



Cassandra

360° Technical Fleet Optimisation



Cassandra

Achieve Operational Excellence

Cassandra is a **new breed** of performance monitoring tool, which utilises a layer of artificial intelligence to **actively monitor** every vessel, and direct your attention to where it's needed most. This allows you to run the most efficient operation possible.

Features

-  Active monitoring & alerting
-  CO₂ emissions monitoring
-  Hull monitoring
-  Main engine & auxiliary equipment monitoring
-  Automated reporting



75% TIME SAVINGS THROUGH
ACTIVE MONITORING

Active monitoring

AI-generated performance models, and alerts, that work for you

Cassandra creates custom AI-generated models based on the performance profile of every individual vessel. This allows it to truly understand what 'good' performance looks like for each ship, and to provide you with **instant feedback** when a corrective action should be taken.



3

CUSTOM AI
MODELS PER
VESSEL

240+

DATA POINTS
ANALYSED
PER VESSEL



16.4%

FUEL OVERCONSUMPTION



11.2%

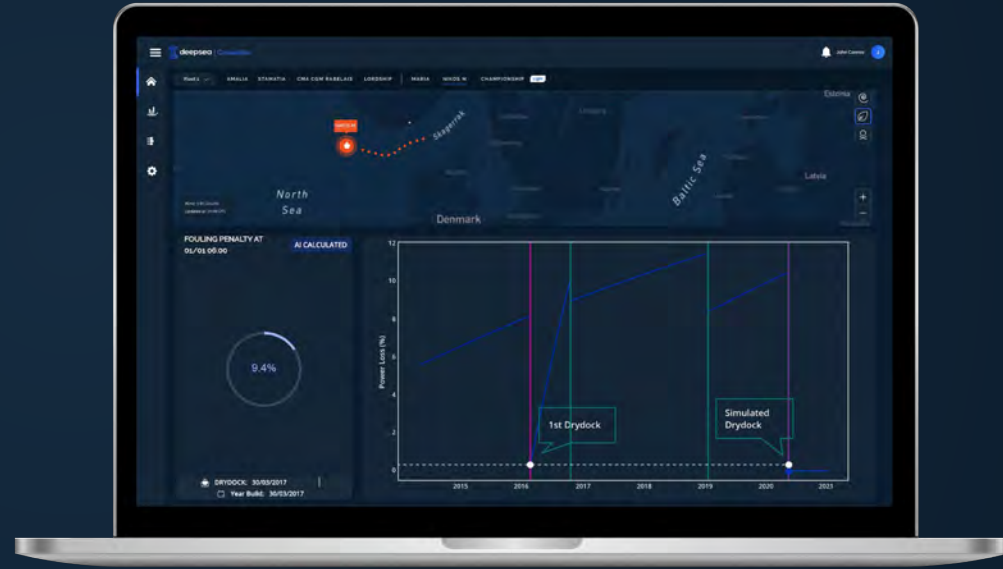
FOULING PENALTY

Accurate models enable real savings

Why DeepSea succeeds where state-of-the-art solutions fail

Accurate, tailored models of each vessel's hull and engines let you reliably answer questions such as:

- Is a given increase in fuel consumption caused by weather, fouling or inefficient main engine operation / fuel loss?
- How much could performance be increased by cleaning the hull?
- Are noon reports and sensor readings accurate?
- What fuel consumption can be expected for different speeds, drafts and weather?
- How much has a given hull cleaning actually reduced fouling?
- How has of an energy-saving device affected performance at each speed?
- Are generator engines being used optimally?



