European Maritime Safety Agency

EMSA OUTLOOK 2020

EMSA

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European Maritime Safety Agency

TABLE OF CONTENTS

Foreword from the Chairperson of the Administrative Board

It is my pleasure to introduce the EMSA Outlook for 2020 with highlights of the core strategic tasks of the coming year.

This publication builds on EMSA's new 5-year strategy and brings it to life through the planned concrete activities. The strategy's five strategic priorities: sustainability, safety, security, simplification and surveillance, are all reflected with the clear aim of adding strong value to maritime Europe and international shipping as well.

With the visionary and strong commitment demonstrated by EMSA management and staff in developing the new strategy and the clear working tracks laid down in this Outlook 2020, EMSA will continue the hard efforts and further strengthen its role as a focal point of services and expertise for the benefit of safety, security and environmental protection at sea.

Andreas Nordseth

Chairman of the Administrative Board

Foreword from the Executive Director

While EMSA will be making every effort to fulfil the objectives set for 2020, the current publication should be viewed in light of the recent developments regarding the coronavirus outbreak.

2020 is the first year of operation under EMSA's new 5-year strategy. Five areas are clearly marked as strategic priorities: safety, security, surveillance, simplification and sustainability.

The work we have set out to do in 2020 aims to add value in all five areas at EU level, in line with the new European Commission priorities. The safety of maritime transport – preventing the loss of life at sea – remains at the heart of EMSA's mission. But there can be no doubt in anyone's mind that the ambitions in relation to the environment are unprecedented. In all policy areas, not least transport and maritime, more effort will have to be mobilised to rise to this latest and most urgent challenge.

In parallel, digitalisation and artificial intelligence are presenting opportunities on all fronts, to enhance maritime safety and security, build surveillance capability, simplify administrative procedures, protect the marine environment and decarbonise the blue economy – but these technologies come with their own set of challenges. How we deal with the increasingly hybrid human/machine setting will be crucial to safeguarding and improving the standards achieved so far.

Deriving real intelligence from a growing mass of maritime data, using it to provide tools and services that add value to the maritime sector, and disseminating it efficiently to support and strengthen maritime functions – this is what EMSA does and will continue to do every day and ever better, to execute its mission of supporting a safe, secure, green and competitive maritime sector in the EU.

Capacity building is key to the process of dissemination, harmonisation and levelling-up. A new modular approach to training and professional development will provide more flexible and structured support to competent authorities in an increasingly complex environment.

With the combined efforts of the Agency's expert and dedicated staff, of the maritime sector's committed stakeholders and the EU's ambitious policy makers, I hope and expect this year to set the tone for the medium term and open some new channels towards a smarter and more sustainable maritime sector.

Maja Markovčić Kostelac
Executive Director

Executive summary

This publication presents the main steps the Agency plans to take in 2020 to deliver on its multi-annual strategic objectives. The content is based on the information contained in the Single Programming Document (2020-2022) as adopted by EMSA's Administrative Board.

Given the outbreak of the coronavirus and the impact this has and will have over the weeks and months to come, EMSA is adapting its working methods to accommodate as fully as possible the objectives set for 2020. Teleworking, video conferencing and new information services (e.g. publishing the preventive measures adopted by each EU member state and EFTA country) are just some of the ways in which EMSA is responding.

The Agency's activities in this publication are broadly divided into four thematic areas which are also reflected in the recently revised organisation of the Agency. Here below we highlight a few of the developments for 2020 per thematic area:

Sustainability and technical assistance

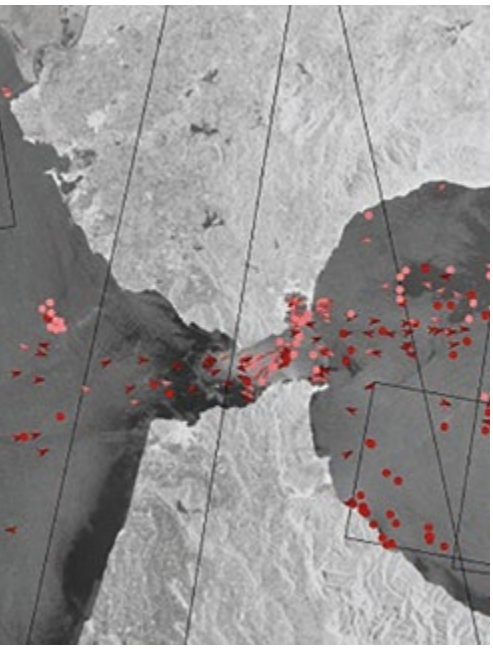
Strengthening our joint capabilities to protect the marine environment, mitigate climate change and rise to new challenges

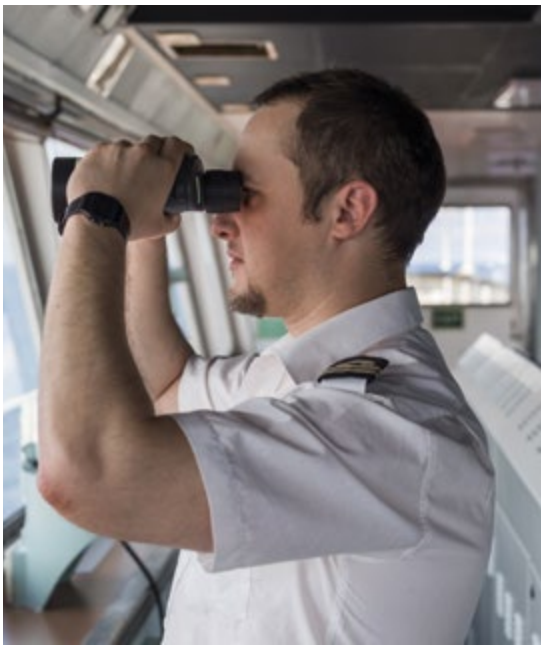
EMSA will continue to offer expertise in the field of environmental protection, helping the European Commission and member states to address a wide variety of ship-sourced pollution and emission-related issues, including carbon dioxide and sulphur emissions, alternative fuels, port reception facilities, ship recycling and shipowner insurance for maritime claims.

For this purpose and more, visits to member states and inspections of non-EU countries will be conducted with the results used to identify gaps in implementation and areas of best practice. A new cycle of visits relating to passenger ship safety will begin in 2020, taking into account new rules applicable from 21 December 2019.

Coastal states will continue to benefit from the wide range of marine pollution response services available from EMSA, including oil spill response vessels, seaborne dispersant spraying, equipment assistance, and RPAS drone monitoring. These services will continue to be part of exercises in 2020 to enhance the capacity of member states to respond to pollution at sea.

The Agency's capacity building toolbox will also be developed in 2020 with new technologies being added to enhance the overall learning experience. Virtual reality and 3D simulation are expected to create a more engaging and immersive experience.





Safety, security and surveillance

Raising maritime safety standards across the board and strengthening maritime security in Europe and beyond

Two safety studies will be concluded in 2020 covering aspects related to ship steering and manoeuvrability and maritime autonomous surface ships. In addition, for 2020 EMSA intends to conclude a framework contract for the provision of a functional study for developing a Risk-Based Assessment Tool for MASS (RBAT MASS) which will be gradually developed over the coming years.

These studies come after the positive outcome of the Firesafe I and Firesafe II studies, which led to a set of interim guidelines being adopted by the IMO concerning fire safety on board ro-ro passenger ships.

EMSA also intends to work on an action plan to address container ship safety with a view to conduct a safety study in 2021.

EMSA will continue to work on security matters, having introduced the new THETIS-EU reporting module in 2019 to assist national authorities when conducting maritime security inspections on board ships, and particularly following up on issues related to cybersecurity in conjunction with the EU Agency for Cybersecurity (ENISA) notably in the EU Maritime Security Committee (MARSEC) and in the IMO framework.

Remotely Piloted Aircraft System (RPAS) services will continue to be made available to interested member states, thereby extending their operational surveillance capabilities. In 2020, EMSA is targeting 180 days of deployment for pollution and emission monitoring.

Satellite surveillance services will also be used to detect and deter marine pollution through the oil spill surveillance and vessel detection service, CleanSeaNet, as well as to support improved monitoring of human activities at sea through the Copernicus Maritime Surveillance Service for a growing number of authorities.

Digital services and simplification

Strengthening EMSA's role as chief information management hub for maritime surveillance and facilitating the simplification of EU shipping using digital solutions

EMSA provides digital services to well over 150 different national authorities across the EU and EFTA member states, as well as to the European Commission and related European bodies. By integrating and correlating data from EMSA's applications and external sources, services are delivered responding directly to a user's specific needs. In 2020, automated behaviour monitoring tools will continue to be developed with new algorithms offering even more tailored alerts and preparations will begin on a new version of the IMS mobile application which will be open to the public. This public version will show terrestrial AIS vessel position data, tracks over 24 hours, basic vessel information, photographs and nautical charts.

