



STEERING THE MARITIME INDUSTRY TOWARD A SUSTAINABLE, ZERO- DOWNTIME FUTURE

Delivering cognitive AI insights that optimise vessel performance, reduce emissions, and eliminate mechanical failures.

The Journey So Far

Groundup.ai delivers AI-powered Cognitive Maintenance that equips maintenance teams with real-time intelligence to keep mission-critical equipment running at peak performance with zero downtime.

Powered by proprietary IoT sensors and autonomous AI agents, their platform continuously analyses machine data to detect hidden faults, predict failures, and prescribe precise maintenance actions before problems arise.

This represents a generational leap over traditional condition monitoring; while standard systems simply flag an anomaly, Groundup.ai provides the full picture.

Their solution explains exactly why an asset is degrading, identifies the specific fault, and delivers actionable repair steps.

Innovation Opportunity

Maritime operations face a unique challenge: blind-spot maintenance. When vessels are at sea, a single engine or pump failure can lead to millions in lost revenue and safety risks. Furthermore, poorly maintained assets are inefficient, consuming more fuel and increasing carbon emissions.

Traditional manual inspections are insufficient for modern, complex fleet systems, making it difficult for operators to achieve the precision required for today's sustainability standards.

Solution

By deploying Groundup.ai's Cognitive Maintenance solution on critical rotating mechanical assets, such as main engine motors, gearboxes, and pumps, we capture high-fidelity vibration and acoustic data. Their AI, GINA, then compares this data against our proprietary library of 5,000+ industrial failure signatures to identify early-stage wear, allowing crew to perform precision maintenance.

By keeping assets optimised and running at peak mechanical efficiency, we directly reduce fuel waste and environmental impact.

Pilot Project Key Results

Defense-Grade Validation: Secured the Republic of Singapore Navy as a major client and received the MINDEF Exemplary Innovator Award (2022) for excellence in AI-driven maintenance.

Operational Uptime: 18% increase in uptime, enabling more efficient vessel operations and fewer interruptions for a Singapore-based ship management company.

Tier-1 Maritime Defense Partnership: Secured a major eight-figure contract with a Maritime Defense organization, further establishing Groundup.ai as a trusted provider of mission-critical reliability at a global scale.

Founded 2021, Singapore

“PIER71's mentorship, resources, and networking were genuinely crucial for Groundup.ai. They significantly accelerated our growth, deepened our market understanding, and helped us build a vital network for our AI-driven cognitive maintenance solution. As a Smart Port Challenge alumnus, I'd certainly recommend partnering with the team. It's an indispensable launchpad for startups in the maritime space.

Leon Lim,
CEO & Founder

Looking Forward

Having already established a strong presence in the Middle East, Groundup.ai is now scaling into Japan, Australia, Hong Kong. Optimized assets are the cornerstone of a sustainable maritime future. Their goal is to ensure that critical machinery remains reliable, efficient, and emission-optimised throughout its entire lifecycle.