European Maritime Safety Agency

EMSA OUTLOOK 2025

EMSA

TABLE OF CONTENTS

Foreword from the Chair of the Administrative Board

It is my privilege to introduce the EMSA Outlook 2025, a publication that reflects the shared vision and collaborative efforts of the European Maritime Safety Agency, its Administrative Board and its dedicated staff. As we step into a year of both challenges and opportunities, the Board remains committed to supporting EMSA's vital work in ensuring the safety, security and sustainability of Europe's maritime sector.

The year ahead will see EMSA expanding its responsibilities to help Member States implement key legislative frameworks, including the new Maritime Safety Package. With reinforced resources, EMSA is well positioned to support Member States as they adapt to revisions in the Port State Control, Accident Investigation, Flag State, and Ship Source Pollution Directives. Preparations are also underway for the proposed revision of EMSA's Founding Regulation, ensuring the Agency is ready to act once the co-legislators reach their decision. With the FuelEU Maritime Regulation in force from 1 January, EMSA will also be providing support to Member States and stakeholders for this important piece of legislation.

In addition to legislative support, the approval and renewal of strategic partnerships remain a priority for the Board. Agreements with DG CLIMA and DG ENV will enable EMSA to continue adapting its flagship enforcement tool, THETIS, to harmonise and streamline the implementation of the Sulphur Directive, the MRV Regulation, and the extension of the EU Emissions Trading System to maritime transport. These partnerships highlight EMSA's role as a key player in Europe's environmental and decarbonisation efforts. In early 2025, EMSA will launch the second edition of the European Maritime Transport Environmental Report. This joint effort with the European Environment Agency will provide an updated and forward-looking analysis of the environmental impact of the maritime transport and outline actionable measures for further reducing the sector's footprint.

The Board also appreciates EMSA's continued delivery of core services, which remain essential to Member States. From visits and inspections to capacity building initiatives through the EMSA Academy and the provision of advanced tools and technologies, the Agency continues to provide well-rounded support. In particular, the Board recognises the importance of data-driven maritime situational awareness through systems such as the Integrated Maritime Services (IMS) and via the evolving Common Information Sharing Environment (CISE). These tools and platforms, which enable the effective exchange of information, are vital in today's complex geopolitical context and serve as important resources for both regional and global maritime operations.

The Board also recognises the importance of fostering an inclusive and diverse working environment, which strengthens EMSA's ability to serve its stakeholders. We are proud of EMSA's recent recognition with a Certificate of Excellence at the 2024 EU Agencies' Network Diversity & Inclusion Awards. This achievement reflects the Agency's commitment to promoting equality and inclusion across all levels of its organisation.

On behalf of the Administrative Board, I wish to extend my gratitude to EMSA's staff for their dedication, professionalism and innovation. It is their collective effort that ensures EMSA remains a cornerstone of maritime safety and sustainability in Europe.

I look forward to another productive year, working together with EMSA's leadership, staff and stakeholders to achieve our shared goals for 2025 and beyond.

Wojciech Zdanowicz

Chair of the Administrative Board

Foreword from the Executive Director

As we look to 2025, I am pleased to present the EMSA Outlook 2025, a comprehensive overview of the work we will carry out in the year ahead. Based on the Single Programming Document 2025-2027, adopted during the 71st Administrative Board in November 2024, this publication highlights our ongoing commitment to improving safety, security, sustainability and efficiency across Europe's maritime sector.

A key development this year comes with the roll-out of the new Maritime Safety Package, an ambitious legislative initiative designed to modernise maritime safety rules and address ship-source pollution. This package introduces important revisions to directives governing accident investigation, port state control, compliance with flag state requirements and ship-source pollution, which will significantly shape EMSA's activities and resources in 2025 and beyond. In response, EMSA will provide strong support to the European Commission and Member States by enhancing, adapting and developing technical tools and operational services to effectively meet the new requirements.

In addition to these efforts to strengthen maritime safety, EMSA will release the second version of EMSAFE, offering updated insights into the primary safety challenges confronting the EU's maritime sector. Passenger ship safety also remains a top priority, with continued technical support for revising the Directive on domestic passenger ships, ongoing visit cycles and a dedicated study focussing on large passenger ship evacuation strategies.

Recognising the escalating importance of maritime cybersecurity, EMSA will intensify efforts to assist Member States and industry stakeholders in strengthening their cybersecurity frameworks. Simultaneously, we will ensure the protection of EMSA's own systems, reflecting our commitment to digital resilience.

Sustainability remains a critical part of our work. In early 2025, EMSA will launch the second edition of the European Maritime Transport Environmental Report (EMTER 2.0), developed in partnership with the European Environment Agency. In parallel, EMSA will play a critical role in supporting the implementation of the extension of the EU Emissions Trading Scheme to maritime transport and the FuelEU Maritime Regulation. Complementing these efforts, EMSA will continue to release studies on promising technologies, including a 2025 focus on onboard carbon capture and storage. Furthermore, we will address safety considerations associated with alternative fuels such as ammonia and hydrogen, offering practical guidance to facilitate the sector's transition to cleaner energy sources.

On the environmental front, EMSA's pollution monitoring capabilities will advance significantly under the revised Ship Source Pollution Directive. Enhanced features will include the integration of new pollutant categories and cutting-edge Sentinel-2 imagery analysis into CleanSeaNet.

This publication also reflects the Agency's ability to adapt and respond to today's complex geopolitical challenges. Rising global instability and conflicts in key maritime regions have disrupted shipping routes and increased security risks. Geopolitical tensions have led to vessel re-routing, increased shadow fleet activity and occasional attacks on merchant shipping. In this context, EMSA remains committed to promoting resilience and security across the sector through enhanced situational awareness and cooperation.

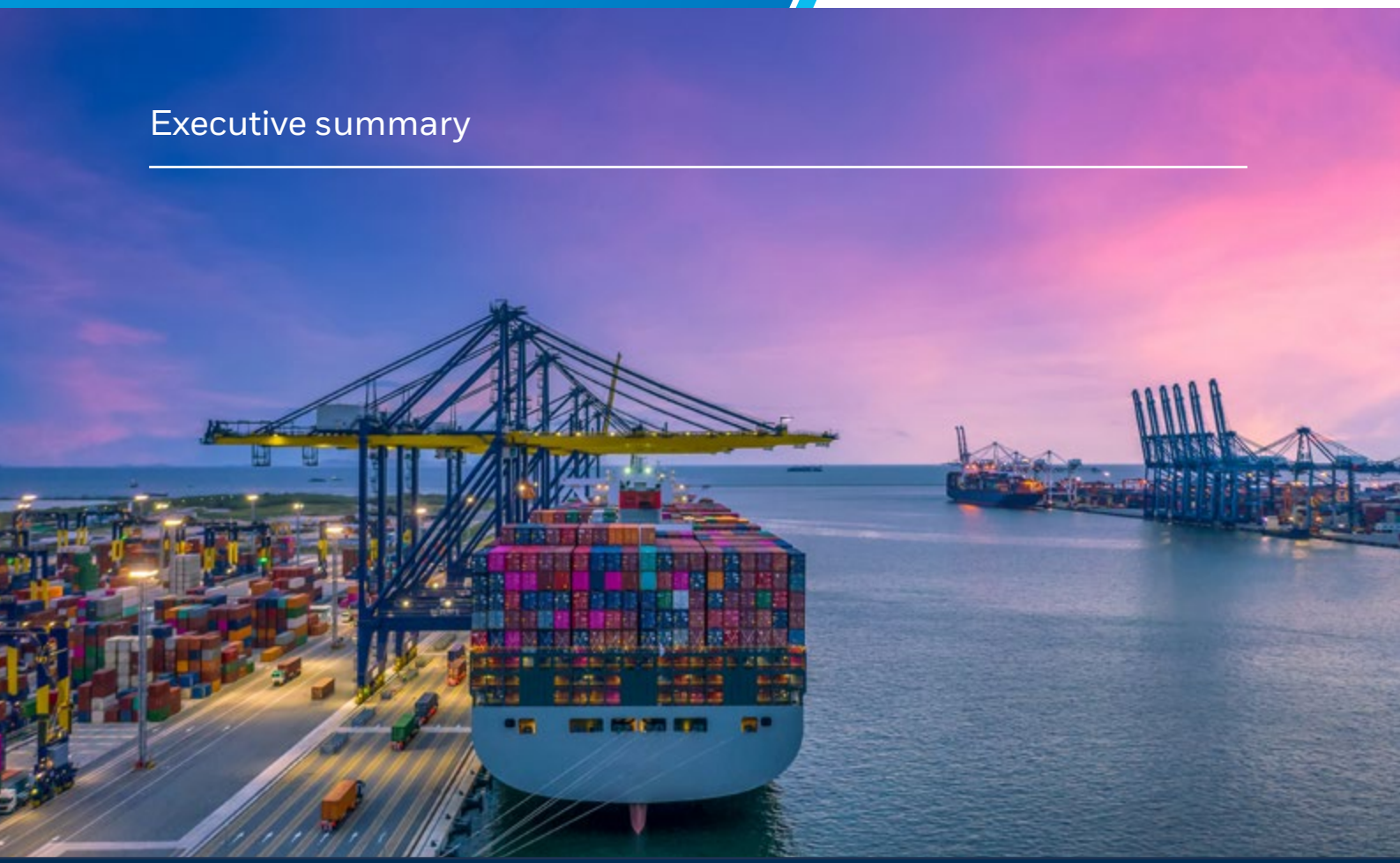
None of our progress would be possible without the dedication of our staff and the support of our Administrative Board. I extend my sincere gratitude to the Board, particularly its Chairperson, Mr Wojciech Zdanowicz, for their continued guidance and trust. I would also like to acknowledge the efforts of our staff, whose expertise and commitment remain at the core of the Agency's success.

The EMSA Outlook 2025 represents our contribution to fostering a maritime sector that is not only safer and more efficient but also aligned with the sustainability goals of the future. We hope this publication offers valuable insights into our work and direction as we strive to shape a resilient, secure and sustainable maritime future.

Maja Markovčić Kostelac

Executive Director

Executive summary



The EMSA Outlook 2025 outlines the Agency's strategic priorities for the coming year. Aligned with its multi-annual strategic goals, these priorities are drawn from the Single Programming Document (2025-2027), which was adopted by EMSA's Administrative Board in November 2024.

As a decentralised Agency of the European Union, EMSA plays a central role in the EU's maritime safety network. The Agency works in close collaboration with a wide range of stakeholders, including European and international institutions, Member States' administrations and the maritime industry. Established under Regulation (EC) No 1406/2002, EMSA's mandate has been updated over time to extend its responsibilities, particularly in areas like pollution response, coast guard cooperation and the facilitation of a European maritime transport space without barriers.

The Outlook 2025 reflects these evolving responsibilities, which have been further shaped by recent legislative developments, including the FuelEU Maritime Regulation and the Maritime Safety Package. This Maritime Safety Package aims to modernise maritime safety rules and tackle ship source pollution. It is expected to have a significant impact on EMSA's activities and resources starting in 2025. Additionally, the proposal to revise EMSA's mandate is set to introduce a broader scope of tasks and responsibilities. This revision will further align EMSA's capabilities with evolving EU priorities, enhancing its role in key areas such as decarbonisation, maritime safety and digitalisation, and providing additional resources to support these new activities throughout 2025.

Structured around seven key thematic areas, the Outlook emphasises Sustainability, Safety & Security, Surveillance and Simplification. Additionally, it integrates three cross-cutting themes – Digitalisation, Technical Assistance and Strategic Support – to ensure that EMSA's activities remain aligned with EU priorities while optimising the effectiveness and cost-efficiency of its services.

In the next pages are highlights of the key initiatives planned for the year ahead.

EMSA supports a greener maritime sector, working with stakeholders to promote decarbonisation, alternative fuels and pollution reduction

CHAPTER 1

SUSTAINABILITY

In 2025, EMSA will continue to prioritise the reduction of the maritime sector's environmental impact, supporting EU decarbonisation goals, sustainable fuels and pollution reduction. The implementation of key legislative frameworks, including the FuelEU Maritime Regulation and the extension of the EU Emissions Trading Scheme (ETS) to maritime transport, will be central to EMSA's work, alongside the broader European Green Deal package aimed at achieving climate neutrality by 2050. In particular, the Agency will continue to host and develop the necessary databases and reporting tools.

A major focus will be on supporting the implementation of the Maritime Safety Package, particularly the revised Ship Source Pollution (SSP) Directive, which will enhance monitoring and enforcement of new pollution control measures. For example, EMSA's CleanSeaNet service will expand its capabilities to detect additional pollutants such as sewage, garbage and waste from scrubber wash water, with support from satellite radar imagery and optical satellites.

EMSA will also continue to work on filling knowledge gaps in relation to alternative fuels and promising technologies in support of the green transition for shipping, such as onboard carbon capture and storage.

