EUROPEAN MARITIME DAY
Digital transformation supporting coast guard functions activities:
Project “eFishMed”

Pedro J. Galache
19/05/2022
Our mission is to promote the highest common standards for control, inspection and surveillance under the CFP.

EFCA's work contributes to:

- Sustainability
- Level Playing Field
We function at the highest level of excellence and transparency with a view to developing the necessary confidence and cooperation of all parties involved and in so doing, to ensure effectiveness and efficiency of operations.

Compliance

Harmonisation

Cost-efficiency
EU Cooperation on Coast Guard

- Support to fisheries control and other national authorities working in the field of Coast Guard functions: Chartering of means, joint project with other EU agencies; technologies for surveillance

**Five Coast Guard Cooperation Areas**

- **Sharing of information**
  - EFCA Integrated Maritime Services
  - Sightings / observations

- **Surveillance and Communication services**
  - Remotely Piloted Aircraft Systems
  - Piloted Fixed Wing Aircraft
  - Copernicus Maritime Services

- **Capacity Building and Training**
  - Coast Guard Practical Handbook
  - Cross-sector training and capacity building

- **Cooperation on risk analysis**
  - Cross-sector risk analysis
  - Risk Analysis products

- **Capacity Sharing**
  - Multipurpose Maritime Operations
  - Operational briefings
  - Sharing of airborne and seaborne capacity
  - Exercises

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**EFCA operational capacity**

is available for **Multipurpose Operations in cooperation with FRONTEX, EMSA and Member States relevant authorities in its support to coast guard functions**

**Primary**

- **Fisheries inspection and control**

**Support role**

- Search and rescue
- Border Control and Customs control
- Law enforcement
- Maritime environmental protection and response
- Maritime monitoring and surveillance
- Maritime safety
- Maritime accident and disaster response
International Dimension

To strengthen compliance through the implementation of EU international projects as regards fisheries monitoring, control and surveillance: PESCAO, efishmed, Algeria,

PESCAO

- Legal support for review of legislation
- Support to two joint control operation of the SRFC
- Training provided on IUU Regulation and FMC operators
- Support to set up FCWC FMC

Dedicated projects:
- Provide additional funds/ressources
- Permit to extend EFCA activities in the international dimension
- Contributes to level playing field and cooperation policy
- Very positive experience so far!

Other International Projects (starting from 2022)

- e-fishmed, Virtual Regional Academy for Mediterranean: contribution agreement being finalised with DG MARE before end of 2021
- Support to fisheries control in Algeria: contribution agreement being finalised with DEU Alger before end of 2021
- ECOFISH/Indian Ocean: Ongoing discussion for a service contract
Development of training on MCS activities: training sessions + e-learning platform

- Improve the efficiency of inspection and facilitate the exchange of best practices
- Harmonise inspection methodologies
- Establish a level playing field where all operators are treated equally without discrimination

### Figures 2021

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of training events</td>
<td>41</td>
</tr>
<tr>
<td>Member States officials trained</td>
<td>1273</td>
</tr>
<tr>
<td>Third Country officials trained</td>
<td>148</td>
</tr>
<tr>
<td>Registered active users in EFCA platform</td>
<td>1374</td>
</tr>
</tbody>
</table>
Mediterranean Sea
Fisheries

-Fisheries conservation is high priority in the EU agenda

-Ensure the implementation of the management rules adopted at International, EU and national level is basic for the conservation

-EFCA supports the EU in the Mediterranean basin through different activities: JDP, Assistance, pilot projects, support in relation with Third Countries

-Identified during West Med Blue initiative the promotion of capacity building by EFCA as a necessary element
Overall Objective:

to support the effective implementation of conservation and management measures through enhanced capacities, knowledge, skills and competences in fisheries control and inspection and the fight against IUU fishing.

Specific Objective:

to improve national and regional MCS systems of Beneficiary Countries by setting-up a virtual regional training academy.
PROJECT SCOPE/BUDGET ALLOCATED TO EFCA

Beneficiary countries:
Algeria,
Libya,
Mauritania,
Morocco, and
Tunisia
+ poss. additional non-EU countries from the Adriatic and Eastern Med. (e.g. Albania, Egypt, and Montenegro)

Project Partners:
France,
Italy,
Malta,
Portugal, and
Spain

1 M€/3 years
Result 1: A common training curriculum is developed, as a contribution to harmonisation of MCS activities across Beneficiary Countries

Result 2: A set of e-learning modules and training material is made available online, improving the effectiveness of training activities for MCS staff in Beneficiary Countries

