



IMS 17.7 - Introduction to RPAS Services

17th User Consultation Meeting

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RPAS services



EMSA as a broker of services for Coast Guard authorities

“Support national authorities carrying out coast guard functions at national and Union level and, where appropriate, at international level by:

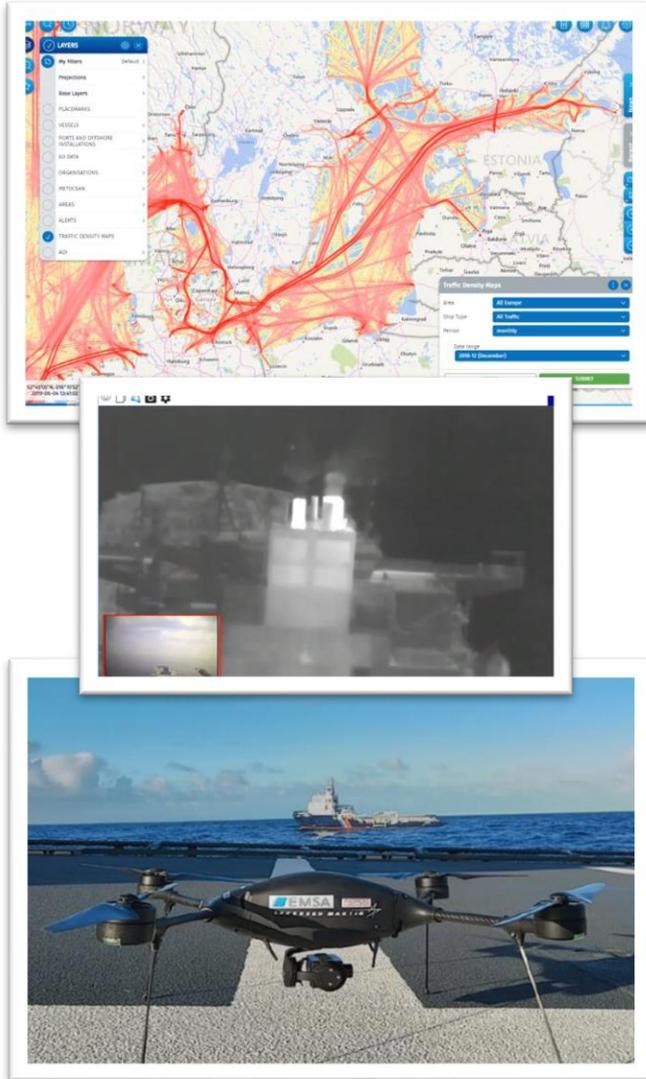
(a) **sharing, fusing and analysing information** available in ship reporting systems and other information

(b) **providing surveillance and communication services** based on state-of-the-art technology, including space-based and ground infrastructure and sensors mounted on any kind of platform;

(....);



RPAS Short Video



- Governance by RPAS User Group
- Regional Multipurpose Maritime Surveillance
 - focus on priority regions
 - in multi annual framework
 - for Member States and EU Agencies
- Emissions Monitoring:
 - National service but with benefits for all EU ports
 - Also addresses multipurpose operation
 - Focus on high traffic lanes
- EU chartered vessels:
 - Equip EMSA OPV fleet (light RPAS).
 - Equip EFCA vessel
 - Equip FRONTEX or MS vessels included in Multipurpose maritime operations at EU level

Emission monitoring



200kg, >4h, EO/IR, sniffer



<15kg, >50min, EO/IR, sniffer

Multipurpose Maritime surveillance



180kg, >10h, 500km(SATCOM)
EO/IR, Mar. radar, Still camera,
radar detector, phone
detector



200kg, >6h, 200km
EO/IR, opt. scanner VIS



36kg, >10h, 140km, up to
400km with ground relays
EO/IR, radar
Launcher & net

Operational modes

- **Local operations:** for emission monitoring and areas of specific interest
- **High seas operations:** based on RPAS with SATCOM capabilities
- **Extended coastal operations:** Ground relay stations for extending the coastal range
- **Ship-based operations:** rotatory-wing RPAS (and launcher/net RPAS)
- **Take-off from one site and landing in a different site** (take-off in one MS and landing in a different MS)
- **Multi-purpose operations:** Addressing different user requests and communities with the same flights/operations

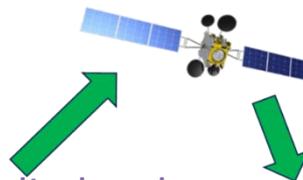
Light RPAS



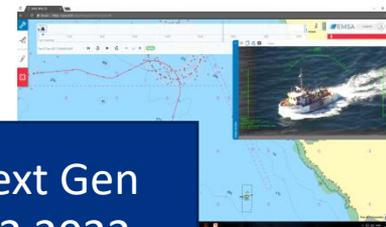
<5kg, >35min, EO/IR

SAT-COM

- RPAS to ground /
- ground to ground



Data Centre



Next Gen
Q2 2022

EMSA Service – RPAS Data Centre



- Common visualization and command interface for all RPAS operations;
- Integration of RPAS data into existing EMSA Maritime Picture
- Real-Time Local Situational Awareness
- Mission Command by User

Features:

- Live Video;
- Map view;
- Live Chat with Operators;
- Draw annotations on the map/video
- Export of mission data during and post mission;
- Full mission replay.