The THETIS information system will continue to expand with additional modules and functionalities. THETIS-Med is the latest development to enter into service to assist countries of the Mediterranean Memorandum of Understanding in targeting ships for inspection, as well as in recording the findings and sharing the results.

The European Maritime Single Window is another area in which EMSA will be looking to facilitate maritime transport operators by lessening their administrative burden as regards reporting requirements. Two related studies on security and interoperability solutions are expected to be completed in 2020.

As regards the Common Information Sharing Environment, EMSA will be looking to take the transitional phase forward turning what was initially a research project into a fully functioning EU-wide operating system. EMSA will be supporting member states with the interoperability of the system, and drawing on the work accomplished during the pre-operational phase, EUCISE2020.

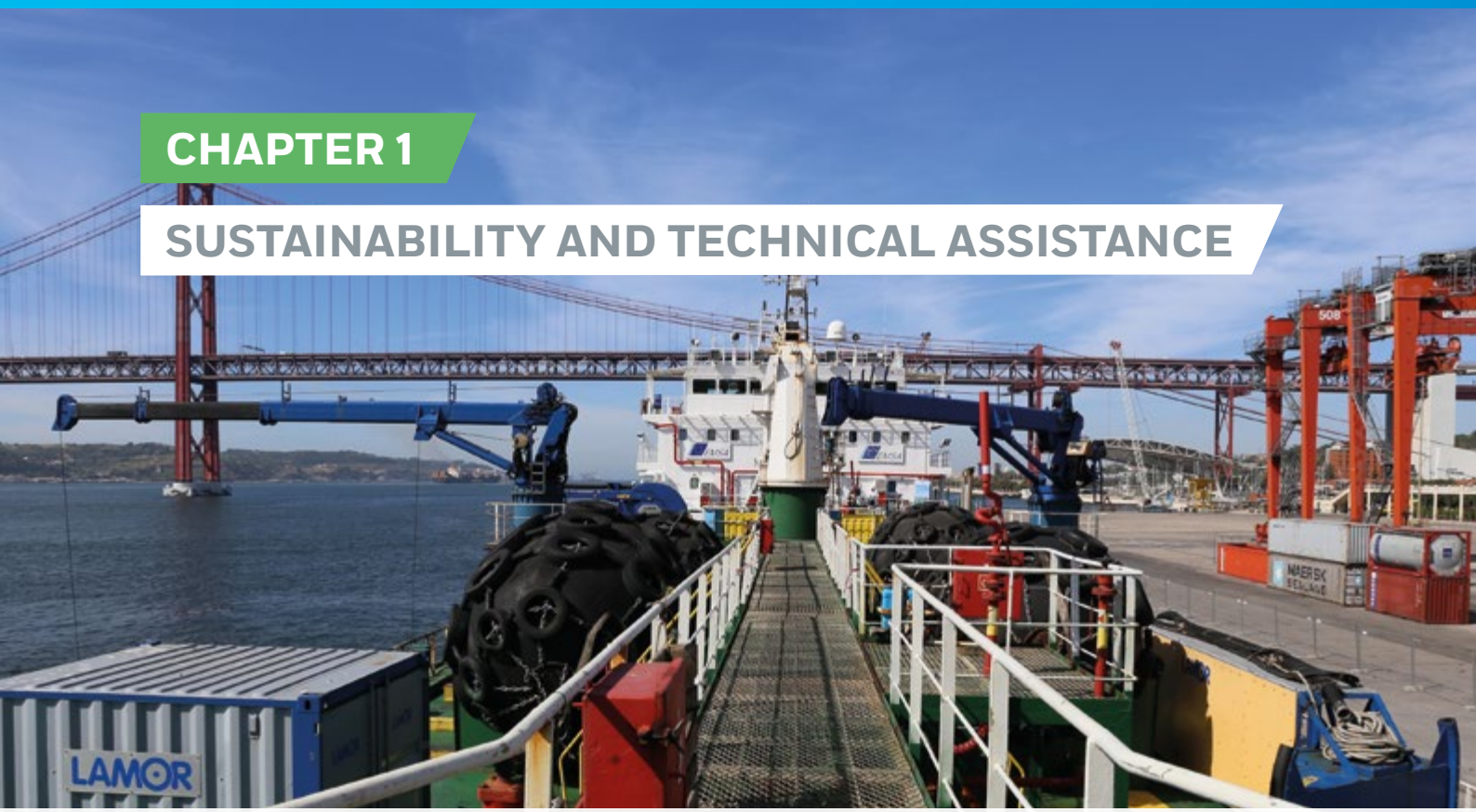
In 2020, EMSA will continue the work on European cooperation on coast guard functions, jointly with EFCA, Frontex and the national authorities from across the EU. As outgoing chair, EMSA will be hosting the Annual Coast Guard event in late spring, to gain feedback on the various cross-sectoral and cross-border cooperation efforts.

Corporate and executive services

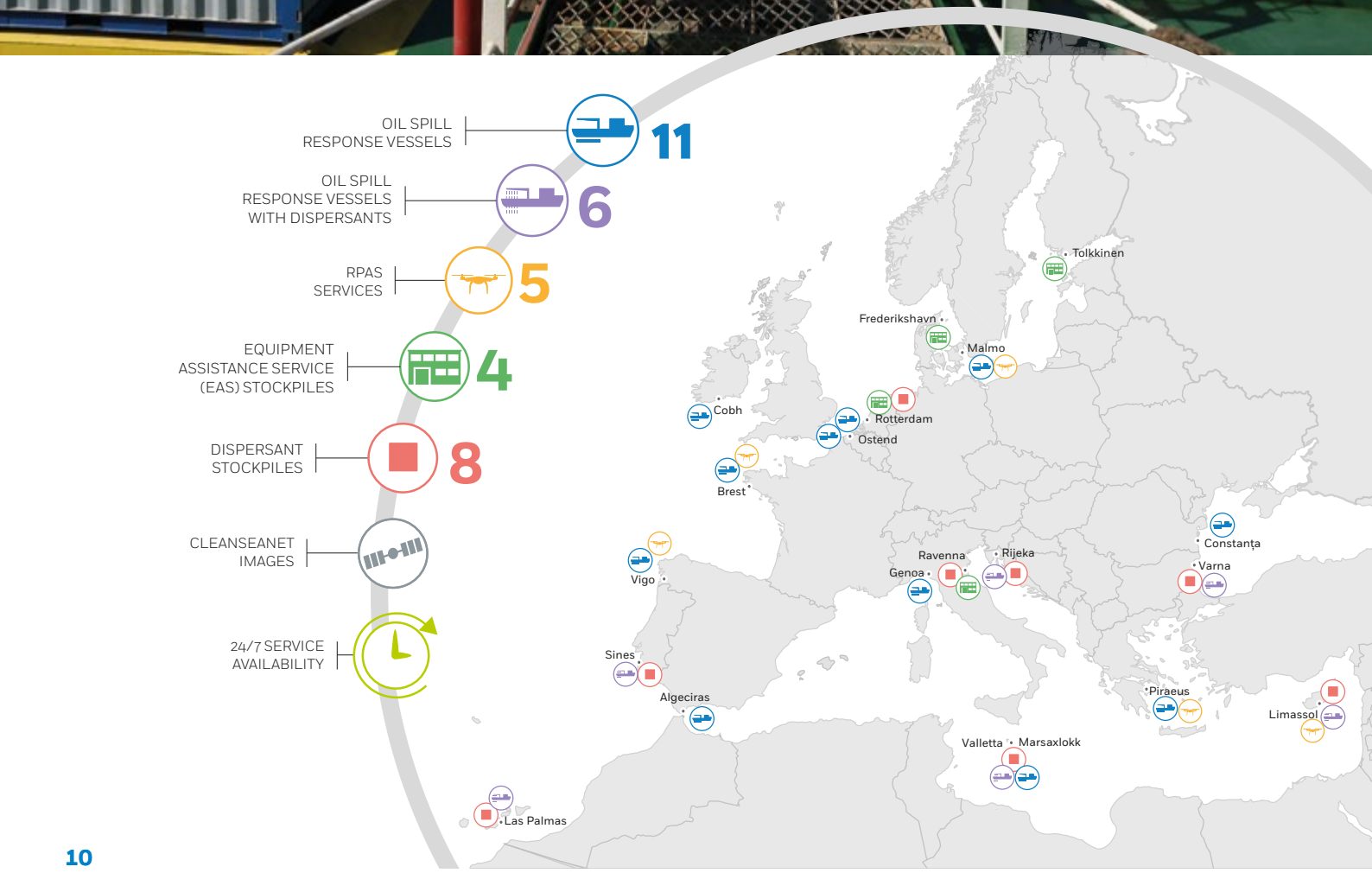
EMSA's management team will take forward the strategic objectives of the Agency's five-year strategy, translating these into concrete activities and achievements. Continued efforts will be made to enhance performance monitoring and efficiency gains. Performance will also be looked at from the environmental perspective, where the Agency aims to put in place the best practices of the EU Eco-Management and Audit Scheme (EMAS).

