



EMSA

FACTS & FIGURES

2021

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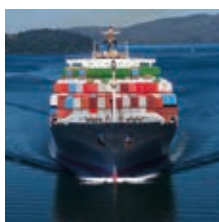
TABLE OF CONTENTS

Foreword **4**

CHAPTER 1

SUSTAINABILITY **6**

Prevention of pollution by ships 7
Operational pollution response services 9



CHAPTER 2

TECHNICAL ASSISTANCE **12**

Visits and inspections 13
Capacity building and the EMSA Academy 16
Interagency cooperation on coast guard functions 19

CHAPTER 3

SAFETY & SECURITY **20**

Maritime safety 21
Human element 23
Accident investigation 24
Maritime security 26



CHAPTER 4

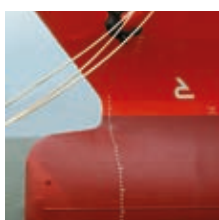
SURVEILLANCE **28**

Satellite-based services and innovation 29
Remotely Piloted Aircraft System services 31
Common Information Sharing Environment (CISE) 33

CHAPTER 5

DIGITALISATION & SIMPLIFICATION **34**

Integrated Maritime Services 35
THETIS and its associated modules 38
Harmonised reporting 40



CHAPTER 6

CORPORATE DEVELOPMENTS **42**

FOREWORD

2021 was the second full year in which we took forward EMSA's 5-year strategy (2020-2024), consolidating our multifaceted role in each of our five strategic areas of action. In the past two years, I am proud to have witnessed first-hand the commitment and dedication of our staff to this process and to be able to present to you in the EMSA Facts & Figures publication the many achievements of 2021.

This publication hinges around our five strategic areas of action – sustainability, safety, security, simplification and surveillance – and our four-fold role of service provider, reliable partner, international reference and knowledge hub. Through this structured approach, we share how we have delivered on the aims and ambitions set out in our roadmap that is the Single Programming Document 2021-2023.

Highlights in the area of sustainability include the launch of the European Maritime Transport Environmental Report which EMSA produced jointly and in close cooperation with the European Environment Agency. In it is a wealth of data on the impact of maritime transport on the environment and it can serve as a reliable basis for important decision-making processes. Studies on alternative fuels for maritime transport were also initiated as part of a series, starting with biofuels and ammonia.

Bridging sustainability and surveillance, our remotely piloted aircraft systems delivered over 1700 operational flight days in 2021 with emissions monitoring as one of the key services alongside general multipurpose maritime surveillance and support from lightweight RPAS on board both EMSA and EFCA chartered vessels. In addition, EMSA's pollution response services provided effective support during three separate incidents in 2021.

Our maritime stakeholders continued to benefit from the increasingly sophisticated maritime awareness picture provided by EMSA's Integrated Maritime Services. An extra 400 individual users joined this growing community which can draw on an impressive range of data extracted from multiple sources and contributing to the safety of maritime traffic, improved response to accident and dangerous situations at sea, as well as to better prevention and detection of pollution at sea.

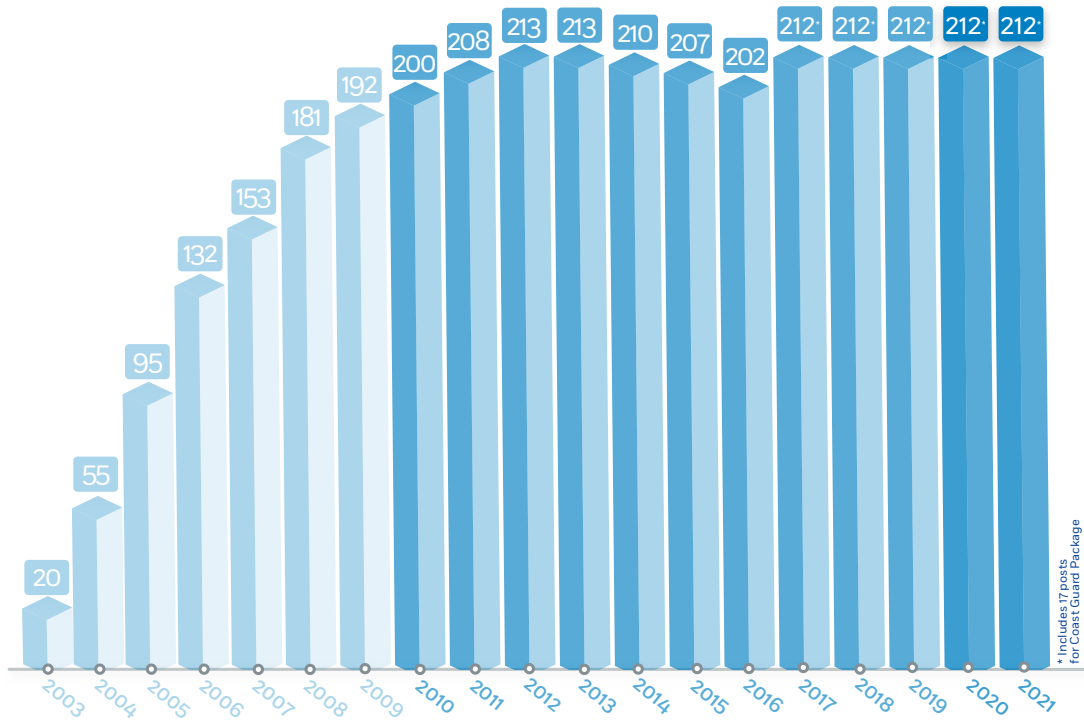
Efforts in 2021 also went into establishing an effective ISO Quality Management System and becoming fully certified for all of our main activities. This also extends to our Greening EMSA ambition which saw much preparatory work for both ISO certified Environmental Management Systems and registration for the EU Eco-Management and Audit Scheme (EMAS).

I gladly present to you these achievements and many more which represent our commitment to the Agency's maxim of quality shipping, safer seas, cleaner oceans whose success is dependent upon the strong collaboration with our many partners in this endeavour both across the EU and further beyond.

Maja Markovčić Kostelac
Executive Director

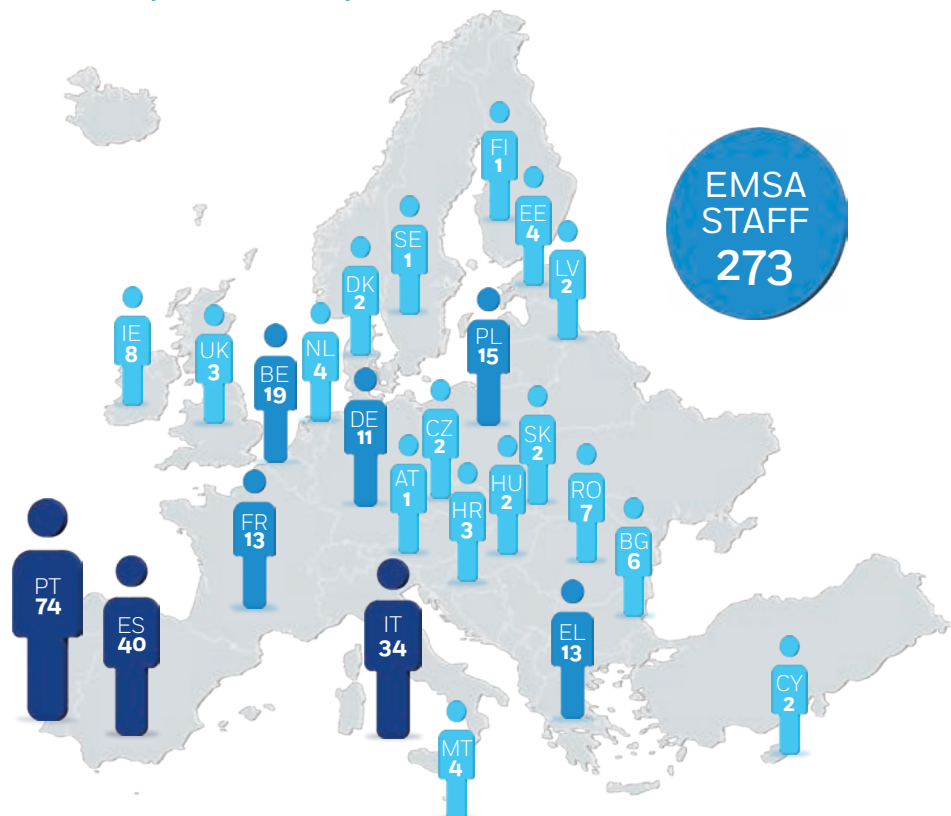
ESTABLISHMENT PLAN FIGURES

EMSA statutory staff from 2003 to 2021



EMSA STAFF BY NATIONALITY 2021

Figures include statutory and non-statutory staff



CHAPTER 1

SUSTAINABILITY



EMSA'S STRATEGIC PRIORITY: CONTRIBUTE TO THE EUROPEAN GREEN AGENDA FOR MARITIME TRANSPORT BY STRENGTHENING THE EU CAPACITY TO PROTECT THE MARINE ENVIRONMENT, MANAGE CLIMATE CHANGE AND RESPOND TO NEW ENVIRONMENTAL CHALLENGES

PREVENTION OF POLLUTION BY SHIPS

Throughout 2021, EMSA gave full support to the European Commission on the maritime dimension of the European Green Deal which sets out the EU's ambition to be the first climate-neutral continent, with a far-reaching growth strategy based on a just and inclusive transition.

Evidence-based facts and data are crucial to shape effective policies and strategies capable of mitigating shipping related environmental risks. To this end, in 2021, EMSA worked with the European Environment Agency (EEA) to release the European Maritime Transport Environmental Report (EMTER). This is the first report of its kind providing a comprehensive assessment of the environmental performance of the maritime transport sector in the European Union. The report drew on contributions from a collaborative stakeholder consultation process and can now feed into the European Commission's array of policy initiatives linked to the European Green Deal. With the release of this report, EMSA is stepping up its efforts to become a hub for environmental data related to maritime transport.

EMSA also participated in several initiatives related to the European Green Deal by providing technical support and data to the European Commission and Member States. This support was mainly focused on the preparation of the FuelEU Maritime initiative, the Zero Pollution Action Plan and the work at IMO on energy efficiency and carbon intensity. The technical contribution of the Agency was an essential building block in support of ongoing policy initiatives by the European Commission, such as the "Fit for 55 package" delivered in July 2021 and aimed at making Europe climate neutral by 2050.

After the successful conclusion of procurement for studies on alternative sources of energy for ships, work started with a focus on biofuels and ammonia. These studies are intended to support the shift towards alternative sources of energy with a low or zero carbon footprint and provide decision makers and stakeholders with an updated and thorough overview of the potential of different sources of power, including a review of the risks associated with their use for shipping, an analysis of the regulatory gaps, as well as an economic appraisal of the costs for retrofitting existing ships or building new ones adapted to these new sources of energy. The first two studies are expected to be delivered in the course of 2022.

In the context of the Marine Strategy Framework Directive, the Agency participated in a number of technical groups, including in the areas of marine litter and underwater noise. A dedicated study entitled 'Sounds: Status of Underwater Noise from Shipping' was published by EMSA in October 2021, consolidating information on the topic and putting



forward recommendations. This work may assist the EU in the forthcoming work within the dedicated working group established at IMO level under the Sub-Committee on Ship Design and Construction (SDC).

The MRV Regulation ((EU) 2015/757) is part of the EU's efforts to include the maritime transport sector in its overall policy to reduce greenhouse gas emissions. In support of this regulation, EMSA developed and hosts the THETIS-MRV system, which supports the monitoring and reporting of verified data on CO₂ emissions by shipping. EMSA supported the European Commission in gathering the data of ships of over 5 000 gross tonnage operating in EU waters. The data, relating to approximately 12 000 ships was published, providing a picture of CO₂ emissions from shipping in the EU for the third consecutive reporting period. Moreover, EMSA supported the European Commission in analysing emissions data, for a report published in 2021 which assesses both the CO₂ emissions and the energy efficiency of maritime transport.

