



RPAS Demonstration in support of Coast Guard functions

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- Instituto Nacional de Técnica Aeroespacial – INTA
- Salvamento Marítimo – SASEMAR
- Servicio de Vigilancia Aduanera – Aduanas (Spanish Customs)



INTA's facilities



Salvamento Marítimo



Aduanas

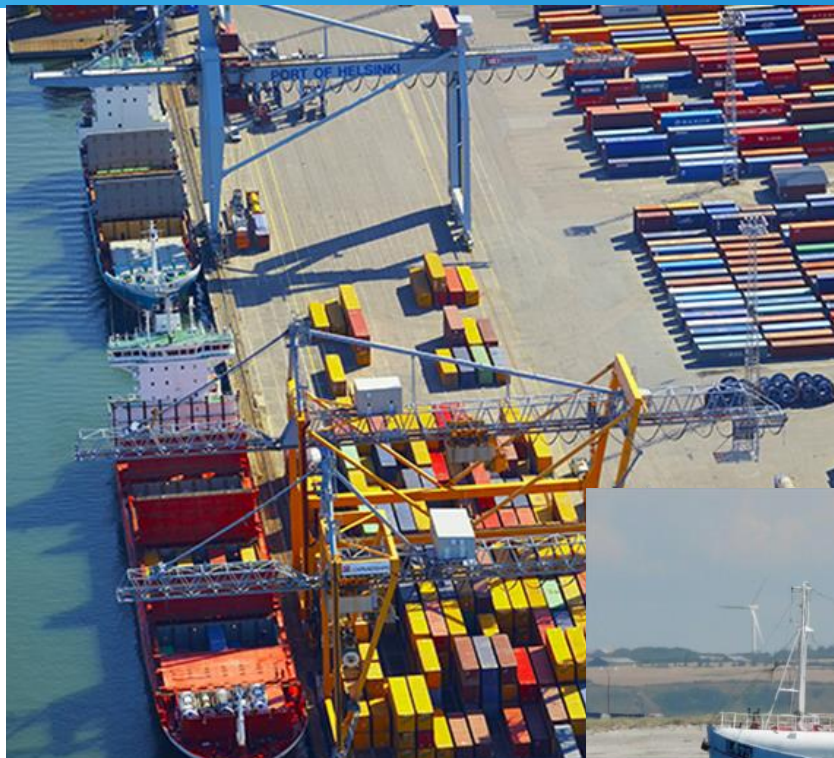
- **European Parliament initiative ahead of the Coast Guard Package**
- **To promote coast guard cooperation amongst the three Agencies (EMSA, Frontex and EFCA) and the Member States:**
 - Sharing information
 - Providing surveillance and communication services
 - Capacity building
 - Risk Assessment
 - Multipurpose operations, sharing of assets

Task	Topics	Activities	Coordination
TASK 1	Sharing information	<ul style="list-style-type: none">Fusing and analysing data	EMSA
TASK 2	Surveillance services	<ul style="list-style-type: none">Remotely Piloted Aircraft SystemsMaritime Patrol Aircraft etc	EMSA Frontex
TASK 3	Capacity building	<ul style="list-style-type: none">Guidelines, recommendations & best practices	EFCA
TASK 4	Capacity sharing	<ul style="list-style-type: none">Multipurpose operations	Frontex



- **Technical capabilities of the state-of-the-art RPAS services in the civil maritime surveillance domain.**
- **Test the Concept of Operations (CONOPS) for multipurpose RPAS missions in support of coast guard functions.**
- **Simulation of several flight scenarios and demonstration of the real time decision making process in maritime surveillance missions based on dissemination and exploitation of data collected and provided by RPAS.**

EU Maritime Challenges



RPAS bringing the gap...

