

ViDAR

Visual Detection and Ranging

Wide-area maritime search and surveillance with high-resolution imagery



UNMANNED AIRCRAFT SYSTEMS



ViDAR is an airborne wide-area maritime search payload that pairs automated target detection with high-resolution identification, empowering operators to find elusive objects over vast areas that other search methods often miss.

KEY BENEFITS & FEATURES

Wide-area search and surveillance

- Delivers autonomous wide-area maritime search and surveillance at an unprecedented small Size, Weight and Power (SWaP)
- Search a 20-nm-wide swath of water and detect objects that traditional maritime search sensors often miss, such as low-profile semi-submersibles, marine mammals, and humans.

Demonstrated daytime capabilities

- Search area of approximately 13,360 nm² in 12 hours
- Target and distance detection of a person in the water from >1.7 nm to a single deck car ferry from >30 nm
- Detects targets not detected by traditional radar
- Proven to detect 98% of targets ranging from a person in the water to large ships

Automated target detection

- Pairs a scanning search camera with a high-resolution nose turret for automatic detection, cataloging and selective cross cueing
- Uses a modular payload sensor suite and onboard image processing to detect and positively identify maritime targets

Quick actionable intelligence

- Distinguishes between water and objects, making it easier for the operator to rapidly locate, track, and catalog multiple objects of interest for map location overlays, tracking and target interrogation.
- Autonomously ranked to increase human operator performance
- Unlimited multi-target tracking and geo-location
- Cross correlation with AIS targeting



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Rapidly locate, track, and catalog multiple objects of interest



SPECIFICATIONS

ViDAR User Interface

The screenshot displays the ViDAR User Interface with several key components:

- Live Thumbnail Strip:** A horizontal strip at the top showing a sequence of frames from the live feed, with a magnifying glass icon over one frame.
- FMV Feed:** A large central window showing a live Full Motion Video (FMV) feed of a ship named 'SIDER WOMPON' from Panama.
- Surveillance Area:** A map view on the right showing a circular surveillance area with various colored pins and icons representing detected objects.
- Thumbnail Strip for Points of Interest:** A strip at the bottom showing a sequence of frames with magnifying glass icons over specific points of interest.

Callout boxes identify these features: **Live Thumbnail Strip**, **FMV Feed**, **Thumbnail Strip for Points of Interest (unlimited pins)**, and **Surveillance Area**.

ViDAR TURRET

- Scan type: Five Increment Step Stare
- Angular coverage: 180° *FOR limits and FOV scan rate are configurable to support mission flexibility

EO TURRET

- Wavelength: 400–900 nm
- Pixels: 1280 x 720
- Tilt: 30° Up, 90° Down
- Pan: 360° (Endless)
- Slew rate: 50°/Sec
- Performance @ 1 Hz and 2 Hz: 59 dB attenuation
- Power supply range: 12.6–14.4 VDC, 16 with nominal, 17.5 with peak

DEMONSTRATED DAYTIME DETECTION CAPABILITIES

- Person in water: >1.7 nm
- Six-person raft: >3.5 nm
- 20' fast boat: >9.1 nm
- 40' fast boat: >17.5 nm
- Single deck car ferry: >30 nm