Operationally, EMSA will look into options to make its pollution response services toolbox "future-proof", taking into consideration evolving traffic patterns due to challenging geopolitical scenarios and emerging risks from the uptake of new fuels. A new prototype tool will also be developed to simulate oil pollution response operations, ensuring readiness for future incidents.

By supporting the European Sustainable Shipping Forum (ESSF) and Sustainable Ports sub-group, EMSA will continue fostering collaboration on sustainable maritime practices, driving initiatives to reduce the sector's carbon footprint. EMSA's European Maritime Transport Environmental Report (EMTER 2.0), produced in cooperation with the European Environment Agency, will provide key insights into the sector's environmental impact, helping to guide EU policy on shipping and sustainability.

EMSA's work in sustainability for 2025 will play a crucial role in supporting the implementation and enforcement of the legislative framework in place in the EU to align the maritime sector with EU environmental goals, advancing decarbonisation efforts and supporting the broader European Green Deal vision.

EMSA continues to build up maritime surveillance capabilities for greater situational awareness that benefits a broad range of maritime-related functions

CHAPTER 2

SURVEILLANCE

In 2025, EMSA will further enhance its maritime surveillance capabilities, providing advanced technologies to support Member States and EU agencies in various maritime operations. Through the use of Remotely Piloted Aircraft Systems (RPAS), satellite-based services and advanced data processing tools, EMSA will improve maritime situational awareness across a broad range of maritime-related functions.

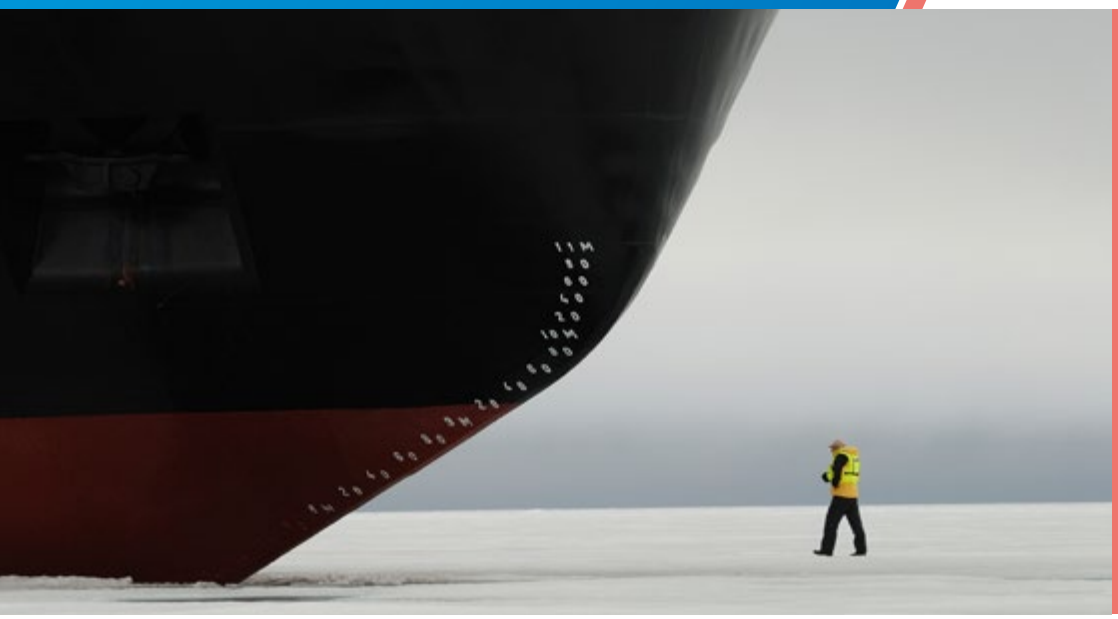
EMSA will expand its RPAS services, consolidating deployments with longer durations, in regions of shared operational interest. This will enable real-time, high-resolution data collection for a broad range of coast guard-related activities, from support to search and rescue, monitoring pollution from vessels, as well as surveillance linked to law enforcement operations. RPAS services will be used to assist Member States in pollution verification activities under the revised Ship Source Pollution Directive, supporting the follow-up of CleanSeaNet detections. In collaboration with the European Fisheries Control Agency (EFCA), EMSA will also provide RPAS surveillance for fisheries monitoring, ensuring a multipurpose approach to operations.

EMSA will strengthen its Earth Observation services through the Copernicus Maritime Surveillance Service (CMS), which supports maritime safety, law enforcement, maritime security and fisheries control activities. The Earth Observation portfolio of the agency will be expanded with the addition of Cosmo-SkyMed and Pleiades Neo satellite imagery that will support vessel detection, activity tracking and pollution monitoring. With respect to CleanSeaNet, service developments will start with the aim of increasing its capabilities in the detection of a broader range of pollutants, such as sewage and rubbish, in line with the revision of the Ship Source Pollution Directive.

EMSA's global vessel monitoring will continue to benefit from Satellite-AIS data, enriching the maritime situational picture to support a wide range of operational activities. This enhanced awareness is particularly valuable in high-risk areas, aiding law enforcement and maritime security efforts in near real-time.

Looking ahead, EMSA will sign new framework contracts that will enable the renewal of the Agency's RPAS portfolio and ensure continuity of RPAS activities for the coming years. EMSA will continue to monitor emerging surveillance technologies such as High-Altitude Pseudo Satellites (HAPS), aiming to further optimise maritime surveillance capabilities. The Agency will also continue to refine artificial intelligence algorithms for the analysis of satellite data to help improve vessel and activity detection products.

Key priorities for 2025 will include enhancing EMSA's maritime surveillance capabilities by expanding the use of RPAS, strengthening Earth Observation services, and incorporating new satellite imagery sources to improve vessel and activity detection, and pollution monitoring.



The new Maritime Safety Package will be a key focus area for EMSA in 2025 as the Agency supports its practical implementation across legislation aimed at modernising the EU's rules on maritime safety and reducing pollution

CHAPTER 3

SAFETY AND SECURITY

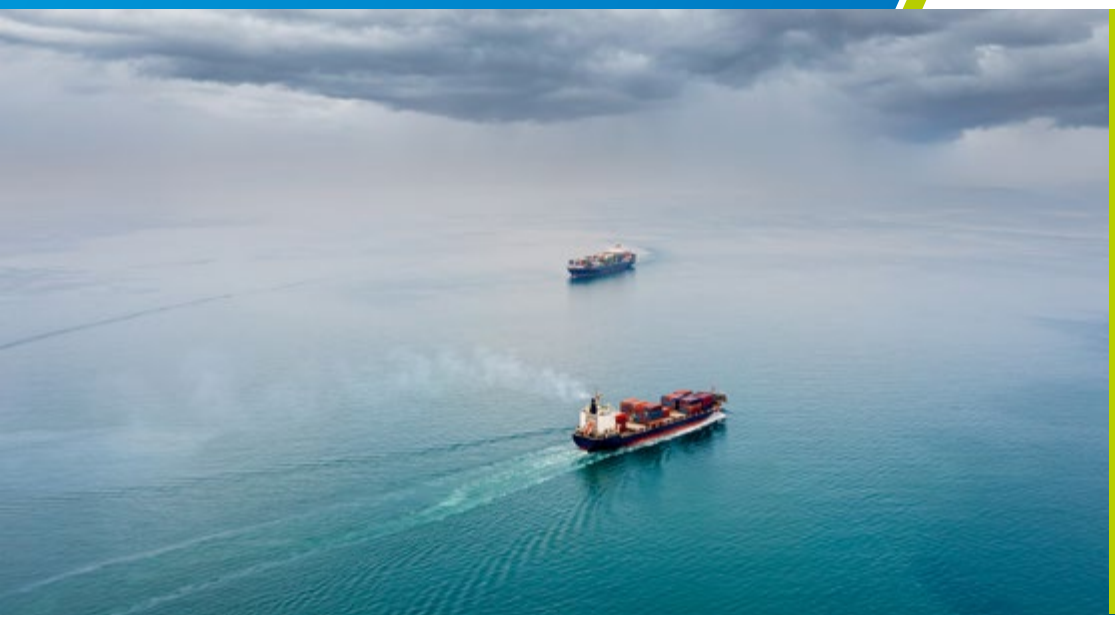
In 2025, EMSA will play a key role in enhancing maritime safety and security, with a focus on implementing the new Maritime Safety Package, which aims to modernise safety regulations and tackle ship source pollution. This package brings additional responsibilities and resources to the Agency, supporting its ongoing work to make shipping safer and more sustainable. For instance, EMSA will support the implementation of new requirements under the updated Port State Control Directive and Flag State Directive, including the development of digital tools for ship inspection and the wider adoption of e-certificates for vessels.

EMSA will prioritise safety in the context of innovative technologies like alternative fuels and autonomous ships (MASS). The Agency will launch a pilot risk-based assessment tool for MASS projects, helping Member States to approve new projects safely. Additionally, EMSA will take forward studies on the safe use of ammonia, biofuels and hydrogen as fuels for ships, providing practical guidance for these emerging technologies. In 2025, EMSA will also focus on the safety challenges posed by the carriage of electric vehicles on ships, following the Fremantle Highway incident in July 2023.

To improve maritime safety standards, EMSA will continue collaborating with the Paris MoU to eliminate substandard shipping. EMSA's coordination of the IMO Correspondence Group on Port State Control will help harmonise procedures internationally, ensuring safer global operations for EU-flagged vessels. Moreover, the European Marine Casualty Information Platform (EMCIP) will be expanded to include data on accidents involving smaller fishing vessels, improving safety analysis and accident prevention.

On the security front, EMSA will maintain its role in supporting the implementation of EU maritime security legislation, such as Regulation (EC) No 725/2004 on enhancing ship and port facility security. The Agency will also support cybersecurity initiatives, collaborating with stakeholders like the EU Agency for Cybersecurity (ENISA) to address cyber threats to the maritime sector. EMSA will continue its work on raising cybersecurity awareness and, based on the outcome of the 2024 maritime cybersecurity conference, will explore ways to establish a system for sharing information on maritime cyberattacks at the EU level.

In 2025, EMSA's safety and security priorities will focus on the practical implementation of the Maritime Safety Package, providing guidance on the safe use of alternative fuels, advancing the regulation of autonomous ships and strengthening cybersecurity measures across the maritime sector.



EMSA contributes to enhanced efficiency in the shipping sector by managing systems like SafeSeaNet and supporting the implementation of the European Maritime Single Window environment

CHAPTER 4

SIMPLIFICATION

In 2025, EMSA will continue to drive simplification through digitalisation, enhancing maritime operations and assisting in reducing administrative burdens. Central to these efforts is the further development of the SafeSeaNet system, which will support a variety of mandatory functions, including vessel traffic monitoring, port call information and the management of dangerous cargo and waste. SafeSeaNet will also be enhanced with upgraded facilitation services for ship-to-shore reporting and the development of centralised databases, supporting harmonised information sharing across the EU.

EMSA will continue to support the implementation of the European Maritime Single Window Environment (EMSWe). The EMSWe will harmonise port-call reporting across EU ports, applying the "once-only" principle to reduce repetitive reporting for ship operators. EMSA will provide technical assistance and maintain key components such as the EMSWe data set, to have interoperability between Member States' National Single Windows.

In addition, EMSA will advance the modernisation of ship reporting systems, including the integration of the Adriatic Sea reporting system (ADRIREP) with automated ship-to-shore reporting. The Agency will *continue to develop Traffic Density Maps, offering* valuable insights into vessel movement patterns, and will work on expanding the voluntary eCertification platform for seafarers, aiming for full implementation by 2028.

These initiatives will simplify maritime operations, streamline reporting obligations and promote the digitalisation of maritime services across the EU.

EMSA offers a whole host of digital services designed to support real-time operations while strengthening customisable data-driven solutions for Member States

CHAPTER 5

DIGITALISATION

In 2025, EMSA will focus on enhancing its digital portfolio. The Integrated Maritime Services (IMS) delivering the maritime picture will continue to be improved with additional customised features, data sets and services, including enhancements to the SafeSeaNet Ecosystem Graphical User Interface (SEG) and IMS Mobile App. The System-to-System (S2S) interfaces will further support national systems, while Automated Behaviour Monitoring (ABM) services will use algorithms to detect abnormal vessel behaviour, enriching the maritime surveillance picture. Cross-referencing ship movements with Earth Observation data and situational information such as weather conditions will aid in real-life maritime operations interpretation.

Drift modelling capabilities will also be developed, further refining the maritime situational picture. Data analysis tools will enable the use of 'live' and historical data to support Member States in coastal, port and flag state functions, and EMSA will provide digital tools for enhanced Search and Rescue (SAR) capabilities.

The Agency will continue to assist Member States and the European Commission in handling maritime emergencies, monitoring maritime traffic and providing specific reports related to the monitoring of sanctions against Russia. EMSA also offers live alerts and periodic reports on crises, like the one in the Red Sea.

EMSA will also continue to develop maritime analytics and predictive capabilities, using advanced data tools like the Blue Data Warehouse. This will allow the Agency to better support decision-making processes and provide a clearer picture of maritime safety, environmental protection and other critical factors.

