Engine Hyper Cube

Performance Management

FOR THE MARITIME INDUSTRY

Propulsion Analytics

About Us

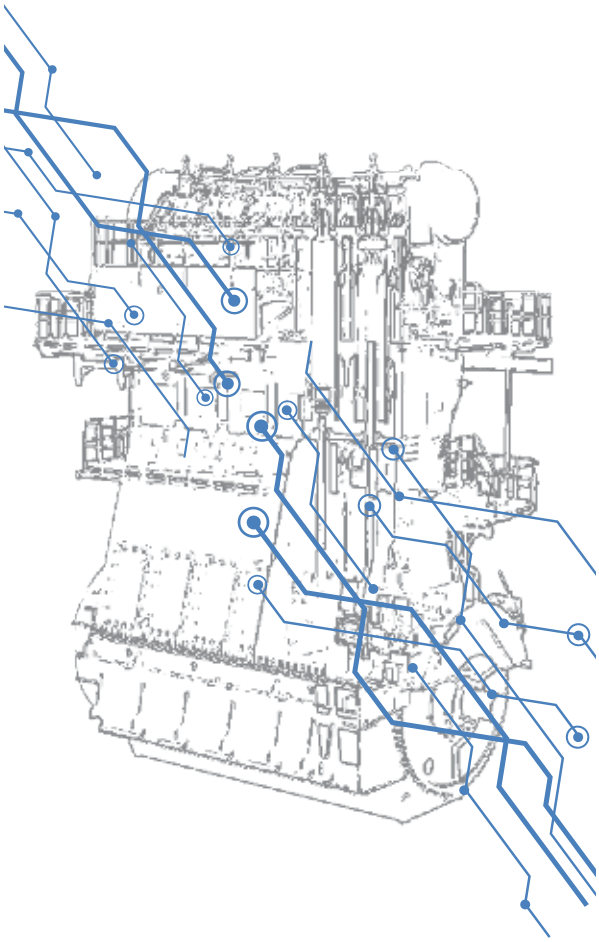
Propulsion Analytics is an innovative company in the area of performance management and energy efficiency for the maritime industry and has been set up with the vision to apply state-of-the-art technology to the world shipping community.

The company offers products and services focusing on engine performance management and has pioneered the use of thermodynamic simulation models in conjunction with machine learning techniques, for performance assessment, fault diagnosis and optimisation in service.

Propulsion Analytics is the partner of choice for Winterthur Gas & Diesel Ltd. in the development of their Engine Diagnostics System (EDS) for all 2-stroke diesel and dual-fuel engines.

Extract meaning from your data

Analyzing routine data collected from the vessels, we extract and display meaningful information (KPI's Graphs/Trends, Faults/Alarms) regarding the status of your fleet's engines and we provide diagnostics, prognostics, optimisation recommendations and information towards better planning of your maintenance based on condition assessment.



Digital Twin in action

We have pioneered the use of thermodynamic simulation models in conjunction with machine learning techniques in order to generate the Digital Twins of your engines.

The Digital Twin is tuned to be an exact replica of your actual engine in operation, reflecting the physical relationships of all primary parameters (temperatures, pressures, rpm) and resultant performance values (torque, fuel consumption and emissions) and how these are influenced by ambient conditions, load, speed and fuel type at any operating point.

The Engine Hyper Cube® software, by comparing operational engine measurements to the digital twin, can then reliably provide a detailed engine status assessment and optimization guidelines.

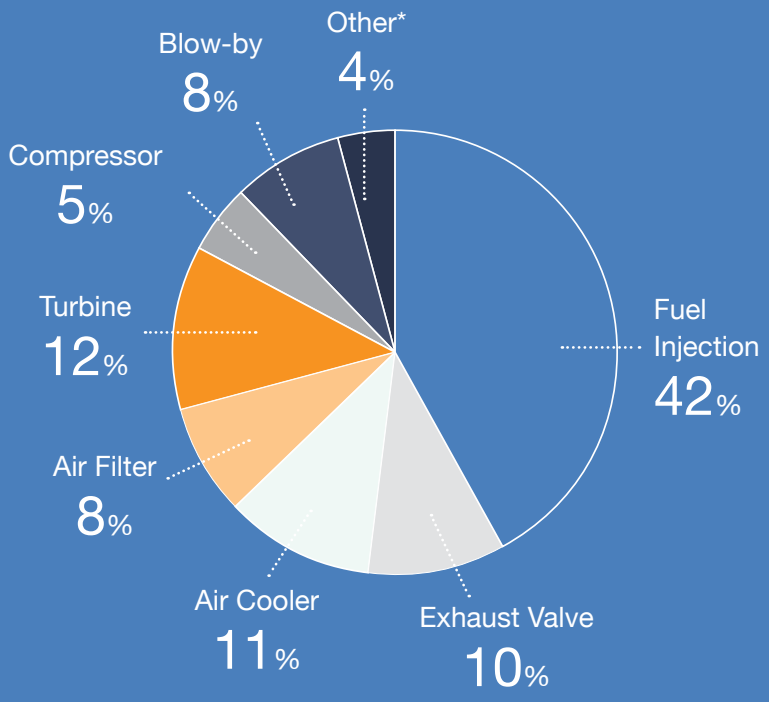
The Engine Hyper Cube® applies to all conventional and electronic, 2 or 4 stroke, Diesel, Gas or dual-fuel marine engines