Optimising workflows with Cassandra

AI and active monitoring enable repetitive tasks to be automated

JOB TO BE DONE	TRADITIONAL APPROACH	DEEPSEA APPROACH
Establishing the consumption warranty	Using out-of-date past voyage information	AI-generated fuel-consumption models
Keeping vessel within expected limits	Manual checks, experience, basic statistics	Active monitoring (AI) & alerting
Assessing the fouling state	Assumption-laden formulas or visual inspection	AI-generated fouling models
Troubleshooting equipment	Historical comparison and manual checks	Automated alerts directing human intervention
Benchmarking vessels	Comparing sister vessels	Automated indexing
Company Reporting	Repetitive manual work	Automated reporting
Improving vessel efficiency	Complex manual work, external consultants	Active monitoring (AI) & alerting
Regulatory compliance	Repetitive manual work, external consultants	Automated indexing & data collection

Working with noon reports or sensor data

A single platform for your whole fleet, enabled by AI



Assessing the needs of each vessel

We evaluate all possible data sources for every vessel in order to design the best data strategy for you, given your needs.



Getting data from every source

Our system integrates with your existing data sources (noon reports, ERPs, sensor data systems and on-board sources). To this we add 3rd party data (weather hindcasts, forecasts and AIS data).



Boosting data quality using AI

Poor data quality is the number one obstacle to obtaining value from vessel data. Our AI data models can automatically detect, filter and remove poorly synchronised, badly calibrated, noisy or otherwise invalid data points.



Enabling more powerful AI with less data

Leveraging our rich data pool, we use **transfer learning** to adapt insights from models of similar vessels. This enables accurate AI models to be obtained from even small or sparse amounts of data.



Collecting live data from your vessels

We have developed the **most advanced data acquisition hardware in the industry** which can be easily installed on-board your vessel to acquire high-frequency signals.

High-impact outcomes



Decarbonisation

5%+

decrease in CO₂ emissions through **active monitoring**



Cost Saving

\$3000

per day can be avoided on an 8500 TEU container vessel through accurate knowledge of fouling



Increased Control

8%

average **hull improvement** over 6 months through more impactful investments



Time Saving

75%

time saving can be achieved through **automated** leg, fleet and vessel reporting

Pain points addressed

Complying with environmental regulations

Squeezed bottom-line profits, increasing commercial pressure

A critical lack of data to make vital business decisions

Many human hours spent on routine analysis & reporting

Minimising environmental impact

And complying with industry regulations



CO₂ monitoring & vessel indexes

Understand, report, and minimise your environmental impact on a vessel, fleet or company level.



Consumption Optimisation

An accurate view of your vessel, fleet and company's fuel consumption on a daily basis.

Active monitoring and alerting work to minimise overconsumption.



Accurate hull performance

Empowering you to make clearer decisions



Performance analysis

Performance curves plotting power and fuel consumption against speed under different conditions - allowing you to know with confidence how to charter your vessel.



Current fouling state

An always-up-to-date assessment of the fouling state of your vessel powered by AI. This allows you to know when to schedule a hull cleaning without a visual inspection.



Your engine control room

Allowing you to take rapid action, even from the office.



Main engine monitoring

Live, detailed information from your vessel's main engine. **Active monitoring**, powered by AI, detects even small anomalies in performance, by accurately predicting fuel requirements, under live conditions, on a minute-by-minute basis.



Auxiliary equipment monitoring

Live, detailed information regarding the auxiliary equipment aboard your vessel, including generator engines and boilers, and how they contribute to overall vessel performance. **Active monitoring** ensures optimal generator engine usage.



Maximum operational efficiency

For optimised vessels and optimised teams



User-generated dashboards

User-generated dashboards allow monitoring and reporting on vessel, fleet and company data in way that is tailored to the needs of the user or business. All data available in the platform can be harnessed to create a custom dashboard.



Automated reporting

Save huge amounts of time by cutting down on repetitive reporting. Automated reports display key metrics on a daily, vessel or fleet basis, and compare data from multiple sources.



Seamless Upgrade Opportunities

A flexible and future-proofed solution

Cassandra[®]
light

Cassandra[®]
basic

Cassandra[®]
enterprise

Noon reports, AIS,
live weather data



High-frequency
sensor data



360° technical
optimisation with
sensors





Get in touch

For more information and a full demo


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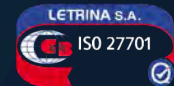
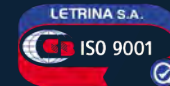
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