Other digitalisation efforts will focus on developing the Earth Observation Data Centre (EODC), enhancing RPAS data solutions and supporting Member States with data-driven maritime surveillance tools. Systems like the STCW Information System, THETIS, and RuleCheck will be further developed to help improve maritime safety and regulatory compliance. Additionally, EMSA will continue to coordinate the operational phase of the Common Information Sharing Environment (CISE). Efforts will accelerate to host more maritime applications in the cloud and to enhance cybersecurity.

Looking forward, EMSA will prioritise the work on the implementation of digital tools related to the EU Maritime Safety Package and the revised Ship Source Pollution (SSP) Directive, including CleanSeaNet enhancements and new reporting tools for ship source pollution incidents. EMSA will also continue with the modernisation of the THETIS Ecosystem.

EMSA provides technical assistance, training and inspections to help Member States implement EU legislation, enhance safety and build capacity across the maritime sector

CHAPTER 6

TECHNICAL ASSISTANCE

In 2025, EMSA will continue to provide technical assistance through capacity-building initiatives, supporting the implementation of EU maritime legislation and conducting inspections and visits.

The EMSA Academy will expand its portfolio of learning services, delivering certified courses aligned with applicable ISO standards and developing new learning services on key topics such as the extension of the EU Emissions Trading System (ETS) to maritime transport, the FuelEU Maritime Regulation, alternative fuels and the revised Ship Source Pollution Directive. These efforts will support Member States in achieving harmonised implementation and enforcement of maritime legislation across the EU and beyond.

EMSA will continue to conduct inspections of Recognised Organisations (RO) and third countries supplying seafarers to EU-flagged vessels, contributing to improved safety and compliance with international standards, including the IMO's STCW Convention. The Agency will also facilitate discussions on remote surveys and inspections, supporting EU and international efforts to create a regulatory framework for these technologies.

EMSA's visits to Member States will focus on ensuring the consistent application of EU legislation related to passenger ship safety, port reception facilities and seafarer training.

Finally, EMSA will continue to support the European Neighbourhood Policy (ENP) countries in the Mediterranean region and in the Black and Caspian Sea regions, as well as in the Instrument for Pre-accession Assistance (IPA III) beneficiary countries with technical assistance, training and tools, contributing to capacity building and the transposition of international maritime standards.

EMSA prioritises good governance within the Agency and enhanced cooperation with EU bodies and stakeholders, including in the area of coast guard collaboration

CHAPTER 7

STRATEGIC SUPPORT

In 2025, EMSA will continue delivering financially efficient and operationally effective maritime services to support the objectives of key EU bodies and stakeholders. Through strengthened partnerships, EMSA will enhance cooperation in areas such as maritime safety, security and environmental protection.

EMSA's partnerships with key EU agencies are essential for addressing shared maritime challenges. Under various bilateral agreements, EMSA will provide information services to the European Fisheries Control Agency (EFCA), European Naval Forces (EUNAVFOR Atalanta, Med Irini and Aspides), the EU Agency for Law Enforcement Cooperation (Europol), the European Border and Coast Guard Agency (Frontex), the Maritime Analysis and Operations Centre – Narcotics (MAOC-N) and the European Commission's Emergency Response Coordination Centre (ERCC).

For EFCA, EMSA will offer Integrated Maritime Services (IMS), including satellite imagery from the Copernicus Maritime Surveillance service, and equip EFCA's Offshore Patrol Vessels (OPV) with oil pollution response equipment and Remotely Piloted Aircraft Systems (RPAS). These efforts will assist in fisheries control and environmental protection. Under its agreement with Frontex, EMSA will provide Earth Observation data, vessel traffic data and analysis, and incidental pollution sightings will be shared through CleanSeaNet.

Additionally, EMSA will continue supporting Europol in combating maritime crime and MAOC-N in drug trafficking monitoring by providing surveillance and vessel tracking data. EMSA's partnership with the Emergency Response Coordination Centre (ERCC) will remain crucial for collecting information for EU-wide maritime emergency responses.

Building on successful operations in the Baltic Sea (2023) and La Manche (Channel) and southern North Sea (2024), EMSA will coordinate a new MMO in 2025 with Member States, focusing on maritime surveillance, fisheries control and environmental protection.

In addition to these operational efforts, EMSA will continue to prioritise good governance and transparency. The Agency remains committed to adhering to the EU Eco-Management and Audit Scheme (EMAS), aiming to maintain its environmental sustainability initiatives, particularly in reducing carbon emissions and improving energy efficiency. Furthermore, EMSA will advance its Gender Action Plan (2022–2025), targeting 60% female participation in its traineeship programme, while working to increase geographical diversity in recruitment.

The following chapters will delve into each of the focus areas, providing detailed insights into EMSA's activities and operational efforts for 2025. These sections will explore how the Agency is enhancing maritime safety, improving environmental protection, streamlining operations through digitalisation and providing strategic support and technical assistance to its stakeholders.

CHAPTER 1
SUSTAINABILITY

PREVENTION OF POLLUTION BY SHIPS

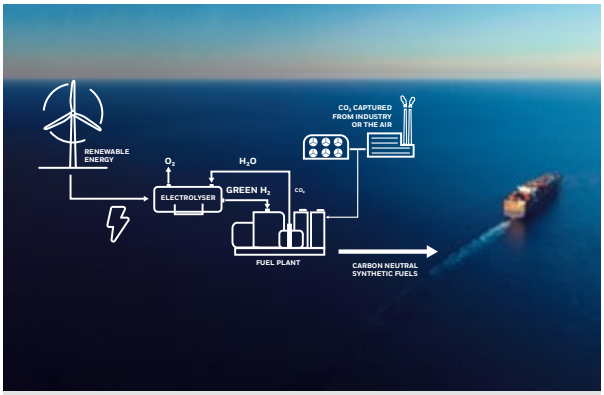
EMSA acts as facilitator and technical hub to lessen the environmental impact exerted by the maritime sector in the EU. The Agency supports the EU's priorities in the areas of decarbonisation, smart mobility, sustainable alternative fuels, ship energy efficiency and carbon intensity, accelerated use of on-shore power supply, protection of biodiversity and zero pollution ambitions.

EMSA offers expertise in the field of environmental protection, helping the European Commission and EU Member States to address a wide variety of ship-sourced water and air pollution. In the year ahead, the Agency will be further contributing to the European Green Deal – a set of policy initiatives by the European Commission with the overarching aim of making Europe climate neutral by 2050.

With the new legislative framework in place and its two pillars of the extension of the EU Emissions Trading Scheme (ETS) to maritime transport and the FuelEU Maritime Regulation, the Agency is on the front line to support their implementation and enforcement, including through the development of relevant tools within the THETIS ecosystem. THETIS and its associated modules will therefore continue to address compliance with rules in the areas of sulphur, port reception facilities, ship recycling, the monitoring, reporting and verification of CO_2 emissions under the EU MRV Regulation as well as the extension of the EU ETS to maritime transport and the FuelEU Maritime Regulation.

The NAVISON report is the first pan-European report to provide historical and future forecast underwater noise data for all European seas

EMSA provides studies on potential alternative fuels and power solutions for shipping, such as wind-assisted propulsion technologies



Synthetic fuels for shipping - including e-diesel, e-methane and e-methanol - have also been analysed in a dedicated study

In 2025, EMSA will continue in its efforts to fill knowledge gaps and deliver new studies that will complement the ones already available on biofuels, hydrogen, ammonia, wind-assisted propulsion, synthetic fuels, nuclear power, starting with a study focussed on onboard carbon capture and storage. In other environmental areas, EMSA will continue its work on underwater radiated noise (URN), supporting Member States in assessing the level of underwater noise at national and regional levels, drawing from the results of the NAVISION project and the sound maps made available both in a hindcast and forecast perspective to better understand and mitigate the environmental impact of URN.

The Agency will maintain its role as the technical secretariat of the European Sustainable Shipping Forum (ESSF), offering a platform for structured dialogue among maritime industry stakeholders and the European Commission to address the environmental sustainability challenges. EMSA will also support the Sustainable Ports sub-group of the European Ports Forum, promoting collaboration on port-related matters.

On the international front, EMSA will continue to contribute to the developments at IMO and assist the European Commission and the EU Member States in the discussions for the implementation of the 2023 IMO Strategy on the reduction of greenhouse gas emissions from ships. This will involve providing assistance on the ongoing work on mid-term measures, energy efficiency and carbon intensity regulations, alternative fuels and their safety standards, as well as addressing the technological and operational challenges of decarbonising shipping. The Agency will also assist the European Commission in IMO negotiations on emerging issues, such as marine litter and underwater noise, in line with the EU's environmental agenda.

EMSA will release the second edition of the European Maritime Transport Environmental Report (EMTER 2.0) in cooperation with the European Environmental Agency (EEA). This report will offer a comprehensive overview of maritime transport's environmental footprint.

In addition, EMSA will look into options to enhance satellite and RPAS-based pollution monitoring through collaborations like the Copernicus Atmospheric Monitoring Service.

The Alexandria is one of EMSA's fleet of chartered oil spill response vessels. Its area of operation is the Eastern Mediterranean.

The Amalthia is based in the Black Sea. Along with other resources, it forms part of a "toolbox" that can top-up Member State capabilities in case of pollution.

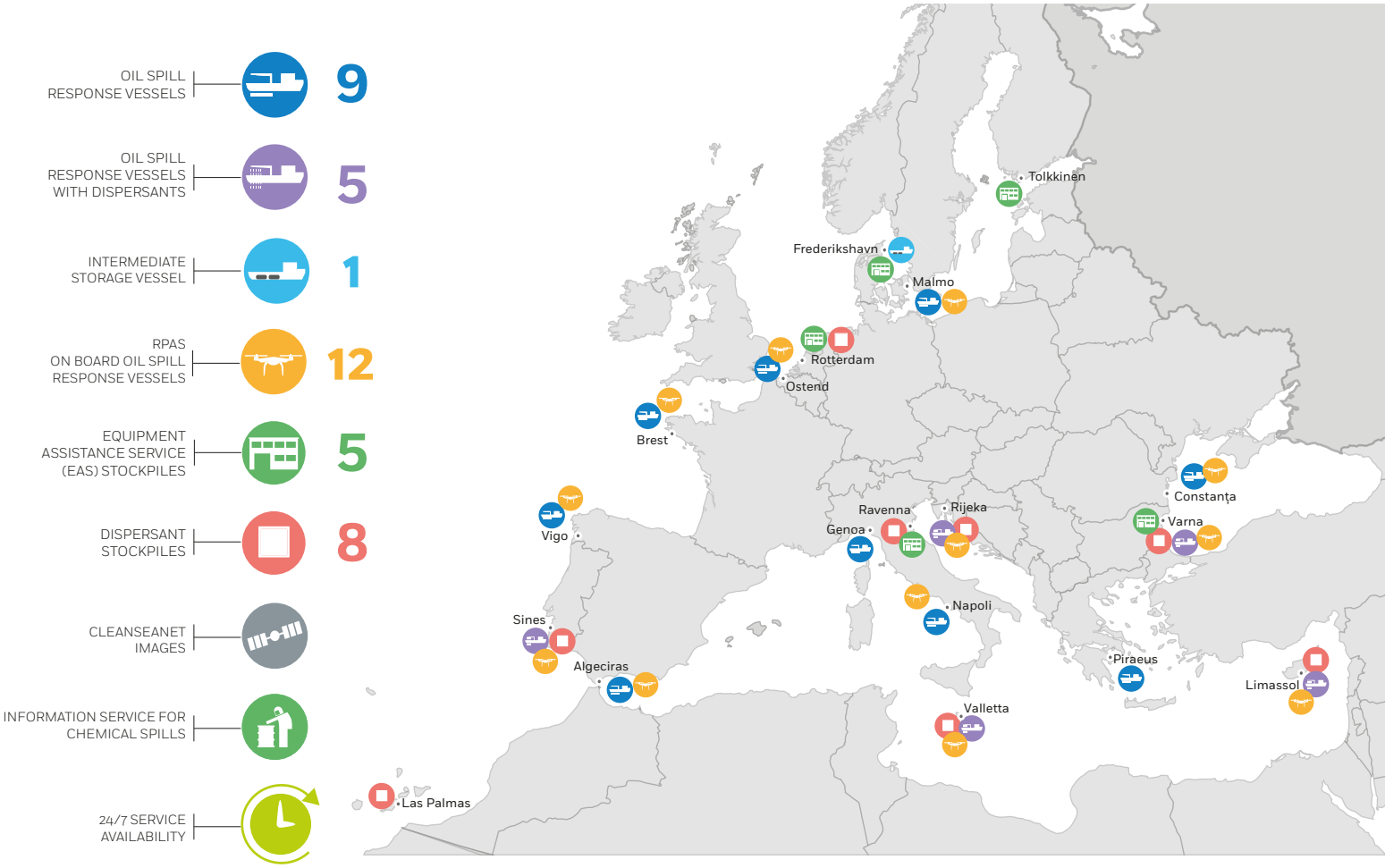
OPERATIONAL POLLUTION RESPONSE SERVICES

EMSA offers a wide range of pollution response services to protect the areas in and around the European coastline. Various options are available to Member States on request via the European Commission's Emergency Response Coordination Centre (ERCC), which is run by the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO). These can be selected based on the characteristics of the spill and the type of pollutant involved.

