MEDUSA SENSING · COASTAL ISR

Who lands at the cove at night and in the fog?

The same payload, over beaches, inlets and estuaries.



1. **Unlit boat** — The radar tracks it through the fog; the camera identifies it.
2. **Beach and road** — People and a vehicle waiting for the cargo.
3. **Known fishing boat** — Flagged by its automatic ID, it raises no alarm.
4. **Tracks to the Harbour Master** — The drone flies back to its nest; tracks arrive in kilobits.

THE PROBLEM

A gimbal camera covers 3 to 5°: sweeping 360° takes about 100 positions and minutes per turn. Whatever it is not looking at does not exist.

On the coast, night adds to the coastal fog. Chile has 6,435 km of mainland coastline, and the Maritime Police had 289 posts for the entire coast. In remote coves such as Caleta Vítor, speedboats unload drugs where there is no permanent surveillance.

MATURITY

No range has been measured yet. Sea clutter as seen from the drone and hover drift still need to be measured. A stationary boat is the hard case.

PAYLOAD AND ESTIMATED RANGES

Parameter	Estimated value
Payload mass	2.3 – 4.7 kg
Power draw	100 – 150 W
Person on the beach	330 – 400 m
Boat or skiff	≈ 390 – 700 m (not measured)
Pointing error	≈ 0.15° (camera: 3 to 5°)

How it is estimated: an automotive imaging radar detects a car at about 350 m. With four chips combined and longer dwell on slow targets, that range increases and is then scaled to each target's size.

THE ASK

A counterpart with access to a pier or cove and to a boat for measurement, and a drone platform to evaluate the payload. The initial platform is bought off the shelf.

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