Remotely Piloted Aircraft Systems



Limited
Availability &
Fixed Timing

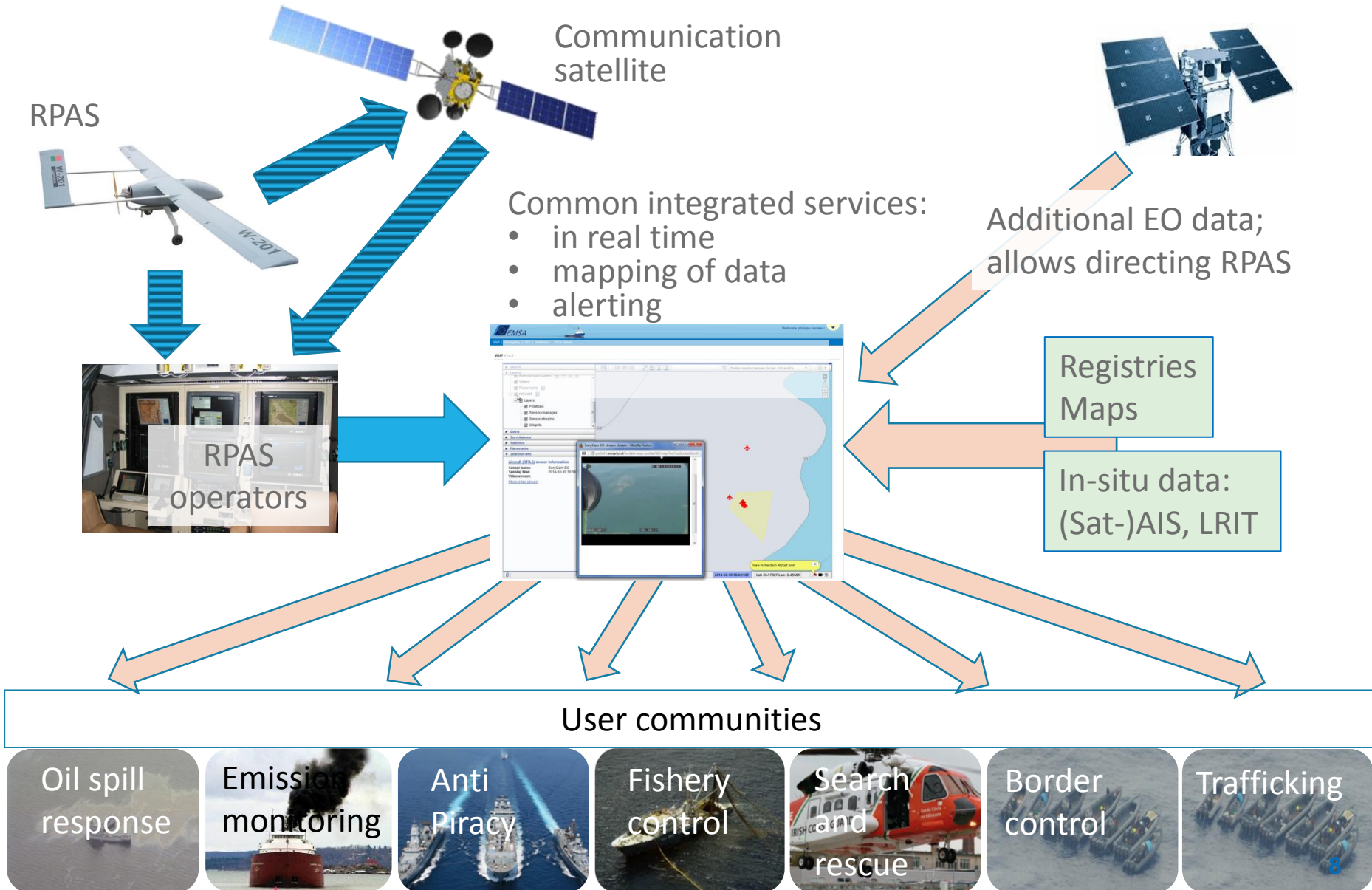
How can
RPAS complement
maritime
surveillance?



Limited
range



Goal: Integrated services



OP/06/2016: Marine Environment

- Anti-Pollution Measures:
EUR 10 million over 4 years
- Marine Pollution Detection
and Monitoring
- Ship Emission Monitoring
- 4 Contractors



OP/12/2016: Supporting Coast Guard Functions

- EU Border Package:
EUR 67 million over 4 years
- Multi-purpose contracts
- Supporting Member States
- Joint capability of EMSA, FRONTEX and EFCA
- 4 Contractors



Overview RPAS portfolio



Main Service	Endurance	Size	Lift-off	Particularities
Maritime surveillance	10 h	150 kg	Runway	EO/IR, AIS Radar Satcom
Maritime surveillance	10 h	120 kg	Runway	EO/IR, AIS Radar Satcom
Emission	12 h	22 kg	Runway Catapult	SOx sensor EO/IR, AIS
Emission	6 h	30 kg	Runway Catapult	SOx sensor EO/IR, AIS
Maritime surveillance	6 h	180 kg	VTOL	Radar, EO/IR, AIS
Mar. surveillance Emission	6 h	25 kg	VTOL	SOx sensor EO/IR, AIS



Multi-mission Capability:

- Detection of pollution and potential polluters
e.g. oil spills
 - Ship Emission monitoring
- } Marine Environment
- Support to Search And Rescue operations
 - Monitoring anchorage areas & identification of vessels
 - Identification and characterisation of cruising vessels
 - Detecting fishing activities
 - Monitoring (non)-fishing zones
 - Inspecting oil/gas platforms
 - Surveillance and detection of small boats
- } General Maritime Surveillance Operations

(Depending on configuration)

Sensor Payload

- Maritime radar
- Electro-optical cameras
- Thermal infrared cameras
- SOx (and CO2) sniffers
- Distress signal transponder
- AIS transponder

Operational Advantages

- **Real Time Data**
- Medium range detection of vessels and oil slicks.
- “Streaming the maritime scene”
e.g. photographic evidence and/or observing vessel activities.
- Fire analysis, locating people, general observation at night or in poor visibility.
- Estimate Sulphur concentration in ship fuel
- Determine location of person/object in distress.
- Identify vessels and position



CONOPS to be tested today:

- **Maritime patrol and general surveillance**
- **Marine pollution**
- **Vessel identification and tracking**
- **Search and rescue**
- **Illegal fishing or anti-drug trafficking monitoring**

Use of RPAS for air emissions monitoring not today.

Time	Agenda Item		
9:00 – 10:00	Speeches & Presentations (TBC): <ul style="list-style-type: none"> • INTA • EMSA & Introduction to the Coast Guard Pilot Project: RPAS Demonstration • FRONTEX • EFCA 		
10.30	Take off of RPAS flight demonstration no. 1 (at the take off area)		
11.30-12.30	Visualisation of RPAS flight demonstration no. 1 (from the media room, coffee will be available) Presentation of the RPAS on the ground (outside the media room, available all day)		
12.30	<u>Optional</u> : RPAS recovery visualisation (at the take off area)		
13:00 – 14:30	Lunch break		
<u>GROUP I</u>		<u>GROUP II</u>	
14:30-15:30	Presentation of the RPAS on the ground (outside the media room, available all day)	14:30	Bus travel to Almonte Aerodrome
15:30-17:30	Visualisation of RPAS flight demonstration no. 2 (from the media room)	15:30	Take off of RPAS flight demonstration no. 2
		16:00	Bus transportation back to INTA
17:00 – 17:30	Visualisation of the rest of RPAS flight demonstration no. 2 (from the media room, coffee will be available)		
17:30 – 18:00	Closing of the demonstration and final remarks		



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 **EMSA**
European Maritime Safety Agency