Result 3: A staff exchange programme is in place and training sessions are organised through an e-learning platform, facilitating the exchange of experience and best practices between EFCA, Project Partners and Beneficiary Countries.
# OVERALL PROJECT TIMELINE

<table>
<thead>
<tr>
<th>Phase</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>e-FlshMed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MONTHS</strong></td>
<td>Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec</td>
<td>Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec</td>
<td>Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec</td>
<td></td>
</tr>
<tr>
<td><strong>Phase 1 - Start</strong></td>
<td>PRELIMINARY ANALYSIS IN EACH NON-EU BENEFICIARY COUNTRY AND ACTION PLAN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Phase 2 - Implementation</strong></td>
<td>SETTING-UP, HOSTING AND MAINTENANCE OF A MULTILINGUAL E-LEARNING PLATFORM</td>
<td>DEVELOPMENT AND PUBLICATION OF MULTILINGUAL E-LEARNING MODULES</td>
<td>DEVELOPMENT AND PUBLICATION OF MULTILINGUAL TRAINING MATERIAL TO SUPPORT &quot;FACE-TO-FACE&quot; TRAININGS</td>
<td></td>
</tr>
<tr>
<td><strong>Phase 3 - Closure</strong></td>
<td>IMPLEMENTATION OF AN EXCHANGE PROJECT BETWEEN PROJECT PARTNERS AND BENEFICIARY COUNTRIES</td>
<td></td>
<td></td>
<td>CLOSURE</td>
</tr>
</tbody>
</table>

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*Note: The table and diagram provide a detailed overview of the project timeline, including the months and specific tasks for each phase.*
Platform design drafts
Frontex Situation Centre - structure
Real-Time Surveillance

- Vessel Tracking
- Operational Media Monitoring
- Vessel Detection
- MAS
- Coast Guard Functions

FRONTEX - European Border and Coast Guard Agency
Multipurpose Aerial Surveillance
FSA operational tasks

Maritime Operations

- Maritime Safety
- Maritime security
- Search & Rescue
- Border Control
- Fisheries Control
- Customs Control
- Law Enforcement
- Environmental Protection
FRONTEX Surveillance Aircrafts

Fixed-Wing Airplane

RPAS

Helicopter
Sensors

- AIS receiver
- Radar
- E/O camera
- Other...
Vessel Tracking and Maritime Surveillance
Stage 1: Vessel Tracking
Stage 2: Maritime Surveillance
Stage 2: Products
• Early Alerts to affected Member States
• Daily VoI Overview Reports
• Integrated VoI Reports
• Weekly Situational Report on EU External Maritime Borders
#EMD2022

EMD
EUROPEAN MARITIME DAY

Ravenna
19-20 May 2022
ITALIAN COAST GUARD HEADQUARTERS

EUROPEAN MARITIME DAY (EMD)

ITALIAN COAST GUARD’S BEST PRACTICES FOR MARITIME MONITORING TO ENFORCE THE EU CG FUNCTIONS

RAVENNA 19TH MAY 2022

CDR (ITCG) TOMMASO PISINO
ORDERING AND FUNCTIONAL DEPENDENCIES
COAST GUARD FUNCTIONS

- MARITIME SEARCH & RESCUE
- MARITIME ACCIDENT & DISASTER RESPONSE
- SHIP CASUALTY & MARITIME ASSISTANCE SERVICES
- MARITIME SAFETY & VESSEL TRAFFIC MANAGEMENT
- MARITIME SECURITY (SHIP & PORT)
- MARITIME MONITORING & SURVEILLANCE
- MARITIME ENVIRONMENTAL PROTECTION
- FISHERIES INSPECTION & CONTROL

SUPPORTING AGENCY

COMPETENT AUTHORITY

MARITIME CUSTOMS ACTIVITIES
MARITIME BORDER CONTROL
PREVENTION & SUPPRESSION OF TRAFFICKING & SMUGGLING & RELATED MARITIME LAW ENFORCEMENT
1. SEARCH AND RESCUE
2. SAFETY OF NAVIGATION REGULATION
3. MARITIME SAFETY AND SECURITY (SHIP & PORT)
4. MARITIME ENVIRONMENTAL PROTECTION – POLLUTION PREVENTION AND RESPONSE
5. MARITIME TRAFFIC MONITORING
6. FISHERY RESOURCES PROTECTION AND FISHERIES INSPECTION & CONTROL
7. ADMINISTRATIVE AND CRIMINAL POLICE
8. ADMINISTRATIVE FUNCTIONS: PORT MANAGEMENT, PUBLIC PROPERTY, NAVAL PROPERTY REGISTERS, SEAFARERS REGISTERS…

