European Maritime Safety Agency

Drills & Exercises Annual Report 2021

Sustainability and Technical Assistance

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EMSA

Summary

The European Maritime Safety Agency (EMSA), following the mandate given in Regulation (EC) No 1406/2002 of the European Parliament and of the Council (as amended), operates, in European waters, a range of oil pollution response services (PRS) consisting of a Network of stand-by oil spill response vessels, Equipment Assistance Service (EAS) arrangements, including specialised stand-alone equipment, and dispersant stockpiles as well as the MAR-ICE network of chemical experts. The PRS are available at the request of a coastal State[1], a Private Entity[2], and/or the European Commission for responding to oil and chemical spills at sea caused by ships as well as by oil and gas installations.

At the end of 2021, 17 fully equipped oil spill response vessels (of which 10 with remotely piloted aircraft systems (RPAS) capability), 8 dispersant stockpiles and 4 EAS arrangements were available for mobilisation.

To achieve the level of performance for pollution response required by the Agency, the contracted response arrangements have to perform regular trainings, drills, Equipment Condition Tests (ECTs) and exercises.

The evaluation of the contractors' performance during vessel drills, ECTs and exercises by the Agency's staff in line with the "Guidelines on Conducting Drills / ECTs and Exercises for the EMSA Contracted Vessels / EAS arrangements" is an effective tool to ensure that the adequate level of preparedness of the pollution response services is constantly maintained.

For the EMSA's Network of stand-by oil spill response vessels and EAS the year 2021 was another year with COVID -19 pandemic conditions causing travel and health safety restrictions and thus limiting the possibilities for EMSA to physically attend and oversee drills and ECTs. However, with the experience gained from the previous year, the Agency managed to maintain the service on a high level of performance, thanks to good co-operation with services providers and extended programme of reporting. The number of events performed by EMSA services in 2021 increased compared to 2020.

In addition the Agency is tasked to support Member States in case of marine incidents involving chemicals. EMSA is providing rapid access to expert advice for hazardous and noxious substances (HNS) through its MAR-ICE Network. This service offers rapid information transfer regarding chemical substances involved in marine pollution emergencies 24/7 to the EU/EFTA coastal Member States and EU Candidate Countries. In order to familiarise EU Member States with the service's activation procedures and to ensure high quality of this service, MAR-ICE exercises are performed each year.

Overall, the outcome of drills, ECTs, exercises and MAR-ICE activations carried out during 2021 demonstrated that the services were provided efficiently and in accordance with the EMSA services users expectations. This was also proven during real cases activations which happened in 2021 where all services were quickly activated and provided the expected support to Member States.

Table 1. Summary of drills, ETCs and exercises carried out in 2021

Acceptance Drills Newly Contracted / Replaced Vessels	Acceptance Drills Improvement projects / new equipment	New EAS stockpile acceptance	Quarterly Drills / ECTs	Operational Exercises Vessels / EAS / real cases of oil pollution	Notification Exercises Vessels / EAS	MAR-ICE Exercises / real cases of chemical polution
4	2	1	64 / 39	7 (8 vessels - 2 RPAS / 2 EAS) / 3	9 (13 vessels - 3 RPAS / 4 EAS)	6 / 2
Total number of events	136					

[1] EU Member States, EU Candidate States, Norway and Iceland as well as those third countries sharing a regional sea basin with the European Union (Regulation (EU) 100/2013).
[2] Private Entity means the ship owner or oil and gas installation operator controlling the activity causing the marine pollution or the imminent threat of it, or their contractor.

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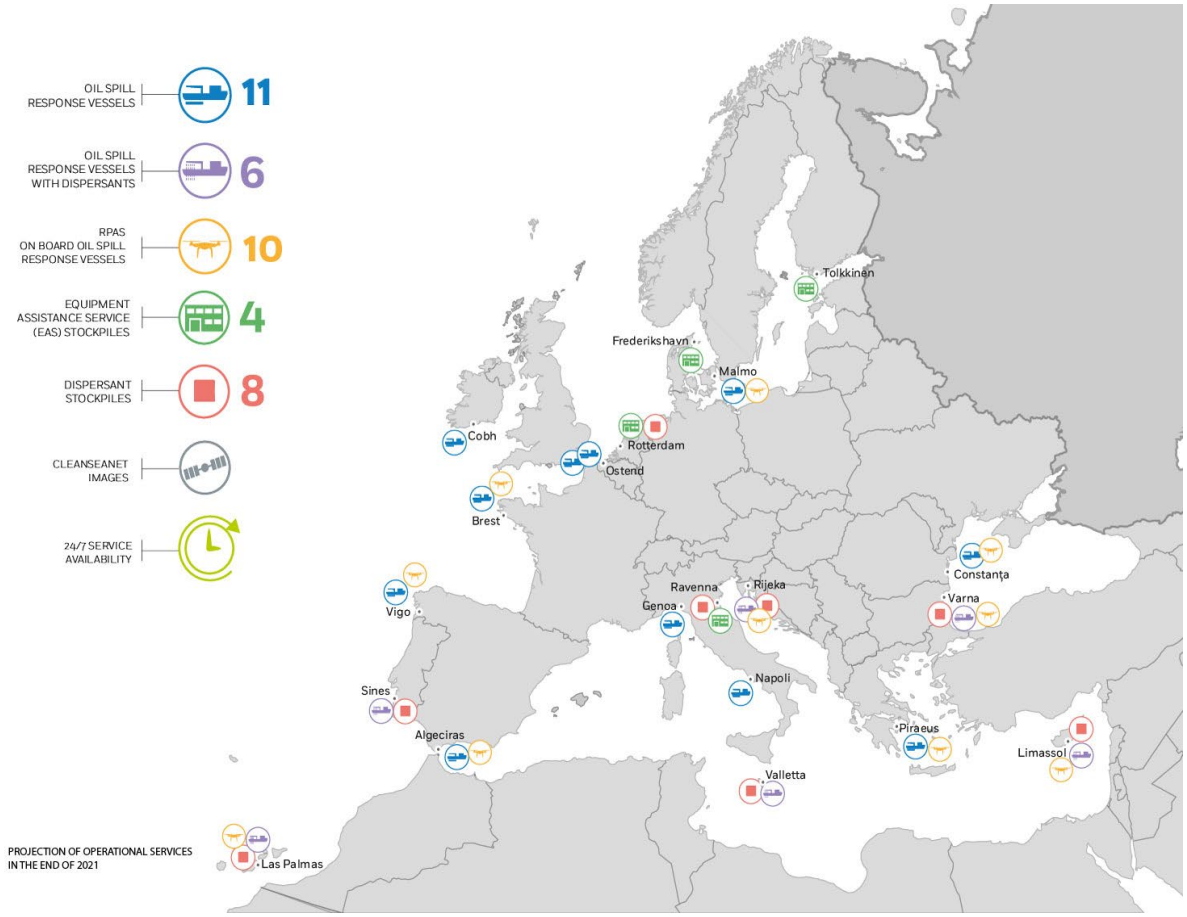
1. Introduction

1.1 EMSA's oil pollution response services (PRS) - Overview

Through its "toolbox" of PRS, EMSA offers a European tier of response resources in order to top-up the capacities of coastal States for protecting their marine environment from oil pollution caused by ships and oil and gas installations. The map below provides an overview of EMSA's oil PRS and their geographical distribution.

Map 1. Distribution of EMSA's contracted vessels and EAS arrangements at the end of 2021



At the end of 2021, 17 fully equipped oil spill response vessels and 4 EAS stockpiles were available for mobilisation in case of marine pollution.

