Performance monitoring

It is well known that the performance of a ship will deteriorate over time. Monitoring the ship's performance allows the shipowner, manager or operator to reduce costs.

SeaTrend provides monitoring and analyses of fuel consumption as well as fouling of hull and propeller. Ship owners, charter parties and shipping companies can optimise their fuel consumption as well as their daily operation on board the vessels.

The system can also be used to verify retrofit solutions and give valuable input to design of newbuildings.
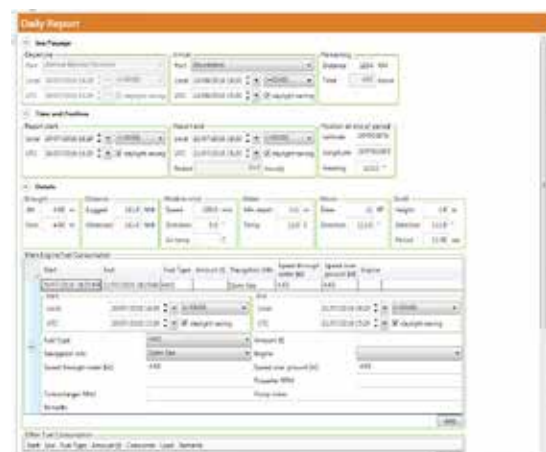
Data Collection

SeaTrend is a modular based solution depending on how automatic the data collection should be. We offer three different data collection solutions:

- Noon-report – the traditional approach
- Semi-automatic – collecting parts of noon-report data by our logging box SeaLogger
- Fully-automatic – automated logging of relevant signals

Noon-report

For collection of data by noon-reports the SeaTrend Onboard application is utilised ensuring regular and consistent reporting. The required data should be filled into the application by the crew. The data entries are as following (can be customised):

- Time and position
- Destination, remaining miles and ETA
- Vessel draught
- Distance sailed
- Wind and waves
- Water depth and temperature
- Main engine power and RPM
- Fuel consumption and remaining fuel onboard
- Comments

Screen dump of a noon-report

Semi-automatic

Our semi-automatic data collection solution uses a noon-report approach; ship's speed, location, heading, course over ground, indicative draft, high accuracy trim and motions are automatically input by our data logging box called SeaLogger and the rest will still have to be filled out by the crew in the noon report application SeaTrend Onboard.

The SeaLogger box can also input other signals (NMEA or Modbus), this could for instance be a torque meter which can output NMEA signal. This feature brings the semi-automatic logging closer to the fully automatic logging.

Fully-automatic

The comprehensive fully automated logging solution requires establishment of automatic interface with all relevant signal sources. The solution allows for data to be captured onboard with short time intervals and raw data send ashore in data packages.

Behind SeaTrend – The propulsion module

The heart of performance monitoring is the ability to analyse and normalise collected data in a correct and consistent way. FORCE Technology utilises our propulsion module for analysis and normalisation of data.

The analysis depends on a mathematical hydrodynamic model of the ship and is based on more than 50 years of hydro- and aerodynamic experience at FORCE Technology and input data from the client. Additionally we use a weather service company to provide weather data and furthermore weather data from the ship IS checked.
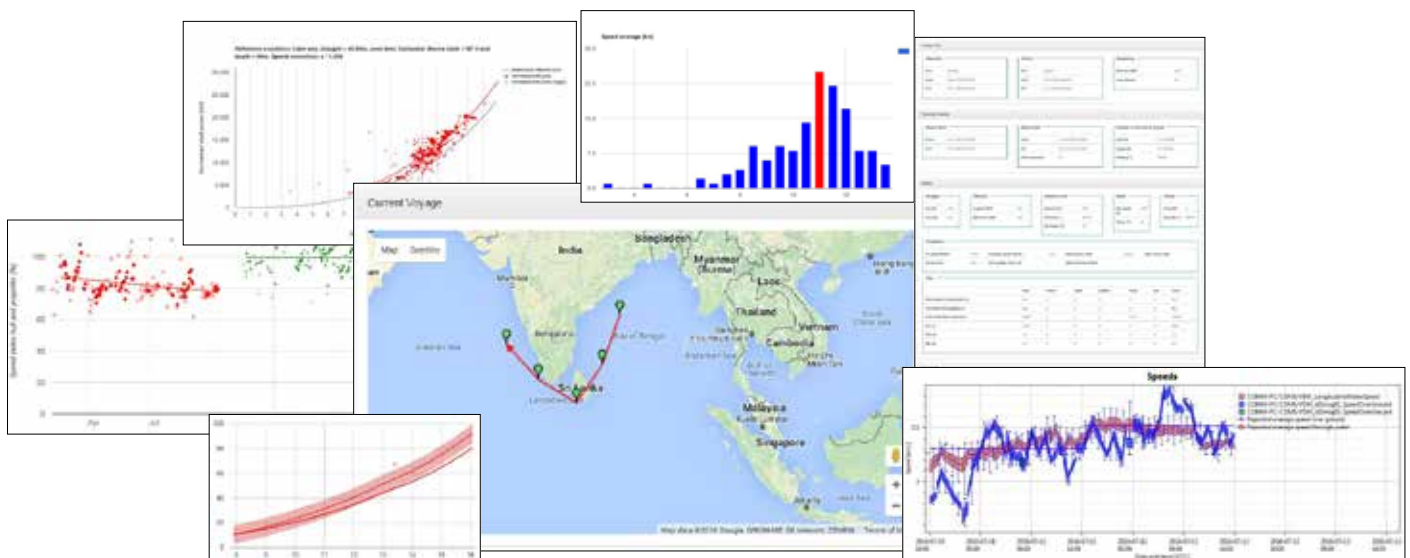
SeaLogger

12 cm.
10 cm.

Performance management

The analysis enables decision making related to fuel optimisation, dockings, bottom/propeller cleanings or possibly as input to new ship design or retrofit solutions.

SeaTrend includes the following features for performance management:

- Web based reports: speed-power performance, engine performance, data histograms, fuel tables, fuel bookkeeping, voyage summary reports, charter party analysis, fouling trending
- Daily mails reporting instantaneous performance of vessels in the fleet
- Bi-annual performance reports from FORCE performance experts including sister ship comparisons
- Tailor-made plotting based on client request
- Real time data viewing – requires fully-automated data collection