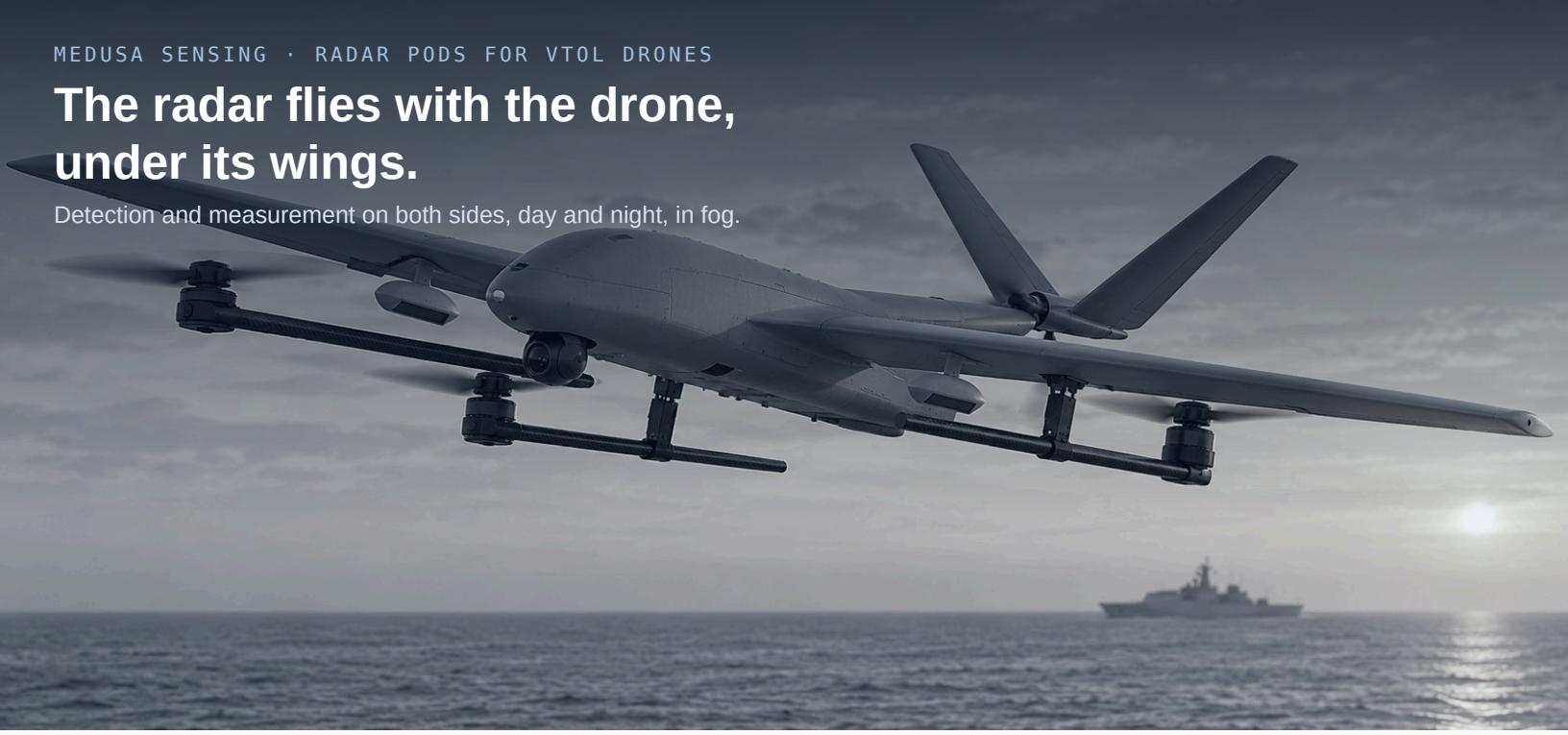
MEDUSA SENSING · RADAR PODS FOR VTOL DRONES

The radar flies with the drone, under its wings.

Detection and measurement on both sides, day and night, in fog.



THE PROBLEM

Maritime patrol drones rely on their camera. Zoomed in, the camera sees a tiny patch of sea and the operator must know where to look. At night it loses detail; in fog, spray or with the sun ahead it stops seeing, and it measures neither range nor speed.

A conventional maritime radar weighs 15 kg or more and does not fit on a tactical drone.

THE SOLUTION

A lightweight radar pod under each wing continuously watches both sides of the drone, with no moving parts. The radar detects, measures and tells the camera where to look; the camera identifies.

Each pod processes on board and sends the flight computer only the contact list, using the GPS and data link the drone already has.

MATURITY

No range has been measured at sea yet. Sea clutter seen from the drone still has to be measured and the pod validated in flight.

PAYLOAD AND ESTIMATED RANGES

Parameter	Estimated value
Pod	≈ 35 × 12 cm · ≈ 1 kg
Coverage per pod	120° sector, continuous
Small drone	200 – 300 m
Small boat	≈ 1 km (not measured)
Helicopter	1 – 2 km
Output to drone	Contact list, in kbit/s

How it is estimated: using the radar equation, from the known performance of commercial components of this class, scaled to the size of each target. It varies with material, aspect and flight altitude.

POSSIBLE MISSIONS

Confirm contacts	Take a close look at doubtful ones
Track fast boats	Keeps them even when they zigzag
Coves and bays	Unlit boats at night
Port protection	Boats and drones approaching

WHAT WE ASK A partner with access to a boat or the coastline to measure real ranges, and a fixed-wing VTOL drone to integrate the pods and test them in flight.

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