The main milestones for the Vessel Network in 2021 were:

- The entry into service of the new vessel arrangements contracted at the end of 2020 to replace the response capacity for the southern Atlantic coast as well as West and Central Mediterranean Sea. The tankers *Bahia Tres (re-contracted)*, based in Sines, Portugal, *Brezzamare (re-contracted)*, based in Genoa, Italy and *SB Borea (new Contractor)*, based in Napoli Italy, successfully completed the Preparatory Phase and entered into operational service at the end of 2021;

- Following a procurement procedure, award of a new contract for the Aegean Sea to replace the existing vessel arrangement which contract will expire without the possibility of further renewal in 2022;

- Improvement of spill detection and monitoring capacity by equipping two vessels, namely *Kijac* and *Monte Anaga* with remotely piloted aircraft systems (RPAS) was completed;

- In addition, within the context of cooperation between EU Agencies on Coast Guard functions, EMSA continued providing support to the European Fisheries Control Agency (EFCA) chartered vessels *Lundy Sentinel* and *Aegis* for oil pollution response duties, with oil spill response equipment and some dispersants.

The main activities implemented in 2021 related to EAS were:

- Bringing into operational service the new EAS arrangements contracted at the end of 2020 for Southern Europe, based in Revenna (Italy);

- EMSA's response toolbox was enhanced in 2021 through delivery of medium size equipment (Current Buster 4, V-sweep and skimmers) to all EAS arrangements. In addition, equipment for near shore response was successfully procured in 2021. Delivery of this new specialised equipment - including working boats - for response in shallow waters will take place in 2022;

- Following the successful conclusion of a procurement procedure, award of a new contract to establish a new EAS in the Black Sea. The arrangement will become operational in mid 2022.

In addition, EMSA provided operational assistance in the context of the response to pollution incidents in Greece, sinking of *Sea Bird*, Cyprus, Syria oil spill, and Bulgaria, grounding of *Vera Su*:

- The vessel *Aktea* was mobilised by Greek authorities on 28 August 2021 and performed oil recovery operations around the wreck of the *Sea Bird*, in the East coast of Peloponnesus, from 29 August to 6 September 2021. The *Aktea* collected 75 m^3 of oil water mixture in the area around the wreck.

- The vessel *Alexandria* was mobilised by Cypriot authorities on 30 August 2021 and was on stand-by until 5 September 2021, monitoring the oil spill originated in Baniyas (Syria) from a tank containing 15,000 tons of oil in a power plant, inside one of Syria's oil refineries.

- EMSA's operational assistance to Bulgarian authorities comprised activation of MAR-ICE service, RPAS from vessel *Galaxy Eco* and mobilisation and deployment of three Oil Storage Barges, each with a 100m3 storage capacity, as well as one oil offloading system which were used for the removal of the cargo of fertilizers (Urea) from the Vera Su. EMSA equipment was deployed on 7 October 2021 and was successfully used in the lightering operations of the stranded ship. The *Vera Su* was re-floated on 26 October 2021.

Details regarding the service of the Vessel Network and EAS arrangements in 2021 can be found in the table below.

Table 2. Summary of the Oil Pollution Response services in 2021

Area	Contractor / Contract	Vessel(s) / Assets	Vessel type / storage capacity(m^3) / dispersant stock	Service 2021
1. Contracted vessels				
Southern Baltic	Stena Oil EMSA/NEG/1/2015 Lot 2	*Norden*	Oil Tanker / 2880	Whole year service
Channel and Southern North Sea	DC Industrial S.A. 2014/EMSA/NEG/1/2014 Lot 3.1	*Interballast 3*	Hopper Dredger / 1886	Whole year service
	DC Industrial S.A. EMSA/NEG/1/2014 Lot 3.2	*DC Vlaanderen 3000*	Hopper Dredger / 2744	Whole year service
Atlantic North	MOJO Maritime, France EMSA/NEG/1/2013 Lot 2	*Mersey Fisher* *Corrib Fisher*	Product Tankers 4754 / 5028 / 6248	Whole year service

Atlantic Coast	Remolcadores Nossa Terra S.A. EMSA/NEG/1/2014 Lot 1	*Ria de Vigo*	Offshore Supply / 1522	Whole year service
Bay of Biscay	Seaowl EMSA/CPNEG/01/2017	*VN Partisan*	Offshore Supply / 1022	Whole year service
Southern Atlantic Coast	Mureloil EMSA/NEG/1/2012 Lot 1	*Bahia Tres*	Oil Tanker / 7413 / Dispersant 200 t.	The contract expired on 17/07/2021
	Mureloil EMSA/CPNEG/1/2020 Lot 2	*Bahia Tres*	Oil Tanker / 7413 / Dispersant 200 t.	The vessel entered service on 01/12/2021
Canary Islands and Madeira	Petrogas EMSA/NEG/1/2015 Lot 1	*Mencey*	Oil Tanker / 3500 / Dispersant 200 t.	Whole year service
Western Mediterranean Sea	Naviera Altube EMSA CPNEG/1/2019 Lot 2	*Monte Anaga*	Oil Tanker / 4096	Whole year service
	Ciane EMSA/NEG/34/2012	*Brezzamare*	Oil Tanker / 3288	The contract expired on 26/08/21
	Ciane EMSA/CPNEG/1/2020 Lot 3	*Brezzamare*	Oil Tanker / 3288	The vessel entered service on 20/11/2021
Central Mediterranean Sea	Sarda Bunkers EMSA/CPNEG/1/2020 Lot 1	*SB Borea*	Oil tanker / 3558	The vessel entered service on 12/11/2021
	Petronav EMSA/CPNEG/1/2019 Lot 3	*Adelia*	Oil Tanker / 7458 Dispersant 180 t.	Whole year service
	SL Ship Management EMSA/NEG/1/2012 Lot 2	*Santa Maria*	Oil Tanker / 2421	The contract expired on 25/06/2021
Aegean Sea	Environmental Protection Engineering S.A. EMSA/NEG/1/2013 Lot 3	*Aktea OSRV (Aegis I as a back-up vessel)*	Oil Tanker / 3000 Offshore Supply / 950	Whole year service (*Aegis I* was replaced with *Aegis* on 30/08/2021)
Adriatic Sea	Dinamarin Ltd EMSA/CPNEG/1/2019 Lot 1	*Kijac*	Oil/Chemical Tanker / 1730 Dispersant 200 t.	Whole year service
Eastern Mediterranean Sea	Petronav EMSA/CPNEG/1/2018	*Alexandria*	Oil Tanker / 7458 / Dispersant 200 t.	Whole year service
Northern Black Sea	Petronav EMSA/NEG/1/2014 Lot 2	*Amalthia*	Oil Tanker / 5154	Whole year service
Southern Black Sea	COSMOS EMSA/CPNEG/6/2016 Lot 1	*Galaxy Eco*	Oil Tanker / 2969 Dispersant 200 t.	Whole year service
2. EAS				
Northern Baltic	Lamor Corporation AB EMSA/CPNEG/2/2018	25 stand-alone equipment sets	Contracted storage area: 812m^2 (Tolkkinen, Finland)	Whole year service
Baltic Sea	Stena EMSA/CPNEG/2/2019 Lot 1	20 stand-alone equipment sets	Contracted storage area: 1,000m^2 (Frederikshavn, Denmark)	Whole year service

North Sea	Ambipar EMSA/CPNEG/2/2019 Lot 2	22 stand-alone equipment sets Dispersant 200 tonnes	Contracted storage area: 900m^2 (Rotterdam, The Netherlands)	Whole year service
Southern Europe	Ottavio Novella EMSA/CPNEG/38/2016	23 stand-alone equipment sets 200 tonnes 0f dispersant	Contracted storage area: 1,961m^2 (Ravenna, Italy)	The contract expired on 10/07/2021
	Ottavio Novella EMSA/CPNEG/2/2020	27 stand-alone equipment sets 201.4 tonnes of dispersant	Contracted storage area: 1,000m^2 (Ravenna, Italy)	The new EAS entered service on 11/07/2021

1.2 Purpose and types of drills and exercises

The vessels and EAS arrangements contracted by the Agency are equipped with state-of-the-art, oil containment recovery and spill detection equipment. In addition, some of the vessel arrangements have dispersant spraying capabilities with dispersant stock available. The pollution response equipment provided by the Agency aims at achieving high recovery rates and high effectiveness of the pollution response activities.