At the International Maritime Organization (IMO), the Agency participated actively in the Marine Environment Protection Committee (MEPC), the Sub-Committee on Pollution Prevention and Response (PPR) and in several meetings of the Working Group (ISWG-GHG) on Reduction of GHG emissions from ships, as part of the EU delegation.

A dedicated study was published by EMSA in October 2021 on cybutryne, a biocide used in anti-fouling paints for ship hulls. While cybutryne is effective in preventing the attachment of marine life to hull surfaces, it is extremely harmful to marine ecosystems to the point that its use has already been restricted in Europe. With technical support from EMSA and the European Chemicals Agency, the EU has successfully obtained the banning of cybutryne internationally at IMO as from 2023.

In the field of implementation of the Sulphur Directive (Directive (EU) 2016/802), EMSA assisted the European Commission in the monitoring of the implementation of the 2020 global sulphur cap in the EU. As part of the assistance to Member States in the enforcement of this directive, 245 measurements were performed of Sulphur Dioxide emission levels from vessels by using Remotely Piloted Aircraft Systems (RPAS) in two Member States, an activity which is expected to increase in demand in the future. In addition, the Agency has supported the European Commission in the ongoing work within the Barcelona Convention framework which led to the landmark decision during COP22 in December 2021 to submit a proposal to the IMO for the designation of the Mediterranean Sea as a Sulphur oxide Emission Control Area.

OPERATIONAL POLLUTION

RESPONSE SERVICES

Today, the Agency maintains a fully equipped, and constantly updated, 'toolbox' of pollution response services. This is at the disposal of coastal Member States of the EU to help them deal quickly, effectively and efficiently with oil pollution incidents from ships and offshore oil and gas installations. For chemical incidents, EMSA's MAR ICE service offers Member States expertise in case of an emergency. These services are also available to third countries sharing a sea basin with the EU.

Located around the EU, these services are designed to top-up and complement existing response resources at national and regional level. When a pollution event occurs, Member States can choose the response resources that best fit their needs from a catalogue of services, including a network of 17 oil spill response vessels (equipped for recovery or dispersion of oil), some of them with light Remotely Piloted Aircraft System (RPAS), standalone equipment or dispersants from one of the four Equipment Assistance Services (EAS). Member States may also ask for satellite-based images from CleanSeaNet.

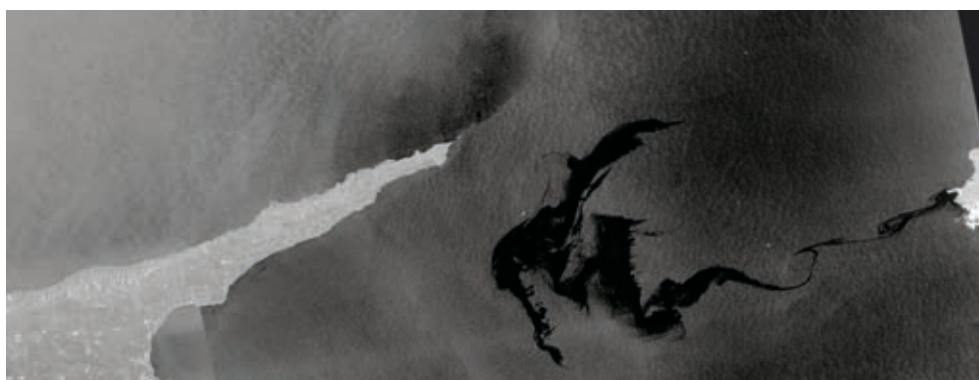
In addition to maintaining and renewing its existing network of oil recovery vessels and the Equipment Assistance Service (EAS), in 2021 the Agency also ordered near shore equipment to complement the existing toolbox by filling the gap in the response to oil spills in shallow waters. EMSA also continued improving the operational capacities of its vessels by equipping two additional vessels with RPAS capacity, reaching a total of ten RPAS-enabled vessels by the end of 2021.



The EMSA contracted oil spill response vessel Galaxy Eco



EAS training in the Port of Rotterdam, 2021



Cypriot authorities activated EMSA's contingency plan identifying several potential oil spills ©European Maritime Safety Agency, contains modified Copernicus Sentinel-1 data, 2021



Overall, the services provided for the response to pollution caused by ships, as well as the response to marine pollution caused by oil and gas installations, have become more adaptable and flexible to better reflect regional capacity, requirements and risks.

In three instances, EMSA's pollution response services were activated to support Member State authorities: in Greece following the sinking of the 'Sea Bird'; in Cyprus as an oil slick originating from Syria was threatening the coastline; and, in Bulgaria following the grounding of the "Vera Su". The assets deployed in each of these cases responded directly to the specific nature of the situation at hand, mobilising a combination of recovery vessels equipped with RPAS, standalone equipment, satellite-based imagery and the 24/7 information service for chemical emergencies at sea MAR-ICE.

The MAR-ICE service was activated by EU Member State authorities eight times (for two real incidents and six exercises in 2021). The Marine Chemical Information Sheets (MAR-CIS) were also further updated in 2021.

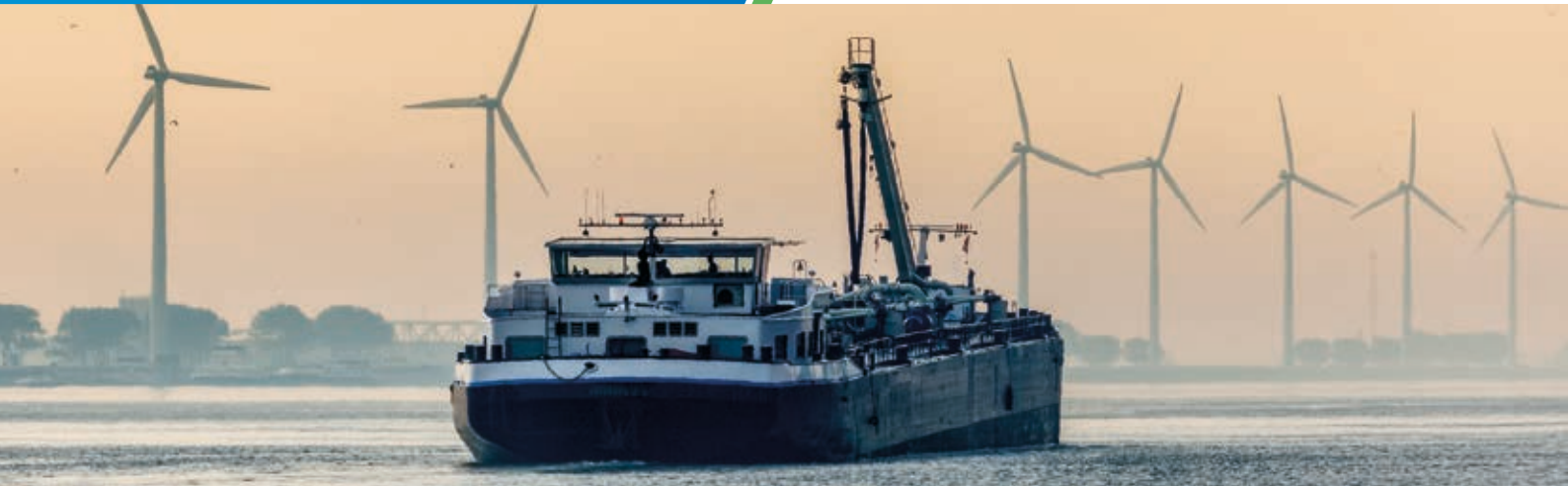
Pollution preparedness and response priority issues identified by the Member States continued to be addressed, with several virtual working groups meetings under the work of the Consultative Technical Group for Marine Pollution Preparedness and Response (CTG MPPR). The CTG MPPR work programme continued with the drafting by the various working groups of the 'Interdisciplinary practical Guidelines on Oil Spill Sampling in Europe', the 'EU/EFTA States practical Guidelines on Health & Safety of oil spill Responders' and the 'Common operations procedures for international oil spill response operations', supported by the use of online meeting platforms.



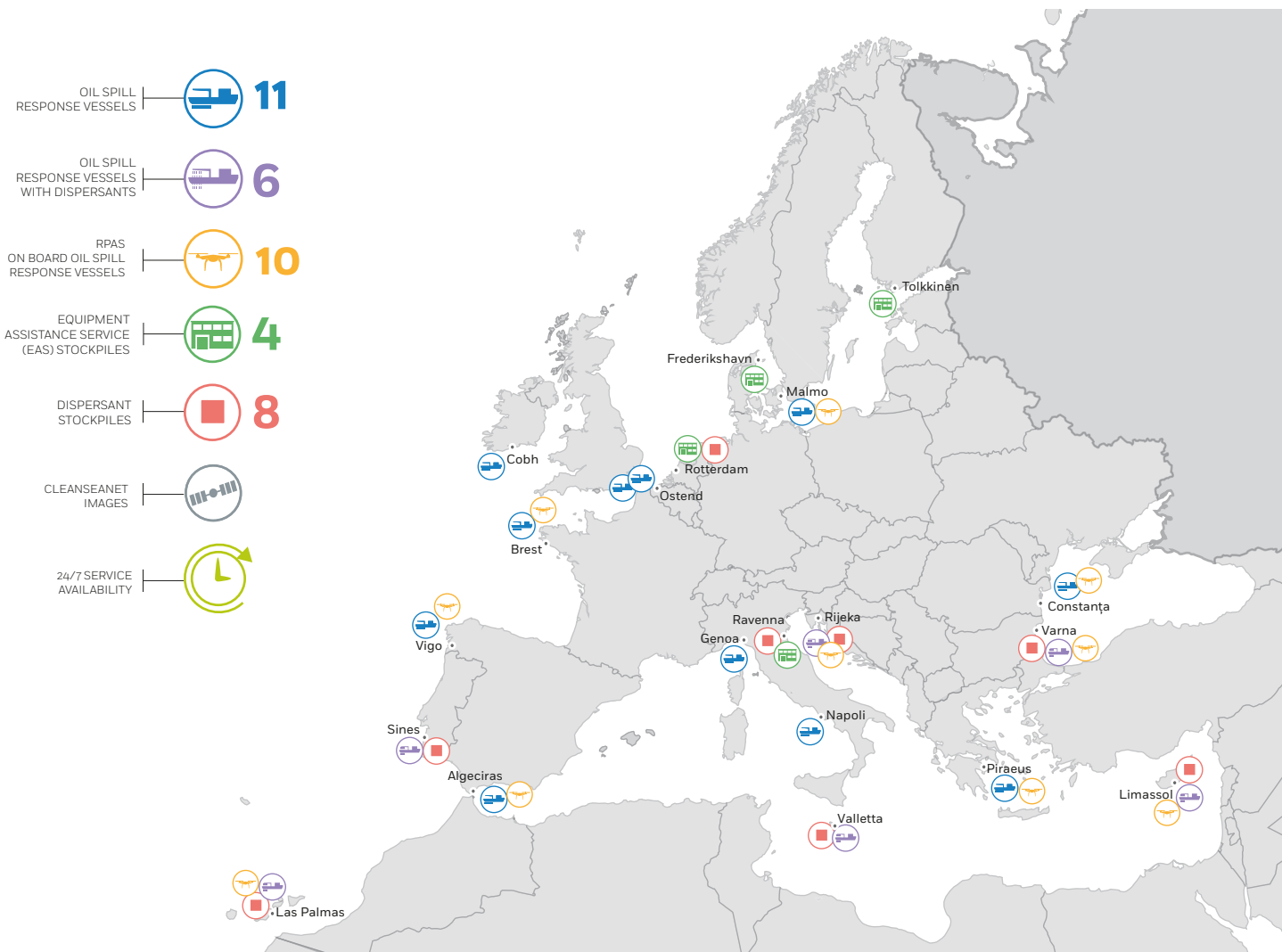
EMSA EAS training in Rotterdam, 2021



Quarterly drill on board the Alexandria with the deployment of boom and high capacity skimmer