EMSA's services target marine pollution from both ships and offshore oil and gas installations, and are intended to top up the capacity of coastal states in the event of a major spill at sea. The services may also be made available to countries sharing a regional sea basin with the EU.

EMSA pollution response services are based on a network of chartered commercial vessels which have been adapted and equipped to offer pollution response services. These vessels are on standby all year long and are positioned around the European coastline. The services take into account the existing response capacities of the Member States to offer a rapid response.

Bearing in mind evolving traffic patterns determined by challenging geopolitical scenarios, as well as emerging new risks due to the green transition of shipping and the shift towards alternative fuels and new sources of power for ships, in 2025 EMSA will start looking into options to make the Agency's pollution response services future-proof.



OPERATIONAL SERVICES
AS AT END OF 2024

Procurements will be launched to ensure availability of relevant services. While mechanical recovery of oil remains the main response strategy, some vessels are also equipped to use dispersants, with stockpiles available at several points along the EU coastline.

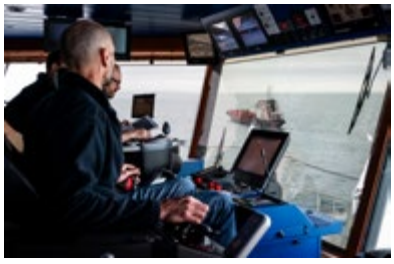
To diversify the response means, several Equipment Assistance Services (EAS) have been established, providing Member States with specialised response equipment – including near-shore and Hazardous and Noxious Substance (HNS) equipment – which can be used by non-dedicated response vessels. The EAS arrangement for Southern Europe will become operational in 2025, and the EAS contract for the Black Sea will be re-tendered.

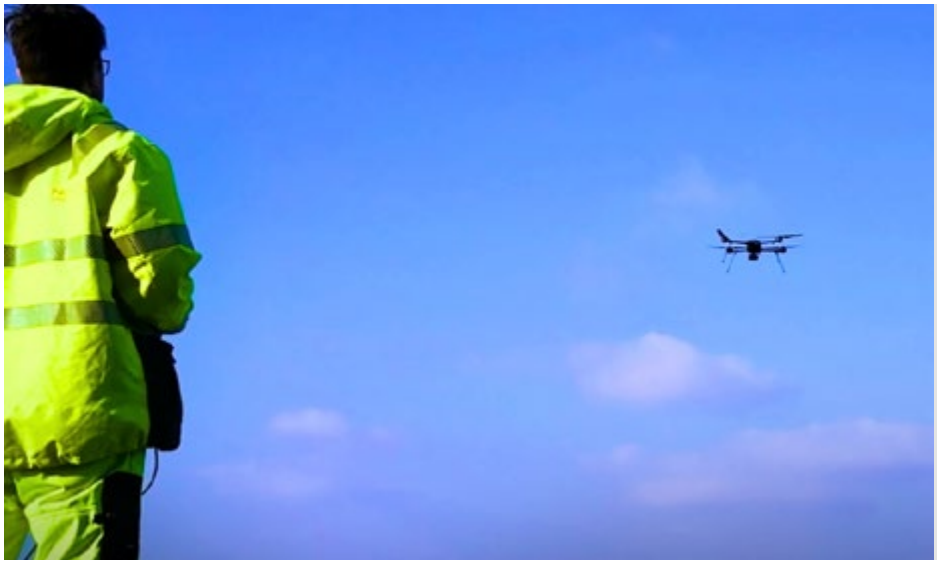
To enhance pollution detection and monitor clean-up operations, EMSA's response vessels can be equipped with lightweight Remotely Piloted Aircraft Systems (RPAS) offering a live video stream to help identify areas of pollution and provide indications of oil slick thickness. In 2025, 13 vessels will be equipped with RPAS.

In the year ahead, EMSA will continue to manage these pollution response services, providing training to ensure a high level of readiness and working on the development of a prototype tool to simulate oil pollution response operations at sea. Furthermore, EMSA will actively participate in international multi-partner, multipurpose exercises at sea with Member State authorities.

Both of EMSA's MAR-ICE and MAR-CIS services will continue to offer access to expertise in the event of a chemical spill whether through specialised chemical experts and/or chemical substance datasheets.

In 2025, EMSA will start looking into alternative fuels from a pollution response perspective, starting with blends of biodiesels with conventional fuels. Given the green transition of shipping, this area of research is critical for future preparedness.





EMSA offers a range of services to help coastal states around Europe respond quickly, effectively and efficiently to oil or chemical marine pollution incidents

CLEANSEANET & RPAS FOR AIR & SEA POLLUTION MONITORING

Europe-wide oil spill monitoring and polluter identification is made possible through a combination of different services offered by EMSA to EU and EFTA coastal states to support their users in identifying illegal discharges from sea-going vessels.

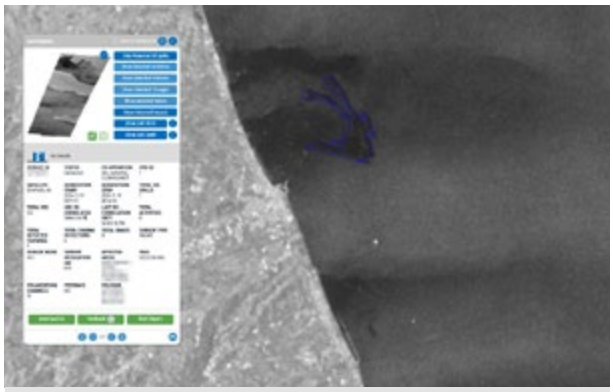
CleanSeaNet is the near real time European satellite-based oil spill monitoring and vessel detection service, set up and operated by EMSA since 2007. It analyses satellite images to detect possible oil on the sea surface, to identify potential polluters and to monitor the spread of oil during emergencies.

The existence of the CleanSeaNet service serves as a powerful deterrent to would-be polluters and is available to all participating states. These include EU Member States and their overseas territories, candidate countries and EFTA/EEA states, as well as beneficiary countries participating in programmes of the European Commission, such as IPA (Pre-Accession Assistance), SAFEMED IV and the ENP programme for the Black and Caspian Sea which have signed the conditions of use for the system. Each country has access to the service through a dedicated user web interface.

In addition to satellite imagery and vessel positioning data, Remotely Piloted Aircraft Systems (RPAS) are also particularly useful for the overall surveillance chain. At the request of Member States, RPAS equipped with gas sensors can be deployed in areas of high traffic density to fly in the plume of passing merchant vessels to take measurements of their air emissions. This makes it possible to determine whether or not the vessel checked is using heavy fuel for propulsion exceeding the permitted sulphur limits, in which case coastal authorities will be alerted. These alerts are recorded in the THETIS-EU system and can lead to follow-up by inspectors at the ship's next port of call.

In 2025, EMSA will continue expanding RPAS services with three distinct emissions monitoring operations planned: two using larger RPAS to monitor vessels far from shore and one operation with smaller RPAS to monitor vessels closer to port areas.

For incidents involving oil spills at sea, lightweight RPAS are available on board EMSA's standby oil spill response vessels. These quadcopters allow for increased flexibility in monitoring and detecting pollution during an incident at sea. In 2025, this service will continue to be supported through regular drills, and a new contractual framework will be established for the deployment of lightweight RPAS from onboard EMSA's standby oil spill response vessels, ensuring the continuity and further enhancement of these assets.

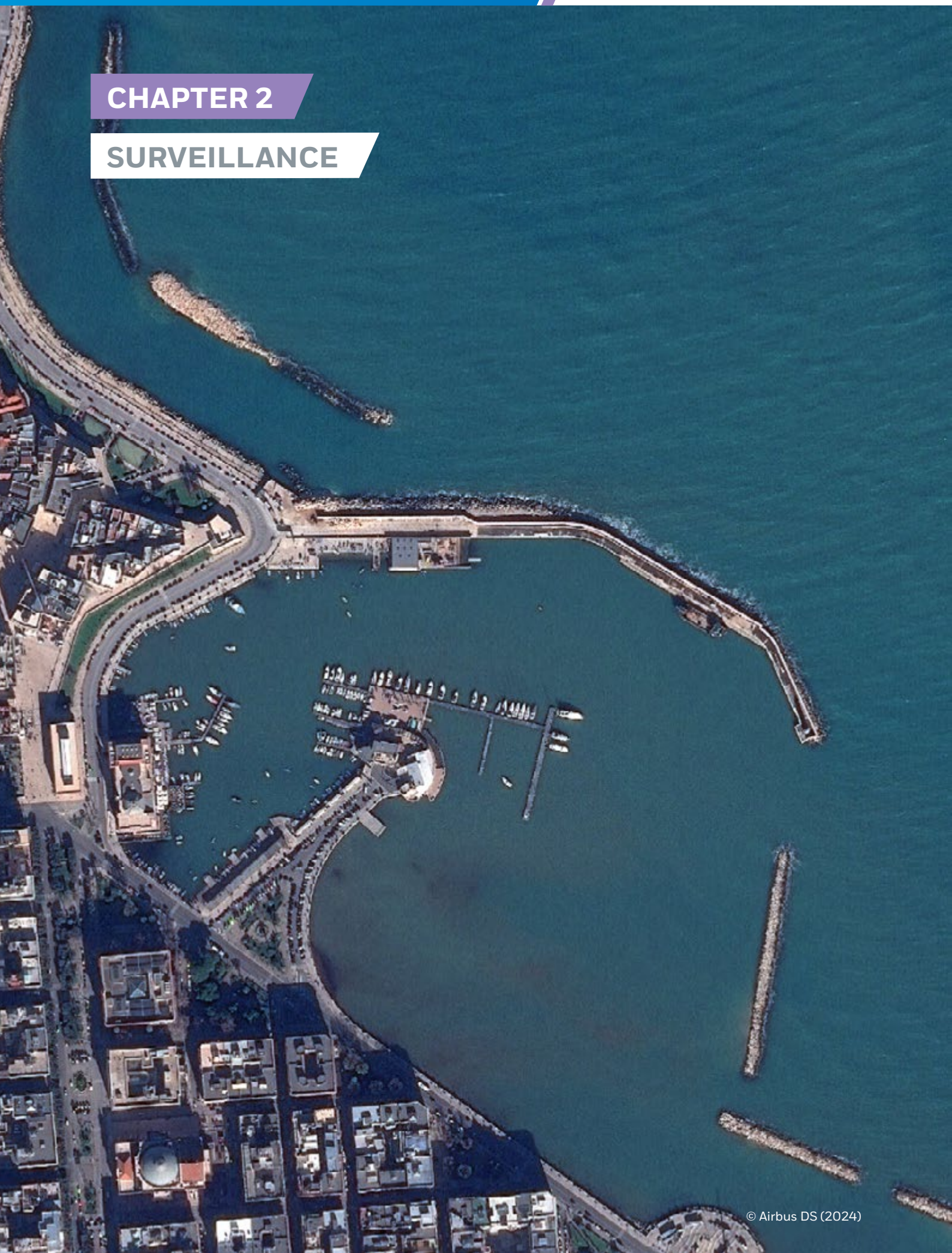


Detecting spills on the sea surface from SAR satellite imagery ©EMSA, contains modified Copernicus Sentinel-1 data, (2024)

RPAS equipped with gas sensors can take measurements of air emissions from ships

CHAPTER 2

SURVEILLANCE



MULTIPURPOSE MARITIME SURVEILLANCE RPAS

Unmanned aircraft coupled with satellite communication have taken maritime awareness to the next level, enabling real-time maritime information transmission from assets at sea to personnel on shore. EMSA offers a service based on Remotely Piloted Aircraft Systems (RPAS) which are free of charge to EU Agencies and Member State authorities executing coast guard functions for use in a whole range of maritime scenarios.

With a focus on regions of shared operational interest, the aim is to establish more permanent deployments, serving a broader array of national administrations across various function areas, and cater for multiple Member States per operation, enhancing regional cooperation. The objective is to carry out these operations regularly, supporting Member States in all facets of maritime surveillance. From wide area monitoring of vessels and objects of interest to the identification of specific activities onboard vessels, EMSA offers support to Member States' various maritime activities, including search and rescue operations.

In 2025, EMSA will enhance its multipurpose regional RPAS services for Member States and EU Agencies, building up a more permanent capacity for RPAS-based surveillance in key maritime areas. EMSA will continue to provide RPAS services to EFCA, specifically to one EFCA vessel, in support of EFCA's Joint Deployment Plans. Furthermore, EMSA will organise its annual RPAS user group meeting, promoting the exchange of best practices between RPAS service users.

