ABB ABILITY™ SPOS

Reduce voyage costs while ensuring safety with real-time onboard route optimization

Route-planning and optimization involves juggling safety, efficiency, navigation, costs, port rotation, ETAs, speed ranges and additional constraints, such as seakeeping. For ship captains, this is a complex challenge that requires the aid of a decision-supporting tool to give them confidence in their decisions and support with execution.

Benefits

ABB Ability™ SPOS – Ship Performance Optimization System enables captains to safely navigate the globe with minimal fuel consumption and emissions by calculating and recalculating optimum routes and anticipating oncoming weather and sea conditions. With SPOS you can:

- **Save fuel and time:** Expertly calculate routes with the lowest voyage cost. The industry's first variable speed algorithm allows severe weather to be bypassed and voyage trim optimization further reduces fuel consumption.
- **Increase ship safety:** Avoid heavy weather and experience reduced downtime, reduced damage to ships and cargo and improved crew safety. SPOS ensures a shared view across fleets with system integration and add-ons.
- **Unburden captains:** Pre-built ship models support captains with more accurate routing and configurable back-to-shore reporting, eliminating duplication and redundant reporting.

Users and key use cases

SPOS supports captains and senior crew responsible for the planning and adjustment of shipping routes:

- **Weather forecast analysis:** Analyze weather and ocean forecasts prior to and during voyages.
- **Route planning:** Plan and update detailed routes and port itineraries prior to voyages.
- **Route adjustments:** Calculate and recalculate optimum routes based on updated forecasts during voyages.
- **Reporting:** Report positions, planned routes and additional parameters to shore during and after voyages.

Customers

Leading shipping companies, charterers and marine system integrators put their trust in us. Contact us to learn more about how we help these prestigious organizations safely and economically plan routes covering millions of sea miles.

Features
SPOS optimizes shipping routes, taking into consideration sea conditions, such as wind, waves and swell, currents and other weather elements. Timely weather updates and forecasts ensure crews are continuously aware of their surroundings and the conditions that are ahead.

SPOS offers the following input features and functionality:
- **Weather forecast input** – Receive input up to four times a day, via e-mail or http download. Weather maps can be displayed on screen or printed. Over 20 input parameters for voyage optimization, salinity for ballasting, humidity and dew point for cargo ventilation.
- **Conditional parameters input** – Specify and update vessel and voyage data during transit. Use the Ship Profile Library, developed with MARIN, which contains advanced algorithms for the resistance impact of wind and waves on specific vessel types.
- **Route planning and adjustment** – Create route options based on time, cost or fuel constraints, either with or without a given ETA. Use weather optimized route network to plan port-to-port routes, including navigational constraints and port approaches. Variable speed routing functionality ensures ships can avoid severe weather.
- **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. Integration with Fleetguard and Routeguard ensures a shared view across fleets.

SPOS offers additional modules to further increase performance and safety and to secure a shared reality across fleets:
- **Sea Keeping** – Protect motionsensitive ships and cargoes.
- **SPS2GRIB** – Export forecasts to other onboard display systems.

SPOS unique capabilities
SPOS builds on decades of experience in weather forecasting and severe weather routing. With SPOS users access the following unique capabilities:

Marine Forecasting System
Utilizes weather information from the most respected global forecasting models (ECMWF, UK Meteorological Office & NCEP) producing a single higher quality forecast.

Route Network
Provides routing options based on the thousands of routes created over the years. It includes all possible passages to and from ports, through canals, through TSSs and ECAs, and more.

Ship Profile Library
Contains advanced algorithms for the resistance impact of wind and waves on specific vessel types. Developed with MARIN, the Maritime Research Institute Netherlands, it increases route planning accuracy and removes complexity for captains and crews in comparison to traditional separated, speed-down tables.

Variable Speed Routing
Calculates optimum routes using variable-speed routing algorithms, considering elements, such as bad weather, traverse ECA zones, RPM/ speed ranges or fixed ETA.

ABB Marine & Ports
Routing Services
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