Network of EMSA's pollution response services available to the coastal Member States of the EU up until 31 December 2021



CHAPTER 2

TECHNICAL ASSISTANCE

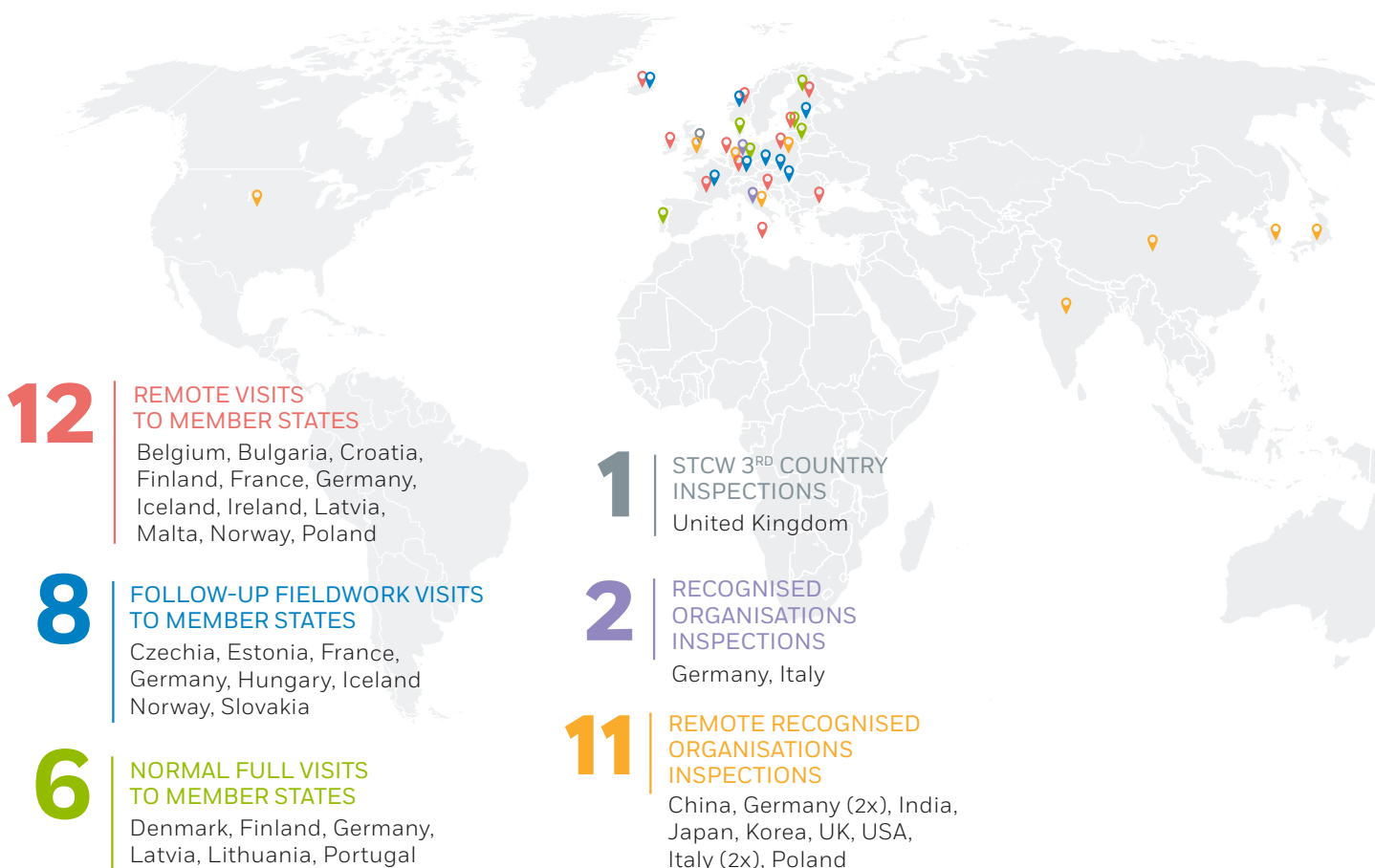


EMSA'S STRATEGIC PRIORITIES: CONSOLIDATE EMSA'S SUPPORT TO THE COMMISSION FOR THE DEVELOPMENT OF EU AND INTERNATIONAL LEGAL ACTS AND FOR ASSESSING THEIR IMPLEMENTATION; EXTEND AND FORMALISE EMSA TRAINING SCHEMES; SUPPORT EU NEIGHBOURHOOD AND SEA BASIN POLICIES TO LEVEL-UP AND HARMONISE STANDARDS

VISITS AND INSPECTIONS

EMSA provides crucial support to the development and implementation of EU standards and regulations in the maritime sector through a programme of visits and inspections, corresponding reports and cumulative horizontal analyses. The continued focus on implementing the Methodology for Visits to Member States, as adopted by the EMSA Administrative Board, ensured that the Agency succeeded in reducing the administrative burden for Member States, developing and sharing best practices and lessons learnt, and strengthening the flow and exchange of information.

INSPECTIONS CONDUCTED IN 2021





In 2021, a revised visits and inspections programme based on a combination of remote sessions and subsequent fieldwork was implemented with the aim of reducing the impact, as much as feasible, of travel restrictions and COVID-19 related measures. The remote sessions continued until September 2021, from when some visits and inspections resumed on-site. However, the overall number of visits and inspections carried out, with the exception of Recognised Organisation (RO) inspections, was lower than planned.

In the case of Recognised Organisations, following a request by the European Commission, EMSA completed a dedicated campaign of remote inspections of RO head offices, focussing on their remote surveying practices. The outcome of this campaign fed into the work on submissions at IMO on a new output concerning the conduct of remote surveys and audits.



2021 was meant to see the conclusion of three cycles of Member State visits. However, while the second cycle of visits to Member States in respect of seafarer training was completed as planned, the COVID-19 pandemic had a significant effect on other aspects of the programme. This led to the completion of two cycles of visits concerning port state control and the sulphur content of marine fuels being deferred to 2022. Nevertheless, 2021 did see the start of a new cycle of visits on passenger ship safety. This cycle is the first to cover multiple directives as well as to envisage the use of remote sessions as a standard feature to cover part of the scope of the visits.

In addition, the horizontal analysis performed has provided fundamental input for policy development and improvement of the relevant EU legislation in the area. The mid-cycle horizontal analysis of the visits to Member States in relation to the Directive for the safe loading and unloading of bulk carriers was delivered.

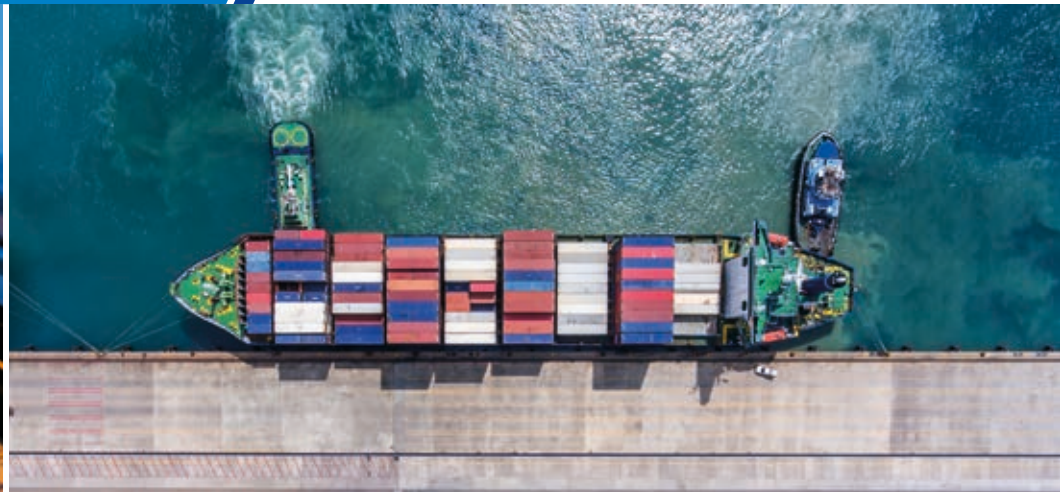


CAPACITY BUILDING AND THE EMSA ACADEMY

In 2021 the Agency's flagship project, under the label of the EMSA Academy, constituted the backbone of the different activities planned in support of the competent authorities of the Member States. Focussing on functions, and combining state-of-the-art tools, such as the eLearning platform MakCs and the Virtual Reality Environment for Ship Inspections (VRESI), the Agency has put together different learning paths in support of professional development.

Two part-time online courses were developed and delivered by EMSA. The first one, on EU institutions and EU maritime legislation, had a total duration of 9 weeks. The course was attended by 48 participants (officials of EU Member States and members of staff of the European Border and Coast Guard Agency-Frontex and the European Fisheries Control Agency-EFCA). The second course was the second edition of "Inspection Principles and Techniques for Flag State Inspectors" that was originally developed and delivered by EMSA in 2020. The ten-unit course had a total duration of ten weeks. Twelve participants from 11 states attended the course. This innovative and first-of-its-kind course gave the opportunity to participants to gain knowledge, competence and skills on the inspection principles and techniques for Flag State Inspectors, with a view to fostering their capabilities and enriching their inspection toolbox.





VRESI was offered as a learning activity to Member States in 2021. Participants using state-of-art technologies were able to be trained on how to perform ship inspections in a safe and controlled environment. Users were able to connect to the platform from anywhere via the internet, through the Maritime Knowledge Centre Services (MaKCs) implemented through Moodle, a world-wide used and recognised learning management platform.