Considering the revised obligations under the updated Ship Source Pollution Directive regarding CleanSeaNet pollution detection verification, EMSA will enhance the pollution monitoring component of its RPAS surveillance operations. This will ensure that RPAS flights play a crucial role in supporting Member States with the follow-up of CleanSeaNet pollution detections, reinforcing EMSA's role in maritime pollution prevention and response.

Procurement efforts to renew EMSA's portfolio of RPAS services will be finalised, with the goal of ensuring service continuity, integrating new operational requirements, and deploying the latest aircraft and sensor technologies. These new capabilities are expected to be available for operations in 2026. In parallel, EMSA will continue evaluating the operational added value of new RPAS platforms, including High Altitude Pseudo Satellites (HAPS), which could optimise current services and unlock new surveillance capabilities.

EMSA's portfolio of remotely piloted aircraft comprises six different model types

VTOL RPAS: Versatile aircraft capable of vertical take-off and landing, used for emissions monitoring and maritime surveillance with high-endurance capabilities.

Light RPAS for pollution monitoring: Compact and versatile, these RPAS support vessel-based operations by tracking and monitoring oil spills and vessel oil recovery, enhancing real-time response efforts.

Hybrid RPAS: Combining fixed-wing endurance with vertical take-off, this model offers flexible coastal and offshore monitoring.

Fixed-wing RPAS: Long-endurance aircraft equipped with satellite communications, advanced sensors and capable of deploying an inflatable life raft for search and rescue missions.

Light RPAS: Compact quadcopters for short-range tasks, deployed from land/vessels for emissions monitoring and port surveillance, with hovering and multipurpose capabilities.

Fixed-Wing RPAS: Coastal surveillance aircraft with long endurance, launched via catapult and recovered by net, covering up to 800 km with relay stations.

SATELLITE-BASED SERVICES AND SURVEILLANCE INNOVATION

Earth Observation satellites continue to offer a unique perspective on oceans, seas and coasts, providing routine, cost-effective, reliable and wide-area maritime surveillance. In the event of maritime emergencies at sea, such as large-scale oil spills or search and rescue operations, Member States can activate EMSA's contingency plan, through which Earth Observation products are supplied to support critical follow-up actions.

In 2025, EMSA will continue to deliver oil spill classification and quantification reports in support of emergencies, using satellite-based technologies. These reports, derived from medium-resolution optical sensors like Sentinel-2, will further support Member States during emergencies, helping to monitor substantial accidental spills more effectively.

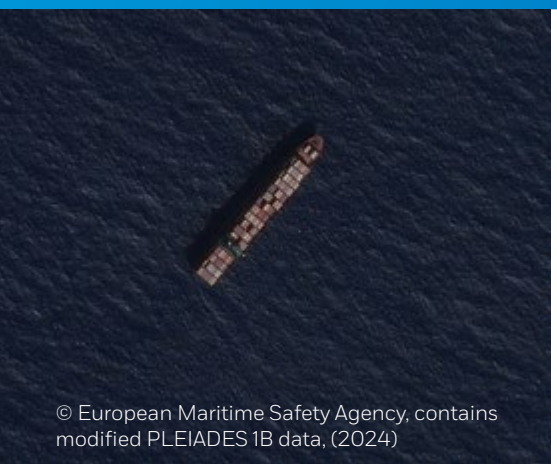
Combining Earth Observation products with traditional and innovative surveillance tools, including *in situ* capabilities like RPAS, offers significant synergies and optimises pollution monitoring. In 2025, EMSA will continue expanding global Satellite AIS data feeds, offering near real-time worldwide vessel monitoring, aiding authorities in tracking "dark vessels" (non-reporting vessels) by integrating this data with Earth Observation services.

The development and testing of innovative artificial intelligence algorithms for analysing diverse datasets will remain a priority. These algorithms can extract key maritime elements such as vessel detection, activity patterns and automate alerting systems, enhancing reliability and performance for all user communities of Earth Observation information. Additionally, EMSA will collaborate closely with the European Space Agency (ESA) on integrated space-based solutions to improve maritime safety and surveillance services, exploring new sensors and technologies, such as RPAS, HAPS and enhanced satellite-based emissions monitoring.

In 2025, EMSA will launch a preliminary market consultation to evaluate the maturity of the industry regarding the analysis of Sentinel-2 imagery for identifying pollutants beyond oil spills. New services based on Cosmo SkyMed and Cosmo SkyMed Next Generation satellite images will also be deployed, expanding EMSA's monitoring portfolio. Additionally, EMSA will sign new contracts for SATCOM services to support RPAS operations, including capabilities from Low Earth Orbit systems.

Fish farms in the Alboran sea © EMSA, contains modified GeoEye-1 data, (2022). © (2022) European Space Imaging / Maxar Technologies

Emergency EO image © EMSA, contains modified Pleiades-1A data, (2024) © Airbus DS (2024)



© European Maritime Safety Agency, contains modified PLEIADES 1B data, (2024)

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COPERNICUS MARITIME SURVEILLANCE SERVICE

The Copernicus Maritime Surveillance (CMS) Service, implemented by EMSA, provides Earth Observation products (satellite images and value adding products) to support a better understanding and improved monitoring of activities at sea across seven function areas:

- **Fisheries control:** completing the integrated maritime picture through wide-area surveillance using synthetic aperture radar (SAR) imagery, vessel detection services through correlation algorithms to identify potential inspection targets and providing high-resolution SAR and optical imagery for specific operations. The European Fisheries Control Agency (EFCA) coordinates Member States' requests concerning fisheries control activities.

- **Maritime safety:** tracking and identifying objects and vessels at sea, ensuring their safe navigation.

- **Maritime Security:** enhancing maritime situational awareness in anti-piracy and maritime security contexts, particularly in piracy hotspots or where vessel reporting is scarce, by routinely analysing Earth Observation products.

- **Customs:** detecting potentially suspicious vessels involved in trafficking or smuggling, monitoring ship-to-ship transfers, and providing early warnings and identification of vessels engaged in criminal activities.

- **Law enforcement:** detecting and tracking suspicious targets, monitoring shorelines, and identifying vessels conducting illicit activities. This may also extend to environmental compliance activities.

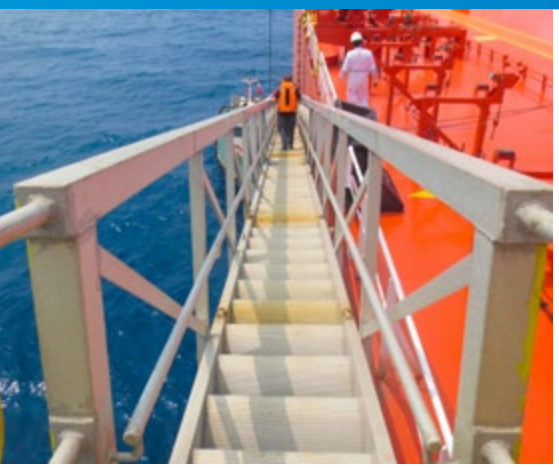
- **Marine Pollution monitoring:** Detecting and tracking illegal ship source pollution and identifying possible polluters by correlating oil spill detections with vessel positions and routes. Following large-scale accidents, CMS helps monitor the extent and spread of oil over time.

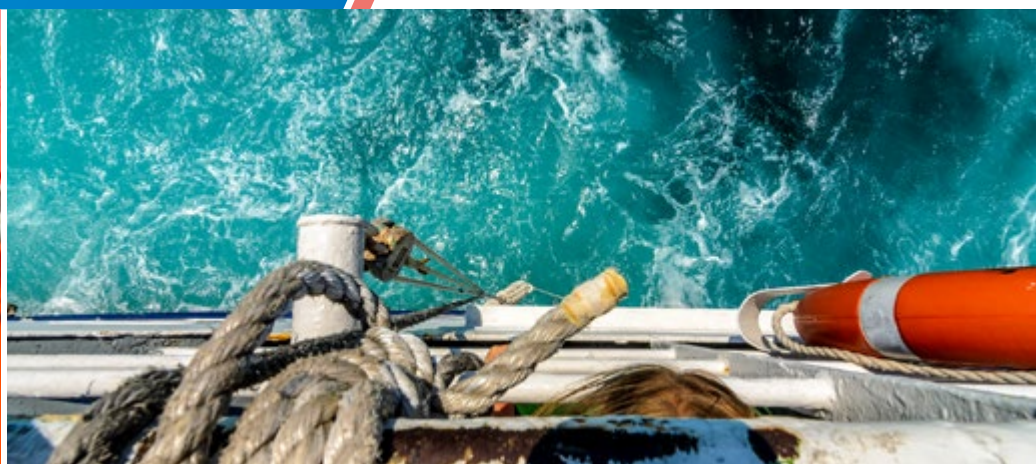
- **International cooperation in the maritime surveillance domain:** providing wide-area surveillance through vessel detection and correlation of reporting and non-reporting vessels, and offering high-resolution imagery for intelligence-led operations, including monitoring shoreline activities.

In 2025, EMSA will further strengthen its ties with Copernicus Research and Development projects within the scope of the Copernicus Strategic Research Agenda, aiming to deliver additional operational benefits that extend beyond CMS to all EMSA's Earth Observation services.

CHAPTER 3

SAFETY AND SECURITY





MARITIME SAFETY

EMSA remains committed to improving the safety of commercial shipping and enhancing the quality standards of marine equipment. Working closely with the European Commission, the Agency ensures that harmonised safety standards are not only in place but are fit for purpose. EMSA's unique role in gathering technical expertise from Member States and industry allows safety issues to be analysed from multiple perspectives, resulting in more robust outcomes.

The Agency provides a platform for stakeholders to contribute to the implementation of maritime safety legislation and harmonisation of standards across the EU. EMSA continues to commission studies to support decision-making processes, addressing safety concerns related to emerging maritime technologies, including the use of cleaner propulsion technologies and Maritime Autonomous Surface Ships (MASS). To assist Member States with MASS projects, EMSA will offer a pilot risk-based assessment tool (RBAT) to support the approval process by the relevant authorities. Additionally, EMSA will organise familiarisation sessions for the tool and gather feedback on its use. Lastly, the Agency will also consider autonomous navigation, communications and connectivity from the maritime safety perspective, if needed through a dedicated study.

Regarding cleaner technologies onboard ships, EMSA will complete studies on the safe use of ammonia and hydrogen as fuels, as well as biofuel bunkering, and share the results in a dedicated workshop. Further studies will be considered, particularly around the transportation of Alternative Fuelled Vehicles (AFV) on ships, updating safety guidance where appropriate. The Agency will also focus on the evacuation of large passenger ships through an ongoing dedicated study, the intermediate results of which will be shared as they become available.

In 2025, EMSA will publish an updated version of the European Maritime Safety Report (EMSAFE), which addresses safety challenges across the sector, including those related to the evacuation of large passenger ships, fires on containerships and fishing vessel safety.

The Marine Equipment Directive (MED) will remain a priority, with EMSA continuing to manage the MED Portal and coordinating the technical aspects of the MarED group. In this role, EMSA will work on implementing new functionalities in the Portal, and provide technical advice to the European Commission and Member States on marine equipment standards.

EMSA will continue supporting the European Commission and Member States in their work at both EU and IMO levels on maritime safety standards. This includes technical support for areas such as passenger ship safety, steering and manoeuvrability (STEERSAFE), life-saving appliances and the International Safety Management (ISM) Code. As part of the Maritime Safety Package, EMSA will also develop digital tools aimed at enhancing the inspection process, making it more efficient while increasing maritime safety.

In relation to port state control, EMSA will play a central role in facilitating the harmonisation of procedures at an international level, through the coordination of the IMO Correspondence Group on Port State Control. The Agency will also support Member States by collecting information on the implementation of Regulation (EC) No 336/2006 on the ISM Code and reporting to the European Commission. Additionally, EMSA will actively participate in the evaluation of Directive 97/70/EC on fishing vessel safety and provide relevant safety analysis and training.

KEY LEGISLATIVE DEVELOPMENTS

The maritime safety legislative package amends:

Directive 2009/16/EC
On port state control

Directive 2009/18/EC
On the investigation of accidents in the maritime transport sector

Directive 2005/35/EC
On ship-source pollution

Directive 2009/21/EC
On compliance with flag state requirements

There is also a Proposal for a Regulation of the European Parliament and of the Council on the European Maritime Safety Agency which would repeal Regulation (EC) No 1406/2002 [COM(2023) 269]

EQUASIS

Equasis is an international initiative, with EMSA working alongside non-EU countries such as Brazil, Canada, Japan, South Korea, UK and USA, as well as EU countries (France and Spain) and one EEA country (Norway). The goal of Equasis remains to promote quality shipping and help eradicate substandard practices across the global shipping industry.