The screenshot displays the EMSA RPAS Data Centre interface. At the top, there is a navigation bar with a timeline from 9:45 to 17:00. Below this is a map showing a coastal area with various landmarks like 'Parque Nacional Doñana' and 'Punta Umbria'. A red boat is visible in the water. A video feed on the right shows a close-up of the boat. A chat window in the bottom right corner shows a mission log with messages such as 'climbing to 1400ft', 'climbing to 1500ft', and 'High probability of RTB in 1h-40'. A data panel on the left provides details for a specific mission (224116370), including location, status, speed, and ship type.

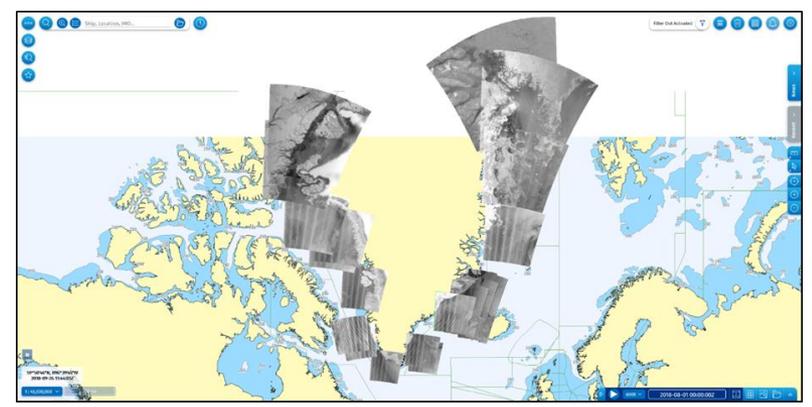
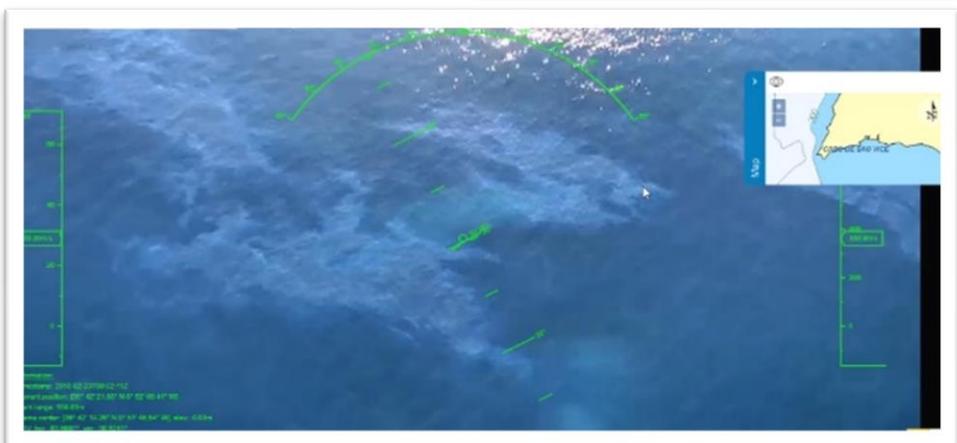
LOCATION	STATUS	SPEED
36° 54' 01.97" N 6° 38' 04.76" W	Under way using engine	23.00kts

TYPE	CALL SIGN	DESTINATION
Reserved for future use		

SHIP TYPE	LAST UPDATE
	2019-02-28T12:59:33Z

	Sensor	Description
	EO/IR camera - Laser illuminator - Still camera	Prime sensor of different resolution, sensitivity and DRI (detect, recognise and identify) to observe during day (EO) and during night (IR) what happens on Sea.
	Maritime radar SAR modes	with Maritime Moving Target Indicator, and optionally with imagery modes for environmental monitoring
	Emission sensor / sniffer	For the detection of SOx and NOx, and thus the fuel sulphur content to help enforcing the sulphur directive
	Optical scanners	In the optical <i>and</i> IR to scan automatically the sea surface for objects of interest
	Mobile frequency detection	For the detection and location of mobile phones on Sea
	Radar detector	For detection and location of radar emitters on Sea
	AIS	AIS signal detection, if remote from terrestrial AIS
	Distress sensor	For the collection of distress signals in order to shorten reaction time

Example: need for completing RPAS picture with other sources



Other Data Sources to Enhance RPAS Services

- **Vessel data (local)**

- Vessel position and track data (AIS, VMS, LRIT, other)
- Ship Database data – Central Ship Database

- **Earth Observation Data (local)**

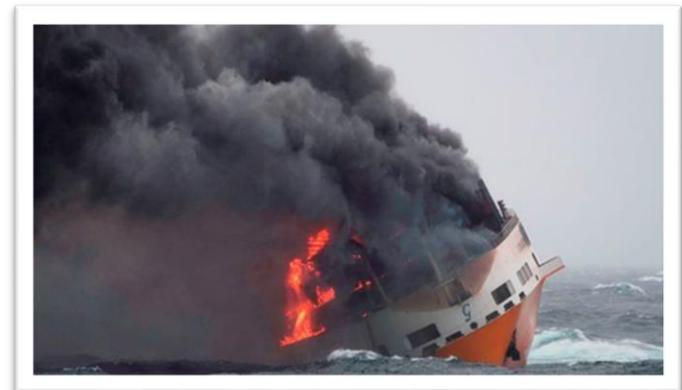
- Satellite image acquisition footprint;
- CleanSeaNet Oil Spill polygons;
- Correlated and Uncorrelated Vessels (VDS).