CHAPTER 1

SUSTAINABILITY AND TECHNICAL ASSISTANCE



NETWORK OF EMSA CONTRACTED VESSELS, DISPERSANTS & EQUIPMENT STOCKPILES IN 2019



1.1 SUSTAINABILITY

Operational Pollution Response Services

EMSA offers a 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. These can be selected based on the particular circumstances of the spill and the type of pollutant involved.

EMSA's services target marine pollution from both ships and 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 are also being made available to countries sharing a regional sea basin.

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. They take into account the existing response capacities of the member states, in order to offer a quick response. Although mechanical recovery of oil remains the main response strategy, some vessels are also equipped to use dispersants. To diversify the response means, several Equipment Assistance Services have been established, providing member states with specialised response equipment which can be used by non-dedicated response vessels. Lightweight Remotely Piloted Aircraft Systems (RPAS) are also available to support pollution monitoring and detection operations from vessels.

In 2020, EMSA will continue to participate in international multi-partner, multi-purpose exercises at sea with member states as part of ongoing cooperation on coast guard functions.

Cooperation for effective pollution preparedness and response

Careful planning is essential to effectively deal with marine pollution incidents. EMSA's role involves disseminating best practices and exchanging information between member states, the Regional Agreements, the International Maritime Organisation and other relevant international bodies.

Special care is required for spills of hazardous and noxious substances given their wide array of properties and how these can affect the environment. EMSA offers specialist information and expertise to member states through the MAR-ICE chemical experts' network, the MAR-CIS database of information on chemical substances, as well as through the DUET dispersant usage evaluation tool. All this is provided as part of the Hazardous and Noxious Substances Action Plan.

In 2020, EMSA will determine how best to assist member states at regional level to close the gaps identified during the stress tests conducted in 2019 whose purpose it was to assess existing large-scale pollution response capabilities.

Prevention of pollution by ships

EMSA also offers expertise in the field of environmental protection helping stakeholders to address a wide variety of ship-sourced pollution and emission-related issues. Assistance in 2020 will be directed towards the implementation of legislation relating to carbon dioxide emissions, sulphur content of marine fuel, alternative fuels, port reception facilities, ship recycling, ship-source pollution and shipowner insurance for maritime claims.

EMSA will also support the goal to decarbonise shipping by 2050 by providing technical analysis of alternative power. The European Sustainable Shipping Forum provides a platform for structured dialogue among maritime industry stakeholders and the European Commission in order to address the environmental sustainability challenges confronting the EU maritime transport sector. EMSA is highly active in this arena as the forum's technical secretariat.

On the international front, EMSA will continue to contribute to the wide-ranging developments at the IMO including among others enhancing the energy efficiency of international shipping, a global data collection system, greenhouse gas emissions, ballast water management, and the safe recycling of ships.

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Work will also start on an environmental report on European maritime transport which is being prepared in close cooperation with the European Commission, the European Environmental Agency (EEA) and the Innovation and Networks Executive Agency (INEA). The report will offer a comprehensive overview of the current status of maritime transport and its impact on the environment.

1.2 VISITS, INSPECTIONS AND HUMAN ELEMENT

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 offer a valuable link between legal objectives and operational application. In this way, the European Commission is able to assess the extent to which EU law is being properly implemented in a given field. They provide a feedback chain on the effectiveness of the legislation and identify gaps where legal objectives are not being met.

Visits in 2020 will cover a broad range of implementation areas:

- the third cycle of port state control visits will continue, including inspections for the safe operation of ro-ro passenger ferries and high-speed passenger craft (4-5 visits)
- compliance with the sulphur content of marine fuels requirement will be monitored (4-5 visits)

- the second cycle of visits related to the marine equipment directive will take place (5-6 visits)
- the cycle of visits related to the safe loading and unloading of bulk carriers launched in 2018 will continue (4-5 visits).

A new cycle of visits related to passenger ship safety also commences in 2020, for which a pre-cycle workshop has already been held. This follows on from the completion of the European Commission's refit exercise and takes account of the date for the application of new passenger ship safety rules (21 December 2019).

SEAFARER STATISTICS IN THE EU

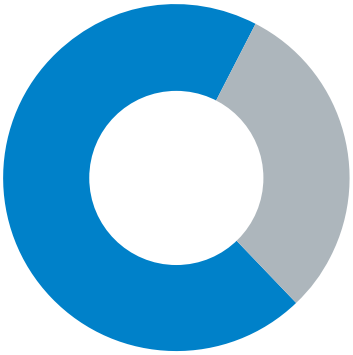
A SNAPSHOT OF THE NUMBER OF SEAFARERS HOLDING CERTIFICATES OF COMPETENCY & ENDORSEMENTS ATTESTING RECOGNITION BY EU COUNTRIES VALID IN 2017, AS REPORTED IN EMSA'S STCW INFORMATION SYSTEM

EU COUNTRIES *

NON-EU COUNTRIES

202 190

MASTERS AND OFFICERS CERTIFIED BY EU COUNTRIES



87 810

MASTERS AND OFFICERS FROM NON-EU COUNTRIES RECOGNISED BY EU COUNTRIES

TOP 5 EU COUNTRIES WITH THE HIGHEST NUMBER OF CERTIFIED OFFICERS

- United Kingdom (30 833)
- Poland (20 138)
- Greece (18 935)
- Italy (15 154)
- Norway (14 696)

TOP 5 EU COUNTRIES WITH MOST OFFICERS RECOGNISED BY OTHER EU COUNTRIES

- Poland (9 260)
- Romania (5 227)
- Greece (3 893)
- United Kingdom (3 689)
- Croatia (3 463)

TOP 5 EU COUNTRIES RECOGNISING THE HIGHEST NUMBER OF NON-EU OFFICERS

- Malta (37 151)
- Cyprus (16 442)
- Norway (7 983)
- Netherlands (7 109)
- United Kingdom (6 345)

TOP 5 NON-EU COUNTRIES WITH MOST OFFICERS RECOGNISED BY EU COUNTRIES

- Philippines (30 615)
- Ukraine (19 304)
- Russian Federation (15 631)
- India (6 357)
- Turkey (4 100)

* Includes EFTA coastal states

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 ten years, assessing their level of compliance with the requirements of the IMO's Convention on Standards of Training, Certification and Watchkeeping. 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. In 2020 EMSA will conduct up to four inspections to non-EU countries and up to five visits to EU countries. A large-scale international workshop is also planned on the implementation of the IMO's Maritime Labour Convention 2006 which sets out the rights of seafarers to decent working conditions. This workshop will be held together with the International Maritime Organisation and the International Labour Organisation to further the debate between the human element in ship safety and the maritime labour dimension.

Classification Societies

Classification societies develop and apply technical standards to the design, construction and survey of ships. Of the more than 50 classifications societies worldwide, 12 are recognised at EU level and are inspected regularly by EMSA. Based on the reports submitted, the European Commission assesses each of the 12 societies at least every two years, requests corrective measures and takes policy decisions. The overall aim is to improve the quality of the certification work undertaken by these recognised organisations.

In 2020 EMSA will conduct between 16 and 20 inspections based on a programme decided jointly with the European Commission which takes into account certain factors such as the size and geographical spread of a particular recognised organisation's activities, inspection history, corrective actions requested, and industry developments. Following a recent regulatory change, EMSA may organise periodical workshops with member states to exchange information and discuss best practices.

1.3 CAPACITY BUILDING

Analytics and research

EMSA drafts reports for each of the visits and inspections it conducts and then analyses these to identify common findings and draw general conclusions on the effectiveness of the measures in place. This is vital to identify good practices, draw lessons and make improvements to current legislation. The two main focus areas in 2020 are the mid-cycle analysis for bulk carriers and the second cycle of visits for marine equipment. Work will also continue on the new cycle of visits for the recently adopted EU passenger ship safety package.

Safemed ballast water training course, 30 October 2019

Training and capacity building

EMSA's wide portfolio of training courses offers support to national maritime authorities in their day-to-day duties as flag, port and coastal state authorities. It includes e-learning courses which are available to member states, EFTA, and enlargement and European Neighbourhood Policy countries. The courses are devised to address the needs of the maritime administrations. In 2020, EMSA plans to hold up to 11 training sessions for member states and six for enlargement countries.

EMSA will continue to maintain the RuleCheck information system which was set up to inform inspectors on the complex international rules governing port state control- related ship inspections by clearly showing the rules that apply to a selected ship at the time of inspection. The system will be further expanded to cater also to authorities carrying out coast guard functions, as well as to an increasing number of user groups. Access has now been granted to the port state control regime countries of both the Caribbean and Indian Ocean Memoranda of Understanding (MoU).

MaKCs, the e-learning platform primarily for port state control officers, will be upgraded in 2020. This highly flexible learning environment is expected to be made available via a mobile app to a broad geographical spread, spanning Paris MoU countries, European neighbourhood countries, as well as the Caribbean and Indian Ocean MoU countries.

