



# Reduce Voyage Costs and Improve Sustainability with Real-time, Onboard Route Optimization

Route-planning is a juggling act. You must balance conflicting constraints — including safety, efficiency, navigation, costs, port rotation, estimated times of arrival (ETAs), and speed ranges — to optimize each route.

For decades, we have helped captains and onboard teams overcome these challenges. The DTN Ship Performance Optimization System (SPOS) is an advanced decision support tool for onboard route optimization. DTN SPOS uses weather forecasts, sea conditions, and your ship's profile to help optimize your route. With it, you can make better-informed decisions on routes, ensure crew safety, and reduce voyage costs.

## DTN SPOS helps your captains and senior crews plan and adjust shipping routes

- Analyze weather and ocean forecasts before and during voyages.
- Plan and update detailed routes and port itineraries.
- Recalculate optimum routes based on updated forecasts.
- Report positions, planned routes, and additional parameters to shore.

Improve route optimization, protect people and assets, and reduce expenses.

## Optimize your shipping routes with DTN SPOS

### Weather forecast input

DTN SPOS provides you with timely weather updates and forecasts. It ensures your crews are always aware of their surroundings and the conditions ahead. Your vessels will receive inputs up to four times a day, via email or HTTP download. Captains and senior crews can access over 20 input parameters for voyage optimization, salinity for ballasting, humidity, and dew point for cargo ventilation.

### Conditional parameters input

DTN SPOS allows you to specify and update your vessel and voyage data during transit. Use the Ship Profile Library, developed with MARIN, to calculate the impact of wind and wave resistance on specific vessel types. It simplifies the process compared to traditional separated, speed-down tables.

### Route planning and adjustment

Create your route options in DTN SPOS based on time, cost, or fuel constraints, either with or without a given ETA. Use our weather-optimized route network to plan port-to-port routes, taking into account navigational restrictions and port approaches. Ensure your ships avoid severe weather by incorporating our unique variable speed routing functionality.

### Ship-to-shore reporting

Share travel updates with configurable reporting options. All routes, communications, and performance indicators are available for onshore stakeholders via the FleetGuard web platform. The integration of FleetGuard and RouteGuard provides a shared view across fleets.

## Benefits

DTN SPOS allows you to navigate the globe safely while helping to reduce your fuel consumption and emissions.

### Save fuel and time

Use our data to calculate the routes with the lowest voyage costs. You'll have access to the industry's first variable speed algorithm to help you bypass severe weather. Voyage trim optimization further reduces your fuel consumption.

### Reduce environmental impact

Weather-optimized routing can provide fuel savings of 2 to 5%, depending on the type of vessel, the season, and the conditions. Using less fuel also helps reduce the environmental impact of each voyage.

### Unburden your captains

Our weather-optimized route network builds on decades of experience. Its pre-built ship models support captains in making accurate routing decisions. The configurable back-to-shore reporting also eliminates redundant reporting.

### Increase ship safety

Avoid heavy weather, enhance crew safety, and reduce downtime and damage to ships and cargo. DTN SPOS ensures a shared view across fleets with system integration and add-ons.



## How we help

DTN SPOS builds on our decades of experience in weather forecasting and severe weather routing.

The DTN SPOS Route Network provides routing options based on thousands of routes created by DTN over the years. It includes all possible passages to and from ports, through canals, through traffic separation schemes and emission control areas (ECAs), and more. Easily calculate optimum routes using variable-speed routing algorithms, considering elements such as bad weather, ECAs zones, RPM/speed ranges, or fixed ETAs.

DTN SPOS utilizes Nautical MeteoBase. It combines weather information from the most respected global forecasting models, including the European Centre for Medium-Range Weather Forecasts, UK Meteorological Office, and National Centers for Environmental Prediction models. With it, you can access a single, higher-quality forecast, designed for onboard route optimization.

Unlock additional performance and safety benefits with more DTN SPOS modules, including:

- [Sea Keeping](#) – protect motion-sensitive ships and cargoes.
- [Trim-Advisor™](#) – optimize trim using ship characteristics, voyage loading conditions, and waves.
- SPS2GRIB – export forecasts to other onboard display systems.

## The DTN Advantage

We help you increase safety and operational efficiencies by providing the data you need to make the right decisions. DTN SPOS keeps your voyages ahead of adverse weather with accurate forecasts for wind, waves, currents, and other important elements. Our team of expert master mariners are ready to support all routing guidance.

We already work with leading shipping companies, including MAERSK, Zodiac Maritime, and TORM. Discover how we can help you safely and economically plan routes covering millions of sea miles.