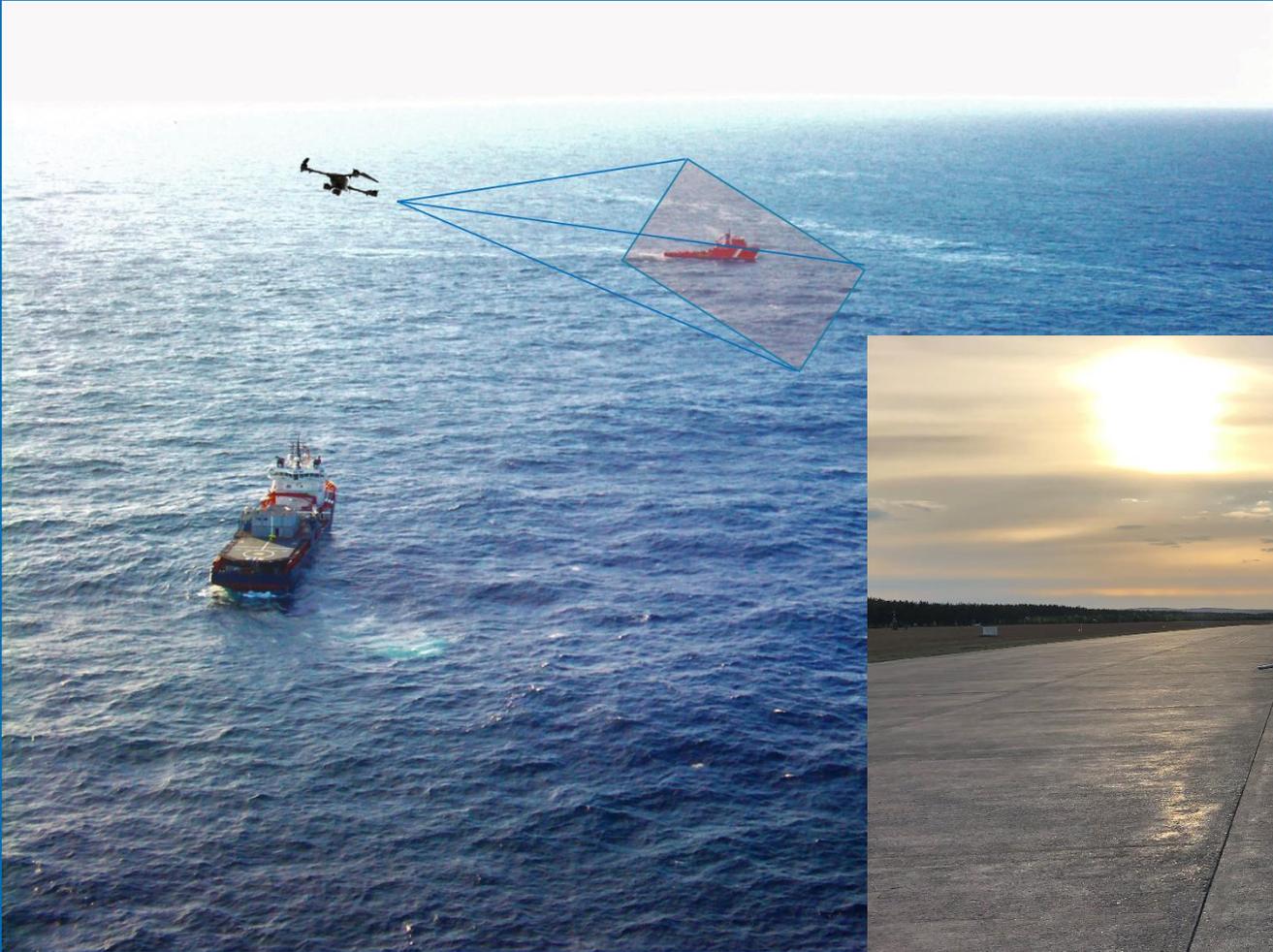
- **Access needs**

- Complete local picture with additional sources

- **Proposal to obtain access through IMS National POC**

- Request done per Deployment/Operation
- 1-3 Member States per operation
- **RPAS Hosting Member State to contact directly IMS POC within the Member State to obtain access.**
- RPAS Data Centre and/or SurvSeaNet systems to manage access rights





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European Maritime Safety Agency