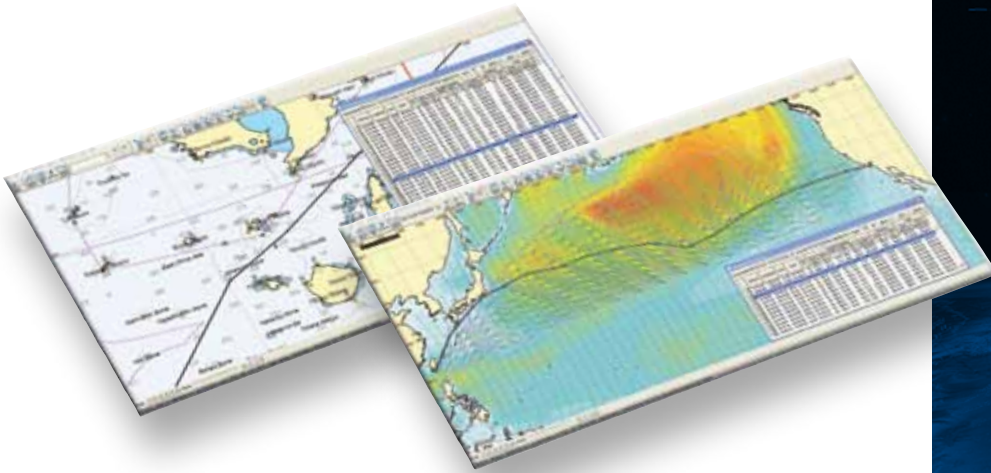


Jeppesen Vessel and Voyage Optimization Solution

Arrive on time. Conserve fuel. Avoid heavy weather damage and cargo loss.



What sets Jeppesen Vessel and Voyage Optimization Solution (VVOS) apart?

The Jeppesen Vessel and Voyage Optimization Solution (VVOS) makes every one of your voyages more profitable by enabling each vessel in your fleet to attain higher efficiency, improved operating margins and operating risk mitigation. This is done through tools that optimize schedule adherence, improve safety, and achieve new levels of customer satisfaction and competitive advantage.

Onboard Tools and Professional Services

Whether you're a captain with years at sea who appreciates onboard decision-support tools, or it's your first time as ship master and you're looking for shoreside routing support from professional master mariners, VVOS has you covered. Over the years, VVOS has become a favorite of ship captains around the world who are looking for the most proven optimized routing solution available.

VVOS Highlights

- :: Dynamic ship performance analysis from departure to arrival
- :: Automatically creates a full range of optimized route solutions for balancing ETA and fuel consumption
- :: Optimized minimum fuel speed plan for required arrival time for VVOS or manually created routes
- :: Comparison of VVOS optimal speed management to a traditional constant speed strategy
- :: Simulation tools for any route in the forecasted conditions with comparisons of ETA, ship motions, fuel consumption, hull stress, weather and sea conditions
- :: Integrated with Jeppesen Fleet Manager service

BENEFITS

- :: Document reductions in greenhouse gas emissions
- :: Identifies most efficient routes and utilizes a just-in-time operating strategy that avoids wasting fuel with sprint and loiter alternatives
- :: Assists shoreside managers in scheduling, port and cargo operations, bunker planning, ship and fleet performance tracking, pro forma analysis and charter party performance analysis
- :: Route optimization helps avoid excessive resonance, motions, accelerations and hull stress before it's too late
- :: 24/7/365 voyage support from experienced ship masters
- :: Reduce fuel consumption by up to 4% over present practice/performance baseline
- :: Reduce ship motions up to 25%
- :: Improve schedule integrity, reliability and operations planning by 7%

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What sets VVOS apart? *(continued)*