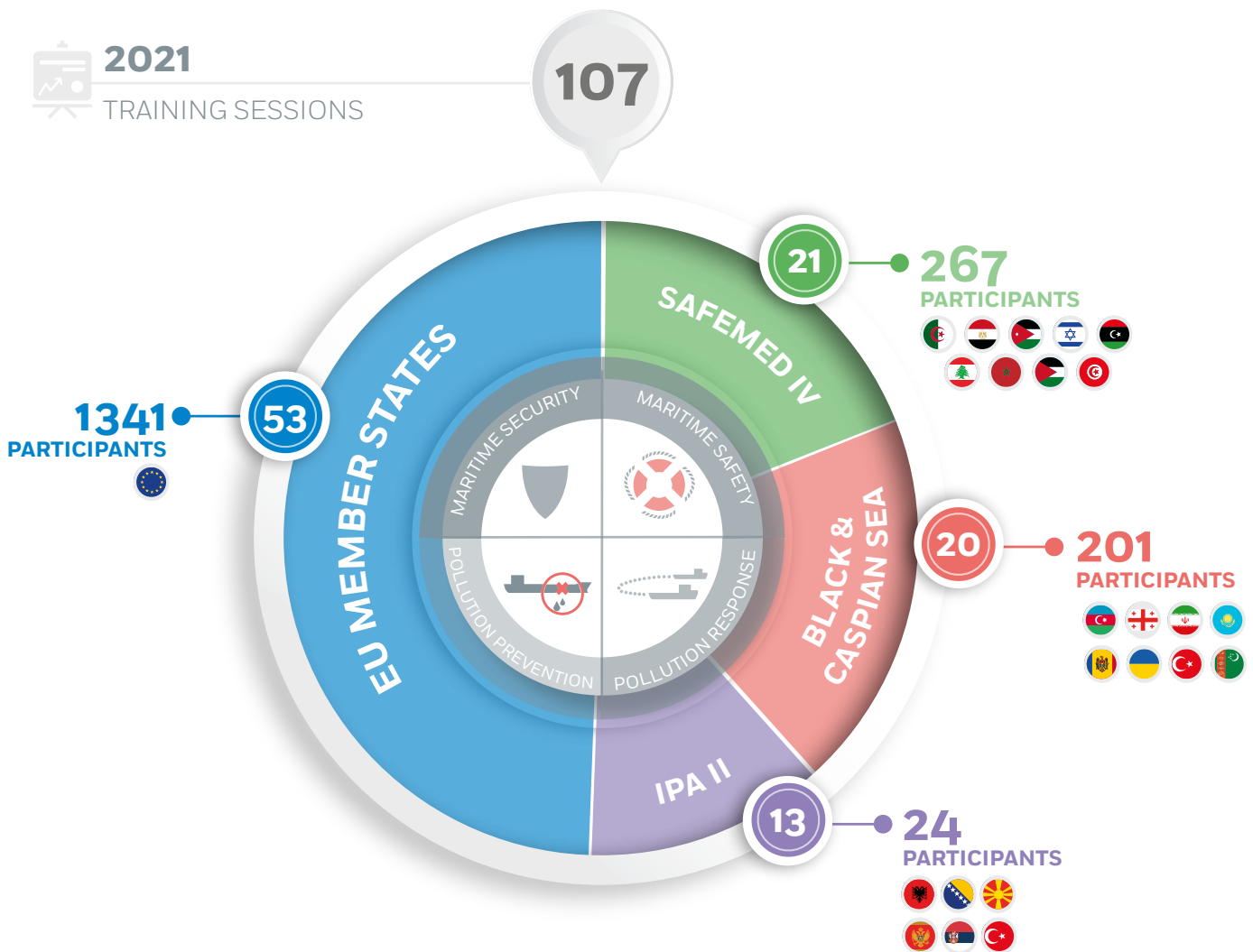
In 2021, support of Port State Control activities in different regions was further enhanced by providing access to a mobile application of RuleCheck. Users can now access up to date IMO Conventions, Codes, Resolutions and Circulars, ILO Conventions and Guidelines, and Maritime related EU Regulations and Directives, Paris MoU Manual and Instructions, Med MoU Manuals, as well as all other functionalities of RuleCheck, through their mobile devices both in iOS and Android. Once the work will be completed (March 2022), eight out of nine regional port state control regimes in the world will be using the same repository of regulations, thereby enhancing access to up-to-date regulations and fostering global harmonisation of the implementation of the international conventions.

The Agency continued to be a centre of excellence for capacity building actions entrusted to EMSA by the European Commission for Pre-Accession and European Neighbourhood Policy countries. As maritime safety, maritime security and protection of the marine environment are common concerns of the EU Member States and non-EU countries sharing the same sea basins, EMSA continued to implement the two projects for technical assistance for the Mediterranean Sea (SAFEMED IV) and the Black and Caspian Sea (BCSEA). Initially supposed to end by the 31 December 2021, both projects have been extended until 31 March 2022 for SAFEMED IV and 30 September 2022 for BCSEA.

The efforts of the SAFEMED IV beneficiary countries to foster control and enforcement in their capacities as Flag, Port and Coastal States intensified in 2021, through dedicated support for the transposition of international conventions to national legislation by beneficiary countries. Gap analysis was performed on four beneficiary countries, identifying those international conventions that states need to ratify and transpose into their national legislation. In addition, support was intensified on Port State Control with dedicated training on THETIS-MED, a modern state-of-the-art inspection database, equal to the one used by EU Members States within the context of the Paris Memorandum of Understanding. During 2021 the Agency provided regular and ad-hoc statistics and analytics aimed at expanding information services to analyse data and identify trends and risks to support safety, security and sustainability, namely the

“COVID-19: impact on the maritime sector”, a report that focuses on the impact of the pandemic on this vital sector. Using data from EMSA’s own sources as well as externally, the study revealed how maritime transport has been affected in areas like trade, ship traffic, shipbuilding activity and the impact on ship inspections.

Furthermore, in 2021 the Agency developed and made available the EU Maritime Profile a one-stop-shop providing relevant and up-to-date statistics highlighting the details and importance of individual sectors and domains within the maritime transport sector in the EU. The Agency also supported with meaningful data the Impact Assessments for the revision of the Flag, Port and Accident Investigation Directives.





INTERAGENCY COOPERATION WITH FRONTEX AND EFCA ON COAST GUARD FUNCTIONS

The European Union and its Member States have a strategic interest across the global maritime domain in identifying and addressing relevant challenges linked to the sea. Within the EU, there are more than 300 civilian and military authorities responsible for carrying out coast guard functions. These functions comprise tasks related to safety and security at sea, search and rescue, border control, fisheries control, customs activities and environmental protection and response.

EMSA together with the European Fisheries Control Agency (EFCA) and the European Border and Coast Guard Agency (Frontex) work jointly to support these national authorities as they carry out coast guard functions at national, EU and, where appropriate, international level. In 2021, the annual European Coast Guard Event took place virtual on the 29 June, hosted by EFCA under the theme of the “Use of digital age technologies in Coast Guard functions”.

As part of European Maritime Day 2021, a joint workshop was held virtually on “EU cooperation on coast guard functions in practice” giving practical examples of interagency cooperation in action.

Finally, the agencies were actively involved in the works of the Coast Guard Global Summit, an initiative launched at global level by the Japanese Coast Guard to foster dialogue and cooperation.



CHAPTER 3

SAFETY AND SECURITY



EMSA'S STRATEGIC PRIORITIES: CONTRIBUTE TO HIGHER MARITIME SAFETY STANDARDS, ANTICIPATE NEW MARITIME SAFETY CHALLENGES AND EXPECTATIONS, AND PROVIDE KNOWLEDGE-BASED SOLUTIONS WITH THE AIM OF CONTRIBUTING TO THE REDUCTION OF MARINE CASUALTIES AND HUMAN LOSS; STRENGTHEN MARITIME SECURITY IN EUROPE AND GLOBALLY WHERE THERE IS A EUROPEAN INTEREST

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MARITIME SAFETY

Maritime safety has been at the heart of EMSA's activities since its inception and is both foundation and pillar for all its present and future work. The wealth of technical actions that have been carried out by the Agency in relation to the safety of passenger ships, marine equipment, alternative fuels, Maritime Autonomous Surface Ships (MASS), steering and manoeuvrability, containership fires, etc., underlines its pivotal role. EMSA's work also addresses emerging trends, potential future risks, and new technologies, in support of the European Commission and the Member States at EU and IMO level.

During the course of the year, EMSA was actively involved in taking forward a number of studies and other activities targeting areas of key importance to the current and evolving maritime safety landscape:

- The CARGOSAFE study was launched to explore fire safety aspects on board containerships. Applying the Formal Safety Assessment methodology, this study will explore cost-effective risk control options for cargo fires on board containerships with the outcome expected in early 2023 to provide the basis for further discussions at IMO on the topic.
- The STEERSAFE study was concluded having as its focus international requirements for steering and manoeuvrability and where there is a clear need to update these requirements for enhanced safety. This study together with several stakeholder consultations led to two EU submissions being made at IMO and will further promote discussions in 2022.
- EMSA participated, on behalf of the European Commission, in several IMO Correspondence Groups dedicated to developing safety standards. This included fire safety aspects of ro-ro passenger ships based largely on EMSA's FIRESAFE I and II studies.
- Also in the area of passenger ship safety, EMSA provided support on the follow-up and review of the European Commission study on Small Passenger Ships which is to be completed in 2022.
- The SAFEMASS study looking at safety aspects related to MASS was made available to EU Member State administrations. This study will help support them in understanding and developing regulations on MASS, as well as in identifying emerging risks that are posed by the implementation of the different degrees of MASS.

- The ongoing Risk-Based Assessment Tool (RBAT) study is looking to provide a risk-based tool to maritime administrations to assess MASS projects. In this way, the Agency is assisting in the homogenous implementation of MASS across the EU. The first phase of the study was concluded in 2021 while the second and third phases are to be concluded in 2022 and 2023 respectively.
- EMSA continued to provide support in the ongoing technical discussions on the damage stability of ro-ro passenger ships and in the review of Directive 2003/25/EC, resulting in a legal proposal that will be discussed by EU legislators in 2022.
- EMSA provided support to Member States and the Commission in relation to Port State Control and their participation to the Paris MoU activities.
- EMSA participated in the Equasis project providing the Management Unit and being a member of the Equasis Supervisory Committee.



The multi-dimensional safety aspects of electrical systems were also the focus of EMSA's work in 2021 as the Agency supported the European Commission and Member States in the development of an adequate analysis framework. EMSA continued to develop guidance covering different safety and standardisation aspects of the interoperability and interconnectivity for shore side electricity. A workshop on the topic was held by EMSA in 2021, gathering more than 300 participants.

As the number of electric cars on board ro-ro ships increases, it is ever more important to have adequate safety guidance for the carriage of alternative fuelled vehicles on board ro-ro ships. To this end, at the request of the European Commission, EMSA started developing dedicated guidance in cooperation with a group of experts from Member States and industry which is expected to be finalised in 2022.



At international level, EMSA participated in several IMO Correspondence Groups dedicated to developing safety standards. In addition to the fire safety aspects of ro-ro passenger ships, this also included life-saving appliances, fuel cell guidelines and technical work related to the International Code of Safety for Ship Using Gases or Other Low-flashpoint Fuels (IGF). EMSA continued to provide technical input to support the positions of the EU in the different IMO committees and sub-committees in the development and revision of standards.

During 2021, the role of EMSA in the marine equipment domain (MED) has been strengthened. In addition to the annual update of the applicable standards for the more than three hundred equipment items, the Agency started providing support to the European Commission for the update of the mutual recognition agreement with the USA, expected to be concluded in 2022.

The web-based MED portal has been enhanced and is widely used and recognised by the MED community as the main information source to find MED approved products that can be installed on board EU Member State flagged ships and as the forum for technical discussion on interpretations of the application of standards. The mobile Android version, capable of scanning e-tags, is already available and the iOS version is expected to be released in 2022.