In 2020, EMSA will also be looking to extend its capacity building toolbox through pathways for career development and the use of new technologies – learning content management systems, virtual reality and 3D simulations of vessel inspections are being developed to make the learning experience more engaging and immersive.

European neighbourhood countries

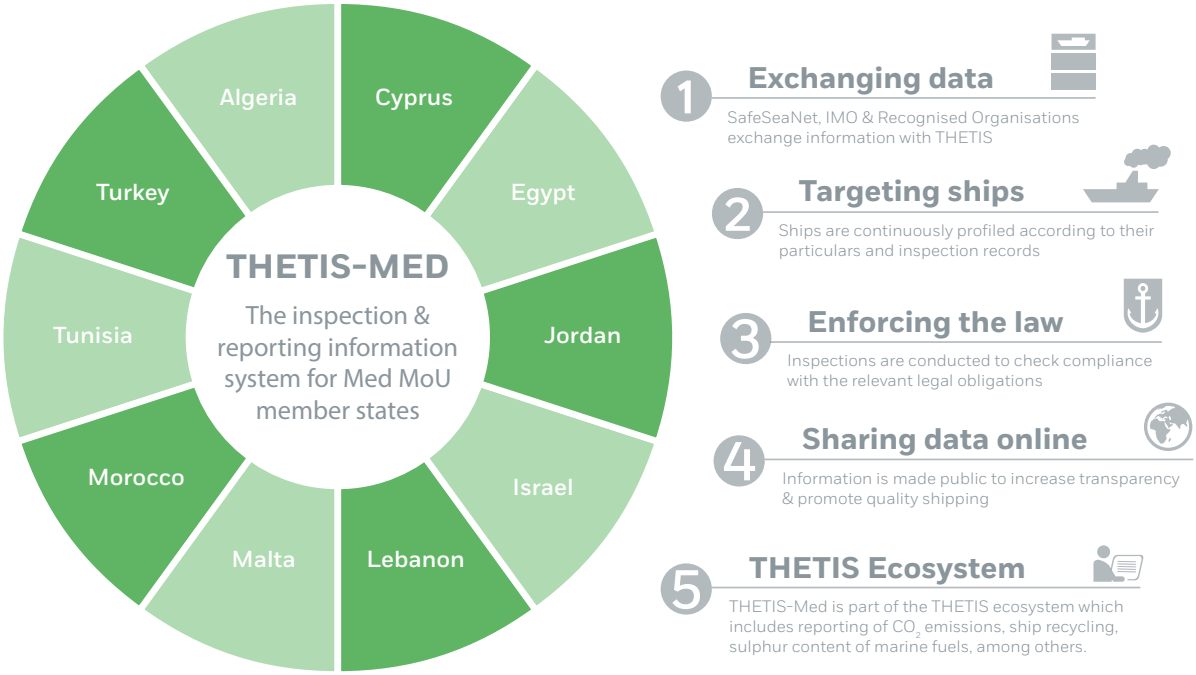
Black and Caspian Sea Project - Training course, 9 October 2019

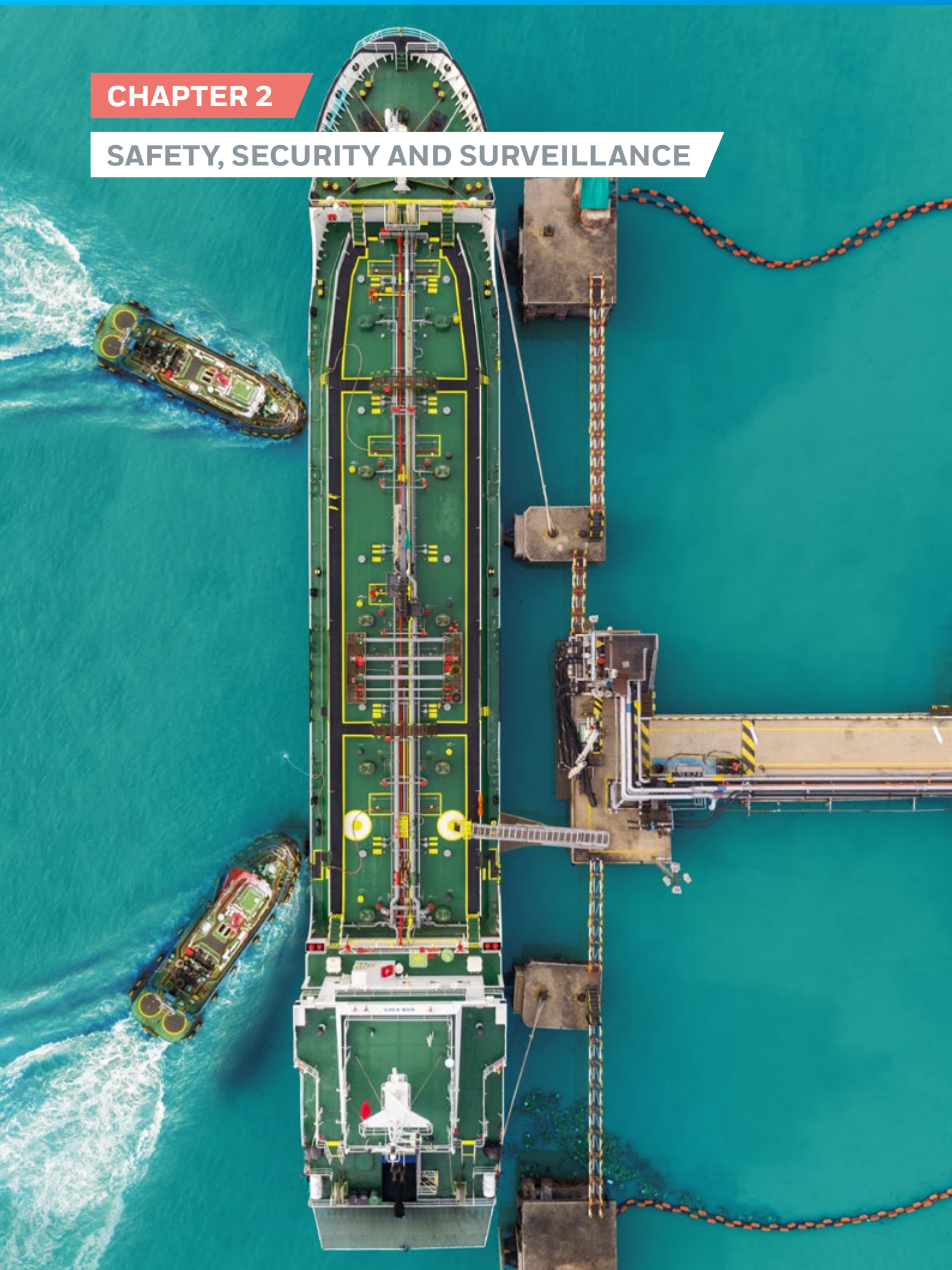
Through the Safemed project, EMSA works with southern Mediterranean partner countries to help enhance their technical capacity in the fields of maritime safety, security and marine pollution. Beneficiaries include Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine and Tunisia. The current phase of the project is expected to run until 2021.

Seminars, workshops and training sessions will be held in 2020 and access to both RuleCheck and MaKCs will be provided to the relevant authorities of the beneficiary countries. EMSA's Integrated Maritime Services (IMS) and CleanSeaNet oil spill and vessel detection service are also both available to those countries having signed the conditions of use, namely Jordan, Tunisia, Morocco and Libya. Part of this includes Earth Observation images, related value-added products (such as oil spill detection and polluter identification) and alert reports.

Based on the expertise gained in port state control with the Paris Memorandum of Understanding, EMSA will support the work of the Mediterranean Memorandum of Understanding in 2020 to develop a harmonised scheme for the training and assessment of port state control inspectors as well as to set up a dedicated inspection database (THETIS-Med).

Similarly, EMSA works with eastern European neighbourhood countries around the Black and Caspian seas. This current phase of the project is also expected to run until 2021 and aims to promote a harmonised approach to maritime safety, security and marine pollution. Assisting these countries to implement and enforce their international obligations is another area in which EMSA is active. On request, EMSA supports them in the preparation for the IMO Member State Audit Scheme (IMSAS) and in the post audit follow-up related to capacity building.





CHAPTER 2

SAFETY, SECURITY AND SURVEILLANCE

2.1 SAFETY & SECURITY

Maritime safety

EMSA aims to progressively improve the safety of commercial shipping in EU waters.

High quality marine equipment is indispensable for the safe operation of a ship, life-saving capabilities and protection of the marine environment. EMSA provides assistance where the development and implementation of EU legislation is concerned. The Agency also supports the European Commission and member states at the IMO in matters of EU competence.