EMSA provides the management unit of Equasis, a global online database that offers detailed information on port state control inspections, ship and company-related data from classification societies and P&I (insurance) ship specific data. The information is supplied by port state control regions (such as the Paris MoU, Caribbean MoU, Indian Ocean MoU, US coast guard, etc.) as well as by industry stakeholders.

In 2025, EMSA will continue to support the day-to-day operations of Equasis, ensuring its smooth functioning while also enhancing its services. Following the implementation of the dynamic dashboard in 2024, new functionalities will be added to modernise the portal. It is also expected that the new way to present information and statistics in the annual World Fleet will be fully operational in 2025. Finally, the development of the new 5-year strategy of Equasis will be started.

HUMAN ELEMENT

The human element is a critical component of maritime safety, encompassing all activities performed by ship crews, shore-based management, regulatory bodies and others. In 2025, EMSA will continue to provide technical assistance to the European Commission and Member States in amending, adopting and implementing European and international legislation, with a strong focus on the ongoing workstream at IMO for the revision of the STCW Convention and Code.

EMSA's work will contribute to addressing the impact of both climate and digital transitions on maritime sector jobs and the wellbeing of seafarers. The findings from EMSA's studies on these topics will feed into discussions on the revision of the STCW Convention and Code, contributing to the European Commission's goal of ensuring quality jobs and a just transition for the maritime workforce as the industry faces rapid technological changes.

EMSA will also continue publishing its annual statistical review, which provides an overview of the labour market by analysing the number of seafarers holding valid certificates and endorsements. This data, drawn from the STCW Information System, serves as a valuable resource for EU Member States, the European Commission, the European Parliament, shipowners and operators, aiding in policy-making and workforce planning by highlighting the availability of certified manpower within the EU to crew vessels.

ACCIDENT INVESTIGATION

Technical investigations into marine casualties play a vital role in improving maritime safety across Europe by helping to better understand the circumstances that lead to loss of life, ships and pollution. EMSA continues to contribute by bringing together the accident investigation bodies of the Member States through the Permanent Cooperation Framework (PCF) on Accident Investigation, to develop and implement a more uniform approach as well as to provide technical support and training.

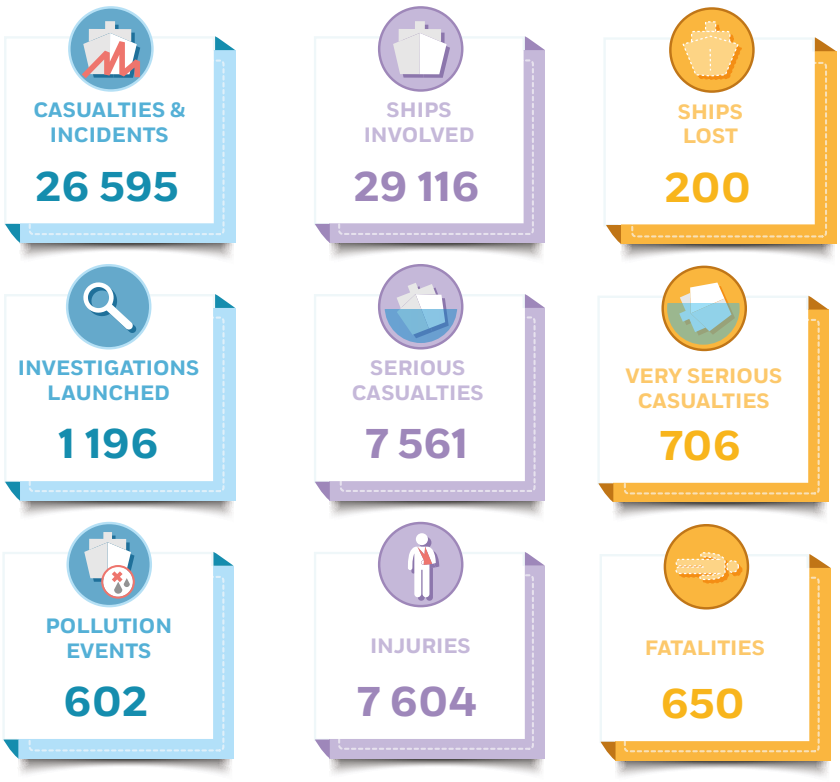
In 2025, EMSA will further enhance its support to accident investigation bodies and other authorities by providing, upon request, underwater survey services using remotely operated vehicles (ROV) for safety investigations related to very serious and serious casualties, such as inspecting sunken ships. These ROV services will be expanded and more widely used as tools to gather critical evidence.

The European Marine Casualty Information Platform (EMCIP) remains a cornerstone of EMSA's accident investigation efforts, with over 2 500 casualties and incidents recorded annually. EMCIP serves as the central database where Member States submit accident data, which in turn supports comprehensive safety analyses that inform decision-making across various safety areas, including accidents involving passenger ships, ro-ro ferries, containerships and fishing vessels.

In 2025, EMSA will focus on expanding the EMCIP system's capabilities, including adapting it to gather data on accidents involving fishing vessels below 15 metres. The Agency will also publish the Annual Overview of marine casualties and incidents with improvements aimed at making the report even more useful to the shipping community.

2014 - 2023

Key figures from the 2014-2023 period as reported in the EMCIP and covering EU-27 and EEA



MARITIME SECURITY

Within the EU's legislative framework, maritime security refers generally to preventive measures taken to protect against unlawful acts such as piracy, armed robbery, terrorism and maritime violence. EMSA assists the European Commission and the EFTA Surveillance Authority in assessing the implementation of EU maritime security legislation in the Member States and identifying any necessary changes to improve the overall level of maritime security.

In 2025, EMSA will continue supporting the European Commission and the EFTA Surveillance Authority with their maritime security inspections. This includes conducting security inspection missions in EU Member States, Norway and Iceland, following the annual plans of the European Commission and EFTA Surveillance Authority. EMSA will also contribute to updating and enhancing maritime security inspection procedures and assist with following up on deficiencies identified during inspections, as requested by the European Commission.

EMSA will maintain the reporting module in THETIS-EU, which helps Member State authorities perform maritime security inspections on board ships. The Agency will also assist the European Commission in the accreditation process for national security inspectors in line with EU legislation. Additionally, EMSA will provide technical support to ensure proper implementation of EU and international maritime security legislation, through the Agency's involvement in the Committee for Maritime Security (MARSEC) and the Stakeholder Advisory Group on Maritime Security (SAGMAS), both chaired by the European Commission.

In the field of cybersecurity, EMSA plays an important role in raising awareness of cyber threats and attacks aimed at disrupting the EU maritime domain. The Agency will enhance collaboration with key stakeholders such as ENISA (the EU Agency for Cybersecurity), promoting information exchange and harmonisation of cybersecurity practices across Member States. Following the 2024 conference, EMSA will explore specific ways to develop an information-sharing and analysis system on maritime cyberattacks at EU level.

Additionally, EMSA will develop and finalise an analysis of the threats posed by drones to critical port infrastructure, providing support to the European Commission and Member States in identifying best practices and fostering cross-sectoral cooperation on maritime security and cybersecurity.

CHAPTER 4

SIMPLIFICATION

SAFESEANET

Vessel and voyage-related information across the EU is shared through the SafeSeaNet system within the scope of the VTMIS Directive, which is aimed at supporting maritime safety, security and the efficiency of maritime traffic and transport. EMSA provides national administrations – including port authorities, coastal stations, search and rescue services, vessel traffic services, and pollution response bodies – with 24/7 access to this critical system.

In 2025, EMSA will continue to work closely with national authorities to ensure the seamless interaction of their systems with SafeSeaNet, maintaining its role as the European platform for maritime data exchange. SafeSeaNet will support various mandatory functions, such as collecting and distributing data on vessel traffic monitoring, port call information, dangerous and polluting cargo, security, waste and cargo residues, and incident and accident reports. The system's central databases play a vital role in improving data quality within national databases and contributing to data consistency across the EU.

The four central databases within the SafeSeaNet ecosystem – the Central Ship Database, Central Hazmat Database, Central Location Database, and Central Organisations Database – will continue to provide up-to-date and harmonised reference information. In 2025, EMSA will expand the Central Ship Database to cover a broader range of ship data, including ship certificates and additional ship types.

SafeSeaNet's Traffic Density Maps service, which provides insights into shipping patterns and vessel movements, will be further enhanced. New features will allow users to better evaluate shipping density and vessel movement patterns in selected areas, offering valuable benefits for maritime safety, security, and the implementation of EU environmental policies.

The SafeSeaNet system also accommodates the legal requirements laid down by two sets of EU rules: one on the registration of persons on board passenger ships; and the other on port reception facilities for waste from ships. Crew and passenger data must be registered digitally, using standardised administrative procedures (the National Single Window). This data can then be shared for the purpose of search and rescue operations in case of an emergency. As regards port reception facilities, the rules make sure that waste from ships is not discharged at sea but rather disposed of properly in ports with adequate waste reception facilities. Related waste information is transferred to the associated THETIS-EU inspection database.

In 2025, EMSA will continue to provide technical assistance on modernising the IMO-adopted Ship Reporting System (SRS) in the Adriatic Sea (ADRIREP). This includes further integration with the Integrated Report Distribution (IRD) SafeSeaNet service, which automates ship-to-shore reporting, contributing to a reduction in the administrative burdens on ships and an improvement in navigation monitoring. EMSA will support operational tests with coastal stations and the shipping industry to verify the technical solution's reliability and adjust it based on feedback.

EMSA's cooperation with EUROSTAT will also continue, using SafeSeaNet data to produce Early Statistical Indicators. A specific service for the automated extraction and transmission of SafeSeaNet data to EUROSTAT will be finalised, enabling the production of early maritime transport estimates based on port calls.

EUROPEAN MARITIME SINGLE WINDOW ENVIRONMENT

Maritime transport operators face numerous legal reporting requirements each time a ship arrives at or departs from a port. To reduce this administrative burden, EMSA assisted the European Commission to replace the Reporting Formalities Directive with a new Regulation (EU) 2019/1239 which establishes a European Maritime Single Window environment (EMSWe). This regulation, fully operational by 2025, harmonises and coordinates all port-call reporting through digital solutions.

The EMSWe Regulation enhances digitalisation in areas such as port-call optimisation, offering a more harmonised system across all EU ports. EMSA will continue supporting the European Commission and the Member States by maintaining the EMSWe data set, message implementation guide, and harmonised digital spreadsheets, ensuring that consistent data can be reported across all EU ports.

EMSA will also play a crucial role in developing and validating the key components of the EMSWe architecture, such as the Reporting Interface Module (RIM) and the User Registry and Access Management System (URAM). These components are part of the operational phase starting in 2025. Additionally, the Agency will deliver SafeSeaNet services for data exchanges between National Single Windows (NSW), improving data interoperability and reusing already reported information, applying the “once only” principle when a vessel moves between EU ports.

As Member States upgrade or develop their National Single Windows to meet the new requirements, EMSA will provide technical assistance through workshops, training and support to reach full compliance and interoperability. EMSA will also finalise the development of critical databases, including the EMSWe Ship Database, Common Hazmat Database, and Common Location Database and will conduct commissioning tests for their smooth integration with National Single Windows.

LONG RANGE IDENTIFICATION AND TRACKING

EMSA operates the European Union LRIT Cooperative Data Centre (EU LRIT CDC), through which Member States, Iceland, Norway, Georgia, Montenegro and Tunisia (as Flag States) can access the LRIT information of their ships worldwide as well as of any non-EU LRIT CDC participating country vessel bound to their ports or sailing within 1 000 nautical miles of their waters. The central module, known as the International LRIT Data Exchange, is also hosted and operated by EMSA and interconnects 72 LRIT Data Centres worldwide which provide services to over 130 SOLAS Contracting Governments and Territories.

eCERTIFICATION

Increased digitalisation in the maritime sector is bringing the industry closer to paperless documentation. EMSA is supporting and facilitating Member States’ efforts in the digitalisation of their STCW (Standards of Training, Certification and Watchkeeping) Certificates by developing and offering a voluntary eCertification Seafarers’ platform. This platform provides a secure, accredited and transparent means for signing and sealing eCertificates issued to seafarers by participating Member States. The platform enables these Member States to modernise their administrations without needing to develop standalone solutions, centralising efforts to host and operate a cutting-edge system. By facilitating the verification of the authenticity and validity of these certificates, the platform is also expected to reduce administrative burdens for all stakeholders involved.

CHAPTER 5

DIGITALISATION

MARITIME DIGITAL SERVICES

Getting a comprehensive overview of activity at sea is challenging, yet to implement maritime policies effectively, governments and authorities need detailed, reliable knowledge about what happens at sea, in real time. EMSA offers a wide range of digital services designed to provide optimal maritime awareness to over 150 national authorities across the EU and EFTA Member States, as well as to the European Commission and related European bodies.

Chief among these is EMSA's Integrated Maritime Services (IMS) which supports national authorities engaged in maritime-related tasks and several European bodies, including Frontex (border control), EFCA (fisheries monitoring), Europol (law enforcement), EU Naval Force Operations Atalanta, Irini and Aspides, and MAOC-N (law enforcement – narcotics).

