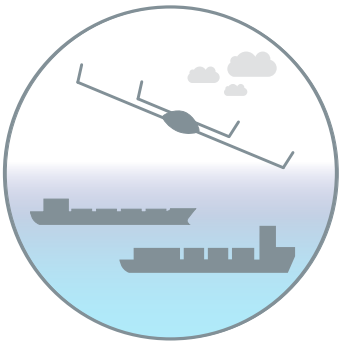
RPAS SERVICE

MONITORING PORT ACTIVITIES

EMSA
European Maritime Safety Agency

THE CHALLENGE IN EU PORTS



Keeping ports safe and secure requires a variety of different daily monitoring activities which can be challenging, especially when dealing with a large surface area. Ports engaged in global trade are responsible for the safety and security of the many millions of containers and freight tons which transit yearly through the kilometers of quays and storage areas, interconnecting to other ships and modes of transport (rail, road, waterways). Large ports may also be close to densely populated areas making it vital to consider the impact of their activities on the surrounding environment. Remotely Piloted Aircraft Systems can be used to support the day-to-day monitoring of port operations and can be particularly useful when rapid action is needed, to respond to incidents of pollution in a port area, for instance.

THE EMSA SERVICE

Remotely Piloted Aircraft Systems (RPAS) can be deployed to support the day-to-day monitoring of port operations and rapid response to pollution incidents in large port areas. Several use cases can be defined:

- estimation of size of reported oil spills and litter
- support for oil clean-up operations
- detection of illegal venting of gasses from cargo
- floating debris detection
- checking compliance with shore power
- checking accessibility for emergency services
- support to inspections of fendering and nautical infrastructure.

Flights in port are streamed live to EMSA's RPAS Data Centre where they can be viewed by authorised port users to monitor the situation on the ground and take action as and when necessary.

Each EMSA deployment will be for a minimum of three months and the RPAS will be under the command (operational instruction) of the relevant Member State or port authority or agency.

Actual flight control/management will be undertaken by qualified pilots from the EMSA service provider.

To improve operational efficiency and effectiveness, the relevant Member State authority should provide an appropriate take-off/landing area, as well as support in obtaining the RPAS permit to fly from the national aviation authority for the deployment concerned.

The EMSA service should be requested well in advance (at least six months before the expected start time of operations) and is scalable so that it can be provided to several Member States in parallel, subject to available budget and resources.

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KEY CHARACTERISTICS

Advantages of using RPAS include:

- Coverage of large port areas and their approaches, including difficult-to-reach areas
- Rapid flight activation: flights can begin very quickly once the operation has started, and the contractor has been mobilised
- Flight data can be enhanced with other maritime data available to EMSA and integrated in local or EMSA systems
- Flights can take place in potentially dangerous environments (e.g. in places with gas emissions) as there is no human pilot on board.

The sensor payload can include the following:

- Electro-optical cameras to record the maritime scene, e.g. photographic evidence linking the plume to the vessel and/or general observing of vessel and port activities and their approaches
- Thermal infrared cameras for plume shape identification, detection of illegal venting of gases by ships, fire analysis, general observation of vessel and port activities during the day or at night, support to oil slick monitoring and pollution response operations
- Depending on the RPAS type, gas sensors for SOx and CO_2 emissions monitoring in port or anchorage areas near ports.