The focus in 2020 will be on the following safety studies:

- Steersafe – a commissioned study on the steering and manoeuvrability requirements of modern steering systems will be concluded in 2020 and EMSA will be active in bringing forward any relevant proposals to the IMO as a result of this study.
- Safemass – a commissioned study initiated in 2019 on maritime autonomous surface ships will be the basis for further work in this area with EMSA acting as a technical facilitator for the European Commission and member states as well as an active participant in the IMO's regulatory scoping exercise.

  As a follow-up to Safemass (which will be concluded in Spring 2020), EMSA will launch in 2020, a functional study ultimately aiming at developing a Risk-Based Assessment Tool for MASS (RBAT MASS) in the coming years.

Recognising the current uptake of ships using alternative energy and power systems, EMSA will work on safety aspects related to the adoption of alternative fuel technologies, including low flashpoint fuels, energy storage and conversion systems or Onshore Power Supply. The Agency will continue developing guidance for the safe deployment of such alternative technologies, including best practice safety guidance, studies and supporting IMO development of the IGF Code and Guidelines for ships using different alternative technologies.

Following the results of the Firesafe I and II studies, the IMO approved interim guidelines on fire safety on board ro-ro passenger ships. EMSA will continue to provide support in this area, particularly as regards proposals for related regulatory amendments.

EMSA in 2020, will compile an action plan and develop a technical analysis indicating the safety challenges of container ships and the potentially relevant options for EMSA to address them. This will feed into a study to be conducted in 2021, depending on the outcome of the technical analysis.

EMSA hosts the management unit of Equasis, an online worldwide database providing details on port state control inspections, ship-related information from classification societies and P&I ship specific data. The information is supplied by port state control regions (Paris MoU, Caribbean MoU, Indian Ocean MoU, US coast guard, etc.) as well as by industry-based organisations. In 2020 a statistical report on the world shipping fleet will be published based on data extracted from the Equasis database. The objective is to encourage quality shipping and eradicate substandard practices.

EMSA also runs the Marinfo information system which collects data from commercial sources worldwide on ship characteristics, accidents, movements, ownership, and ship history. This internal system offers valuable information to EMSA staff when preparing their visits and inspections, as well as to the European Commission when making ex- post assessments of legal provisions.

In 2020, a new platform giving a dynamic overview of national authorities will be developed to help national authorities carrying out coast guard functions. The purpose of this DONA platform is threefold: it offers a public country profile; it serves as a single point for member states to report to the European Commission; and, it gives member states access to up-to-date statistics.

Accident investigation

Technical investigations into marine casualties contribute to raising the overall level of maritime safety in Europe by helping to prevent such casualties resulting in loss of life, loss of ships and pollution from happening again. EMSA's role in this process involves gathering the member states' accident investigation bodies to encourage a more uniform approach as well as to provide technical support and training.

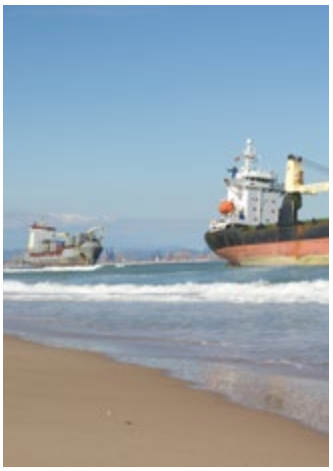
EMSA runs the EMCIP database of accidents which is populated by the accident investigation bodies. The information contained in this database is a valuable basis for sound decision-making in areas such as passenger ship damage stability and ro-ro vehicle deck fires. Some 4 000 casualties and incidents are recorded on average each year in the database.

The EMCIP platform was upgraded in 2018 and will continue to be enhanced to ensure it offers an efficient and user-friendly service, including direct assistance to investigators and simplified data analysis. In 2020, EMSA will also be actively involved in analysing EMCIP data to identify lessons to be learned at EU level according to ship type.

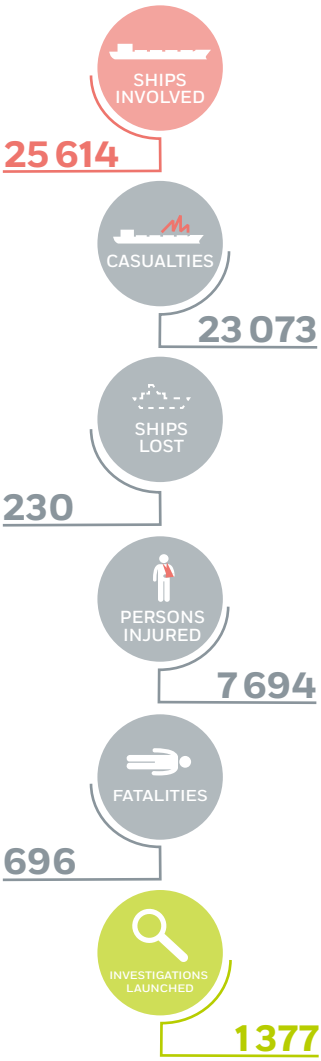
This will build on the two studies previously released on lessons learned from casualties involving fishing vessels and those involving ro-ro ferries. In 2020, EMSA will carry out a safety analysis on container ship safety based on data contained in the European Marine Casualty Information Platform (EMCIP) and provide feedback to the member states and European Commission as appropriate.

Through EMCIP, EMSA will continue assisting accident investigation bodies in the dissemination of investigation data at a global level, to the IMO's Global Integrated Shipping Information System (GISIS) without any extra effort from member states.

The yearly publication giving an overview of marine casualties and incidents will be posted on the EMSA website, covering data extracted from EMCIP since its creation in 2011. EMSA will also publish in the spring of 2020 a preliminary annual overview of marine casualties and incidents to give an early insight into the accident investigation data of the previous year.



Containership *Celia* and cargo ship *BSLE Sunrise* beached by storm off Valencia - 2012



Key figures of marine casualties and incidents for 2011-2018

Maritime Security

Within the EU's legislative framework, maritime security refers generally to preventive measures taken for protection against unlawful acts such as piracy, armed robbery, terrorism and maritime violence. EMSA assists the European Commission and the EFTA Surveillance Authority in the performance of their inspections on enhancing ship and port facility security (based on the EU legislation implementing the IMO ISPS Code). EMSA has also added a new reporting module to THETIS-EU to assist member state authorities when conducting maritime security inspections on board ships.

In 2020 EMSA will work jointly with the European Commission in the development of Maritime Security Guidance within the EU's MARSEC Committee framework. Some 15-18 missions are expected based on requests from the European Commission and determined through the information gathered from a range of sources including previous inspections, and 1-2 to Norway and Iceland at the request of the EFTA Surveillance Authority.

EMSA will follow up on issues related to cybersecurity, including participation in the transport working group set up by the EU Agency for Cybersecurity (ENISA) and other ongoing initiatives in the context of the EU's Maritime Security (MARSEC) Committee or in the IMO. EMSA will also conduct a mapping and gap analysis of the measures already proposed for the maritime sector by IMO, maritime administrations, classification societies and other relevant entities such as ICS, BIMCO, and IACS and may also work to provide guidance on maritime cybersecurity and/or a publication of an overview of existing guidelines/recommendations.

2.2 SURVEILLANCE

View of RPAS ground control station - 18 September 2019

Remotely Piloted Aircraft Systems

Having set up a service for Remotely Piloted Aircraft Systems (RPAS), EMSA will continue to make this service available to interested member states and thereby give them extended operational capabilities for the purpose of pollution detection, monitoring and response.

Monitoring services are available to member states on request from EMSA's fleet of RPAS.

As it becomes technically and operationally possible, lightweight RPAS drones will be added to EMSA's standby oil spill response vessels to add additional pollution monitoring capabilities. These drones can be operated from on board a vessel, allowing for greater flexibility when responding to an incident far from shore.

Sniffer RPAS can also be deployed at the request of a member state to fly in the plume of a passing vessel and measure the amount of sulphur emissions being released into the air. This particular service aids in the detection of vessels using heavy fuel exceeding the EU's and/or international sulphur limits. When this is the case, the local coastal authorities are alerted, and they can arrange an inspection at the next port of call. The results are then uploaded to EMSA's THETIS-EU system which keeps a record of all the measurements taken.

In 2020, EMSA is targeting 180 days of deployment for both pollution and emission monitoring. All multipurpose operational flight data is available to users via EMSA's RPAS data centre.