THE HUMAN ELEMENT

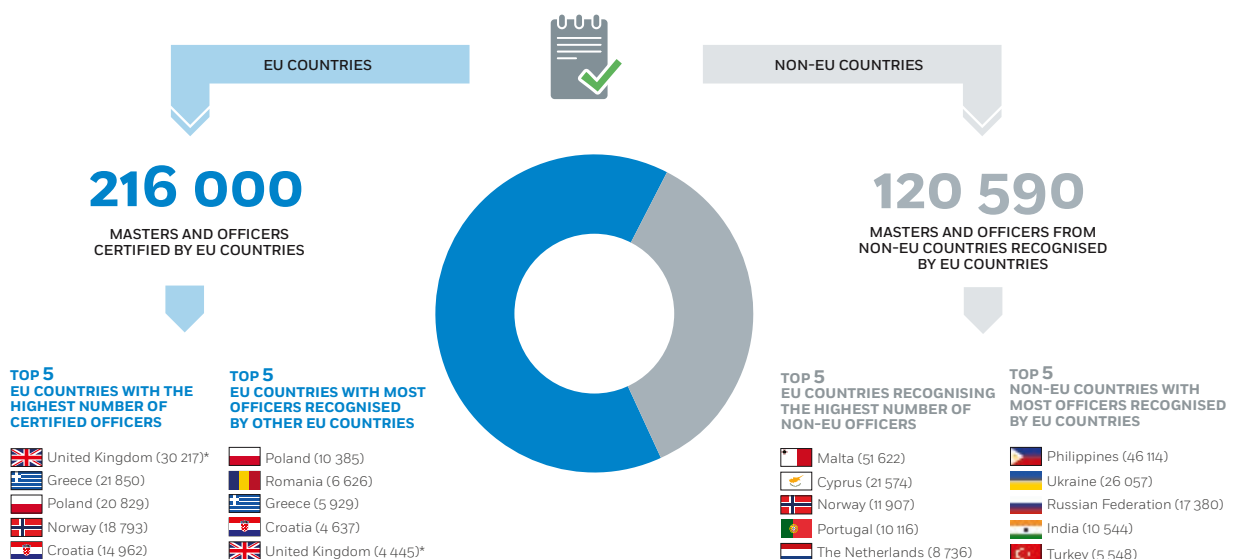
The human element is central to safe and effective shipping and a key concern for the Agency. Over the past year, EMSA has worked alongside the European Commission and the EU Member States supporting the comprehensive revision of the International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (STCW-F) as well as the planned revision of the Standards of Training, Certification and Watchkeeping (STCW) Convention at IMO. The Agency has also fostered the implementation of the Maritime Labour Convention, 2006, by providing training to ensure compliance and enforcement to both EU Member States and non-EU countries.

In 2021, EMSA launched a tender for a study on the Identification of Competences for MASS operators in Remote Control Centres. The expected outcome will inform the European Commission, Member States and possibly the IMO for regulatory purposes, thereby helping to shape and develop future standards of competence for MASS RCC operators and relevant education, training and certification requirements.

The STCW Information System developed by EMSA was further enhanced in 2021 with a web-based module. This will provide Member States, stakeholders and other interested parties with a tool where statistics on the number of seafarers holding EU certificates and endorsements can be tailored according to the user's needs. The new module is expected to be made available to the public during the second semester of 2022. Meanwhile, a Correspondence Group composed of representatives from EU Member States and EMSA initiated its work with a view to defining high level business and technical specifications for the establishment of an EU Seafarers' Certification Platform, which aims to facilitate the issue of e-certification for seafarers.

SEAFARER STATISTICS IN THE EU

A SNAPSHOT OF THE NUMBER OF SEAFARERS HOLDING CERTIFICATES OF COMPETENCY & ENDORSEMENTS ATTESTING RECOGNITION BY EU COUNTRIES VALID IN 2019, AS REPORTED IN EMSA'S STCW INFORMATION SYSTEM



*Representative of the situation in 2019

Source: EMSA



Grounding of M/V Rinella M near Barbarinac Island (Croatia) on 06/02/2020 (HR/AIN)
Extracted from the Annual Overview of Marine Casualties and Incidents 2021

ACCIDENT INVESTIGATION

EMSA works to further develop the accident investigation capabilities of EU Member States as well as to enhance the collection and analysis of casualty data at EU level. It does this through two main structures: the Permanent Cooperation Framework of Accident Investigation Bodies (AIB), for which EMSA is the secretariat; and, the European Maritime Casualty Information Platform which is populated by the AIB and whose casualty data can subsequently be analysed and contribute to an enhanced safety culture at sea.

Throughout 2021, EMSA continued in its role as secretariat of the Permanent Cooperation Framework. The Agency supported technical cooperation among AIB in relation to the ongoing impact assessment of the Accident Investigation Directive and led the working group on the integration of the human element in accident investigation.

To bring value to the wealth of data stored in EMCIP, EMSA has applied a dedicated methodology through which the safety of ro-ro ships, fishing vessels and containerships has been analysed. In 2021, the Agency started to apply this methodology also to navigational accidents.

In cooperation with EMCIP users, several new platform functionalities were developed. In particular, an “Incident reporting tool for non-registered users” was designed in order to facilitate the reporting of any occurrence by any witness or stakeholder.

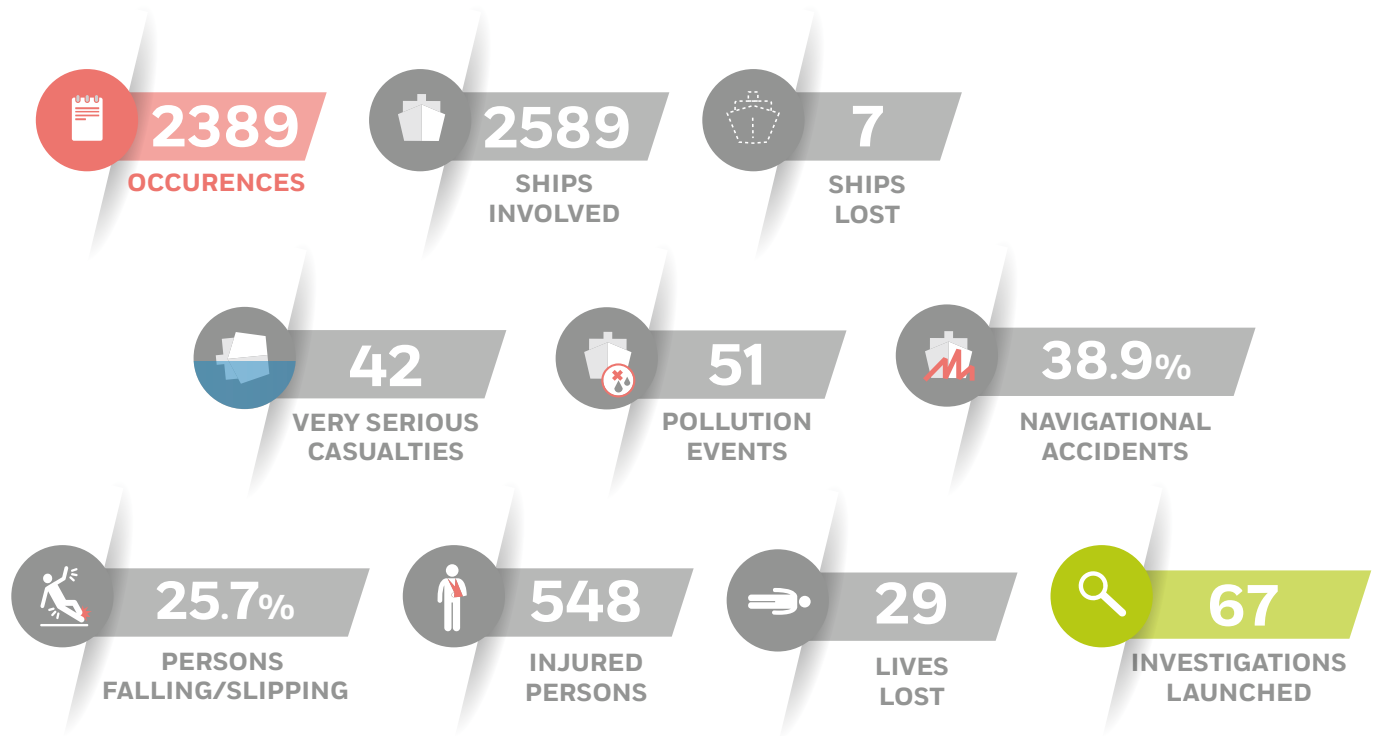
An overview of marine casualties and incidents occurring over the 2014-2020 period was published in two steps: the Preliminary Annual Overview, which provided a quick view of the key figures of 2020; and, the full Annual Overview, giving in depth information by ship type and offering a wide range of data.

Finally, in this domain, the Agency started work on formulating a proposal for organising a service to provide underwater survey capabilities through Remotely Operated Vehicles (ROVs) for accident investigation purposes.

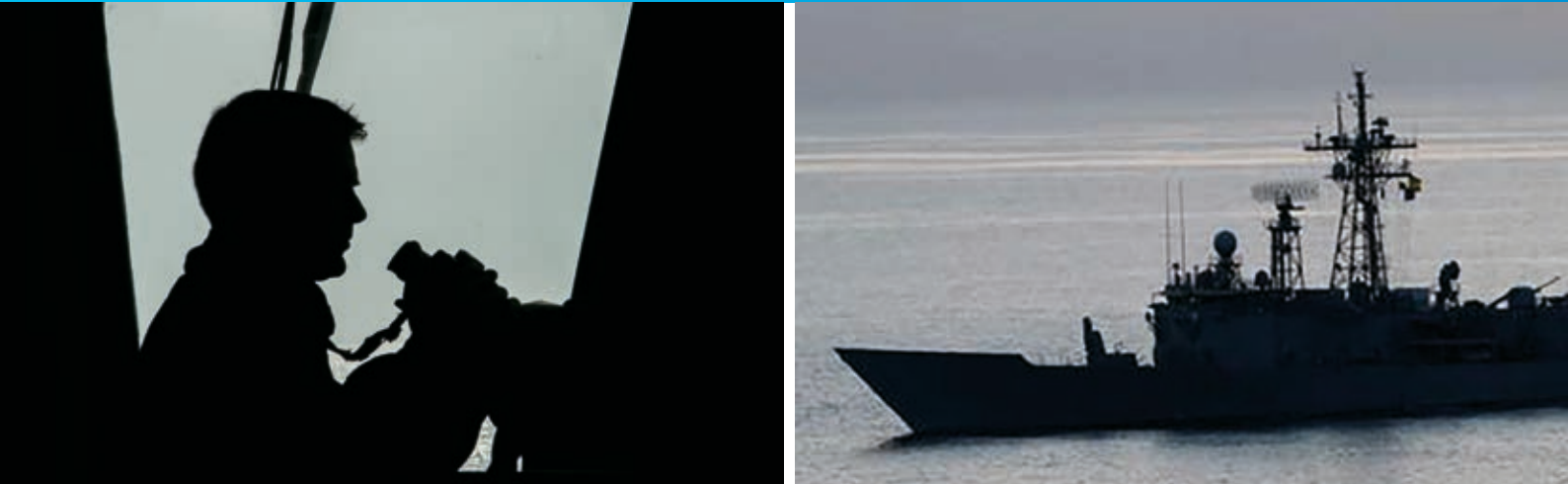
2021

MARITIME CASUALTIES

KEY FIGURES (extracted in January 2022)



Collision in Baltic Sea on 23/09/2020 between M/V ICE ROSE, a refrigerated cargo ship, and a navy ship. (DK/DMAIB)
 Extracted from the Annual Overview of Marine Casualties and Incidents 2021



MARITIME SECURITY

Maritime security refers generally to measures taken for protection against unlawful acts such as piracy, armed robbery, terrorism and maritime violence. As the security of the entire maritime transport chain is important, EMSA provides support to the European Commission to monitor the implementation of Regulation (EC) No 725/2004 on enhancing ship and port facility security.

In 2021, EMSA conducted 15 inspection missions, the reports for which detail the maritime security measures, procedures and structures in place in the countries visited. This number was only slightly lower than that planned due to the pandemic. The Agency also provided technical input on future inspections for the consideration of the European Commission.

In parallel, EMSA kept on supporting the European Commission and the Member States in various tasks notably within the Maritime Security Committee (MARSEC) and the Stakeholders Advisory Group on Maritime Security (SAGMAS). The interim Guidance on Maritime Security prepared by EMSA jointly with DG MOVE was adopted during the 83rd MARSEC Committee meeting. A thorough study on remote surveys, inspections and verifications in the field of maritime security was also carried out at the request of the European Commission.