Once the technical requirements of each contract are satisfied, the most important factors determining success of the pollution response system are the skills of the vessel's crews in the operation of the equipment, the capability of the oil spill response coordinators to lead the response action and to integrate EMSA's response assets within the pollution response mechanisms of the Member States. For the EAS the critical factor lies with the operational condition of the equipment. Therefore, regular training, drills, equipment condition tests (ECTs) and exercises are essential to achieving and maintaining the appropriate level of performance.

Each Vessel and EAS contract defines the types and number of drills, ECTs and exercises to be carried out by each associated service:

- The vessels perform two types of drills: 1) acceptance drills (also referred to as acceptance tests) which entail the acceptance of a new vessel into service or of a vessel/equipment improvement project and 2) regular quarterly oil pollution response drills; and two types of exercises: 1) notification exercises and 2) at-sea operational exercises;

- With regard to the EAS arrangements, the contracts have defined in the contract a maximum number of ECTs per year for the initial services. However, additional ECTs may be contracted by EMSA in case of additional equipment being stored in the EAS arrangements. With regard to exercises, there are the same two types of exercises as for the vessels. ECTs aim at guaranteeing that the technical support personnel is able to deploy and instruct Member State's operators on how to use the equipment, as EMSA's contractor technical support personnel does not operate the equipment during response operations.

Detailed instructions on conducting drills ECTs and exercises, including their methods of evaluation are provided in the "Guidelines on Conducting Drills/ECTs and Exercises for the EMSA Contracted Vessels/EAS arrangements". These Guidelines constitute a component of all contracts. They are periodically reviewed and updated taking into account new services development, new types of equipment/services acquired and lessons learned during drills and exercises.

2. Drills & ECTs performed in 2021

In 2021, a total of 64 quarterly drills, 6 acceptance drills related to vessels, 1 EAS acceptance test and 39 equipment condition tests (ECTs) were performed by the vessels and the EAS arrangements under contract to the Agency.

COVID-19 pandemic conditions lasting through the whole year had led to travel restrictions, including establishment of special public health and safety measures in Europe. Consequently, in most cases EMSA's project officers were not able to participate in acceptance drills, quarterly drills, exercises and ECTs. For this reason the possibility of direct control and assessment of the vessel and equipment performance was limited.

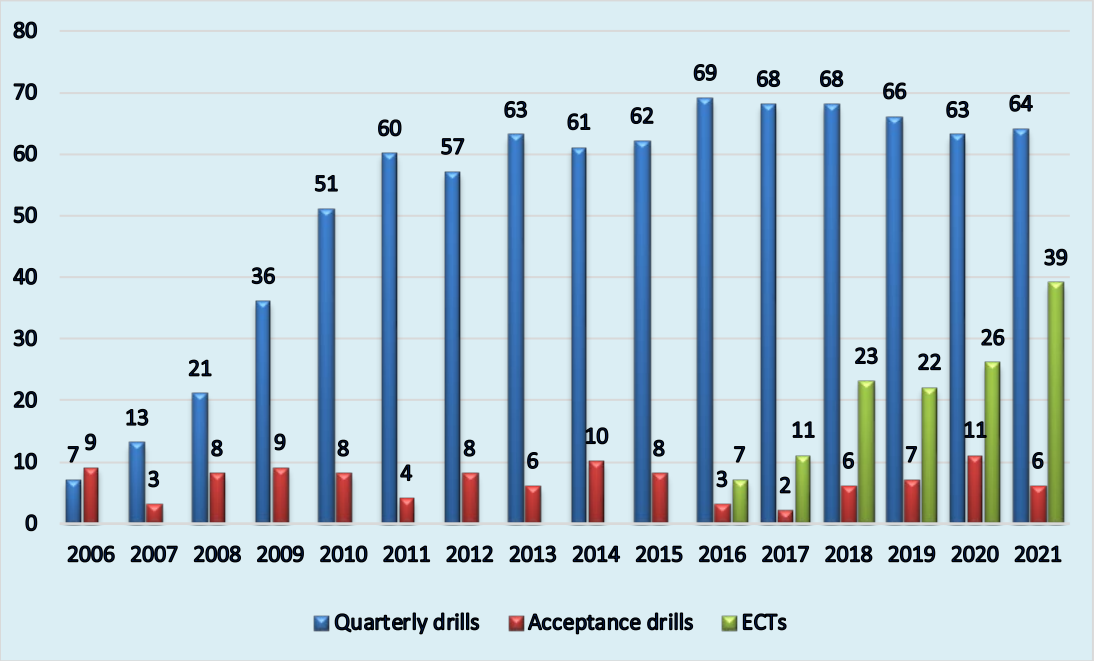
Based on experience from the previous pandemic year, the Agency applied the "Ad-hoc Remote Acceptance Test - Guidelines due to COVID-19" which greatly facilitaded co-operation with EMSA services providers.

For each Acceptance Test, the Guidelines were shared in advance will the relevant contractor in order to agree on the most suitable method of assessment for each of the elements of the "Acceptance Test Check-List / Template" developed in line with the "Guidelines on Conducting Drills and Exercises for the EMSA Contracted Vessels" and "EAS Guidelines for Equipment Condition Tests and Exercises". The Remote Acceptance focused on the tasks requiring on-site assessment during the Acceptance Test and drills i.e. crew skills and equipment performance. To assess these remotely, several options for visual evidence have been identified: Videoconferences (Skype for Business, Teams), Live streaming, Video recording and/or Images. The acceptance of the drill / ECT was based on the assessment of the visual evidence provided by the contractor.

Thanks to this extended programme of reporting and good co-operation of the services providers the Agency managed to maintain control of the service quality and to keep the performance of acceptance and quarterly drills as well as ECTs up to the required standards.

A summary of drills / ECTs performed by EMSA's OPR services during the period 2006-2021 is shown in the chart below.

Chart 1. Number of drills and ECTs 2006 – 2021



2.1 Vessel drills

2.1.1 Acceptance drills

The acceptance drills are of particular importance as they are the major milestone for new vessels, new equipment as well as the overhauled equipment to enter into the standby phase of the pollution response service.

Acceptance drills conducted in 2021:

- Re-entry into operational service of the *Brezzamare*, re-contracted at the end of 2020. The vessel, based in Genova, Italy, provides coverage for the Western Mediterranean Sea;
- Entry into operational service of the *SB Borea* contracted at the end of 2020 based in Napoli, Italy, covering the Central Mediterranean Sea;
- Re-entry into operational service of the *Bahia Tres*, re-contracted at the end of 2020. The vessel, based in Sines, Portugal, provides coverage for the Southern Atlantic Coast;
- Acceptance of the vessel *Aegis* replacing *Aegis I*, the back up vessel for the arrangement in the Aegean Sea;
- Acceptance of the EAS Southern Europe, re-contracted at the end of 2020 based in Ravena, Italy.