Using satellite-based services to detect and deter marine pollution

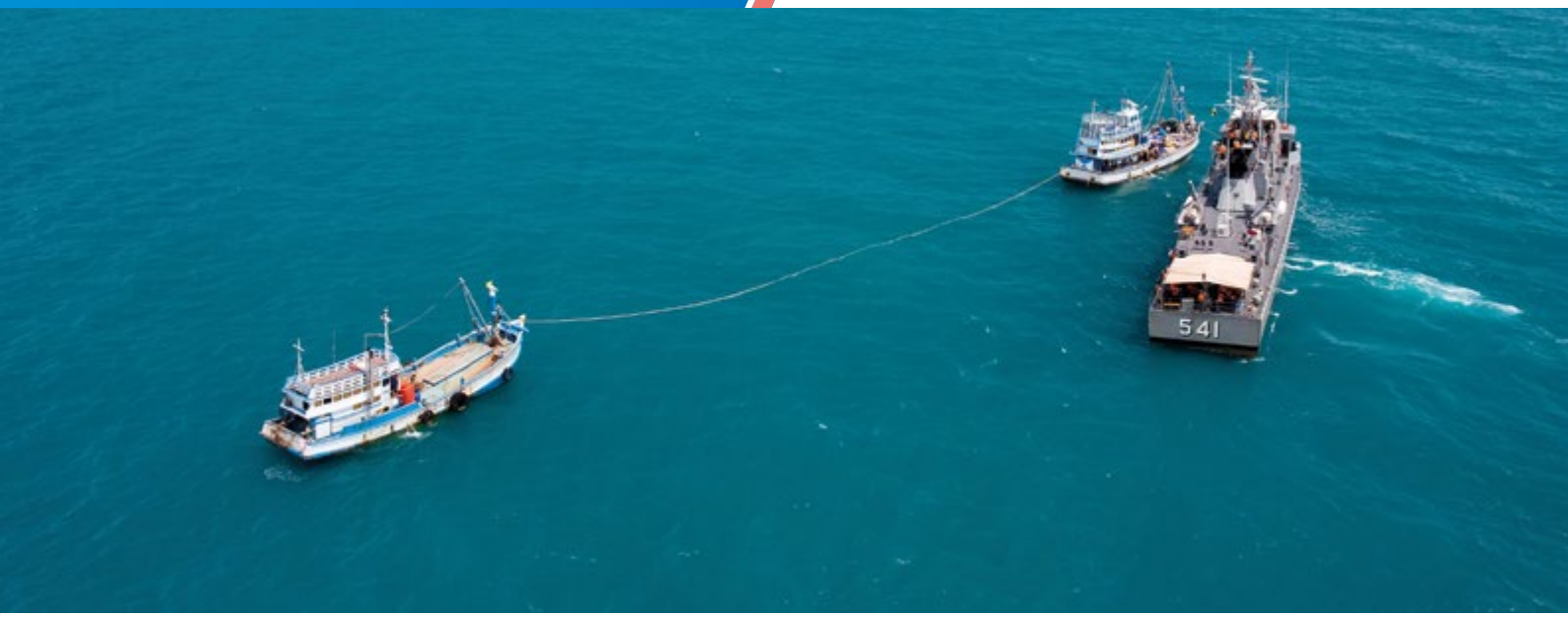
EMSA's satellite-based oil spill surveillance and vessel detection service, CleanSeaNet, analyses images from earth observation satellites to detect possible oil spills on the sea surface. The Sentinel-1 satellite mission, followed by Radarsat-2 and TerraSar-X, is the main supplier of images from Synthetic Aperture Radar and optical satellites. This data can be correlated with vessel traffic reports to identify likely spill sources, making the system a powerful deterrent to would-be polluters.

Through EMSA's Earth Observation Data Centre (EODC) which manages and distributes the EO information (oil spill detection, vessel detection, activity detection), the CleanSeaNet service is also accessible from the SafeSeaNet ecosystem (SEG).

While the Agency has been looking into enhancing access to satellites on the one hand, on the other it has been complementing satellite imagery with RPAS monitoring services to allow for more flexible and intensive detection and monitoring of illegal discharges.

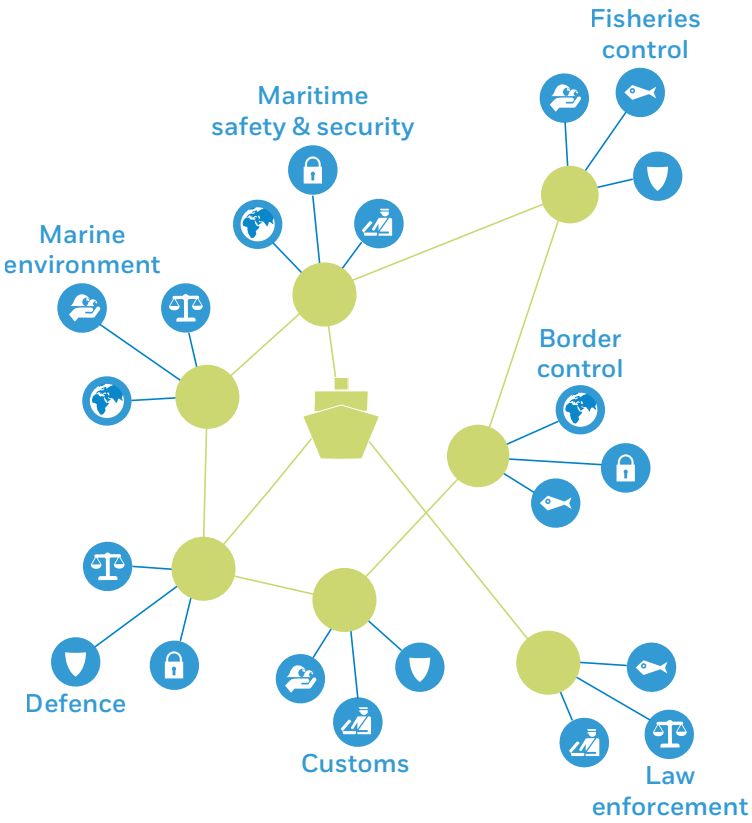
Copernicus Maritime Surveillance Service

As an entrusted entity for the Copernicus Maritime Surveillance Service, EMSA provides satellite images to support a better understanding and improved monitoring of human activities at sea. For the duration of the current delegation agreement (2015-2020), EMSA is responsible on behalf of the European Commission for implementing all related technical and operational work. While activities in 2020 will be directed by the Copernicus Maritime Surveillance annual implementation plan, services will cover the fields of fisheries control, law enforcement, maritime safety and security, law enforcement, customs; and, marine environment, including pollution monitoring.



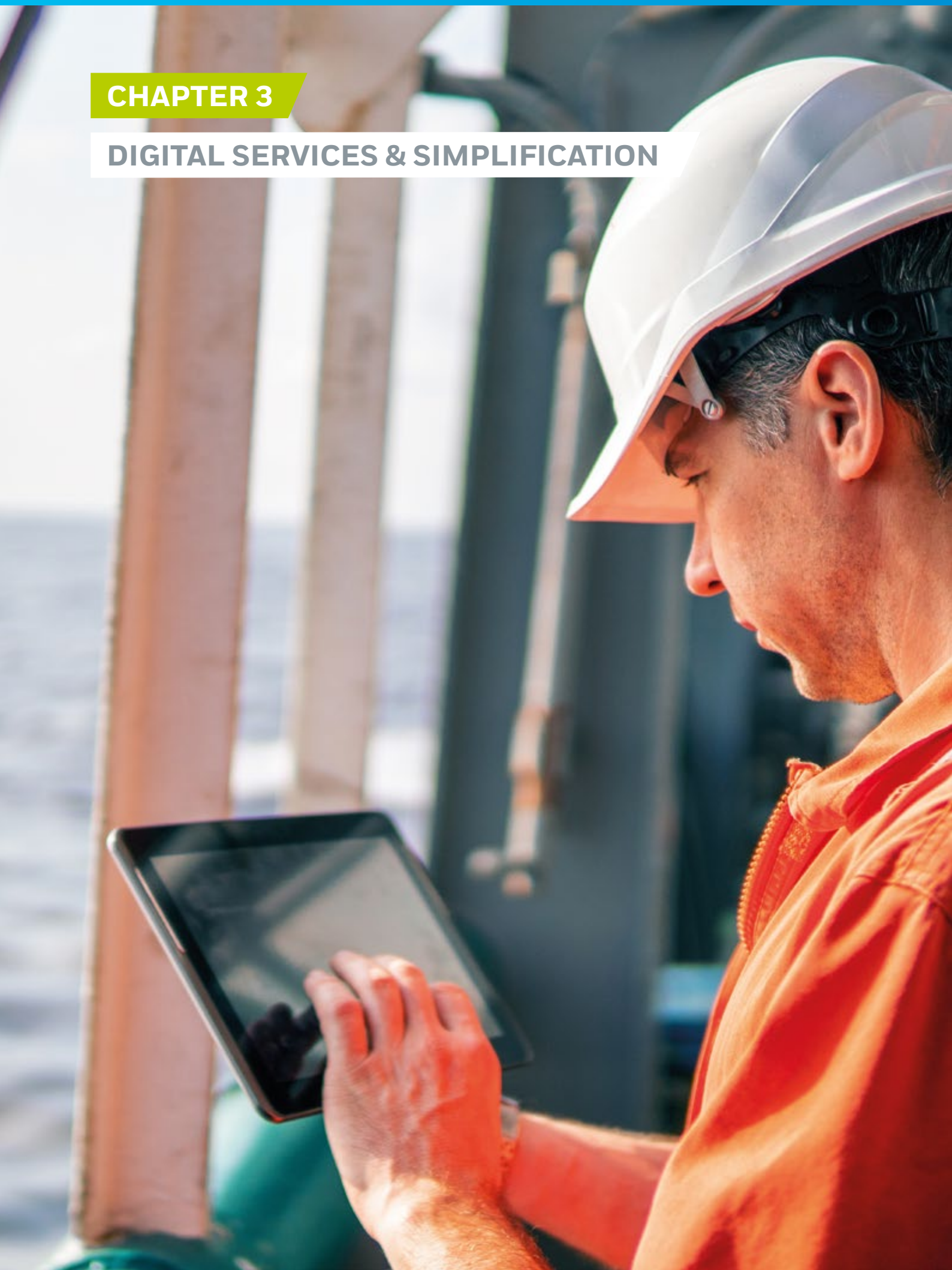
CISE transitional phase

The Common Information Sharing Environment (CISE) is an EU initiative which aims to make European and EU/EEA member state surveillance systems interoperable, by giving all concerned authorities from different sectors access to the classified and unclassified information when they need to conduct missions at sea. From April 2019, EMSA has been involved in the setting up and enabling of the Transitional Phase which will take this project forward by turning it into a fully operational system in the near future. In 2020, EMSA's focus will be on supporting the member states already connected, as well as on extending participation to other member states and EU agencies.



