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ABB MARINE & PORTS | DIGITAL SERVICES

# ABB Ability™ Marine Advisory System - OCTOPUS

Merchant vessels



# OCTOPUS Suite

## Cargo vessels

ABB offers a wide portfolio of marine software and optimization systems to the maritime market. Its performance management solution consists of a modular and comprehensive decision support toolkit to optimize the workability and safety of a ship, and to minimize the overall fuel and energy costs for the whole fleet.

### ABB's OCTOPUS suite

The OCTOPUS suite offers a broad variety of modular functionality that helps to increase the efficiency, safety and workability of a single vessel or entire fleet. OCTOPUS based technology has been installed on hundreds of ships.

### Optimization modules

#### Motion monitoring & response forecasting

The OCTOPUS software suite is the industry leader in vessel motion prediction solutions and combines wave measurements, weather forecasts and navigation data like speed, course, and the voyage plan, with ship characteristics, loading conditions and motion sensor measurements. This facilitates continuous monitoring as well as simulation and forecasting of the ship responses and performance.

The system enables state of the art route assistance in heavy weather. This results in increased safety for the crew and cargo during

voyages at sea, increased comfort level of the cargo owner and reduced operational costs. The OCTOPUS system is for instance used to minimize the risk of containers falling off container ships due to large unwanted motions and accelerations, to avoid the sloshing effect in membrane tanks of LNG Carriers and to assist in preventing damages to cargo of PCC's (Pure Car Carriers).



#### Performance Monitoring

The Performance Monitoring module is the key module for OCTOPUS to provide meaningful data. It provides data collection and visualization for a set of signals to help monitoring the vessels operations, i.e. daily operational costs and to work as a supporting tool for the Ship Energy Efficient Management Plan (SEEMP).

#### Advanced Performance Monitoring

This module extends the functionality of the Performance Monitoring module. The amount of monitored signals is unlimited. The module can be set to display any signals which are readable by OCTOPUS. In addition to monitoring, the module provides dynamic KPI (key performance indicators) targets which can be used to follow the performance of the vessel subsystems.

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### Emission monitoring

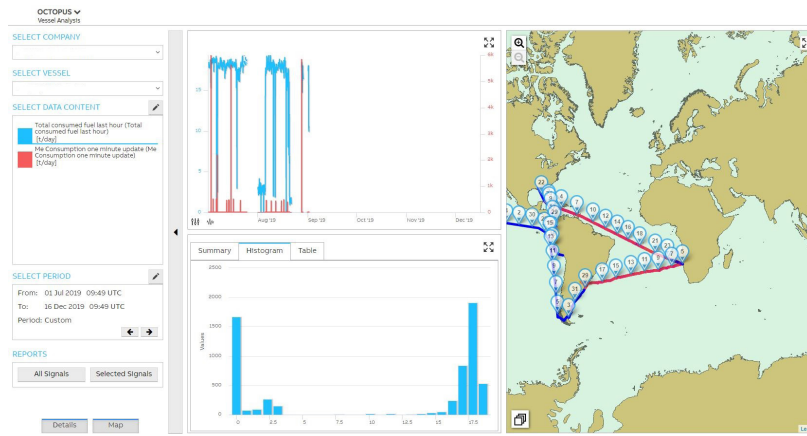
The OCTOPUS suite supports automatic Emission monitoring, allowing onboard visualization and shore side reporting. This assists owners and operators alike with compliance of upcoming air pollution regulations globally and within Emission Control Areas.

### ABB Ability™ Marine Fleet Portal: Easy access to vital information

- Fuel & performance kpi's for individual vessels and benchmarking within the fleet
- Measured and forecasted vessel motions and accelerations
- Sailed routes and location
- Alarms and notifications in case of sensor time outs or failures

Authorized users can access their own part of the protected website to retrieve the latest information. After the voyage, the recorded data is evaluated and the impact on the cargo can be analyzed. The database can be made accessible for all parties required. It can be used to tune motion calculation (specifically roll motion) and for various other purposes, such as fatigue analysis.

The Fleet Portal provides onshore insight in individual and fleetwide vessel performance.



### Service and consultancy

ABB has in-house expertise covering the following fields:

- Before and After analysis
- Periodic reporting and advise
- Customer training and coaching
- Feasibility studies
- Sea-keeping and wave analysis
- Remote support, data health checks and troubleshooting.

### Our holistic approach

The total offering from ABB's digital portfolio is the most comprehensive suite available within the maritime industry and provides seamless exchange of data, full integration of sensors, automation, and ship software and cloud solutions. Important elements within the suite are decision support software for safety and comfort and energy efficient operations, and remote diagnostics technology that preventatively and continuously monitors critical equipment onboard of a ship.

Furthermore, ABB has invested heavily in shore side expertise, analytics firepower and engineering availability to provide 24/7 support from our ABB Ability™ Collaborative Operations Centers that support troubleshooting, maintenance planning, benchmarking, and interventions based on predictive diagnostics.

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### **ABB Ability™ Collaborative Operations Centers**

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