Two technical improvement projects to enhance the oil slick detection capacity with RPAS on board the following contracted vessels:

- *Monte Anaga*, stationed in Algeciras, Spain;
- *Kijac*, stationed in Rijeka, Croatia;

Summary of the acceptance drills is demonstrated in the table below.

Table 3. Vessel / Equipment Improvements and Acceptance tests carried out in 2021.

No.	Contract	Contractor	Vessel	Home port	Subject	Acceptance Test Date	Results
1	Amendment no. 1 to 2019/EMSA CPNEG/1/2019 - Lot 2 Western Mediterranean Sea	Naviera Altube	*Monte Anaga*	Algeciras, Spain	Acceptance of the improvement project: accommodation for the lightweight RPAS services on board the vessel	03/06/2021	Acceptance effective from 04/06/2021
2	Amendment no.7to EMSA/NEG/1/2013 - Lot 3 Aegean Sea	EPE	*Aegis*	Piraeus, Greece	Acceptance of the Vessel Aegis replacing Aegis I	20/08/2021	Acceptance effective from 21/08/2021
3	Amendment No. 4 to 2019/EMSA/CPNEG/ 1/2019 - Lot 1 Adriatic Sea	Dinamarin	*Kijac*	Rijeka, Croatia	Acceptance of the improvement project: accommodation for the lightweight RPAS services on board the vessel	20/10/2021	Acceptance effective from 21/10/2021

4	2020/EMSA/CPNEG/ 1/2020 - Lot 1 Central Mediterranean Sea	Sarda Bunkers	*SB Borea*	Naples, Italy	Acceptance of the newly contracted vessel	11/11/2021	Acceptance effective from 12/11/2021
5	2020/EMSA/CPNEG/ 1/2020 - Lot 3 Western Mediterranean Sea	Ciane	*Brezza mare*	Genoa, Italy	Acceptance of the newly contracted vessel	19/11/2021	Acceptance effective from 20/11/2021
6	2020/EMSA/CPNEG/ 1/2020 - Lot 2 Southern Atlantic Coast	Mureloil	*Bahia Tres*	Sines, Portugal	Acceptance of the newly contracted vessel	30/11/2021	Acceptance effective from 01/12/2021

Fig.1. RPAS acceptance test onboard Kijac. View from the drone.

2.1.2 Quarterly drills

The EMSA vessel Contractor is obliged to train the vessel's crew and to maintain the oil pollution response equipment in order to be ready to carry out oil pollution response services efficiently. To demonstrate the fulfilment of these obligations the Contractor is obliged to carry out drills on a quarterly basis.

The guidelines describing performance standards for the vessel, crew and equipment are part of the Vessel Availability Contract. The quarterly drill can be accepted only if all required standards have been achieved. The acceptance of the Contractor's Quarterly Drill Report is a condition for the payment of the Vessel Availability Fee.

In 2021 the Agency applied the extended programme of reporting based on the "Ad-hoc Remote Acceptance Test - Guidelines due to COVID-19".

The summary of the quarterly drills carried out in 2021 is presented in the table below.

Table 4. Summary of the quarterly drills carried out in 2021.

Area	EMSA Contractor	*Vesel*	No.	Date	Comment
Baltic	Stena Oil AB EMSA/NEG/1/2015 - Lot 2 Southern Baltic Sea	*Norden*	1Q	30/03/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	04/05/2021	
			3Q	20&24/08/2021	
			4Q	18/10/2021	
Southern North Sea and the Channel	DC Industrial 2014/EMSA/NEG/1/2014 - Lot 3.1 Channel & Southern North Sea	*Interballast III*	1Q	09/03/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	27/04/2021	
			3Q	10/08/2021	
			4Q	01/10/2021	
	DC Industrial 2014/EMSA/NEG/1/2014 - Lot 3.2 Channel & Southern North Sea	*DC Vlaanderen 3000*	1Q	09/03/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	08/06/2021	
			3Q	09/08/2021	
			4Q	18/10/2021	
Atlantic North	MOJO Maritime, France EMSA NEG/1/2013 - Lot 2 Atlantic North	*Mersey Fisher*	2Q	15/03/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			4Q	22/09/2021	
		Corrib Fisher	1Q	24/06/2021	
			3Q	04/12/2021	
Atlantic coast	REMOLCANOSA EMSA/NEG/1/2014 - Lot 1 Atlantic Coast	*Ria de Vigo*	1Q	25/02/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	21/04/2021	
			3Q	08/09/2021	
			4Q	03/11/2021	
Bay of Biscay	SEAOWL 2017/EMSA/CPNEG/22/2017 Bay of Biscay	*VN Partisan*	1Q	05/03/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	29/04/2021	
			3Q	24/08/2021	
			4Q	24/11/2021	
Southern Atlantic coast	Mureloil EMSA NEG/1/2012 - Lot 1 Southern Atlantic Coast	*Bahia Tres*	1Q	21/03/2021	2 drills required in 2021. Both drills were conducted and accepted by EMSA. Contract expired on 17/07/2021
			2Q	13/04/2021	
			3Q	-	
			4Q	-	
Canary Islands and Madeira	Petrogas EMSA/NEG/1/2015 - Lot 1 Canary Islands and Madeira	*Mencey*	1Q	24/03/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	07/07/2021	
			3Q	13/09/2021	
			4Q	02/11/2021	
Western Mediterranean Sea	Naviera Altube EMSA CPNEG/1/2019 Lot 2 Western Mediterranean Sea	*Monte Anaga*	1Q	11/02/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	26/05/2021	
			3Q	03/09/2021	
			4Q	02/12/2021	
	CIANE EMSA/NEG/34/2012 Western Mediterranean Sea	*Brezzamare*	1Q	18/02/2021	2 drills required in 2021. Both drills were conducted and accepted by EMSA. Contract expired on 26/08/2021
			2Q	15/06/2021	
			3Q	-	
			4Q	-	

Adriatic Sea	Petronav 2019/EMSA/CPNEG/1/2019 Lot 3 Adriatic Sea	*Adelia*	1Q	16/03/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	25/05/2021	
			3Q	02/08/2021	
			4Q	04/10/2021	
Central Mediterranean Sea	Falzon EMSA NEG/1/2012 - Lot 2 Central Mediterranean	*Santa Maria*	1Q	04/03/2021	2 drills required in 2021. Both drills were conducted and accepted by EMSA. Contract expired on 25/06/2021
			2Q	09/06/2021	
			3Q	-	
			4Q	-	
Aegean Sea	EPE EMSA NEG/1/2013 - Lot 3 Aegean Sea	*Aktea OSRV*	1Q	10/03/2021	6 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	09/06/2021	
			3Q	24/09/2021	
			4Q	10/11/2021	
		Aegis I	2Q	09/06/2021	
		Aegis	4Q	20/08/2021	
Adriatic Sea	Dinamarin Ltd 2019/EMSA/CPNEG/1/2019 – Lot 1 Adriatic Sea	*Kijac*	1Q	23-24/02/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	11/05/2021	
			3Q	10/09/2021	
			4Q	08/12/2021	
Eastern Mediterranean	Petronav EMSA NEG/1/2010 - Lot 1 Eastern Mediterranean	*Alexandria*	1Q	19/02/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	22/04/2021	
			3Q	29/07/2021	
			4Q	12-13/10/2021	
Black Sea	Petronav 2014 EMSA/NEG/1/2014 - Lot 2 Northern Black Sea	*Amalthia*	1Q	08/03/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	06/06/2021	
			3Q	20/07/2021	
			4Q	5-7/11/2021	
	COSMOS 2016 EMSA/CPNEG/6/2016 - Lot 1 Southern Black Sea	*Galaxy Eco*	1Q	08/03/2021	4 drills required in 2021. All drills were conducted and accepted by EMSA.
			2Q	22/06/2021	
			3Q	20/08/2021	
			4Q	27/10/2021	
Total number of quarterly drills 2021: 64					

The outcome of the quarterly drills carried out during 2021 demonstrated that the service was operated efficiently and in accordance with EMSA expectations.