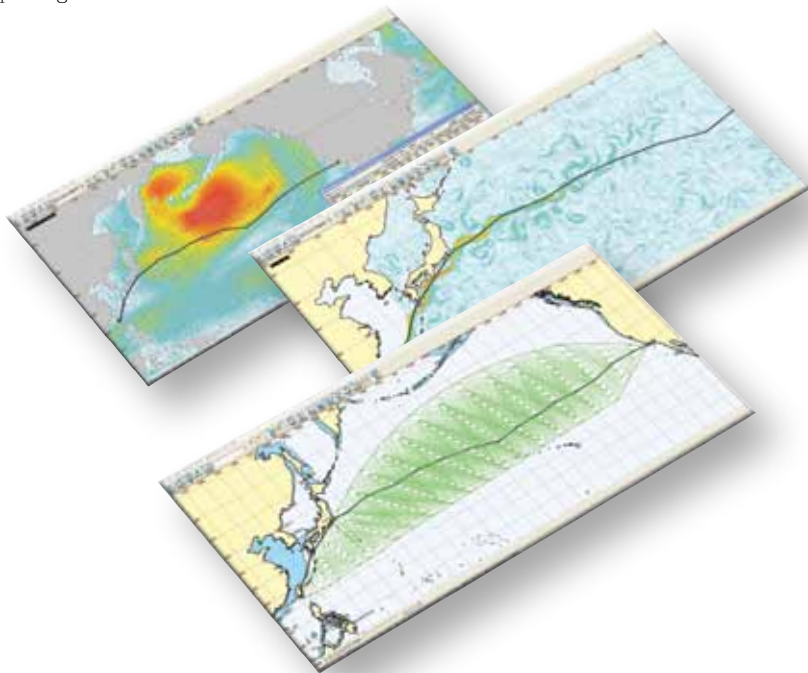
Advanced Routing and Seakeeping Algorithms

VVOS utilizes advanced routing algorithms to accurately and comprehensively optimize each route for on-time arrival while minimizing fuel consumption, maintaining your seakeeping limits and avoiding heavy weather.

Using sophisticated hydrodynamic modeling, computations and high-resolution ocean forecasts, the VVOS guidance system recommends speed and heading changes to manage ship motions and help minimize heavy weather damage.

Unlike traditional weather routing services, VVOS includes a detailed, ship-specific model of your ship's motion, engine and propeller characteristics. This virtual ship accurately estimates speed made good under forecast wind, wave and ocean current conditions at a given engine power and propeller RPM, as well as ship motion limitations uniquely defined for each ship.

Accurate ETA predictions are possible using industry-best met-ocean forecasts in conjunction with sophisticated vessel performance models and advanced route optimization algorithms. At sea, ships download the latest ocean area forecasts via satellite communication. Masters can update and re-optimize passage plans as new forecasts become available or operational requirements change during a passage. With this process of daily continued refinement, a safer and more economical passage can be achieved.



VVOS provides the crew with decision-support tools that enable them to evaluate various scenarios and select the one that best meets their specific operational objectives.

Vessel safety and operations risk management is further improved through continuous monitoring of voyage progress to plan, real-time seakeeping and the ongoing analysis of vessel performance metrics.

Today, VVOS solutions are used by onboard ship officers, shoreside operations and cargo planners, technical staff and commercial managers to realize improved operational efficiency and performance.

VVOS 2.0 ENHANCEMENTS

- :: Updated toolbar and menus for easy access to regularly used functions
- :: New route refinement tools promote fuel savings by automatically reducing route distance when possible and smoothing the speed profile to avoid fast starts with subsequent slow downs
- :: Updated optimization wizard walks you through using the most advanced and proven route optimization methods
- :: Full 15-day high-resolution wind, wave and ocean current forecasts
- :: Updated chart symbols and tool tips for improved presentation of optimization route information
- :: New route import/export function enable route exchange in 20 different ECDIS formats improving workflow and reducing mistakes
- :: Updated optimal solutions window for fast and clear review of optimization results
- :: Integration with Jeppesen C-MAP CM-93/3 cartography including automated depth and obstruction check*
- :: Integration with onboard E-mail systems allows automatic weather forecast updates

PROVEN RESULTS FROM A LONG-TIME CLIENT

- :: 80% reduction in the actual number of hours delayed due to heavy weather
- :: 73% decrease in the number of structural damage claims due to heavy weather, and 29% decrease in the cost of overall claims
- :: 87% decline in cargo damage claims due to heavy weather
- :: Up to 4% fuel savings over sample period

MINIMUM SYSTEM REQUIREMENTS

- :: Desktop computer or notebook PC running Windows XP, Vista, or 7.0
- :: Color graphics card with SVGA/XVGA support, monitor supporting 1024x768 or higher
- :: 5 GB of hard drive space
- :: 2 GB RAM
- :: Optional GPS
- :: CD-ROM drive
- :: E-mail or Internet access for weather forecast updates

FOR MORE INFORMATION

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