CHAPTER 3

DIGITAL SERVICES & SIMPLIFICATION



3.1 MARITIME DIGITAL SERVICES

Integrated Maritime Services

EMSA provides integrated maritime services to over 150 different national authorities across 26 EU and EFTA member states whose duties include maritime-related tasks, as well as to the European Commission and four European bodies encompassing Frontex (border control), EFCA (fisheries monitoring), EU Navfor (antipiracy) and MAOC-N (law enforcement – narcotics).

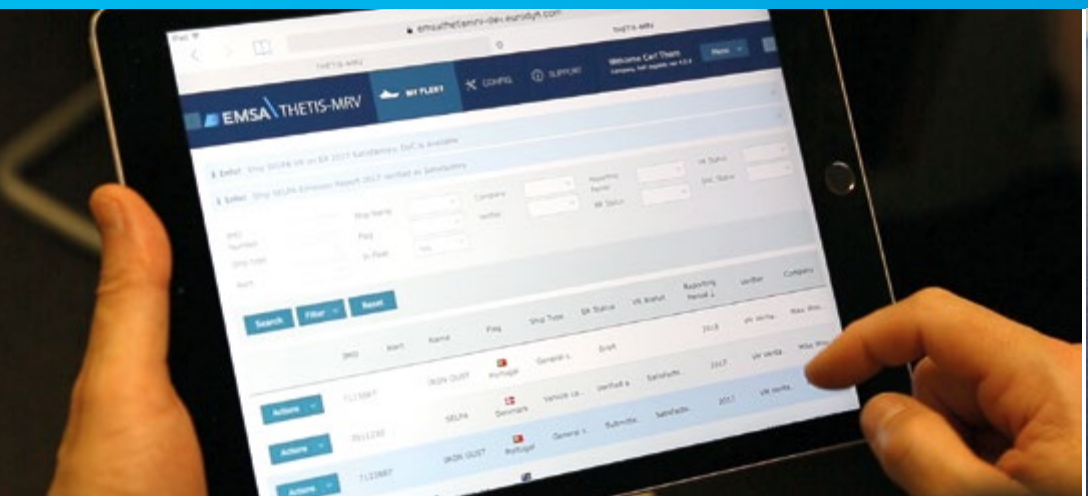
By integrating and correlating data from EMSA applications and external sources, services are delivered responding directly to a user's specific needs. Users benefit regardless of whether their needs lie in search and rescue, law enforcement or border control operations. And, as operational needs evolve, the services can be refined and developed. One such example, has been the integration of oceanic and meteorological data.

In 2020 EMSA will continue to provide Automated Behaviour Monitoring tools to support maritime surveillance users in the detection of anomalous and specific behaviour for use in various domains, including safety, security, traffic monitoring, fisheries, border control, and accident/incident prevention. Behaviour algorithms may be combined to detect interlinked situations, historical data exploited, and new algorithms developed based on user needs transforming this behaviour tracker into a powerful analytical tool. A new functionality will also be developed to accommodate for the monitoring of autonomous ship operations.

Data will continue to be extracted from Remotely Piloted Aircraft Systems for multiple maritime monitoring and surveillance purposes, such as pollution and polluter detection, ship emissions monitoring, search and rescue operations, and various other coast guard related functions. The information is then fed into a data centre with partial access to other EMSA sources. In 2020, specific support to search and rescue authorities will be extended beyond the existing functionalities: drift modelling tools will be incorporated; a training module set up in cooperation with both EFCA and Frontex; and a workshop on how SAR operations could benefit further from the communication and information exchange provided by IMS and Copernicus. With respect to new satellite technology, EMSA will continue to monitor developments concerning the VHF Data Exchange System (VDES). The VDES, which builds on satellite AIS data, is set to provide higher rates for digital data exchange. Potentially, it could allow for a more effective and efficient transfer of information from ships to shore-based systems, on a worldwide basis. EMSA will continue to work closely with the European Space Agency as well as with national administrations on VDES through the EU Satellite-AIS Collaborative Forum.

EMSA will also be exploring the potential of High Altitude Pseudo Satellites (HAPS) as an additional surveillance tool as well as the feasibility of having a hybrid vessel traffic management system to incorporate autonomous vessels and manned vessel traffic which would maintain navigational safety.

The IMS mobile application is to be further developed in 2020 with preparatory work starting on a new public version providing a public maritime picture showing terrestrial AIS vessel position data; vessel tracks over past 24 hours; basic vessel information (MMSI, IMO number, call sign, name, flag, vessel type); Equasis information; vessel photographs; and, nautical charts.



THETIS Information System

The THETIS information system was set up to allow port state authorities in the EU and Paris MoU countries (Canada, Iceland, Norway and Russia) to manage inspection data in a single window. It enables these authorities to target the right vessels for inspection, assists the European Commission by providing statistics on inspection results, and helps monitor the performance of member states in relation to their international and European legal obligations.

Additional functionalities have been added to the system, thereby supporting a wider range of member state authorities and facilitating the enforcement of a broader set of European laws. The provisions of the Sulphur Directive, the Port Reception Facilities Directive, the Ship and Port Facility Security Regulation and the CO_2 Monitoring, Reporting and Verification Regulation and the Directive related to the safe operation of ro-ro passenger ships and high-speed passenger craft are all being catered for in dedicated modules of this flexible system (THETIS-EU and THETIS-MRV).

In 2020, the THETIS-EU sulphur module will be enhanced with a new feature to help sulphur inspectors in ports to check a ship's sulphur compliance in the open sea. This will be facilitated by Remotely Piloted Aircraft Systems equipped with sensors monitoring individual ship emissions.

The THETIS-MRV CO_2 monitoring, reporting and verification system is now fully operational and, companies have been using the system since 1 January 2018 to monitor and report on ship data covering CO_2 emissions and fuel consumption. In 2020, the system will enable users to submit verified emission reports and compliance documents. The information gathered in the system on CO_2 emissions will continue to be made public.

THETIS-Med is the latest development which will enter into service in 2020. This information system will support the members of the Mediterranean Memorandum of Understanding (Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Tunisia and Turkey) by helping them to target ships for inspection, as well as to record and share the results of these inspections.

3.2 DIGITAL INFRASTRUCTURE

Maritime Support Services

The Maritime Support Services (MSS) centre is a 24/7 service helpdesk for users of the vessel traffic monitoring and surveillance systems hosted by EMSA. It provides continual monitoring of these systems, facilitating early incident management and high availability and performance standards. Average feedback times stand at approx. 20 minutes for urgent requests and 30 minutes for non-urgent requests. The MSS centre is the first point of contact for member states whenever assistance is required in case of pollution accidents. In 2020 the centre will continue to provide users with timely helpdesk and monitoring services.

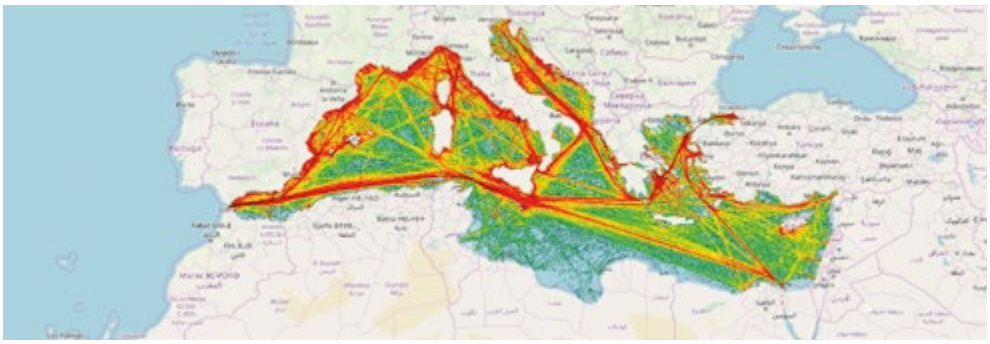
3.3 SIMPLIFICATION

Monitoring vessel traffic through SafeSeaNet

Vessel and voyage related information across the EU is shared among targeted users through the SafeSeaNet system. The information flows and system functionalities are designed to enhance maritime safety and security, as well as to boost the efficiency of maritime traffic and transport. EMSA works to provide the national administrations (port authorities, coastal stations, search and rescue, vessel traffic services, pollution response bodies, etc.) with 24/7 access to the system.