Fig. 2. Quarterly drill on board Aalexandria. Deployment of the boom and high capacity skimmer.

2.2 EAS - Equipment Condition Tests (ECTs) and training sessions

According to the contract, the EAS Contractors are obliged to train their staff and to maintain the equipment in a full state of readiness for carrying out oil pollution response services efficiently.

To demonstrate the fulfilment of these obligations, the Contractors are obliged to carry out ECTs. The Agency developed guidelines describing equipment performance standards. These guidelines are an integral part of the Framework Contracts. The ECT can be accepted only if all required standards have been achieved.

Within the framework of the ECTs, training sessions for the Member States' equipment operators were organised in the EAS North Sea and EAS Northern Baltic. The trainees were able to get familiarised and operate different equipment systems such as the Current Buster 6, the Speed Sweep, the Ro-Trawl and oil storage barges.

Due to limitations caused by the COVID-19 pandemic most of the activities were carried out during the 2nd and 3rd quarters of 2021. The results of the ECTs were assessed remotely based on the visual evidence provided by the contractors. In addition to ECTs and training, equipment from the EAS Baltic was used in the Breeze Exercise 2021 in Bulgaria and equipment from the EAS Northern Baltic was used in the Balex Delta 2021 exercise in Finland.

Moreover, the vessel contractor in the Black Sea conducted two ECTs with the weir boom.

The summary of the ECTs and trainings carried out in 2021 is presented in the table below.

Table 5. Summary of the ECTs and Trainings for Equipment Operators carried out in 2021.

Contractor	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Result
Ambipar EAS North Sea (Rotterdam)	N/A	V-Sweep (06/21)	Current Buster 6 (09/21)	N/A	Equipment was found in a good condition. All ECTs accepted by EMSA
			Speed Sweep (09/21)		
			Oil Storage Barge (09/21)		
			Current Buster 6 (09/21)		
		Oil Skimmer (06/21)	Speed Sweep (09/21)		
			Oil Storage Barge (09/21)		
			Ro-Trawl (09/21)		
			Current Buster 4 (09/21)		
Stena Oil EAS Baltic Sea (Frederikshavn)	N/A	Ro-Trawl (05/21)	Current Buster 4 (07/21)	N/A	Equipment was found in a good condition. All ECTs accepted by EMSA
		Oil Storage Barge (05/21)			
		Speed Sweep (06/21)			
		Oil Storage Barge (06/21)			
		Lamor Skimmer (06/21)			
		Lamor V-Sweep (06/21)			
Ottavio Novella EAS Southern Europe (Ravenna)	N/A	Ro-Boom (05/21)	Current Buster 4 (07/21)	N/A	Equipment was found in a good condition. All ECTs accepted by EMSA
		Ro-Trawl (05/21)	Ro-Trawl (09/21)		
		Current Buster (05/21)	Current Buster (09/21)		
		Oil Storage Barge (05/21)	Oil Storage Barge (09/21)		
		Lamor Skimmer (05/21)	N/A		
		Lamor V-Sweep(05/21)			
LAMOR AB EAS Northern Baltic Sea (Tolkkinen)	N/A	Speed Sweep (05/21)	Speed Sweep (09/21)	N/A	Equipment was found in a good condition. All ECTs accepted by EMSA
		Ro-Trawl (05/21)	Oil Storage Barge (09/21)		
		Ro-Trawl (05/21)	V-Sweep (09/21)		
		Ro-Trawl (05/21)	High capacity Skimmer (09/21)		
		Current Buster 6 (05/21)	N/A		
		Current Buster 6 (05/21)			
Cosmos CPNEG/17/2016 Lot 1 Southern Black Sea	Weir boom (01/21)	N/A	Weir boom (08/21)	N/A	Equipment was found in a good condition. All ECTs accepted by EMSA
TOTAL ECTs 2021: 39		Training sessions for Equipment Operators: - 1 session of 3 days in EAS North Sea with 9 MS's operators; - 1 session of 3 days with 24 Finnish Border Guard personnel.			

Fig. 3. ECT of the Current buster 4. EAS Baltic Sea.

2.3 Technical Issues Record

Checking the technical status and completeness of the oil pollution response equipment on board the vessels and the EAS stockpiles is an important element of each drill / ECT attended by EMSA observers.

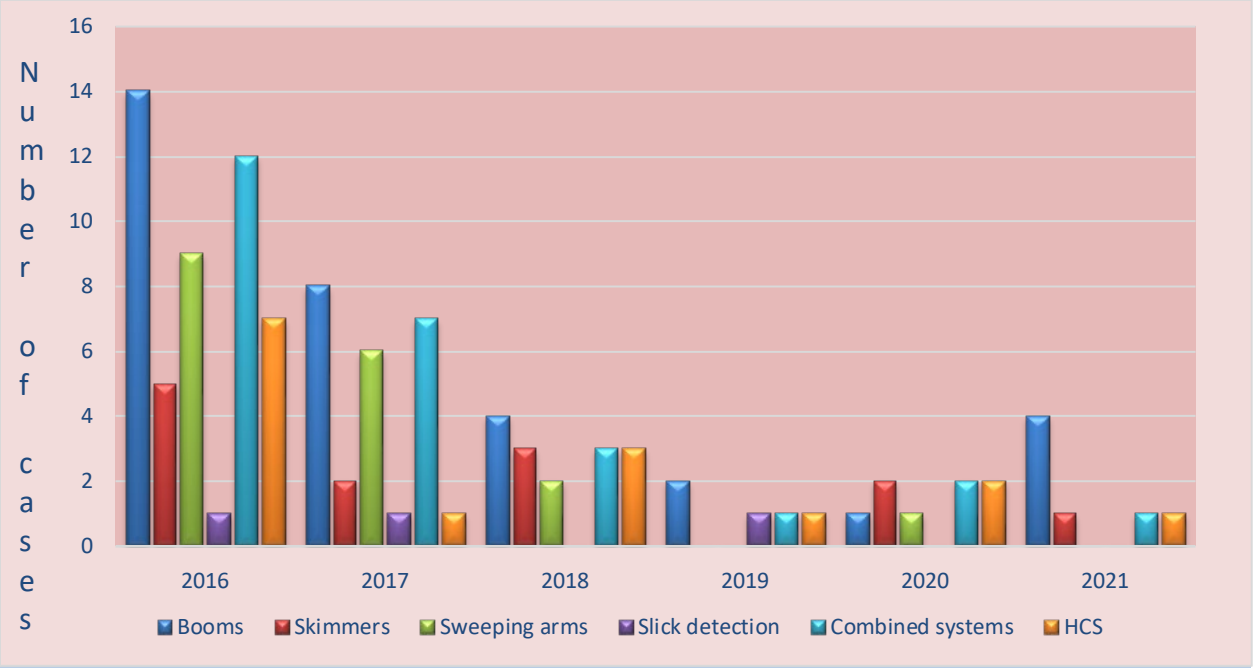
Both vessels and EAS contracts provide for a mandatory reporting of incidents/malfunctions. Besides this, EMSA conducts annual verification of all equipment.