Maritime Domain Awareness (MDA)
Maritime Domain Awareness (MDA) is an effective understanding of anything associated with the maritime domain that could impact the security, safety, economy, or environment (IAMSAR MANUAL).
MARES
MEDITERRANEAN AIS REGIONAL EXCHANGE SYSTEM

Paesi UE
- Gibraltar
- Croatia
- Portugal
- Spain
- France
- Italy
- Slovenia
- Greece
- Cyprus
- Bulgaria
- Romania
- Azores e Madeira

Paesi Terzi
- Morocco
- Tunisia
- Georgia
- Ukraina
- Giordania
- Montenegro

Downsampling 6 min
Collect Information
Re-distribution
Deduplication Avoidance
Data Distribution Plan

SafeSeaNet

EMSA
CASES STUDY

ILLEGAL FISHING ACTIVITY LAMPEDUSA
15.12.2021

- CSN Alert Report – possible oil spill
- possible source – Chemical tanker LAVRAKI (MHL)
- in situ control: illegal discharge of palm oil / crime report
- PSC control: detention due to several deficiencies
**CASE STUDY**

**NAVE «BELLA» - I.M.O. 8319964 – FLAG CAMEROON**

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**MONITORING ACTIVITY**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event描述</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 SEP. '20</td>
<td>SHIP HELD IN MESSINA AFTER PSC CONTROL</td>
</tr>
<tr>
<td>15 NOV. '21</td>
<td>SHIP AUTHORIZED TO &quot;SINGLE VOYAGE&quot; IN BALLAST FROM MESSINA TO PIREO FOR MAINTENANCE UNDER CONTROL OF CONGUARCOST MONITORING ROOM</td>
</tr>
<tr>
<td>18 NOV. '21</td>
<td>CON.GUAR.COST. MONITORING ROOM DETECTED ON PELAGUS DIFFERENT DESTINATION</td>
</tr>
<tr>
<td>19 NOV. '21</td>
<td>ITCG MESSINA, ACCORDING TO DIRECTIVE 2009/16/CE, ISSUED A «REFUSAL OF ACCESS» IN PARIS MoU PORT</td>
</tr>
</tbody>
</table>

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**Announcement Details**

- **Category**: Ban
- **From**: THETISInternal
- **Title**: Ship 8319964 - BELLA - Ban Order validated
- **Message**: The ban order for ship 8319964 - BELLA, issued by Italy on 19/11/2021 was validated on 19/12/2021.
- **Expiry Date**: 19/12/2021
CASES STUDY

M/N SANTANA TOWS M/N SENATA

ABNORMAL BEHAVIOR
- Low speed
- Close distance
CASES STUDY

RUSSIA – UKRAINE CRISIS
Cdr (ITCG) Tommaso PISINO
tommaso.pisino@mit.gov.it
European Maritime Day

Digital transformations supporting coast guard functions - workshop

Francesco Dattis
Policy Officer for Coast Guard Cooperation
Executive Office

Ravenna / 19 May 2022
EMSA in a nutshell

**Maritime Safety**

**Maritime Security**

**Prevention & Response to Pollution from Ships**

**Response to Pollution from Oil & Gas Installations**

**Technical Body**

- Ensuring high, uniform & effective level of:

  - 27 EU Member States, 2 EFTA countries, and the Commission
  - ~270 people, ~24 nationalities
  - ~83 million EUR
  - Lisbon, Portugal
Modern organisational management
efficient, stakeholder oriented, smart, transparent
and gender balanced

as

- service provider
- reliable partner
- international reference
- knowledge hub

EMSA’s strategic framework
Maritime Data Sources
Integrated Maritime Services (IMS)

What can I get from the IMS?

Maritime Picture

Graphical interface(s) – web browser and Mobile

Webservices for specific data and functionalities

Automatic detection and alerting

‘Operation specific’ information/data
Integrated Maritime Services (IMS)
EMSA’s support to Border Control

EMSA is the premier provider of maritime information to FRONTEX, giving access to vessel tracking, analysis and satellite imagery capabilities.
IMS with T-AIS only
IMS with T-AIS and S-AIS
IMS with T-AIS, S-AIS and LRIT
IMS with T-AIS, S-AIS, LRIT and VMS
Integrated Maritime Services (IMS)

Total messages in one day: 32,087,134

- **T-AIS**: 32,300
- **S-AIS**: 69,541
- **LRIT**: 8,884
- **VMS**: 1,431

Distinct vessels: 112,156
**Automated Behaviour Monitoring**

**AUTOMATIC DETECTION AND ALERT TRIGGERING OF SHIP BEHAVIOUR**

<table>
<thead>
<tr>
<th>#Anchorage /outside port</th>
<th># Drifting</th>
<th># Spoofing position</th>
<th># In/out area</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Anchor" /></td>
<td><img src="image2" alt="Drifting Ship" /></td>
<td><img src="image3" alt="Spoofing Ship" /></td>
<td><img src="image4" alt="In/Out Area" /></td>
</tr>
<tr>
<td>#At port at sea</td>
<td># At sea encounter</td>
<td># Not reporting</td>
<td># Time of the day</td>
</tr>
</tbody>
</table>
Automated Behaviour Monitoring (ABM) tool is a computer, rule-based system analysing vessel positions for the detection and alerting of abnormal and/or user specific vessel behaviours.

