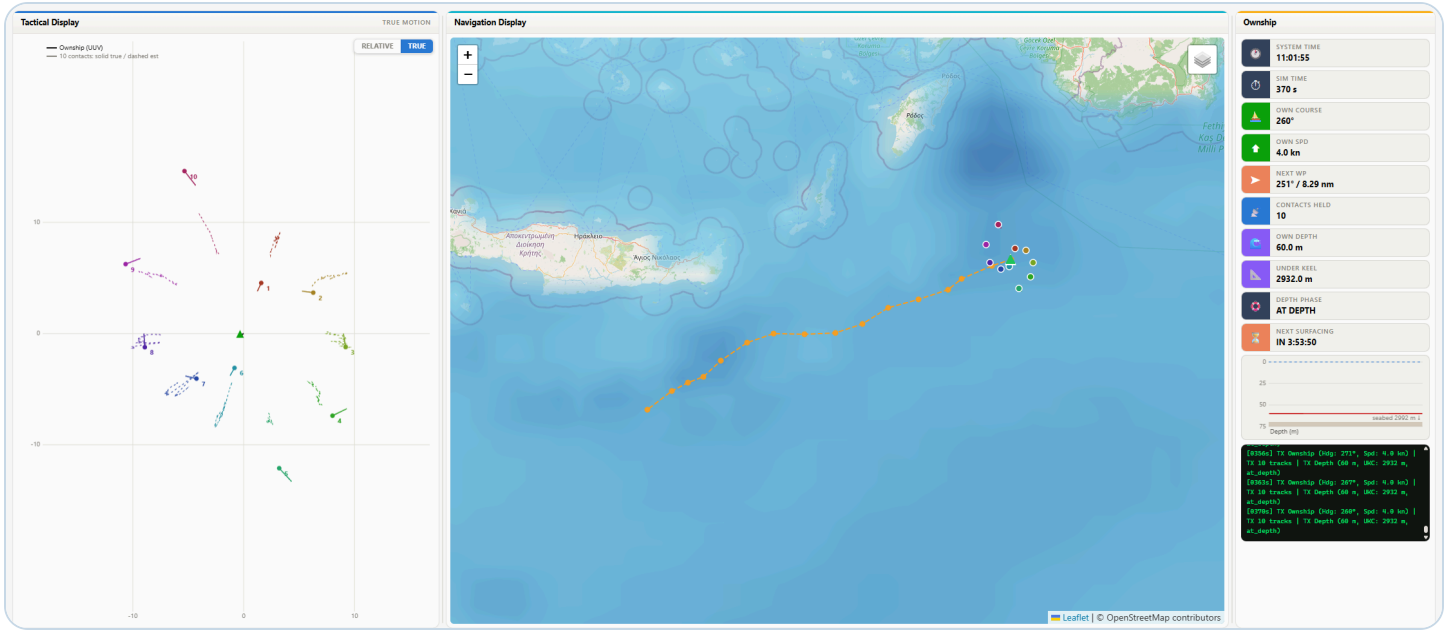


03 · AUTONOMOUS NAVIGATION & TACTICAL MISSION EXECUTION

TRIDENT

Navigate. Track. Decide.
At sea, aboard UUVs.



Runs the whole mission. Autonomously executes a Poseidon mission package with feedback as ordered: harbour departure, anti-collision transit, diving, comm-depth surfacing, sensor duty cycles and harbour entry.

Knows what it is tracking. Labrador Edge's bearings-only TMA follows ten contacts at once, for Trident.

Adapts within limits. Where the mission allows, it changes search patterns, sensor use, local route and depth, responds to contacts, avoids obstacles and manages energy.

Closes the loop. Progress, observations and outcomes return to Poseidon over telemetry.

10

contacts held at once in Labrador Edge's TMA (course, speed, range, CPA, TCPA), acted on by Trident



Poseidon waypoint navigation, anticollision algorithms with autonomous track regaining



Bathymetry-aware depth, clearance and surfacing



IN THE AIR
ZEUS

The same autonomy and mission types as Trident, but flown aboard UAVs.

MISSION TYPES

One engine. Eleven missions.

Multi-phase missions, with acoustic, magnetic and optical sensing



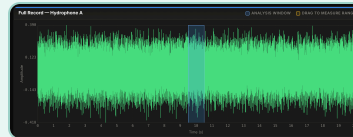
MISSION LIFECYCLE



↻ Uses Edge Computing for feature extraction. Material observations are processed by Poseidon and update Nereus after User Confirmation.

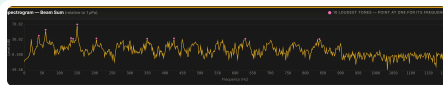
LABRADOR

INTEGRATED SENSOR SUITE



3 sensing modalities, one suite
Acoustic · Magnetic · Optical

ACOUSTIC



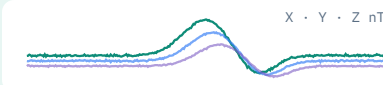
Direction finding. Bearing estimates even on single omnidirectional array.

Full 3-D localisation. The array resolves range, bearing and elevation, modelling the true spherical wavefront.

Tested, not assumed. Trials show how well a given array performs.

See the signal. Spectrograms, Welch spectra and tonal peaks; DSP validated and user configurable.

MAGNETIC



Three-axis sensing. Magnetometers measure the magnetic field along x, y and z, in nanotesla.

Detect and classify. Magnetic signatures aid detection and aid in contact classification.

Anomaly mapping. Multi-channel survey data streams in live and is rendered as a heatmap per channel, or as line profiles for single-track surveys.

OPTICAL



One image, one vessel. From an image, estimates range, bearing, aspect and heading.

Geometry you can check. 3D ship model and adjustable camera are overlaid on the image, so every estimate can be judged by eye.

Works with what you have. Standard default ship dimensions aid initial classification. Refinements are possible subsequently.