In 2021 due to COVID-19 pandemic restrictions the Agency was unable to conduct directly the equipment annual verification and assessment of the equipment condition.

All data related to the technical issues in 2021 are based on the reporting provided by the EMSA contractors.

Generally, the technical issues were dealt with in efficient and effective way and the equipment was brought back to the operational state as quickly as possible.

Chart 2. Number of Technical issues 2016 – 2021.



Despite the limitations set by COVID-19 pandemic in 2021 the OPR equipment under the Vessel and EAS contracts was maintained in constant operational condition ready to perform service for the Member States up to the EMSA required standards.

Nevertheless, a programme for a thorough equipment inventory and condition verification should be prepared and conducted in post-pandemic time for all of EMSA's OPR services.

3. Exercises performed in 2021

At-sea operational exercises assist the integration of EMSA's OPR services within the response mechanisms of Member States, improving the necessary coordination and cooperation of the EMSA resources with the coastal State response units. There are also rare opportunities for the Member States'personnel to familiarize with the equipment available in the stockpiles.

It has to be pointed out that, with the exception of exercises within regional projects implemented by the Agency, EMSA does not organize exercises but participates when requested.

In 2021 the number of operational exercises in Europe increased compared to 2020 and was closed to the average pre-pandemic level. In parallel the number of the notification exercises usually associated with the operational exercises also increased.

The Agency is implementing a procedure for the internal/external exercise coordination in order to provide the full set of services (Vessels, EAS, Mar-ICE, CleanSeaNet and others) in a harmonised manner as well as to provide/receive feedback to and from the Member States after the performance of the exercises.

3.1 Operational exercises

In the course of 2021, eight EMSA contracted vessels (two of which equipped with RPAS) and two equipment sets from the EAS were deployed in seven at-sea operational exercises, organised in cooperation with EU Member States and/or Regional Agreements.

These events took place in the Baltic Sea, The Channel, Atlantic coast, West, Central and East Mediterranean Sea and Black Sea. Feedback from the exercises organisers as well as reports from EMSA service providers indicate that all vessels/EAS systems deployed in the operational exercises successfully completed the tasks assigned.

The summary of operational exercises performed by EMSA contracted vessels/EAS arrangements in 2021 is shown in the table below.

Table 6. Operational exercises at sea 2021

No.	Name of Exercise	Date	Location	Participating Parties	EMSA Vessel (RPAS) / EAS
1	Ramogepol - Paulus II	26 May	North Corsica, France	France, Ramogepol States, EMSA	*Brezzamare*
2	Breeze 2021	16 July	Varna (Bulgaria)	Bulgaria, EMSA	*Galaxy Eco* and *Amalthia* with RPAS, EAS Baltic Sea (Oil Storage Barge)
3	BALEX Delta 2021	24-25 August	Kotka (Finland)	Parties to the Helsinki Convention, EMSA	EAS North Baltic Sea (Current Buster 6), *Norden* with RPAS
4	POLHARBOR 21	29-30 September	Le Havre (France)	France, EMSA	*Interballast III*
5	ATLANTIC POLEX.PT 2021	27-28 October	Sines (Portugal)	Portugal, Spain, EMSA	*Monte Anaga*
6	NEMESIS 2021	3-4 November	Cyprus	Greece, France, United Kingdom, USA, State of Israel, the Republic of Cyprus and EMSA	*Alexandria*
7	POLEX 2021	17-18 November	Castellon (Spain)	Spain, EMSA	*Monte Anaga*

3.2 Notification exercises

Notification exercises are usually conducted in conjunction with operational exercises. In addition, 'stand-alone' notification exercises are occasionally carried out. The aim of these exercises is to test and implement agreed procedures and lines of communication for reporting incidents and for requesting and providing assistance. These exercises are usually launched by the Member States.

Notification exercises involve EMSA, one or more Requesting Parties[3], EMSA's contractor(s) and the Emergency Response Coordination Centre (ERCC), operated by DG ECHO. The main criterion for the

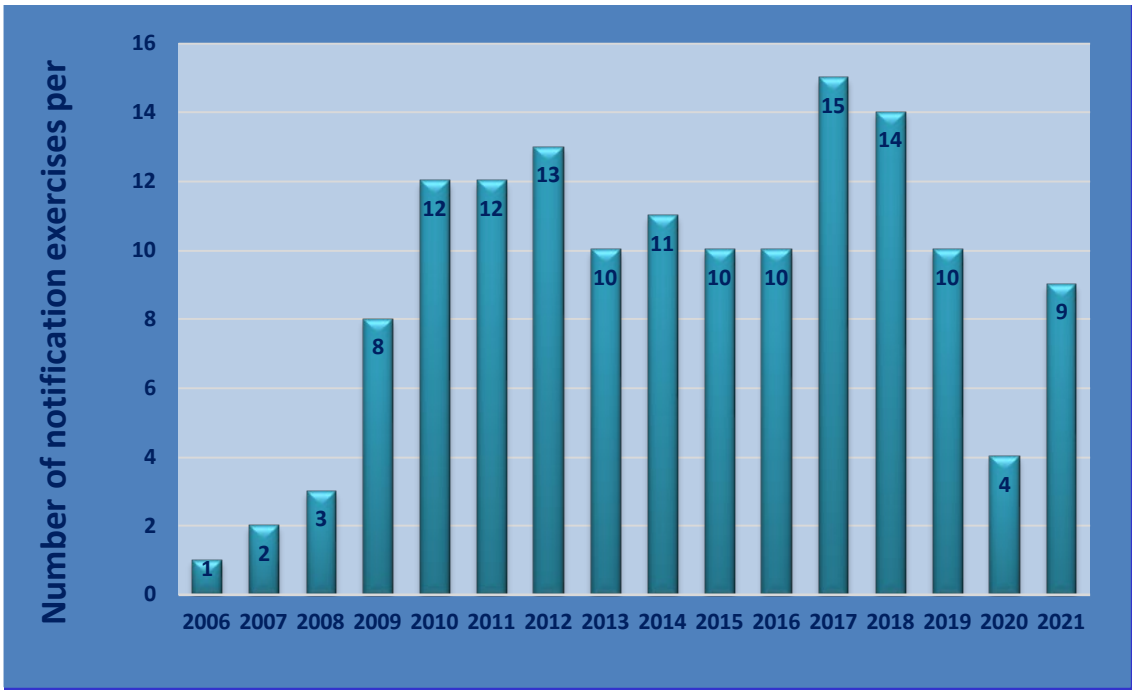
[3] EMSA's OPR services can be activated by the following Requesting Parties: EU Member States, EU Candidate Countries, European Free Trade Association (EFTA)/European Economic Area (EEA) coastal Member States, Third countries sharing a regional sea basin with the Union, Private Entities and/or the European Commission.

evaluation of the notification exercise is the time needed for the Incident Response Contract (Vessel - IRC-V or EAS - IRC-E)[4] to be signed by both the EMSA contractor and the Requesting Party.

In 2021, the Agency participated in 9 notification exercises involving the activation of 13 vessels (three of which equipped with RPAS) and 3 EAS arrangements.

The number of notification exercises carried annually over the years 2006-2021 is shown on the chart below.

