



Assessment of the RPAS operations deployed from on board OPV [REDACTED] in terms of the added value for fisheries inspection and control

1. Background

The European Fisheries Control Agency requested in May 2019¹ the service to the European Maritime Safety Agency (EMSA) of a Vertical Take-Off and Landing lightweight Remotely Piloted Aircraft System (RPAS) to be deployed from on board the EFCA chartered Offshore Patrol Vessel [REDACTED]. The request was for an initial experience of operating an RPAS from the chartered OPV for fisheries control purposes, in particular this RPAS would be used as a complementary fisheries control tool such as to have an initial pre-boarding assessment for fisheries inspectors (before boarding a fishing vessel) and to check certain fisheries control measures remotely. An initial assessment of the viability to deploy the RPAS from on board the EFCA chartered OPV was made with a positive outcome² and a satellite communication (service provided also by EMSA) was also established for streaming in real time to the EFCA Coordination Centre.

2. Objective

The objective of this document is to make an operational assessment on the RPAS service deployed during the period of deployment between the 1 September and the 30 November 2019, in view of future contracting of the service. The assessment covers:

- The practical aspects of deploying the RPAS from on board OPV [REDACTED] using (e.g. tasks on board for the EFCA Liaison Officer on Board (LOB), Operational Procedures);
- Operational added value for fisheries control of using RPAS from board of OPV [REDACTED] (with the current RPAS or with RPAS having higher endurance);
- Possible improvements that could substantially enhance the service.

¹ Ref. Ares(2019)3137186 - 13/05/2019

² [REDACTED]

3. RPAS main technical specifications

The main technical specification of the RPAS used were the following:

- Weight: [REDACTED]
- Battery powered quadcopter with an endurance of about [REDACTED]
- Max range: [REDACTED] legal and technical max range
- Max working range from target: [REDACTED]
- Maximum Altitude: legally limited to [REDACTED]
- Maximum Speed: [REDACTED]
- Camera 1: [REDACTED]
[REDACTED]
- Camera 2: [REDACTED]

The drone needs to be operated within visual or radio line of sight from the operator without any objects being in between them.

The full technical specifications are available in the technical fiche of EMSA.

4. Summary of operational activity

Patrol	Dates	Geographical Area	Number of RPAS flights	Number of boardings
Patrol 17	1 – 14 Sep 19	Central Med	[REDACTED]	[REDACTED]
Patrol 18	16 – 29 Sep 19	Central Med / Adriatic Sea		
Patrol 19	01 – 13 Oct 19	Central Med / Adriatic Sea		
Patrol 20	15 – 29 Oct 19	Western Med North Atlantic		
Patrol 21	31 Oct – 20 Nov 19	North Atlantic Gulf of Biscay North Sea		
Patrol 22	22 Nov – 04 Dec 19	Baltic Sea		

Important to note: The meteorological limits to fly the RPAS are in general: [REDACTED]
[REDACTED]

5. Operational assessment of deploying the RPAS from on board OPV [REDACTED]

Positive aspects:

- The additional workload for operating the RPAS is not seen as a heavy extra burden for LOBs. From a user point of view it takes little skills to operate the system by giving instructions to the pilot on what part of the fishery operation the LOB wants to observe.
- The footage is of a very good quality and useful.
- It can be used to survey the BFT fishery, especially the cages.
- The light weight RPAS has a legal capacity to fly up to [REDACTED] without any prior requests, based on the Norwegian licence.
- There is only one external operator required to operate the drone, the logistics is very basic (some bags) and the operational and storage space are very limited.
- The impact of the RPAS on the ship exploitation is limited.
- There is a possibility to stream the images live via the EMSA SatCom system to any stakeholder.
- When not known of its presence it is difficult for the target to detect the RPAS when in operation.

Aspects for improvement:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

6. Added value for fisheries inspection and control

The use of RPAS in the fisheries control operations is considered to provide an added value. Some examples of practical cases and possible use of RPAS are provided below:

- Fishing restricted area: A vessel was detected inside a fishing restricted area for some time and left the area once [REDACTED] approached. The RPAS was used to see that the catch was being sorted on board after the fishing vessel left the area. This was a clear indication that the vessel was fishing in the restricted area.
- RPAS used to watch a fishing vessel with the crew sorting the catch and using fish as bait to possibly catch tuna. Discarding fish – possibly to attract tuna. RPAS and good quality of images allowed to have a clear view of what was happening on board.
- RPAS is used to accompany through live stream remotely the inspection team while the inspection team is on board a fishing vessel.

- One LOB considered that the RPAS may be useful for maritime surveillance to detect fishing vessels not transmitting AIS/VMS in order to identify the targets and to obtain the information necessary to call the fishing vessel by radio (especially e.g. when the fishing vessel is at a distance not possible to see with the binocular or when the unidentified fishing vessel is trying to move away from the EFCA chartered OPV. The current RPAS does not have [REDACTED] to allow this.
- The RPAS is a good pre-inspection tool to keep the target vessel under surveillance after informing them they will be inspected

Suggestions to improve:



7. General conclusion and proposed way forward