Importantly, EMSA works alongside the national authorities to ensure the interaction of their systems with SafeSeaNet. This allows SafeSeaNet to serve as a European platform for maritime data exchange. Mandatory functions cover the collection and distribution of data on vessel traffic monitoring, port call information, dangerous and polluting cargo, security, waste and cargo residues, and incident and accident reports. The various central databases that form part of the SafeSeaNet ecosystem help to improve data quality on the individual national databases. In 2020, efforts will be made to further improve the common graphical user interface for all the applications available in the SafeSeaNet ecosystem.

Gaining a better understanding of marine traffic – identifying where the main shipping lanes are and which ship types are navigating on which lanes, for example – is another way in which users can benefit from the SafeSeaNet service thanks to Traffic Density Maps which can be generated according to specific criteria such as timeframe and ship type.



Traffic density map for the Mediterranean Sea

The next major release of the SafeSeaNet system will accommodate the legal requirements of two sets of EU rules, one recently amended on the registration of persons on board passenger ships and one new on port reception facilities for waste from ships. Crew and passenger data will have to be registered digitally from 21 December 2019, using standardised administrative procedures (the single window). This measure aims to facilitate search and rescue operations in case of an emergency. As regards port reception facilities, the new 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 will also be transferred to the THETIS-EU inspection database, operated by EMSA.

Four existing databases will be further enhanced in 2020: the Central Ship Database which receives and stores up-to-date information on ship identifiers and which serves as a reference for national systems such as the national single window; the Central Hazmat Database for information on dangerous and polluting goods which is particularly useful for decision-making on places of refuge for ships in need of assistance; the Central Locations Database for information on locations and port facilities codes; and, the Central Organisations Database for information on authorities and organisations.

European Maritime Single Window

Maritime transport operators face a wide range of legal reporting requirements each time a ship arrives in or leaves a port. To reduce this administrative burden, EMSA worked closely with the European Commission to replace the Reporting Formalities Directive with a new regulation which was finally adopted in July 2019. The new regulation which is to be fully implemented by 2025 will bring together all reporting associated with a port call in a coordinated and harmonised way through the new European Maritime Single Window environment.

In 2020, EMSA will be involved in several tasks related to the implementation of this regulation, including: identifying the data to be exchanged via SafeSeaNet; drafting technical specifications for harmonised reporting and shared functionalities; and, developing a joint ship, hazardous materials and location database. An upgrade to SafeSeaNet which allows for data exchange services between National Single Windows is also foreseen. Throughout this process, EMSA's focus will be on improving the interoperability and interconnection between relevant systems, thereby enabling data to be shared and re-used more efficiently.

Two studies are underway on security and interoperability solutions on the one hand, and on the European Maritime Single Window environment dataset on the other. Both are to be completed in 2020. On the international front, EMSA has also been contributing to the IMO work in this field and will continue to participate in the IMO's Expert Group on Data Harmonisation.

Long Range Identification and Tracking

Ships transiting global waters are tracked through the LRIT system, introduced by the International Maritime Organisation in 2006. EMSA operates the LRIT Cooperative Data Centre, through which member state users can access the LRIT information of their ships worldwide as well as of any non-EU country vessel bound to or sailing within 1000 nautical miles of EU waters. In 2020 EMSA will continue to operate the EU LRIT CDC. 2019 saw the UK, Gibraltar, the British Virgin Islands and the Falkland Islands leaving the EU LRIT CDC, and Tunisia and Georgia joining as third countries. Associated to the EU LRIT CDC is the global LRIT International Data Exchange which serves 57 LRIT data centres worldwide covering 122 contracting governments and is hosted and operated by EMSA. In 2020 EMSA will also continue to monitor discussions at IMO on e-navigation.

Support to EFCA

EMSA supports the European Fisheries Control Agency in working to tackle illegal, unreported and unregulated fishing through the coordination of joint deployment plans. A service level agreement has been in place with EMSA since 2015 and is renewed yearly. On the one side, this agreement sets out the conditions for EFCA to provide EMSA with access to the VMS data and vessel identifiers of fishing vessels. On the other, it sets out the conditions for EMSA to provide EFCA with surveillance tools such as Integrated Maritime Services and Copernicus satellite imagery. RPAS drones are also part of this agreement and are being made available to EFCA for operational services. These services are part of the general European cooperation on coast guard functions between EMSA, EFCA and Frontex.

Support to Frontex

EMSA supports Frontex in conducting operations to address irregular migration and cross-border crime along European maritime borders. Among the many services provided to Frontex is Earth Observation which allows for the delivery of very high-resolution optical imagery for the monitoring of areas of interest, whether at sea, on the coastline or in port. The service level agreement between Frontex and EMSA was extended indefinitely and includes support for the implementation of the European Border Surveillance System (EUROSUR). Activities in 2020 are decided on the basis of an annual programme and service description agreed between the agencies.

CHAPTER 4

CORPORATE AND EXECUTIVE SERVICES

European Cooperation on Coast Guard Functions

European cooperation on coast guard functions refers to the joint work of three EU agencies (EMSA, EFCA and Frontex) and national authorities from across the EU. These functions comprise tasks related to safety and security at sea, such as search and rescue, border control, fisheries control, customs activities and environmental protection.

By working together these three agencies can support the member states with information sharing, surveillance and communication services, capacity building activities as well as risk analysis and information exchange on threats in the maritime domain.

Notable examples of this include: the exchange of vessel position and earth observation data to improve maritime domain awareness; RPAS surveillance services being made available by EMSA to both Frontex and EFCA; and, cross-sectoral training on offer for member state national authorities in areas such as search and rescue, maritime surveillance and fisheries control.

As current chair of this cooperation framework, EMSA will be hosting the Annual Coast Guard event in 2020. This will be the opportunity to get feedback on all the various cross-sectoral and cross-border cooperation efforts, gathering more than 100 participants from many different user communities of the three agencies.

Annual European Coast Guard event - 15 - 17 April 2019 in Poland

Management and horizontal tasks

In 2020 EMSA's management team will work on activities designed to meet the strategic objectives identified in the Agency's five-year strategy which cover the five thematic areas of sustainability, safety, security, simplification and surveillance.

The Agency will also work on performance monitoring and concentrate efforts on the best possible use of existing resources and efficiency gains. Following the Quality Management System certification attained in 2017 for EMSA's visits and inspections, the Agency will now develop a Quality Management System to cover more and more of the services delivered.

In the field of Human Resources, efforts will continue to focus on the development & implementation of the relevant implementing rules. The Agency will implement the newly adopted learning and development policy and staff redeployment policies, in order to enhance the efficiency and flexibility of staff, and to address new priorities. Work to further streamline and automatise human resource-related processes in order to achieve efficiency gains will proceed.

As concerns Legal and Financial affairs, assistance will be provided to the operational units and efforts will be devoted to continuously improving and updating internal rules, guidelines and templates in order to improve efficiency. Measures to simplify and streamline administrative and financial procedures in order to further improve efficiency and cost effectiveness will be taken.

Measures to further enhance security, safety and to continue providing a healthy and safe working environment as well as the energy efficiency of the EMSA headquarters will be further pursued. The Agency will further engage to improve its environmental performance aiming at registration within EU Eco-Management and Audit Scheme (EMAS).

In the field of ICT, increasing focus will be placed on the use of both Public and Private Cloud technologies, Cybersecurity and Business Continuity. The overall task will be to continue ensuring efficient, reliable, stable and secure operations with the smooth releases of application/infrastructure enhancements, new applications and pilots, in line with EMSA's evolving ICT landscape.

Communication is a crucial aspect of EMSA's activities. Focus areas were defined in the communication strategy for 2014-2020 and will continue to direct the efforts of the communication team until the adoption of the new communication strategy later in the year. The new strategy is designed to reflect the Agency's future communication priorities in the light of EMSA's new five-year strategy.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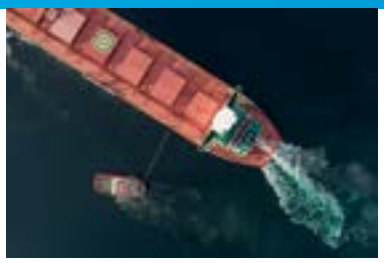


ABOUT THE EUROPEAN MARITIME SAFETY AGENCY

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

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