To support Integrated Maritime Service users in their maritime surveillance functions.

When specific, user-defined criteria are met, operators are alerted: in the graphical interface (and IMS Mobile App) and by means of e-mail notifications.
#AT SEA ENCOUNTER
Earth Observation Services Coverage (2020)

15,657 EMSA EO services (2020)

8324 CleanSeaNet

5495 Copernicus Maritime Surveillance Service

1831 Support to Border Control
CleanSeaNet service

CleanSeaNet is the European satellite-based oil spill monitoring and vessel detection service. It analyses images, mainly from synthetic aperture radar (SAR) but also from optical missions, to:

• detect possible oil on the sea surface, including illegal discharges of mineral oil
• identify potential polluters, and
• monitor the spread of oil during maritime emergencies.

The service was developed and is operated by EMSA, and is available to all EU member states, EFTA/EEA member states, candidate countries and ENP participating countries.
CleanSeaNet Key Facts and Figures

2021
EMSA EARTH OBSERVATION (SAR) CLEANSEANET DATA

Activities Covering

1 year

1 425 MILLION KM² MONITORED IN QRT/NRT
7370 SAR IMAGES
7702 POSSIBLE OIL SPILLS DETECTED
(APPORX. 5.4 SPILLS PER MILLION KM² MONITORED)

1 290.04 MILLION KM² MONITORED IN QRT/NRT (90.5% OF OVERALL MONITORED AREA)
6485 SENTINEL-1 IMAGES (88% OF OVERALL CSN IMAGES)
95% OF DELIVERY RELIABILITY FOR SENTINEL-1 IMAGES
(94% FOR RADASART-2 AND 94% FOR TERRASAR-X / PAZ)

(1) 36 coastal states: 22 coastal European Union (EU), 2 European Free Trade Association (EFTA), 2 candidate countries, 10 countries in the context of the European Neighbourhood Policy (ENP) SAFEMED IV and BCSEA projects
Copernicus Maritime Surveillance service

Copernicus Service Component

All services are free of charge to the users

- Land Monitoring
- Marine Environment Monitoring
- Atmosphere Monitoring
- Emergency Management
- Climate Change

- Security

Border Surveillance
- Maritime Surveillance
- External Action

**Full and open access**
Data accessible to all; mostly available online

**Restricted access**
Specific conditions; delivered directly and securely to user
EO portfolio overview

EO products categories

Basic Products:
- Corresponds to the satellite image

Value Added Products:
- extracts particularly valuable information from the basic image products
- allows higher level analysis of objects, features or activities at sea more quickly and efficiently.

Fusion Products:
- Integrates the basic products with data from EMSA’s maritime information
- enables the provision of an integrated maritime picture to the Member States and Institutional User, which presents a higher operational value than the individual datasets

Example: Vessel detection

Example: Correlation with Vessel Reporting information
Earth Observation Services
Satellite imagery

**SAR DATA**
QUASI REAL TIME* DELIVERY (20’) TO USERS

**OPTICAL DATA**
NEAR REAL TIME* DELIVERY (30’) TO USERS

(*) Depending on acquisition size and value added products
Earth Observation Services: Value-added products

Value-added products

- Vessel detection
- Feature detection
- Activity detection
- Oil spill detection
- Wind and wave

Fusion products

- Oil spill notifications
- Correlation with vessel reporting information
- Serving MSs, EU Agencies and the Commission;
- Provided based on MSs/EU Agencies requests;
- Services offered free of charge to requesting users;
- Operations adapted to user needs (RPAS selection);
- MSs authorities retain command and control.
RPAS operations – Data sharing

EMSA RPAS Data Centre

- Plan
- Follow
- Communicate
- Detect
- Analyse
- Collect
Case Study - EMSA’s Pollution Response Services

GRANDE AMERICA (10th March 2019, fire and sinking in the Bay of Biscay)
Case Study - EMSA’s Pollution Response Services

Monitoring Situation Awareness

Detection of lost containers and oil spills

RPAS Support to Recovery Operations

Oil Pollution Recovery Operations

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