments
Network of Stand-by Oil Spill Response Vessels	17,955,205.76	12,239,427.04
Contracts 2006 (Atlantic Coast,) Contracts 2009 (East, Atlantic Channel, Northern Baltic Sea)	0.00 0.00	212,000.00 401,769.89
Contract 2010 (Mediterranean East, Aegean Sea, Atlantic	0.00	3,164,245.45
Coast, Mediterranean West) Contracts 2011 (Black Sea, Bay of Biscay, Western Mediterranean Sea, Southern Baltic Sea, central Mediterranean Sea)	0.00	3,447,332.83
Contracts 2012 (Bay of Biscay, Atlantic, North Sea, Central Mediterranean Sea)		1,553,841.07
Contracts 2013 (Western Mediterranean Sea, Adriatic Sea, Aegean Sea, Atlantic North, Northern North Sea, Renewal North Baltic)	17,866,459.20	3,441,882.88
Associated activities (Tender Clarification Meetings)	8,079.56	6,062.92
Other (e.g. Flags, Tablets, Storage of Equipment, Labelling Services and Consultancy Services)	80,667.00	12,292.00
Economic & Financial Capacity Assessment Economic & Financial Capacity Assessment	6,262.20 6,262.20	6,262.20 6,262.20
Maintaining the Service: Drills and Exercises Exercises 2013	306,663.02 306,663.02	306,663.02 306,663.02
Improvements to the Network Service	850,920.48	2,317,491.10
Improvements 2012 to the existing arrangements	0.00	2,031,811.42
Improvements 2013 to the existing arrangements	850,920.48	285,679.68
Satellite image licenses and processing	3,445,660.00	3,213,129.16
Satellite image licences	1,685,660.00	1,489,195.00 ²⁸
Satellite image processing and oil detection services	1,760,000.00	1,723,934.16
Support to CleanSeaNet Users	112,207.15	110,946.32
CleanSeaNet User Group meetings	15,058.70	15,058.70
CleanSeaNet User trainings and workshops	97,148.45	95,887.62
CleanSeaNet Service Developments	493,108.92	633,689.18
CleanSeaNet Data Centre maintenance & running costs	0.00	70,000.00
CleanSeaNet Data Centre improvements CleanSeaNet Services improvements	341,892.20	370,612.46 134,110.00
CleanSeaNet support tools	102,000.00 49,216.72	58,966.72
	77,210.72	30,300.72

²⁷ The figures in this report are based on preliminary figures available for 2013. They are subject to verification and confirmation as part of the final accounts of the Agency, which will be checked by the Court of Auditors. Therefore, the final figures may deviate from the figures presented in this report.

These figures include C4 and C5 commitment and payment appropriations.

 $^{^{28}}$ The contract concluded between ESA and EMSA for the provision of satellite images from GMES contributing missions was used to mitigate the loss of ENVISAT. Services were financed under this contract for a total amount of 400,000 €.

Cooperation and Coordination	132,638.91	119,567.62
CTG and VUG Meetings	108,831.23	70,848.04
Other Meetings	23,807.68	48,719.58
Information	133,060.31	188,782.24
Information dissemination	133,060.31	188,782.24
Related missions of EMSA Staff	113,991.10	102,810.01
TOTAL allocated	23,297,564.00	18,930,055.00
TOTAL utilised	23,549,717.85	19,238,767.89