By integrating and correlating data from EMSA applications and external sources, services are tailored to specific user needs, converting data into actionable operational knowledge. Whether in support of search and rescue, law enforcement or border control operations, IMS information services are adaptable as operational needs evolve. The Maritime Picture interface continues to provide a system-to-system connection based on interoperable standards, enabling integration with national Vessel Traffic Monitoring and Information Systems (VTMIS).

Automated Behaviour Monitoring (ABM), a key feature of IMS, uses behaviour algorithms to detect unusual or suspicious ship activity in near real-time. This continuous maritime surveillance is used for a wide range of purposes, including safety, security, traffic monitoring, fisheries, border control and accident/incident prevention. The ABM features can be expanded to meet evolving needs, including exploiting historical data and detecting new types of behaviour based on specific requirements. EMSA remains the primary service provider of these tools to Member States and EU bodies.

In 2025, EMSA will continue to work on a search and rescue (SAR) drift model demonstrator, which will allow for comparative modelling of drifting vessels and objects on the sea surface, supporting national rescue capabilities. With COSPAS-SARSAT alerts expected to be integrated into IMS, EMSA's role in supporting the maritime SAR operations of Member States will be further strengthened.

Automated Behaviour Monitoring is a valuable tool across a wide range of maritime surveillance functions

Safety

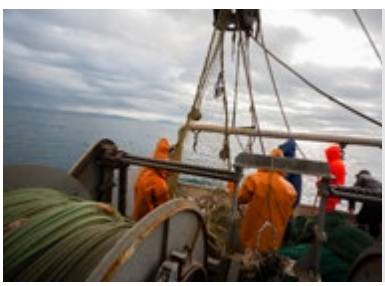
Detection and early warnings for vessels posing a potential risk

Border protection

Detection of vessels approaching shores for illegal transfers

Security

Tracking for vessels involved in potentially illegal activities

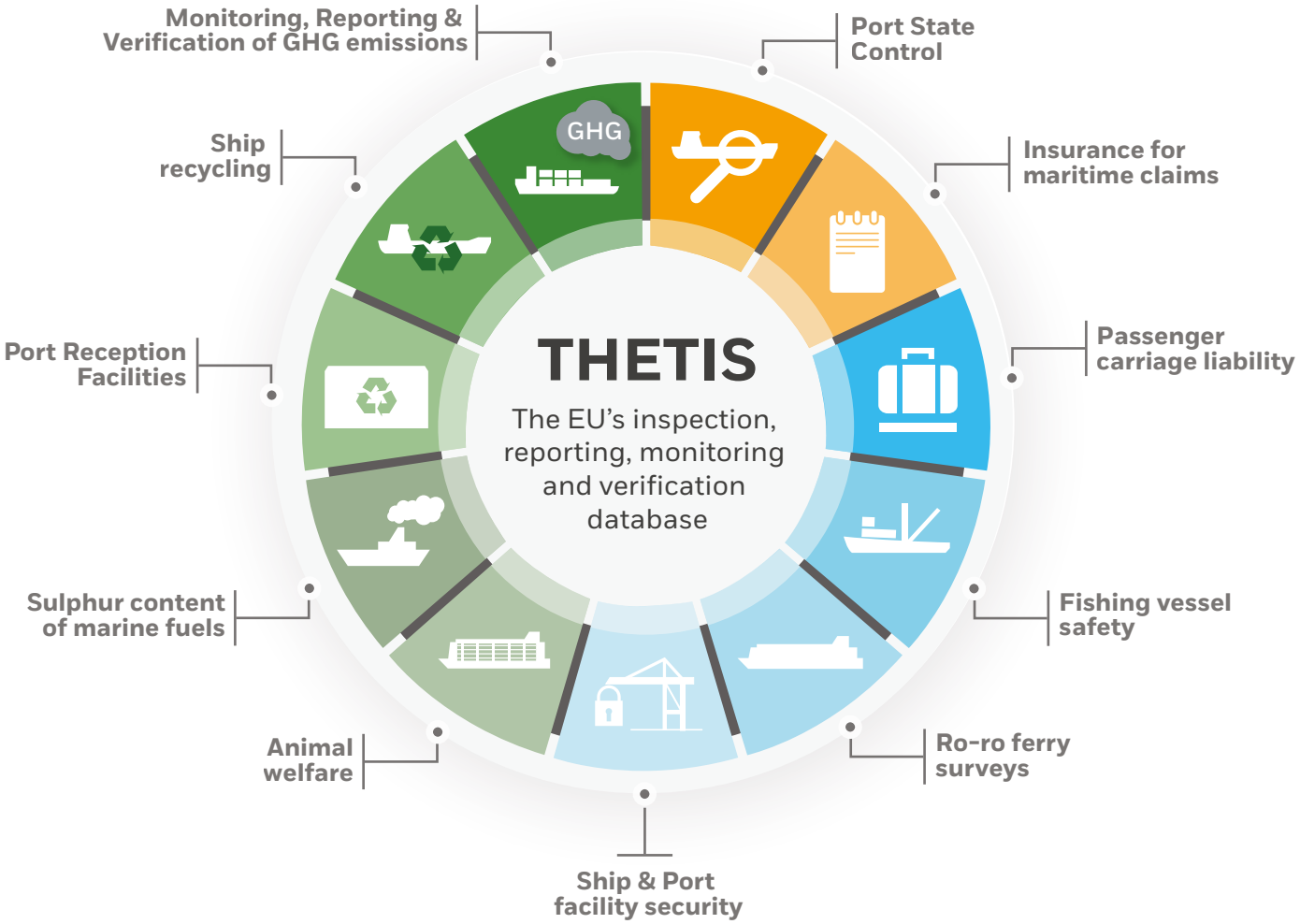


Fisheries

Detection of illegal fishing activities

THETIS INFORMATION SYSTEM

The THETIS information system was originally designed to enable port state authorities in the EU and Paris MoU countries (Canada, Iceland, Norway, Russia and the UK) to manage inspection data through a single platform. This system helps these authorities target vessels for inspection, supports the European Commission by providing statistics on inspection results, and aids in monitoring the compliance of Member States with international and European legal obligations.



Over time, the system has expanded, incorporating functionalities for a broader range of Member State authorities and enforcing additional European legislation. As of 2025, the THETIS-EU system supports eight inspection and reporting regimes, covering Sulphur, Port Reception Facilities, Maritime Security, Ro-Ro passenger ships, Ship Recycling, Animal Welfare, Greenhouse Gas emissions, and Fishing Vessel Safety (a new optional module being introduced in 2025 to promote safety standards for fishing vessels).

The Animal Welfare module will continue to receive updates in collaboration with the European Commission's Directorate-General for Health and Food Safety (DG SANTE), allowing veterinarian inspectors to target vessels, report non-compliance and generate reports for follow-up actions. These updates include improved inspection targeting and compliance monitoring, ensuring the wellbeing of livestock transported by sea, in line with Council Regulation (EC) No 1/2005.

Sulphur inspections remain critical, with the sulphur module allowing port inspectors to verify a ship's sulphur compliance in open waters. Through EMSA's Remotely Piloted Aircraft Systems (RPAS), air emission measurements taken from a ship's plume can prompt targeted inspections at the vessel's next port of call. New system-to-system services are to be introduced in 2025, providing authorities with direct access to sulphur data uploaded into THETIS-EU.

THETIS-MRV, dedicated to monitoring, reporting and verifying CO_2 has been in use by companies since 1 January 2018. In 2025, the system will continue to support the implementation of the EU Green Deal legislation, including the extension of the EU Emissions Trading System (ETS) to maritime transport, and the FuelEU Maritime Regulation. Enhanced monitoring tools are also being introduced, enabling more efficient analysis and verification of emissions by the competent authorities. The THETIS-MRV will facilitate the creation of company emission reports for 2024, helping shipping companies meet their obligations under the ETS.

The THETIS-MED system, introduced in 2020, will continue supporting the Mediterranean MoU member countries (Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Tunisia and Türkiye) in their inspection processes, ensuring consistent standards across the Mediterranean region.

With the revision of the Port State Control Directive, new functionalities will be integrated into THETIS to reflect updated inspection requirements. These include modifications to the ship risk profile, incorporating new safety and environmental risk parameters.

SHIP SOURCE POLLUTION

Illegal discharges from ships harm marine ecosystems, disrupt coastal economies and create disparities in the maritime sector due to inconsistent enforcement and inadequate penalties. These challenges, together with evolving environmental threats, highlighted the need for stronger measures to protect European seas. To address these issues, a proposal was made to revise the existing Directive on Ship Source Pollution introducing modernised provisions, aligned with international standards, and integrating advanced digital tools for more effective monitoring, reporting and accountability.

The revised directive aims to combat pollution from ships by preventing all shipowners and operators, regardless of their ship's flag, from releasing any type of illegal discharge into European seas, in line with international rules. The proposal establishes a robust framework for penalties and their enforcement. Additionally, it expands the range of substances classified as pollutants and strengthens enforcement mechanisms.

In line with this revised Directive on Ship Source Pollution (2005/35/EC) and the associated penalties for pollution offences, EMSA's efforts in 2025 will focus on the development of enhanced digital tools. These tools will build Member States' capacity to detect, report and respond to illegal discharges from ships, while supporting global efforts to mitigate climate change.

Key developments will include collecting and analysing user requirements for the updated directive, alongside preliminary changes to existing systems such as SafeSeaNet and the Earth Observation Data Centre. These updates will target improved reporting on pollution incidents, incorporating features such as real-time pollution tracking, spill feedback and enhanced alert mechanisms.

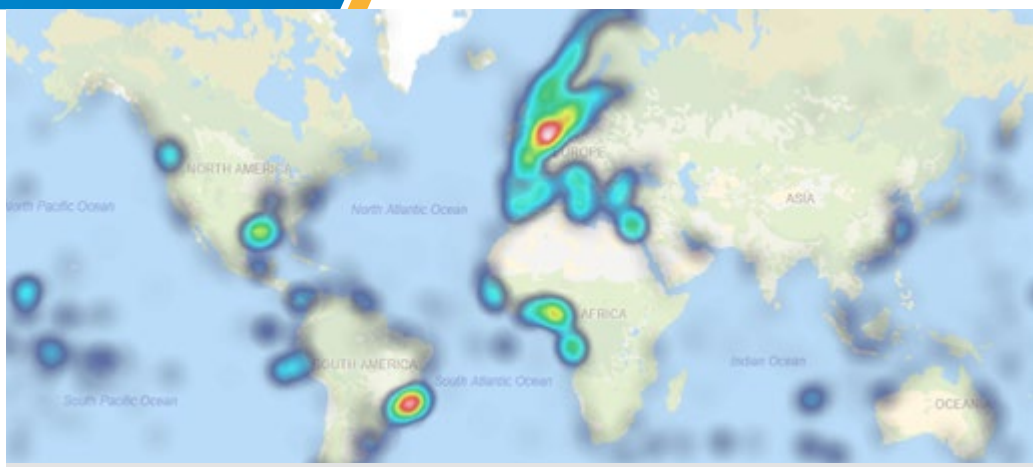
Additionally, the design of an Electronic Reporting tool and a confidential Ship Source Pollution Whistleblower Reporting channel will begin, enabling more streamlined reporting and increased transparency. The integration of the THETIS Port State Control Inspection Module with these tools will further help to support enforcement by facilitating data exchange.

CISE OPERATIONAL PHASE

In 2025, EMSA will continue to play a central role in the implementation of the operational phase of the Common Information Sharing Environment (CISE), a framework designed to assist maritime surveillance by enabling Member States and relevant EU bodies to voluntarily share surveillance information across sectors. Building on the preparatory work of previous years, EMSA will coordinate the operational activities, ensuring both technical and operational support. A key focus will be the development of information services, including the establishment of a classified network to ensure secure data exchanges.

The operational phase of CISE is designed to enhance cross-sectoral information sharing among authorities in sectors such as defence, customs, law enforcement and environmental protection. This voluntary exchange of maritime surveillance data will enrich existing systems, improving situational awareness and operational response.

A high level event took place in Brussels to mark the launch of CISE's operational phase which commenced on 1 July 2024



Heat map generated with the EMSA maritime analytics tool, displaying drifting events over a 24-hour period as detected using Automated Behaviour Monitoring algorithms running globally.

MARITIME SUPPORT SERVICES

In 2025, EMSA will continue to provide 24/7 user support and helpdesk services, assisting the European Commission and Member States with maritime operations, reports and emergencies such as pollution or Search and Rescue (SAR) events, in line with EMSA's Contingency Plan and the Working Arrangement with the European Commission's Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO). The Agency is also monitoring the performance and availability of its maritime applications around the clock.

The available maritime traffic and vessel data at EMSA is used to provide analytics and support for the detection and monitoring of maritime emergencies. Periodical and ad-hoc reports are produced, such as those related to the ongoing monitoring of vessels which are subject to the EU's sanctions against Russia. It will provide Member States and the European Commission with specific reports on sanctions enforcement and the impact of crises on maritime traffic and trade. Warning services for vessels subject to sanctions will continue to evolve into self-service tools for authorised users.

