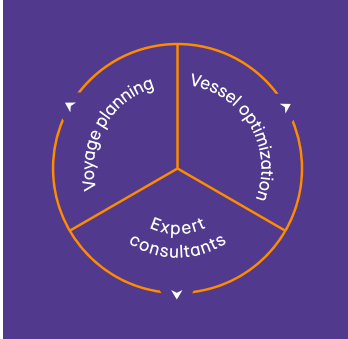


LOREKA360° OptiNav AI



Voyage Efficiency. Data Driven. Expert Led.

System overview

OptiNav AI is an AI-enabled voyage optimization platform integrating vessel telemetry, predictive modeling, and human operational expertise. It is designed for complex maritime decision-making environments: balancing fuel efficiency, weather routing, port access, emissions compliance, safety, and contractual constraints.

Core capabilities:



Dynamic routing:

Adapts voyage plans to vessel-specific performance, weather data, and operational constraints.



Predictive outcome modeling:

Simulates route scenarios to assess fuel consumption, time of arrival, and emissions.



Human-in-the-loop:

Tactical and strategic guidance from our experienced team of Ship Masters, Chief Engineers, and Deck Officers.

Technical information

Feature	Technical detail
Proprietary AI voyage planning	Algorithm trained on vessel-specific hydrodynamic models; integrates pre-requested objectives including least FOC or emissions, fixed RPM setting, Least Voyage Cost and Requested time of Arrival.
Tekomar benchmarked profiles	Access to >10 years of validated engine performance data from 3,500 vessels (>1B datapoints). Supports, composite (CP + digital sister), and benchmarked profiles.
Data fusion for accurate planning	Combines AIS, weather routing feeds, noon reports, and optimization cycles
Risk-aware routing	Models impacts of currents, and meteorological hazards. Supports “earliest arrival,” “least fuel cost,” “emissions minimum,” and “charter party speed” modes.
Integration options	API-based data exchange with existing fleet management systems, including noon/voyage reporting data exchange capabilities (for example IMOS, Softmar, etc.)

Example of verified operational impact

Vessel type	Main engine	Utilization	Annual savings	CO ₂ reduction
Bulk Carrier	Wärtsilä 5RT-flex50D, 7044 kW	210 days	USD 183,418 (~190 MT bunker)	599 MT
Tanker LR	MAN B&W 5S60MC-C, 11,300 kW	195 days	USD 407,458 (~326 MT bunker)	1,030 MT

Example – Brazil to China (Bulk Carrier): Route chosen: slightly longer, smoother sea states; Savings: USD 36,000 on voyage cost; 42.5 MT fuel; 133.9 MT CO₂ reduction.

Performance benchmarks

- **Outcome improvement:** Up to 3% voyage cost savings vs. traditional weather routing systems
- **Global deployment:** Supporting >1,000 vessels; operational across all major ocean routes; >13 years weather routing/performance analysis experience.

Human expertise

- Continuous operational monitoring by a shore-based team of highly experienced maritime professionals.
- Tactical advice for heavy weather avoidance, voyage cost management and ETA planning.
- Collaborative decision-making to balance safety margins with efficiency targets.