Chart 3. Number of notification exercises 2006 – 2021



It must be noted that out of the 9 notification exercises carried out in 2021, only two exercises included the full procedure of EMSA Vessel and/or EAS mobilisation.

During each exercise EMSA Contractors reacted immediately and in line with standards set by EMSA. However, in most cases Member States terminated the procedure prior to the signature of the IRC Form.

It has to be stressed that the mobilisation of EMSA means is based on the signing of the Incident Response Contract and its annex the IRC Form. The contract contains important provisions related to the respective obligations of the Requesting Party and the Contractor.

Exercises are a good opportunity to ensure that response authorities are made aware of all clauses of this contract. In the same way, the IRC form describes which configuration of the vessel is requested or what type of equipment from the EAS is requested. Experience has shown that completing this form could be challenging and therefore time should be devoted during exercises to go through the all process.It has to be reiterated that for exercises signing the IRC does not trigger the payment of any fee by the Requesting Party.

During the notification exercises 2021 it was also noted that in some Member States there is still need to provide CECIS training for the pollution response personnel responsible for requesting assistance from other Member States and EMSA.

A description of the notification exercises carried out in 2021 can be found in the table below.

[4] Incident Response Contract": This contract is to be concluded between the EMSA contractor and the Requesting Party. This pre-established model contract addresses the actual response operations. It covers the terms and conditions of the service and includes the associated daily hire rates. Following a request for assistance, EMSA will activate or even pre-mobilise the vessel / equipment to facilitate the operation. The command and control during an incident rests with the affected coastal State using the vessel / equipment.

Table 7. Outcome of the Notification exercises carried out in 2021

No.	Name /date	Participating parties: MS / Service mobilised	Comments
1	Ramogepol - Paulus II 24-25 May	France, Parties to the RAMOGEPOL / Ciane (*Brezzamare*)	The procedure of signing the IRC-V was not completed. MS opened an emergency in CECIS and requested assistance of EMSA vessel and satellite images. EMSA reacted to MS requestimmediately by placing the assistance offer in CECIS. Although EMSA advised MS to accept or decline the offer in CECIS or by e- mail the exercise was not continued.
2	LAT-EST OILEX 2021 29 June	Latvia, Parties to the Helsinki convention / Stena (*Norden* with RPAS)	An emergency related to a Large oil slick detected by EMSA CSN was opened in CECIS at 9:10 in the morning. MS requested assistance of the OPR vessel. All together 9 offers were placed in CECIS by different countries. EMSA placed in CECIS offer of the OPR vessel Norden. Requesting State chose the vessel from Estonia.
3	Breeze 13-14 July	Bulgaria / Cosmos (*Galaxy Eco*) Petronav (*Amalthia*), EAS Southern Europe and EAS Baltic Sea)	MS requested assistance of two oil recovery vessels, RPAS with pilot and oil storage barge. Exercise went well and the reaction time of EMSA, EMSA contractors as well as the requesting State was satisfactory, namely 2h 42 min after the request for assistance EMSA submitted an offer in CECIS. The offer was accepted and the procedure of signing the IRC-vessel and IRC equipment was fully completed.
4	Wadden Sea Exercise 13 September	Denmark / Stena (*Norden*), DCI 1 (*DC Vlaanderen 3000*), DCI 2 (*Interballast III*)	The procedure of signing the IRC-V was not completed. The reaction time of EMSA and contractors was satisfactory. The agency placed in CECIS offer of assistance of 3 OPR vessels. The requesting State paused and later-on (next day) ended the notification exercise without accepting any offer. Consequently, no notices of pollution were sent, and IRC contracts were not signed. Requesting state didn't accept the offers placed in CECIS and didn't informed about suspension/end of exercise. Meantime, EMSA vessel contractors remained on stand-by waiting for developments. Only after MSS requested information about the status of the exercise the suspension/end was acknowledged.
5	Blue Kingdom 16 September	Ireland / Mojo (*Corrib Fisher*), EAS NS (various systems)	MS requested assistance of 1 vessel. The Agency placed in CECIS offer of Corrib Fisher and some equipment from EAS. The requesting State accepted EMSA offer in CECIS. The Agency sent the IRC-V and IRC-E to the Requesting State for signature. At this stage the exercise was stopped. EMSA and EMSA contractors reacted properly and fast. The initial steps of the procedure of the vessel mobilisation were progressing well. Unfortunately, it was not continued by the Requesting State.
6	CECIS Test 29 September	Denmark / EMSA	This was the CECIS test involving request of assistance as well as offering and accepting assistance using the system. The test didn't involve the vessel mobilisation procedure. No EMSA contractor was involved. Requesting State asked for 4 response vessels. EMSA offered 4 other MS offered 2. The requesting state accepted in CECIS 2. However, the system showed no indication which vessels were accepted.
7	ATLANTIC POLEX.PT 26 October	Portugal / Remolcanosa (Ria de Vigo), Petrogas (Mencey), Naviera Altube & Nordic Unmanned (*Monte Anaga* + RPAS)	The procedure of signing the IRC-V was not completed. MS placed in CECIS request for assistance of 3 OPR vessels at 13:30. EMSA offered 3 vessels (Monte Anaga, Mencey and Ria de Vigo). Offer was submitted at 15:58. Requesting State accepted 1 vessel (Monte Anaga) at 17:00. EMSA forwarded to the Requesting State IRC-V at 17:05. This concluded the exercise as there was no follow up with the contract signature by the contractor and the Requesting State.

8	Nemesis 26 October	Cyprus / EAS SE, Petronav & Nordic Unmanned (*Alexandria* +RPAS)	The exercise went very well and the reaction time of EMSA and contractors was good. Both IRCs (vessel and EAS) were signed by all parties. It took approx. 2 hours from submission to countersignatures. Petronav and the requesting State took the exercise to the next level (usually the exercise is considered completed after the IRC signature) by simulating the issue of: Notice of Readiness, Notice of Arrival; Notice of Ending the Operations
9	POLEX 2021 17-18 November	Spain / Naviera Altube (*Monte Anaga*)	The procedure of signing the IRC-V was not completed. The reaction time of EMSA as well as the vessel contractor was good. EMSA placed offer of assistance in CECIS within 45 minutes after the request appeared in the CECIS request overview. MS implemented the exercise with delays and lack of timely information of the changes. Requesting State did not accept the offer for assistance in "request overview" folder in CECIS. Requesting State did not fill or sign the vessel IRC. Therefore, the process of exchange and signature of IRC between the requesting party and the vessel contractor was not conducted.

4. MAR-ICE activations for drills and exercises

The MAR-ICE Network of chemical experts was established in October 2008 between EMSA, Cefic (European Chemical Industry Council) and Cedre (Centre of Documentation, Research and Experimentation on accidental water pollution). It became fully operational in January 2009 and currently runs through to October 2022. Requesting countries can activate the Network for real incidents, as well as drills and exercises by sending the MAR-ICE Activation Form to the MAR-ICE Contact Point, as per the activation procedures and contact numbers known to the relevant national authorities.

The MAR-ICE Network offers a 24/7 service to EU Member States, Coastal EFTA States and coastal EU Candidate Countries providing upon request rapid access to specialised information, documentation and expert advice on chemicals involved in marine spills to national authorities in charge of response operations, both remotely (level-1) and on a case-by-case basis, also on-site at the command centre of the requester (level-2). The MAR-ICE service level-2 on-site support is provided with the assistance of the chemical industry. The information provided by the MAR-ICE Contact Point is based on product specific characteristics and on advice from companies and chemical industry experts obtained through the ICE database.

