



## WÄRTSILÄ ECOMETER AUTOMATION UPGRADE SOLUTIONS



### WÄRTSILÄ ECOMETER REDUCES VOYAGE FUEL CONSUMPTION AND CUTS OPERATING COSTS

Wärtsilä Ecometer assists owners to develop a vessel Ship Energy Efficiency Management Plan (SEEMP) with regard to fuel-efficient operation of their ships. By identifying potential fuel savings and advising on corrective actions to achieve them, this solution can yield savings up to 3–5% in voyage fuel consumption, with comparable reductions of emissions and operating costs.

### WÄRTSILÄ AUTOMATION UPGRADE SOLUTION

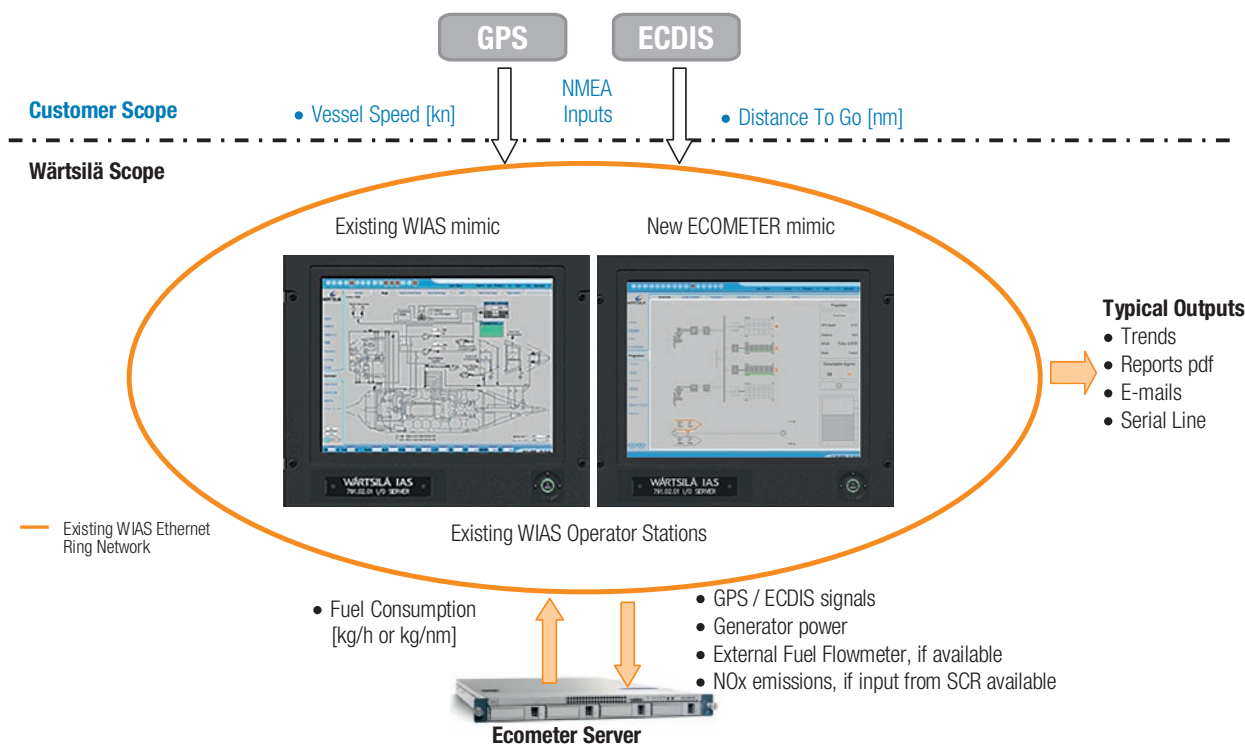
Wärtsilä Ecometer is an upgrade solution for customers with a currently installed Wärtsilä Integrated Automation System (WIAS). The WIAS family is a flexible and modular automation platform providing functionality from basic Alarm & Monitoring to advanced Integrated Automation Systems.

The Ecometer is a web application running on a separate server connected to the existing WIAS ring network. In addition to two new input signals from the bridge, existing available sensors and WIAS Operator Stations are used to collect and display the Ecometer user interface screen. The Ecometer is an advisory support tool for optimal operation of the propulsion plant in relation to fuel consumption. The system estimates and visualises the fuel consumption and power utilisation on a voyage, with recommendations for optimal generator configuration to minimise voyage fuel consumption.

#### KEY BENEFITS

- Saves up to 3–5% in voyage fuel consumption
- Reduces operating costs and emissions
- Identifies potential fuel savings and advises corrective actions to achieve them
- Assists owners to develop vessel Ship Energy Efficiency Management Plan (SEEMP) with regard to fuel-efficient ship operation
- Uses existing WIAS Operator Station, almost no additional training required

## WÄRTSILÄ ECOMETER TYPICAL TOPOLOGY



### WÄRTSILÄ ELECTRICAL & AUTOMATION SERVICES

Wärtsilä is in a unique position to use proven in-house marine automation products to offer a 'One-Stop' solution with minimal integration, installation and commissioning risks to the customer. Customers also benefit from Wärtsilä's in-house expertise of engine and propulsion control systems, together with global services and lifecycle product support.

Our experience of upgrading and retrofitting installed automation systems covers both in-house Wärtsilä automation systems and third-party obsolete or legacy systems, including:

- Stromberg Selma
- Norcontrol DC7 and DC2000
- Valmet Damatic
- Racal Decca Isis
- Norimos 2000
- Moland Macon 100

For more information, please contact your nearest Wärtsilä Service Representative on <http://addresses.wartsila.com>

### MAIN FEATURES

#### Visualisation of fuel consumption and power utilisation.

- Estimates fuel consumption based on generator power. Existing flowmeters can also be used as calibration data input to calculate fuel consumption.

#### Advisory route planning and usage of propulsion plant.

- Produces optimisation criteria for lowest possible fuel consumption
- Recommends which engines to start/stop and loading level
- Enables check of fuel savings for different arrival times
- Provides Trend and Report functionality for fuel consumption per voyage

### VESSEL INFORMATION

To facilitate planning and delivery, the following vessel information must be provided along with issuance of the Purchase Order or prior to the Design Freeze meeting:

#### Input Signals in NMEA protocol format:

- Vessel Speed Over Ground [kn] from GPS
- Distance To Go [nm] from ECDIS.

#### Vessel Design Parameters:

- Vessel Speed [kn] - Propulsion Power [kW] table for hull
- Engine Fuel Consumption [kg/h] - Engine Power [kW] table or Specific Fuel Consumption [g/kWh] - Engine Power [kW] table
- Loss model for propulsion plant equipment viz. generators, electric motors, variable speed drives, switchboards, etc.