No H/W requirement

There are no requirements for installation of specialized H/W equipment onboard.

Actionable Diagnostics

Through advanced engineering rulesets, detailed fault simulation techniques and engine designer guidelines, the Engine Hyper Cube® provides specific diagnostic findings along with actionable recommendation steps for each fault identified.



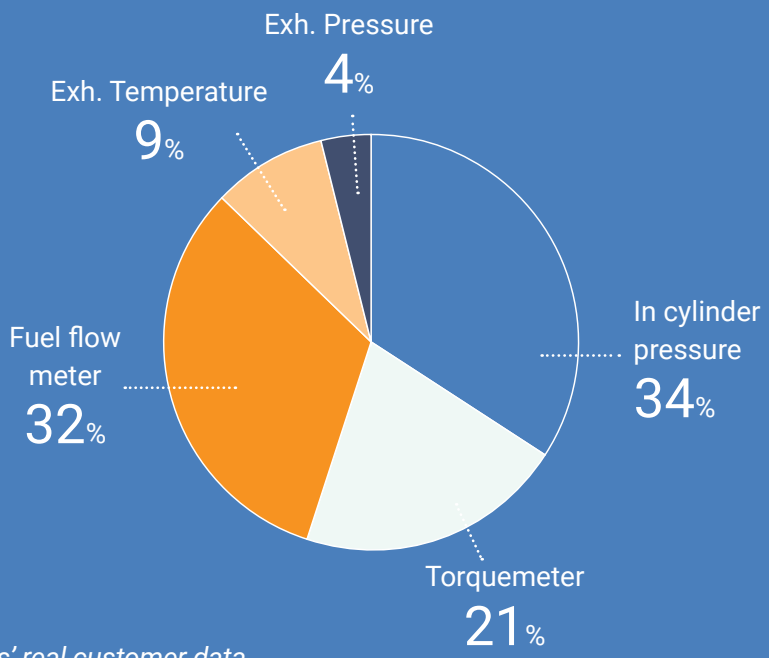
Most Frequent Engine Faults

Faults in the Main Engine are considered to be the most frequent and the most expensive damage in vessels. Engine Hyper Cube® is able to identify all the major engine issues and many more...

** Other: Valve timing error, increased backpressure, insufficient air supply, engine overload*

Most Frequent Sensor Faults

The Engine Hyper Cube® also identifies problematic measurements and faulty/non-calibrated meters, like issues with torque meters, flow meters, in-cylinder pressure measuring devices etc.



The above percentages are based on Propulsion Analytics' real customer data

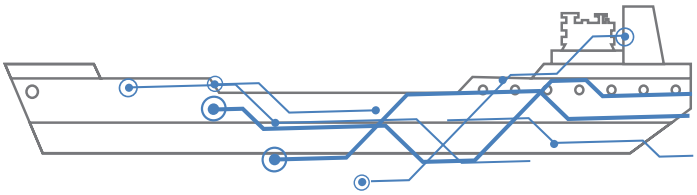
Look after your fleet

The Engine Hyper Cube® is a valuable status assessment and decision making software to be used by the management and the technical/engineering teams ashore. It can prove to be a great tool towards better planning of the maintenance based on condition assessment, offering:

- Dashboard view of overall vessel/engine condition
- Component health and efficiency KPI's
- Detailed diagnostics of possible faults (engine & sensors) and recommended actions
- Financial impact of faults identified
- Timeline analysis for a number of engine parameters
- Sister vessel/engine comparison

Engine Hyper Cube®

The Engine Hyper Cube® is part of a complete Engine/Vessel Performance monitoring suite that offers full control of your fleet