In 2021, the MAR-ICE network was activated:

- Twice for real incidents, by Croatia regarding the cargo of an old wreck, and by Bulgaria regarding the cargo of a grounded vessel; and
- Six times for exercises, by Spain, Lithuania and Finland. Details are presented in the Table 8 below.

During the exercises, some communication issues were noted, as well as some deviations from the service's activation procedures by the requesting party (e.g., phone call is to be made by the requester to the MAR-ICE Contact Point before or as soon as sending the Activation Form). A few improvements of the chemical model input form were identified and will be considered by the MAR-ICE Contact Point. 2021 marked the first activation of the MAR-ICE service level-2, and the high added value of the direct contact between the requester and the chemical industry's product-specific experts was demonstrated during this activation. The requested information was provided within the established timelines of the service.

Table 8. MAR-ICE drills/exercises carried out in 2021

MAR-ICE SERVICE DRILLS / EXERCISES 2021				
1	9/3/2021	**Finnish Border Guard BALEX Alpha exercise (preparatory phase of BALEX Delta 21)**	Exercise scenario involved the collision between a chemical tanker and an oil tanker, with the potential for a possible leak. 5 products were involved: Isopropanol (UN 1219), Phenol (UN 2312), Xylenes (UN 1307), Ethylene dichloride (UN 1184), Butanols (UN 1120). Request asked for product specific information for the 5 products involved in the scenario and for contacts of product-specific experts from the chemical industry.	Activation of MAR-ICE Levels 1 & 2 MAR-ICE service provided the following product-specific documentation and explanatory information: - MAR-CIS datasheets for the 5 chemicals involved - BE-CHEM behaviour information for 4 products (UN 1120, UN 1184, UN 1219, UN 1307) - Cedre's chemical guides for the products UN 1184 and UN 1307 - A short risk assessment regarding the main risks of the 5 substances involved in the scenario. As MAR-ICE Level-2 was also activated, contact was made with the chemical industry, who were ready to provide product-specific experts if needed.
2	18/5/2021	**MRCC Valencia SASEMAR, Spain**	Exercise scenario involved a fire on board a ship carrying Thiodiglycol (no UN Nº was indicated on the activation form). Request made was not clear, as no boxes were selected on the Activation Form, so the MAR-ICE response focused on health and safety of responders.	Activation of MAR-ICE Level-1 MAR-ICE service provided the following product-specific documentation and explanatory information for the product Thiodiglycol: - Safety Datasheet - Medical information - BE-CHEM product behaviour results with recommendations regarding response on the bridge and at sea - Information on environmental impacts - ICSC document in Spanish.
3	23/8/2021	**Finnish Border Guard during the exercise BALEX Delta 21**	Exercise scenario involved the collision between a chemical tanker and an oil tanker, with the potential for a possible leak of 5 products (UN 1219), (UN 2312), (UN 1307), (UN 1184) and (UN 1120), which evolved to the leakage of the product Xylenes (UN 1307). Request asked for product specific information and for contacts of product-specific experts from the chemical industry.	Activation of MAR-ICE Levels 1 & 2 MAR-ICE service provided the following product-specific documentation and explanatory information: - MAR-CIS datasheets for the 5 chemicals involved - BE-CHEM behaviour information for the 5 chemicals involved - Cedre's chemical guide for UN 1307 (Xylenes) - IMDG EmS for UN 1307 (Xylenes) - Short risk assessment regarding the main risks of the 5 substances involved in the scenario - CHEMMAP model output for Xylenes (UN 1307) As MAR-ICE Level-2 was also activated, direct contact was made with chemical industry experts, who provided via an on-line meeting with the requester (simulating for the purposes of the exercise the on-site advice) product-specific information for UN 1307, covering safety and technical issues regarding Xylenes recovery and storage.

4	**27/9/2021**	**MRCC Klaipeda Lithuania**	Exercise scenario involved a fire on board a ship laden with Ammonium Nitrate (UN 2067) in the Klaipeda Harbour. Request asked for product specific information on UN 2067, especially regarding PPE and exposure information relevant for responders. The requester noted that they already had access to the MAR-CIS datasheet for UN 2067.	Activation of MAR-ICE Level-1 MAR-ICE service provided the following product-specific documentation and explanatory information: - ERICard for UN 2067 with explanatory information - General information regarding the sea transport of Ammonium Nitrate based fertilizers (Guidance from the European Fertilizer Manufacturers' Association, EFMA).
5	**15/11/2021**	**MRCC Madrid SASEMAR, Spain**	Exercise scenario involved the spill of Methanol (UN 1230) in the Tarragona port terminal. Request asked for product specific information regarding UN 1230.	Activation of MAR-ICE Level-1 MAR-ICE service provided the MAR-CIS datasheet for Methanol (UN 1230) with explanatory information.
6	**18/11/2021**	**MRCC Madrid SASEMAR, Spain (POLEX 21 exercise)**	Exercise scenario involved the spill of Ammonia (UN 1005). Request asked for product specific information regarding UN 1005 and for a product expert from the chemical industry (MAR-ICE level 2).	Activation of MAR-ICE Levels 1 & 2 MAR-ICE service provided the following product-specific documentation with explanatory information: - MAR-CIS datasheet for Ammonia - ERICard for Ammonia - EmS sheet for Ammonia (IMDG supplement) - Relevant extract from IGC for Ammonia CHEMMAP model outputs regarding the trajectory and fate of Ammonia dispersion were also provided. The chemical industry was contacted via the ICE Network and contact information for a chemical expert on this product was provided (Level-2).

5. Conclusions / Highlights

- Despite the COVID-19 pandemic conditions through the whole year 2021, in terms of number of activities (drills, ECTs, Operational exercises and notification exercises) EMSA returned to figures from pre-pandemic times.
- Thanks to the extended programme of reporting and good co-operation with the EMSA contractors, as well as the experience gathered in 2020, the Agency managed during 2021 to maintain control of the service quality and keep the performance of acceptance and quarterly drills as well as ECTs up to the required standards.
- In 2021 due to COVID-19 pandemic restrictions, for the majority of the response arrangements the Agency was unable to conduct directly the equipment annual verification and assessment of the equipment condition. All data related to the technical issues in 2021 were based on the reporting provided by the EMSA contractors. The record shows that OPR equipment under the Vessel and EAS contracts was maintained in constant operational condition ready to perform service for the Member States up to the EMSA required standards.
- A programme for a thorough equipment inventory and condition verification will be required in post-pandemic time for all of EMSA's OPR services.
- In 2021 the number of operational exercises in Europe increased comparing to 2020 and almost reached the average pre-pandemic level. In parallel the number of the notification exercises usually associated with the operational exercises also increased.
- During the notification exercises in 2021 it was noted that most of the Member States don't take the opportunity to exercising the procedure of the formal mobilisation of EMSA resources. Out of 10 notification exercises only two were completed with signature of the IRC-V and IRC-E contracts.
- It was alsonoted that in most of the exercising States, personnel involved in the exercise has problems with using CECIS. There is a need to provide CECIS training for the pollution response personnel responsible for requesting assistance from other Member States and EMSA.
- The readiness of the response services was positivey tested during the timely activations in the context of the operational assistance provided to Greece, sinking of *Sea Bird*, Cyprus, Syria oil spill, and Bulgaria, grounding of *Vera Su.*
- 2021 marked the first activation of the MAR-ICE service level-2, and the high added value of the direct contact between the requester and the chemical industry's product-specific experts was demonstrated during this activation.

Fig. 4. SB Borea. Newly contracted in 2021

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