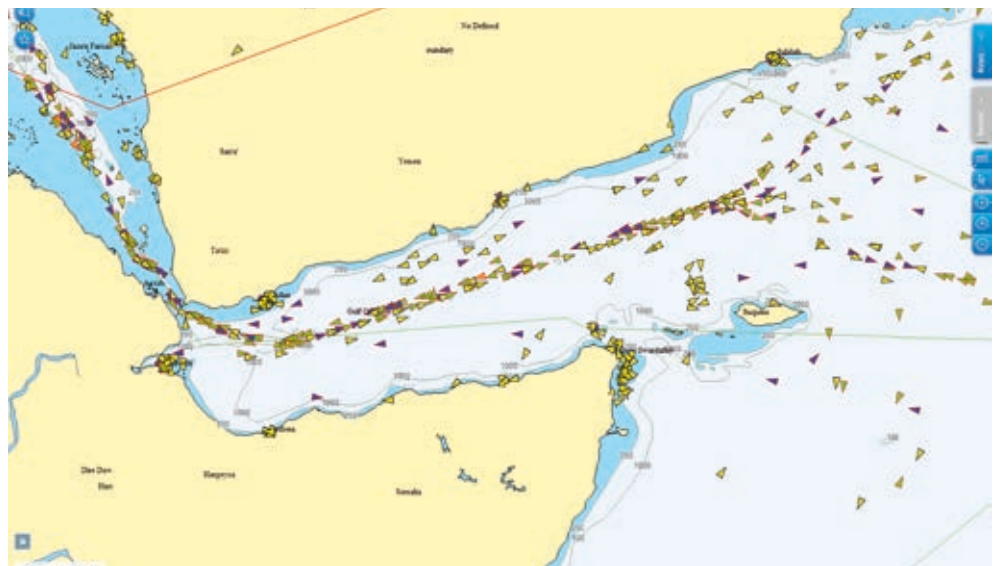


Example of an Earth Observation product delivered through EMSA's IMS portal
WorldView: © 2022 European Space Imaging/DigitalGlobe, a Maxar Company



In support of the EU merchant fleet worldwide, EMSA provided a dedicated Integrated Maritime Service (IMS) to EUNAVFOR Somalia's Operation Atalanta. The IMS is an essential tool for EUNAVFOR as it provides extensive vessel position/characteristics data in combination with satellite surveillance services in key hotspot areas for piracy and armed robbery, through the Copernicus Maritime Surveillance Service. The collaboration will continue through the new Cooperation Agreement signed in 2021. This support includes the delivery of satellite images in quasi real time in support of Member States' navies operating in the Gulf of Guinea, as well as a routine monitoring provided to EUNAVFOR in the Somalian area of operations.

Regarding cybersecurity, EMSA's internal Task Force finalised the mapping and gap analysis of maritime cybersecurity in the ecosystem of ships and port facilities. Results were presented in various fora and discussions on the follow-up were initiated. In this context, the Agency kept on closely cooperating with the European Commission (DG MOVE), the European Union Agency for Cybersecurity (ENISA) and the European Coast Guard Function Forum (ECGFF) on the various issues related to maritime cybersecurity risks.



Maritime traffic off the Horn of Africa as displayed in the SafeSeaNet Ecosystem (SEG) on EMSA's IMS platform

CHAPTER 4

SURVEILLANCE



EMSA'S STRATEGIC PRIORITY: STRENGTHEN EMSA'S ROLE AS THE CORE INFORMATION MANAGEMENT HUB FOR MARITIME SURVEILLANCE

SATELLITE-BASED SERVICES AND INNOVATION

Getting a reliable overview of human activity at sea is a complex and demanding task. The vast areas covered by our oceans resist wide-scale surveillance from the ground, making satellites a reliable, efficient, and cost-effective option for maritime safety, security, and sustainability purposes.

Accessing data from synthetic aperture radar (SAR) and optical satellites, EMSA's Earth Observation services provide a wealth of data for two main EU surveillance programmes – CleanSeaNet, which detects oil spills and potential polluters, and the Copernicus Maritime Surveillance programme, which provides a better awareness of human activity at sea. In 2021, the PAZ1 radar satellite was integrated into the EMSA Earth Observation portfolio, and the technical set-up of a new constellation (ICEYE) was concluded, with procurement of satellite licenses of this new constellation taking place in 2022.

Overall, 13 777 Earth Observation (EO) products were delivered by EMSA to Member State administrations and EU institutions and bodies in the scope of CleanSeaNet, Copernicus Maritime Surveillance, and Border Control activities covering 1.6 billion km² of sea surface monitored over the course of the year. Concerning Copernicus Maritime Surveillance, the Agency signed a new Contribution Agreement with the European Commission (DG DEFIS) worth EUR 73 million that defines the scope of activities taking place between 2021 and 2027.

During 2021 EMSA also expanded the provision of global real time SAT-AIS data services to an average of 34 million messages per day. In terms of operational support during emergencies, in 2021 EMSA increased the budget to support emergencies with satellite imagery linked to pollution at sea and search and rescue operations. In this respect EMSA provided satellite monitoring to Member States in response to 17 emergencies at sea.

Given its natural role as the premier EU hub for the maritime awareness picture, EMSA also facilitated the sharing of EO products between key user communities serviced by EMSA. Accordingly, 7 374 EO products acquired under the CleanSeaNet service were shared with the European Border and Coast Guard Agency (Frontex) and the European Fisheries Control Agency (EFCA).

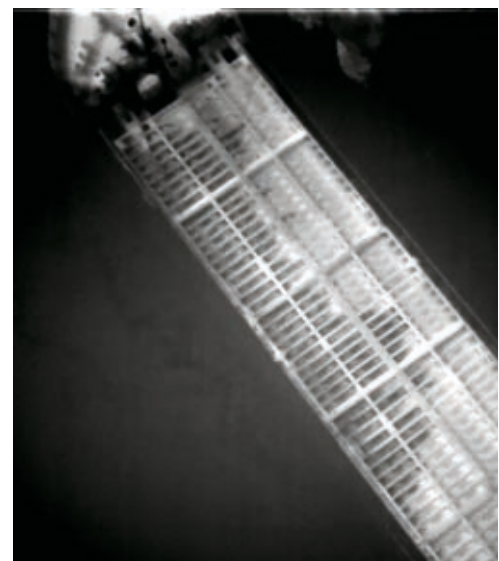
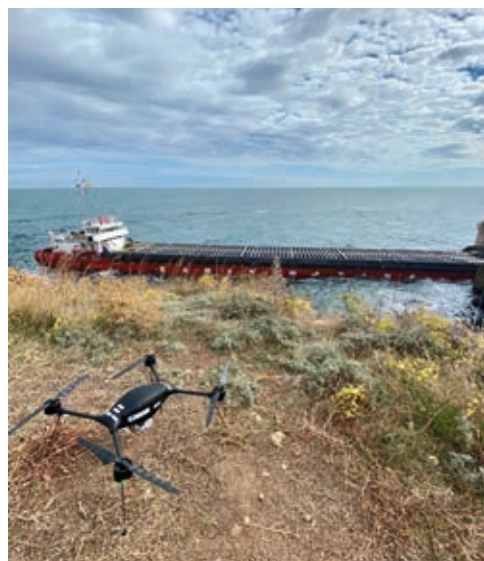
REMOTELY PILOTED AIRCRAFT SYSTEM SERVICES (RPAS)

2021 marked the year with the highest number of RPAS operations offered by EMSA in support to maritime surveillance activities of Member States and other EU agencies. Eleven operations took place, with eight running in parallel. Additionally, EMSA equipped ten of its oil pollution response vessels with lightweight RPAS capabilities. EMSA also participated in seven exercises with these capacities and three RPAS were mobilised to support operations associated with pollution emergencies. The Agency established itself as a reference in the RPAS civilian domain for maritime surveillance applications not only at EU level but also globally.

The Agency continued to take steps towards implementing a regional strategy where RPAS services are delivered in support of a wider range of functions and entities of more than one country and therefore promoting the efficient use of resources in supporting coast guard functions.

In 2021 EMSA put substantial effort into renewing and expanding the RPAS portfolio offered to Member States and Agencies. This includes new capabilities deployable from vessels that can be used also for emissions monitoring and a new service for lightweight RPAS to equip EMSA and EFCA chartered vessels with an improved sensor payload. In terms of capabilities deployable from land, EMSA contracted a new long-range service that – besides having new radar sensors and phone detection capabilities – can also deploy a life raft for eight persons. Additionally, and to support EMSA's regional strategy, a new coastal service was contracted that has an autonomy of up to 15 hours thanks to a system of antennas along the coast for radio relay.

In 2021, RPAS services delivered 1765 operational flight days associated with regional multipurpose deployments, maritime surveillance, emissions monitoring and support to EU chartered vessels.



EMSA lightweight RPAS provided operational assistance following the grounding of the Vera Su off the coast of Bulgaria in September 2021

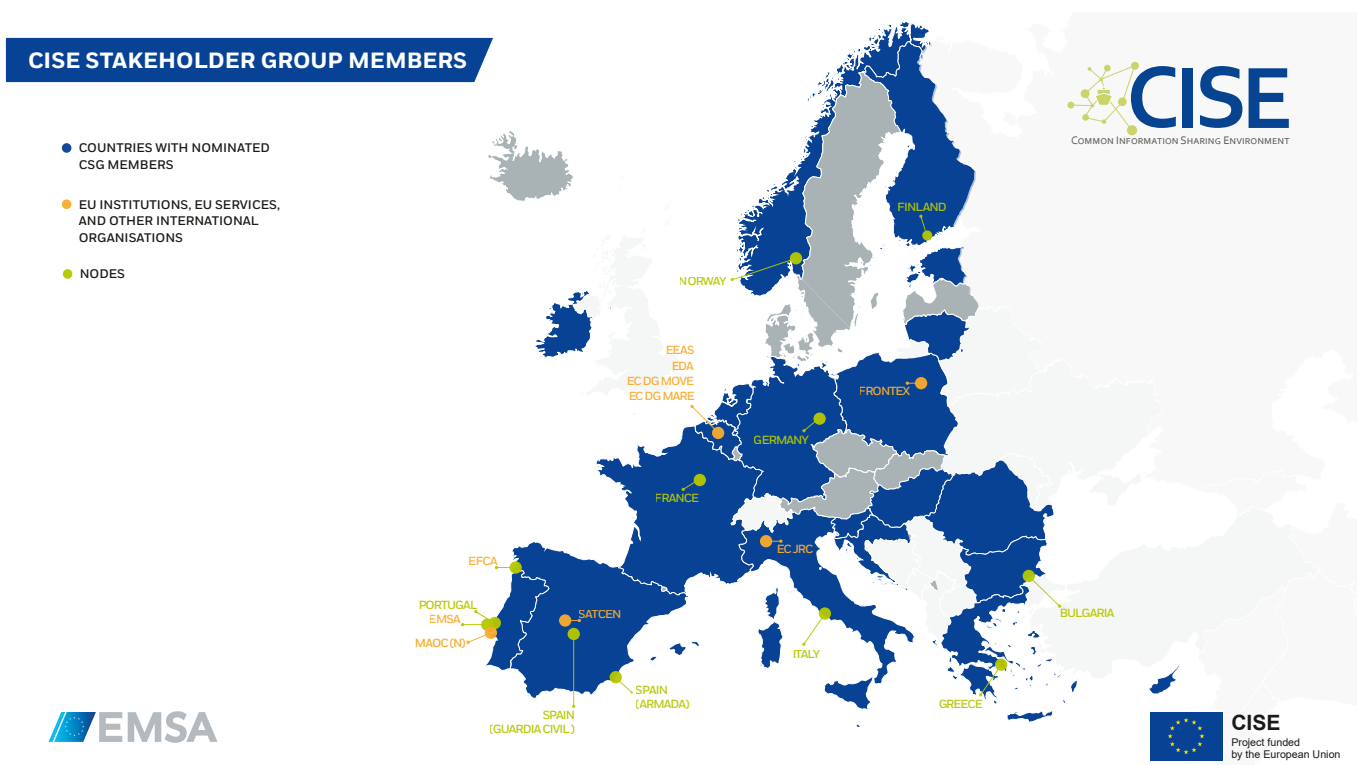
COMMON INFORMATION SHARING ENVIRONMENT

The Common Information Sharing Environment is an EU initiative which aims to make European and EU/EEA Member States surveillance systems interoperable to give all concerned authorities from different sectors access to additional classified and unclassified information they need to conduct missions at sea.