In addition to regular reporting, EMSA will offer real-time alerts and periodic updates on the impact of attacks on merchant shipping in high-risk areas like the Red Sea, tracking changes in traffic patterns, such as rerouting and emerging bunkering zones, and their environmental consequences. These enhanced analytical tools, including business intelligence dashboards, will help Member States and the European Commission with ship profiling, risk analysis and situational awareness.

DONA SERVICE

In 2025, the Dynamic Overview of National Authorities (DONA) will continue to offer three specific functionalities. It will provide information to the general public on the competent authorities responsible for the implementation of EU and international maritime legislation, contribute to reducing the administrative burden for Member States through the reporting gate, and support the work of Member States by providing reliable and up-to-date statistics. Additionally, DONA will also be further adapted to align with the new legal acts, including the revised Flag State, Port State Control, and Accident Investigation Directives, and will continue to support exemptions, derogations, equivalences, safeguard measures and additional safety requirements.

CHAPTER 6

TECHNICAL ASSISTANCE

CLASSIFICATION SOCIETIES

Classification societies develop and apply technical standards to the design, construction and survey of ships. Of more than 50 classifications societies worldwide, 11 are recognised at EU level and are inspected regularly by EMSA. Based on the reports submitted by the Agency, the European Commission assesses each of these recognised societies at least every two years, requests corrective measures and takes policy decisions. The aim is to improve the quality of the certification work undertaken by these Recognised Organisations (RO) and in doing so to increase the overall level of safety in the EU. In 2025 EMSA will conduct up to 20 RO inspections based on a programme decided jointly with the European Commission. The Agency will also support the European Commission and Member States in the discussions held at international level on remote surveys and inspections.

SEAFARER TRAINING AND CERTIFICATION

Many EU registered ships are manned by seafarers who are not nationals of EU Member States. To ensure that these crew members are appropriately educated and trained, EMSA carries out inspections in the supplying countries. EMSA staff have been conducting such inspections for over 15 years, assessing their level of compliance with the requirements of the IMO's Convention on Standards of Training, Certification and Watchkeeping (the STCW Convention).

In 2025 EMSA will conduct up to five inspections to non-EU countries and up to four visits to EU countries, thereby contributing to a level playing field for the standards of seafarers in the EU and improved ship safety on board EU registered vessels and in EU waters. In addition to these inspections, EMSA also runs the STCW information system. This system contains objective and comparable information on seafarers holding EU certificates/endorsements and therefore able to work on board EU registered ships.

VISITS TO MEMBER STATES

EMSA has been monitoring the implementation of EU law in the Member States since its very beginning. Visits to Member States provide a valuable connection between legal objectives and their operational application, enabling the European Commission to assess how effectively EU law is being implemented. These visits offer feedback on the effectiveness of the legislation, helping to identify gaps where legal objectives are not being fully met.

Through horizontal analyses of the findings from these visits, the Member States and the European Commission gain insight into where additional efforts are needed or changes to EU law desirable. End-of-cycle workshops, held after each visit cycle, offer further opportunities to discuss these findings and improve legislative outcomes.

In 2025, EMSA will conduct four visits related to Directives 2009/45/EC, 2003/25/EC, and 98/41/EC, concerning passenger ship safety. Two additional visits will focus on Directive (EU) 2017/2110, which covers the safe operation of ro-ro passenger ships and high-speed passenger craft, with some visits overlapping with passenger ship safety. Finally, five visits will be carried out for Directive (EU) 2019/883 on port reception facilities for ship waste, including one visit to an EFTA state.

These visits not only ensure that Member States are applying EU law consistently but also provide opportunities for national maritime administrations to offer feedback on the effectiveness of the legislation. They allow Member States to discuss challenges, learn best practices and receive guidance from EMSA experts, who provide training sessions, clarify complex sections of the legislation and assist in solving operational issues. These interactions strengthen the operational implementation of maritime legislation and foster continuous improvement in maritime safety and environmental protection.

CAPACITY BUILDING & THE EMSA ACADEMY

The EMSA Academy has been set up to provide learning services outside formal education to a range of beneficiary organisations, including EU Member States, EEA countries, EU candidate and potential candidate countries, and members of the Paris and Mediterranean Memoranda of Understanding (MoU). It also collaborates with EFCA and Frontex in offering joint training services.

The EMSA Academy adopts a blended learning approach, offering traditional training and e-learning through the Maritime Knowledge Centre (MaKCs) and virtual ship inspections via the Virtual Reality platform (VRESI). These resources help EMSA reach a wider audience while maintaining the depth of training offered. RuleCheck, EMSA's maritime legislation repository, will continue to be enhanced to support Member States and regional Port State Control regimes, contributing to global harmonisation and improving access to up-to-date regulations. The Agency also provides data and statistics to the European Commission and targeted reports to specialist audiences.

In 2025, EMSA will continue to implement its Quality Management System to ensure the certification of all learning services, which will be developed based on a structured Training Needs Analysis. New courses will be developed to address the implementation of EU ETS/MRV and FuelEU Maritime legislation, as well as alternative fuels and technologies. MaKCs and VRESI will be further enhanced, and Member States will have access to an eLaboratory for enriching learning activities. EMSA will also support enlargement countries in transposing EU maritime legislation and developing a Quality Management System for their maritime administrations, including the implementation of the Dynamic Overview of National Administrations (DONA).

EMSA will continue collaborating with Paris and Med MoU on their training policies, and the Port State Control Core Curriculum (PSC CCC) will be available. Support will be provided for IMSAS audits, with ISO-certified courses and mock audits to assist Member States. EMSA will also start exploring new technologies to exhance its learning services.

Blending innovation with expertise: the EMSA Academy's Virtual Reality platform (VRESI) enables immersive ship inspections, thereby complementing traditional training

EUROPEAN NEIGHBOURHOOD COUNTRIES

EMSA works to build up the national capacity of European neighbourhood countries, thereby helping to reinforce safety, security and environmental standards in a much broader geographical context than simply at EU level. Through the projects for the Mediterranean Sea (SAFEMED V) and the Black and Caspian Sea (BCSEA II), EMSA offers assistance to build capacity at national level, through technical activities and training courses, as well as access to tools (e.g. RuleCheck, MaKCs, THETIS-MED and VRESI) and services (e.g. IMS, CleanSeaNet). The projects are designed to support the beneficiary countries in flag state, coastal state and port state matters; offer access to the services of the EMSA Academy; and foster maritime safety, sustainability and digitalisation in the relevant regions. 2025 activities will be aligned to the action plan approved for each project, with DONA to be extended to the beneficiary countries.

CHAPTER 7

STRATEGIC SUPPORT

EUROPEAN COOPERATION ON COAST GUARD FUNCTIONS

European cooperation on coast guard functions involves joint efforts between EMSA, EFCA, Frontex and national authorities across the EU. These functions include tasks related to maritime safety, security, environmental protection, search and rescue, border control, fisheries control and customs activities. The objective is to add value to national coast guard authorities while promoting enhanced cooperation among them at EU level. As part of these efforts, EMSA also supports the EU's Maritime Security Strategy (EUMSS) by contributing to actions that protect maritime infrastructure, enhance border security and ensure the integrity of the EU maritime sector.

Mid-way through 2025, EMSA will assume leadership of the Tripartite Working Arrangement (TWA), taking forward the Annual Strategic Plan which contains actions aimed at strengthening collaboration across the key pillars of information sharing, surveillance and communication services, capacity building, risk analysis and capacity sharing.

EMSA will also continue to coordinate and support Multipurpose Maritime Operations (MMO) as requested by Member State authorities by providing services such as vessel traffic management, maritime environmental protection and response, monitoring and surveillance, and search and rescue activities.

In support of this, EMSA will establish a Multipurpose Maritime Operations (MMO) Coordination Centre. This centre will play a pivotal role in overseeing operations and delivering services tailored to the specific use cases identified by participating authorities and formalised in the relevant MMO Specific Modalities Documents.

EFCA SERVICE LEVEL AGREEMENT

EMSA continues to support the European Fisheries Control Agency (EFCA) in addressing illegal, unreported, and unregulated fishing through coordinated joint deployment plans. A Service Level Agreement (SLA) between EMSA and EFCA has been in place since 2015 and is renewed yearly. This agreement outlines the conditions under which EFCA provides EMSA with access to Vessel Monitoring System (VMS) data and vessel identifiers for fishing vessels, while EMSA provides EFCA with surveillance tools such as Integrated Maritime Services (IMS) and Copernicus satellite imagery. Remotely piloted aircraft systems are also made available to EFCA for operational services, as part of the agreement.

Additionally, EMSA will continue equipping EFCA's three chartered Offshore Patrol Vessels (OPV) with oil pollution response equipment, making these vessels available to assist Member States in responding to pollution incidents in EU waters. EMSA will also explore integrating additional information available from EFCA, such as data collected during RPAS surveillance operations, to further enhance the details provided to fisheries control authorities.

FRONTEX SERVICE LEVEL AGREEMENT

EMSA supports Frontex in addressing irregular migration and cross-border crime along European maritime borders through a Service Level Agreement (SLA). This agreement has been extended indefinitely and includes support for the European Border Surveillance System (EUROSUR). Activities in 2025 will continue to be based on an annual programme and specific agreements between the agencies. EMSA provides Frontex with tailored Integrated Maritime Services (IMS), including Earth Observation products that deliver high-resolution optical imagery for monitoring areas of interest at sea, along coastlines, or in ports. Additionally, incidental sightings of potential marine pollution will be shared with Member State coastal authorities through the CleanSeaNet system. EMSA also supports Frontex's maritime risk analysis by combining datasets to map vessel activity and enhance search and query capabilities.

MARITIME ANALYSIS AND OPERATIONS CENTRE (MAOC-N)

EMSA supports MAOC-N in its efforts to suppress illicit drug trafficking by sea and air, under a Cooperation Agreement that has been automatically renewed since December 2020. By providing a wide array of maritime monitoring and surveillance tools and services, the Agency effectively helps to counter narcotics operations. MAOC-N is an initiative by six EU member countries (France, Ireland, Italy, Spain, the Netherlands, Portugal) and the UK and is co-funded by the Internal Security Fund of the European Union. From when it became operational in 2007, MAOC-N has supported the seizure of over 410 tonnes of cocaine and over 675 tonnes of cannabis.

EXECUTIVE AND CORPORATE SERVICES

EMSA's management team remains committed to establishing the Agency as a leading centre of excellence for a safe, secure and sustainable maritime sector, serving both the Member States and the European Commission. The team is responsible for the implementation of the work programme and delivering on the set objectives, while strengthening the Agency's role as a trusted and innovative partner within the European and global maritime sectors.

In 2025, EMSA will continue to prioritise good corporate governance, transparency and flexibility, promoting these values across all levels of the organisation. The Agency's Quality Management System ensures that stakeholder needs and expectations are consistently met, maintaining the high standard of EMSA's services.

EMSA's commitment to environmental sustainability is reinforced through its compliance with the EU Eco-Management and Audit Scheme (EMAS). In 2025, the Agency will continue efforts to minimise carbon emissions, promote energy efficiency, and reduce waste, while actively engaging staff in achieving these environmental goals.

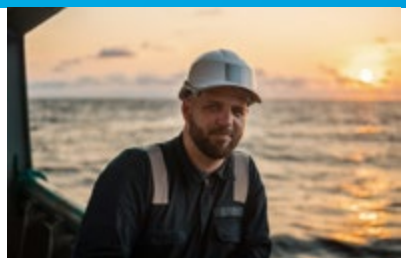
A key focus remains on the Agency's Gender Action Plan (2022-2025), which addresses gender disparity in the maritime, transport and ICT sectors, as well as on the implementation of the broader Diversity and Inclusion Policy. Notable initiatives include participation in conferences, the Ambassador Initiative in schools, and the annual Speed Networking Initiative for International Women's Day. The SMART indicator for the traineeship programme, aimed at achieving 60% female participation, has shown progress, with growing representation across gender and diversity targets.

In 2025, efforts to improve geographical balance in staffing have intensified. Outreach initiatives, such as participation in job fairs, aim to attract talent from underrepresented nationalities, ensuring diverse representation within EMSA's workforce. Geographical and gender balance remain a priority, with Portuguese, Italian and Spanish being the most represented, while EMSA continues to take measures to increase the participation of other nationalities.

The Agency remains an attractive employer for EU nationals by offering favourable conditions for employees and their families, including access to multilingual education. The evolving staff composition reflects a continued commitment to fostering geographical diversity, inclusivity and diversity across all areas of operation.








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.

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Get in touch for more information

European Maritime Safety Agency
Praça Europa 4
Cais do Sodré
1249–206 Lisboa
Portugal

Tel +351 21 1209 200 / Fax +351 21 1209 210
emsa.europa.eu