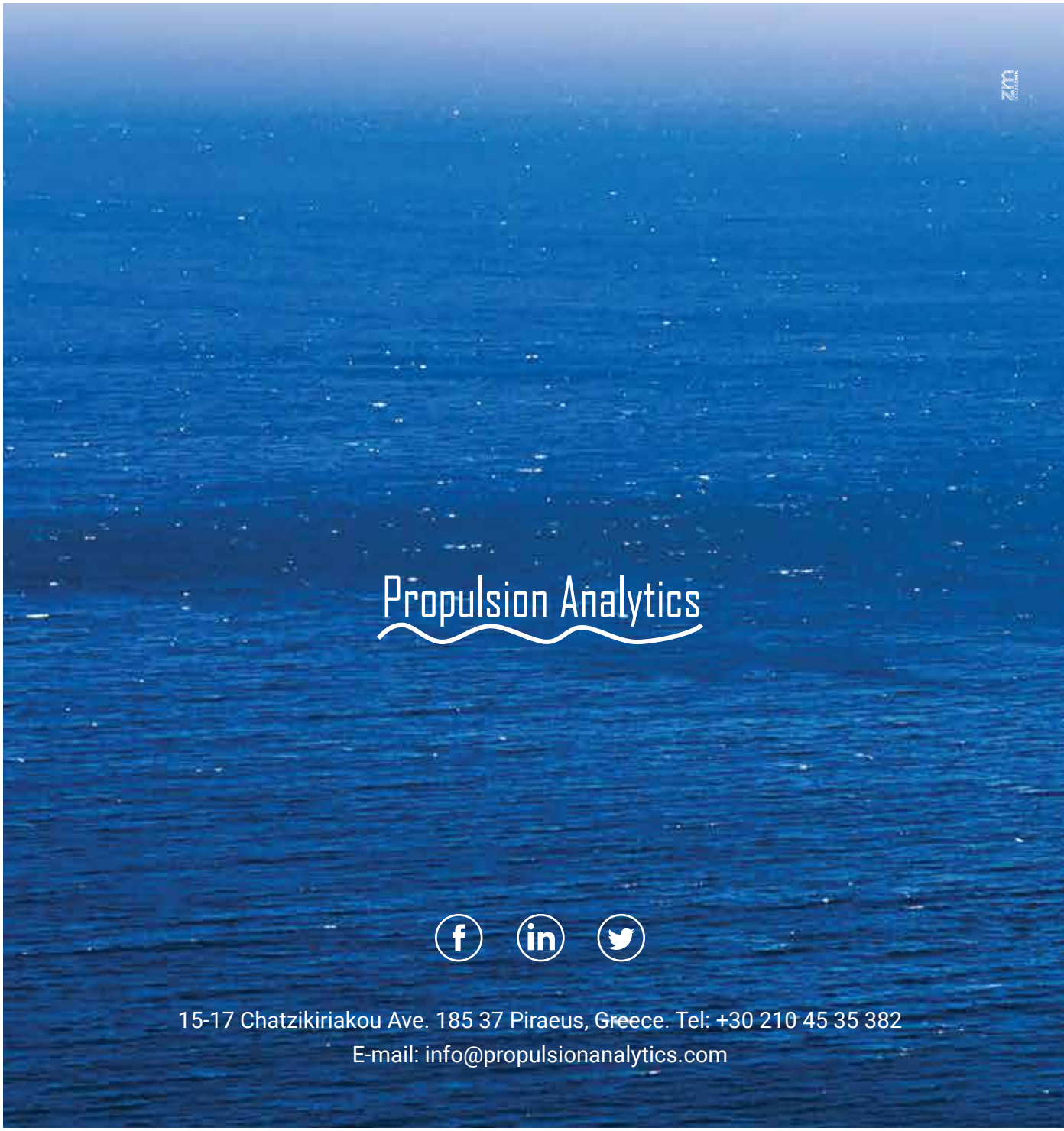


We adapt to your preferences

We typically deliver the Engine Hyper Cube® software in the shipping company, shore office to be used by internal staff. However, you might want to experience a smoother transition through our service option. Our experts perform the monitoring and analysis for you and provide all the support you need to resolve engine faults and optimize the operation of your engines.

Performance Management that guarantees

- Minimum unexpected downtime
- Increased operational efficiency
- Optimization of maintenance



15-17 Chatzikiriakou Ave. 185 37 Piraeus, Greece. Tel: +30 210 45 35 382
E-mail: info@propulsionanalytics.com

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