The European Commission has put in place a preparatory action for the operational implementation of CISE and has tasked EMSA to set up and coordinate the preparatory actions, known as the transitional phase. To finance the transitional phase activities, two Grant Agreements between DG MARE and EMSA were signed. During the transitional phase, CISE has to be transformed from an EU research project into an EU-wide operational maritime surveillance information network, giving all EU Member States and EU Agencies the possibility to connect.

With respect to CISE related activities, in 2021 EMSA achieved the following main objectives:

- Cooperation Agreement. The first important milestone of the Transitional Phase has been accomplished during the 6th CSG meeting (on 9-10 February 2021) with the approval of the agreement that regulates the sharing of information among the participants (called the Cooperation Agreement). The procedure to collect the stakeholders' signatures has started.
- CISE network. The design and implementation of the CISE's node, the main component of the operational network, has been concluded and the migration from the previous version (of the EUCISE2020 Research project) to the new version has started.



CHAPTER 5

DIGITALISATION & SIMPLIFICATION



EMSA'S STRATEGIC PRIORITY: FACILITATE THE SIMPLIFICATION OF EU SHIPPING BY SUPPORTING EU-WIDE DIGITAL MARITIME SOLUTIONS

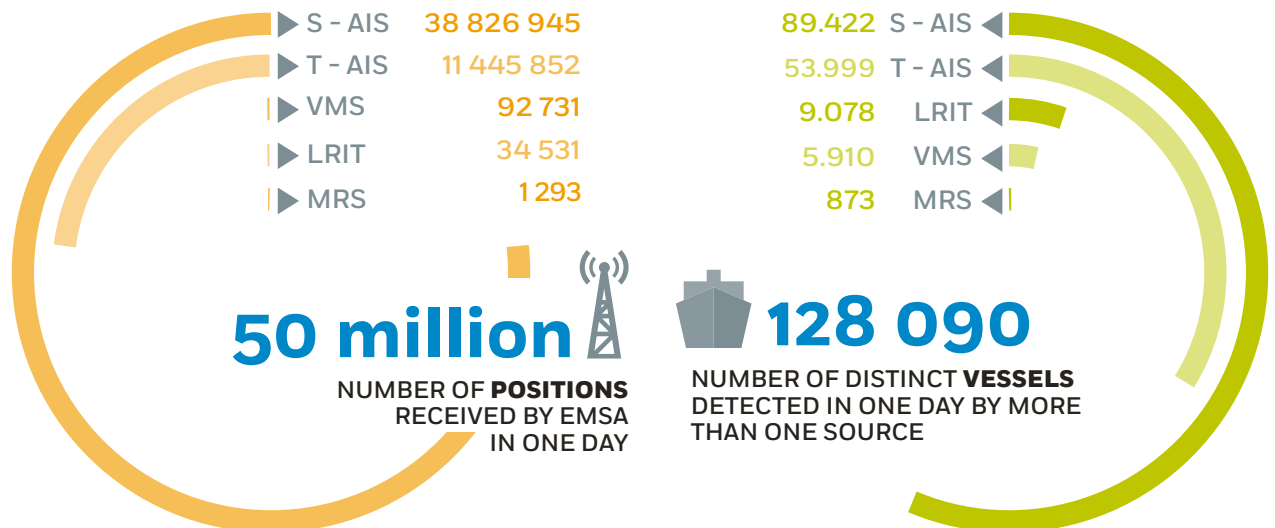
INTEGRATED MARITIME SERVICES

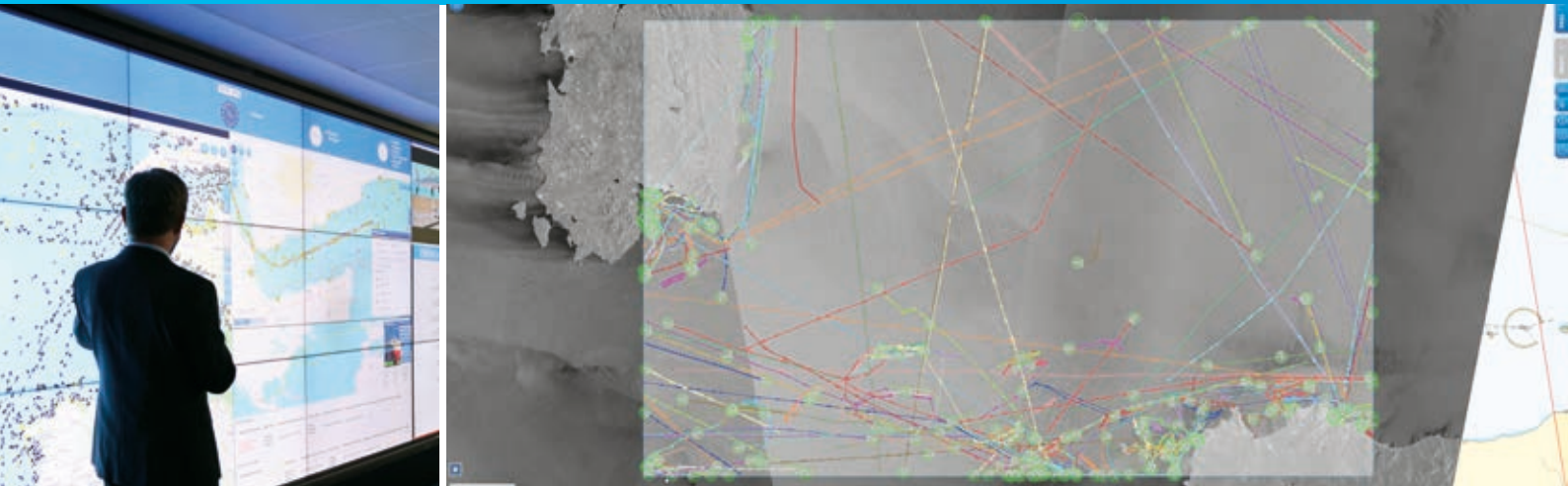
In 2021 the number of individual users of EMSA's Integrated Maritime Services (IMS) increased by 400. These services were delivered to 26 Member States and Montenegro, over 600 organisations and/or authorities and five EU bodies making a total of approximately 5460 users, covering an ever wider range of maritime functions. Approximately 3867 users in 26 EU Member States and European Free Trade Association (EFTA) countries use IMS for Member States in support of their daily tasks and responsibilities. The relative number of users (without considering UK due to Brexit) has increased during 2021. Around 68% of all IMS service users belong to Member States authorities.

Through the IMS, EMSA provides a sophisticated maritime awareness picture of Europe. Drawing on an impressive range of data from multiple sources, the Agency's services help ensure the safety of maritime traffic, assist in improving response to accidents and dangerous situations at sea, and contribute to preventing and detecting pollution by ships. EMSA's systems and thematic services are now a pivotal part of Member State monitoring, information and surveillance functions, and benefit many user communities.

The maritime sector is embracing new technologies at an ever-increasing rate, and EMSA is no exception. Across the Agency's services, state-of-the-art technology is key. Cloud-based solutions, possible future blockchain integrations, machine learning, and leveraging artificial intelligence all form part of EMSA's digitalisation drive in the context of its five-year strategy.

DATA PROCESSED BY EMSA INFORMATION SERVICES
(activities on 27/09/2021)





Screenshot of IMS interface (SEG) showing vessel tracks over a satellite image, used for detection of potential pollution at sea, drifting objects, or ships with inactive identification transponders

IMS receives approximately one billion messages per month. This 'big data' pool is then exploited by various maritime focused analytical tools, providing unique operational information to the IMS user communities. Throughout 2021, EMSA continued to enhance Automated Behaviour Monitoring (ABM), adding new historical capabilities using hybrid cloud solutions, as well as the IMS mobile app, thereby adding value for a growing number of end users with interest in tailor-made services.

Registered users now also have the possibility of accessing data related to all vessels' arrivals and departures from ports around the world, not just the EU, thanks to the recently created Global Port Call Detection Service. On a daily average, more than 8000 alerts were sent to ABM users via system-to-system interfaces, by email or displayed in the SEG or IMS Mobile App graphical interfaces. As for the IMS for Member States, these services cover diverse user communities with a function in the maritime domain such as maritime safety, port state control, accident investigation, navies, law enforcement and statistical offices.

The customised IMS version, EMSA-IMS EFCA, is the official reference worldwide service for EU Member State fisheries control authorities. Used by more than 1100 users at the European Commission's DG MARE, the European Fisheries Control Agency (EFCA) and Member States, it is the second largest IMS user community. With over 100 ABM algorithms running in parallel, the use of ABM within this service is now considered a real operational asset for fisheries control authorities.

For Frontex, EMSA continued to provide IMS data system-to-system, amounting to more than 12 billion vessel position messages over the course of the year and 220 000 unique vessels per day. This data forms the core component of the maritime picture shown in Frontex's graphical interfaces. These vessel positions are topped up with additional T-AIS data from the commercial sector in key areas outside of the EU, funded under the EMSA-FRONTEx Service Level Agreement and shared with all EMSA user communities. Over 2000 satellite synthetic aperture radar images and 800 optical images acquired for Frontex were shared with the Member States and other agencies, while Frontex continued to make extensive use of ABM, with 33 different algorithms delivering more than 700 000 alerts to the border control user community.

The deepening cooperation with the Maritime Analysis and Operation Centre – Narcotics (MAOC (N)), an inter-governmental taskforce set up to tackle maritime drug smuggling towards Europe, resulted in a new Cooperation Agreement between the two organisations being signed on 17 December 2020.

EMSA also provides Europol with access to maritime and surveillance information services to support the areas of law enforcement and organised crime activities at sea. 2021 saw a significant (45%) increase in the number of user accounts of EMSA IMS-EUROPOL service. In May 2021, the EMSA IMS-EUROPOL service was used by a Member State for the first time. The German Federal Criminal Police Law Enforcement unit was provided with access to the system as part of the pilot project for the future EMSA IMS-EUROPOL roll-out phase to Member States.

In 2021, a new Cooperation Agreement was signed between EMSA and EUNAVFOR-Somalia. Through the Cooperation Agreement, EMSA provides access to an integrated maritime monitoring solution. This is integrated with EUNAVFOR data, such as piracy risk assessments, creating a specifically tailored maritime awareness picture.

In November 2021, EMSA and EUNAVFOR-Mediterranean signed a Cooperation Agreement regarding Operation Irini. While EMSA has been providing satellite AIS data to EUNAVFOR-Mediterranean since 2015, the new Cooperation Agreement allows for access to EMSA's Integrated Maritime Services platform and in particular to the Agency's ABM capabilities. These services will help EUNAVFOR officers to have enhanced monitoring capabilities of Libya's ports, the flow of maritime traffic in the area as well as target specific vessels for inspection based on suspicious behaviour picked up by the ABM tool.

EMSA's Maritime Digital Service Catalogue was developed and published for the first time in 2021, reflecting the increasing number of requests for digital services.

The maritime awareness picture is made available by EMSA to its key stakeholders via IMS



THETIS AND ITS ASSOCIATED MODULES

The THETIS system was launched to allow port state control authorities in the EU, as well as the wider region of Paris MoU members (Canada, Iceland, Norway, Russia and now UK) to report inspection data in one single window. THETIS also supports the European Commission by providing data on inspection results. Over the years, the system has evolved to support new modules, including:

- THETIS-MRV, which supports CO₂ emissions monitoring,
- THETIS-MED, specifically created for the relevant authorities participating in the Mediterranean MoU on Port State Control, and,
- THETIS-EU, for data on inspections and verifications required by EU legislation and not covered by the Port State Control Directive.

THETIS and its modules are continually being improved and developed by EMSA to cover more areas of operation, and to offer more services to support the daily work of the relevant authorities at Member State level.





The protection of animals during transport is a new area in which THETIS will be used.

THETIS-MED continued to support the relevant authorities participating in the Mediterranean MoU (MedMoU) on Port State Control and, in December 2021, was adopted as the single inspection reporting system in the MedMoU region, resulting in the decommissioning of the former system. This system, built at the request of the MedMoU, makes it possible to apply a harmonised and optimised inspection regime for ships operating in these waters.

The dedicated THETIS-EU Port Reception Facilities inspection module was further enhanced to accommodate for the Port Reception Facilities Directive (EU) 2019/883 and the newly updated inspection module went live in July 2021.

Also in 2021, the preparation of a new voluntary inspection module was established in THETIS-EU for livestock vessels in line with Regulation (EC) 1/2005 on the protection of animals during transport, known as THETIS-Animal Welfare. This new module will enter into production in 2022 and support the reporting of enforcement actions by Member State authorities.





HARMONISED REPORTING

When a ship enters, stays or leaves a port, its maritime transport operator has to submit a set of information to a number of bodies. This reporting process is currently not harmonised between ports, placing an excessive administrative burden on shipping operators. The entry into force of Regulation (EU) 2019/1239 on the European Maritime Single Window environment (EMSWe) brings all the reporting linked to a port call together into one digital space, to harmonise reporting procedures for shipping operators and to ensure the efficient sharing and reuse of data. Full implementation of the Regulation must be achieved by 15 August 2025. Before this, the Commission shall adopt delegated and implementing acts laying down the technical specifications of the EMSWe. During 2021, and in cooperation with experts from Member State administrations and shipping industry associations, EMSA elaborated the technical specifications of the EMSWe reference dataset, graphical user interfaces, digital spreadsheets and common databases and assisted the European Commission in preparing the corresponding delegated and implementing acts. EMSA also elaborated a Message Implementation Guide (MIG) which is a technical guidance document necessary for the implementation of reporting procedures in the Member States' Maritime National Single Windows.

The latest version of SafeSeaNet supports the legal requirements of the revised Directive (EU) 2017/2109 on the registration of persons sailing on board passenger ships, particularly important in the case of search and rescue operations. In addition, the system now caters for the revised Directive (EU) 2019/883 on port reception facilities and the exchange of information with the new PRF inspection system through THETIS-EU. Version 5, released in December 2021, also offers improved incident reports and additional security measures.

The development of the Dynamic Overview of National Authorities (DONA) platform started, with phase I covering the country profile section, an important step towards digitalisation and simplification that will provide the general public with added value information and the DONA reporting gate which will offer Member States the possibility of greatly reducing their administrative burden when complying with their legal obligations for reporting vis-à-vis the European Commission. Phase I was delivered in December 2021 and will go live in spring 2022.

A new Central Ship Database was deployed combining ship related data from different sources (LRIT, THETIS, Marinfo and SafeSeaNet) and enabling the quality control of datasets leading to increased data reliability.

The Traffic Density Mapping service (TDMS) is made available to the Member States through SEG and to the public through the European Marine Observation and Data Network portal (EMODnet). In 2021, the enhancement of TDMS continued with the delivery of additional types of maps, such as detailed maps, vector maps and comparative maps. In addition, the third phase of service development was started aiming at introducing new types of maps based on specific characteristics of ships (e.g. ranges of engine RPM, fuel types, keel dates and gross tonnage) and maps for customised time periods.

EMSA continued hosting, operating, and maintaining the European Union LRIT Cooperative Data Centre (EU LRIT CDC) and the European Union LRIT Ship DB (EU LRIT Ship DB) on behalf the European Commission and participating countries, i.e. Member States, Norway, Iceland, Montenegro, Georgia, and Tunisia. The process for the integration of Serbia into the EU LRIT CDC started in 2021 and is ongoing. The Agency also continued hosting, operating, and maintaining the LRIT International Data Exchange (LRIT IDE) on behalf of the International Maritime Organization (IMO) and SOLAS contracting governments.

OTHER MARITIME DIGITAL SERVICES

EMSA's Cloud Strategy was adopted in July 2021. This document defines strategic goals in the establishment of a state-of-the-art technological landscape capable of accelerating maritime digital services production in EMSA's software factory while providing user communities the benefits of cloud technologies.

In 2021, the Earth Observation Data Centre was enhanced to support a new data format which allows a more efficient data transmission from the data providers to EMSA and a faster dispatch of alerts in case of oil pollution or other occurrences detected from space.

The SurvSeaNet contract was signed in 2021 and development has been underway to develop the successor of the RPAS Data Centre service. SurvSeaNet will further improve the service quality and integration with other EMSA services, like Integrated Maritime Services, to better support the successful completion of RPAS missions.

CHAPTER 6

CORPORATE DEVELOPMENTS



IMPLEMENTATION OF EMSA'S 5-YEAR STRATEGY

2021 marked the second year of implementation of EMSA's 5-year strategy 2020-2024, which forms the basis for this publication. The main achievements set out here represent the Agency's strategic priorities in the areas of the "5 S", namely Sustainability, Surveillance, Safety, Security and Simplification.

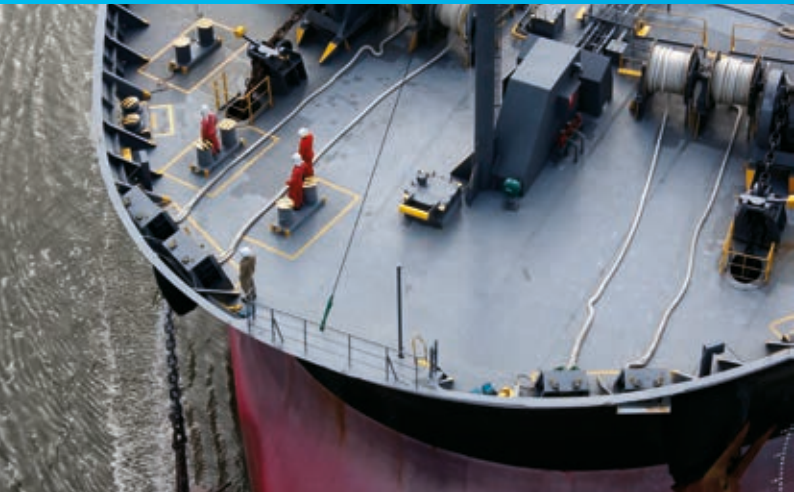
ADMINISTRATIVE BOARD MEETINGS

EMSA's Administrative Board held three ordinary meetings in 2021. The March and June meetings were held online, while the November meeting took place for the first time in a hybrid form with a successful outcome. Each meeting was preceded by a meeting of the Administrative and Finance Committee where technical, financial and administrative matters were reviewed in detail.

In November 2021, the Administrative Board elected the new Deputy Chairman of the Administrative Board, Mr Wojciech Zdanowicz.



EMSA paid tribute to outgoing Deputy Chair of the Administrative Board, Rear Admiral Nicola Carlone.



THE IMPACT OF COVID-19

With the outbreak of the COVID-19 pandemic in 2020 and its evolution in 2021, the Agency developed new services to support the analysis and mitigation of the impact of the pandemic on the maritime sector.

The pandemic fast-tracked the integration of a series of tools and methods to enable work to continue remotely, from live broadcasting to virtual reality technology to remote auditing techniques. The Agency continued to explore and capitalise on the potential of these innovative and hybrid approaches to both add value for Member States and the European Commission and increase efficiency within the Agency.

GENDER BALANCE

EMSA continued its strong commitment to improving the current gender balance in the maritime sector by taking initiatives to attract more females in maritime careers. To this end, EMSA put in place an internal “EMSA women in transport network” that meets regularly to develop ideas for actions to improve gender balance and to help put these actions in place. As an example, in 2021 EMSA launched the Speed Network initiative to offer women interested in a position at EMSA or a career in the maritime sector in general, the opportunity for a short informal conversation with female staff members about their careers in EMSA or experience in the maritime sector. The initiative was a success and will be repeated in 2022.

ISO CERTIFICATION

Thanks to the efforts of the entire Agency throughout 2021, EMSA received the ISO 9001:2015 certification following the successful implementation of the ISO Quality Management System covering all its main activities.



ENVIRONMENTAL MANAGEMENT

The 'Greening EMSA' project that aims to introduce environmental management and the EMAS registration continued in 2021. EMSA worked on updating the environmental statement and program 2021-2022, for the same all-embracing scope as well as the implementation of its Environmental Management System (EMS) in day-to-day business. The internal audit regarding the registration under EMAS took place in June 2021.

In 2021, a number of greening activities and projects were carried out, including: a change in energy provider ensuring EMSA only consumes 100% renewable green energy; photovoltaic solar panels installed on the roof of the EMSA building; and, a further reduction of paper through digitalisation with the Agency moving to a 'paperless office'.

PREPARATION OF THE 20 YEARS OF EMSA

In 2021, the Agency started the preparations for a celebratory year in 2022, with a series of activities dedicated not only to commemorating previous years but also looking forward to the future 20 years, with, as a centrepiece, the 20-year anniversary high level conference to be held in Lisbon.



2021

Highlights timeline

Prime Minister Kyriakos Mitsotakis of Greece and Prime Minister António Costa of Portugal visit EMSA



11

FEB

ED Maja Markovčić Kostelac at the Conference on Maritime Security, in Lisbon



22

Austria's Federal Minister for the EU and Constitution, Karoline Edtstadler, visits EMSA



23

JAN

European Maritime Transport Environmental Report launch, in Lisbon



01

European Transport Commissioner Adina Vălean, and DG MOVE Director-General Henrik Hololei



01

SEPT

Executive Director of the European Fisheries Control Agency (EFCA), Dr. Susan Steele, visits EMSA



19

AGO

JUL

Rear Admiral Nicola Carlone steps down as Deputy Chair of the EMSA Administrative Board



NOV

JUN

EU Commissioner for Budget and Administration, Johannes Hahn, visits EMSA



28

MAY

OCT

07

ED Maja Markovčić Kostelac at the 12th Transport and Communication Council in Istanbul



18



Portuguese Minister of Defence, João Gomes Cravinho, visits EMSA

27



ED Maja Markovčić Kostelac addressing the TRAN Committee at the European Parliament, in Brussels

28

DEC

16



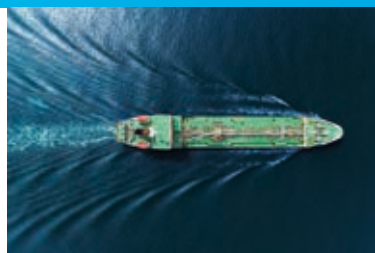
French Maritime Prefect for the Atlantic, Vice Admiral Olivier Lebas, visits EMSA

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ABOUT THE EUROPEAN MARITIME SAFETY AGENCY

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



Get in touch for more information

European Maritime Safety Agency

Praça Europa 4
Cais do Sodré
1249-206 Lisboa
Portugal

Tel +351 211209 200 / Fax +351 211209 210
emsa.europa.eu / [Twitter@EMSA_Lisbon](https://twitter.com/EMSA_Lisbon)