Gitte Henning

Boost Mode for Speed or Heavy Fishing

"With the PTO mode, we're able to optimise the efficiency of the main engine, reducing both fuel consumption and service intervals" says Chief Engineer Jon Sigurd Samuelsen

Designed by Wärtsilä and built by Western Baltija Shipbuilding in Klaipeda, Lithuania, at 86.3 by 17.6 meters, Denmark's biggest fishing vessel Gitte Henning was delivered in 2014.

Using trawl, she catches herring, sand eel, blue whiting, mackerel and boar fish. Although a recent build, within months of delivery she set two stunning world records, landing first 3,200 tons and then 3,527 tons of blue whiting at the port of Skagen, Denmark.

Collaborating with Scantechnic, DEIF was pleased to take on the challenge of supplying a customised, advanced Power Management System (PMS) for Gitte Henning.

Application Challenge

Gitte Henning is equipped with a 5,220 kW main engine, a 3,000 kW shaft generator, two auxiliary generators (2,470 and 790 kW) and a small 140 kW emergency generator.

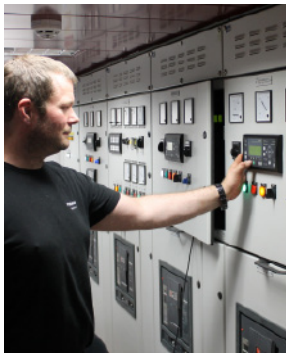
Smooth and incident-free switch functionality for semi-auto, auto, shaft, split and harbour modes was a primary requirement alongside a wish for propulsion boosting and fuel optimisation. Because of the fishing vessel's cooling capacity and hydraulic power requirements, each busbar has eight heavy consumers.

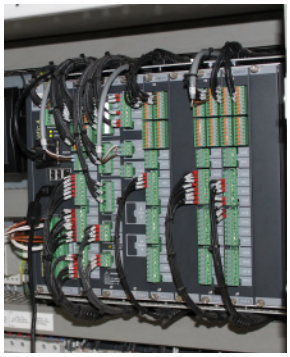
"What really matters to us is reliable power supply, and quick service and support at all times", says Gitte Henning's Chief Engineer Jon Sigurd Samuelsen. "Our previous vessel was also equipped with DEIF PMS, and we have always been very satisfied with the performance and reliability."

Scantechnic

Scantechnic is a recognised supplier of electrical switchboards on the small and medium-sized ships market. The company builds main switchboards with generator control, synchronisation and load sharing using DEIF's Delomatic 4 Marine PMS.

www.scantechnic.dk





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Data

- 1 × 5,220 kW Wärtsilä 9L32 main diesel engine
- 1 × 3,000 kW shaft generator, 2 aux. generators (2470+790 kW) & 1 emergency
- Variable shaft generator frequency for reduced fuel consumption
- Boost mode for maximum propulsion (shaft generator assist the main engine)
- 8 different one-touch plant operation modes

Product

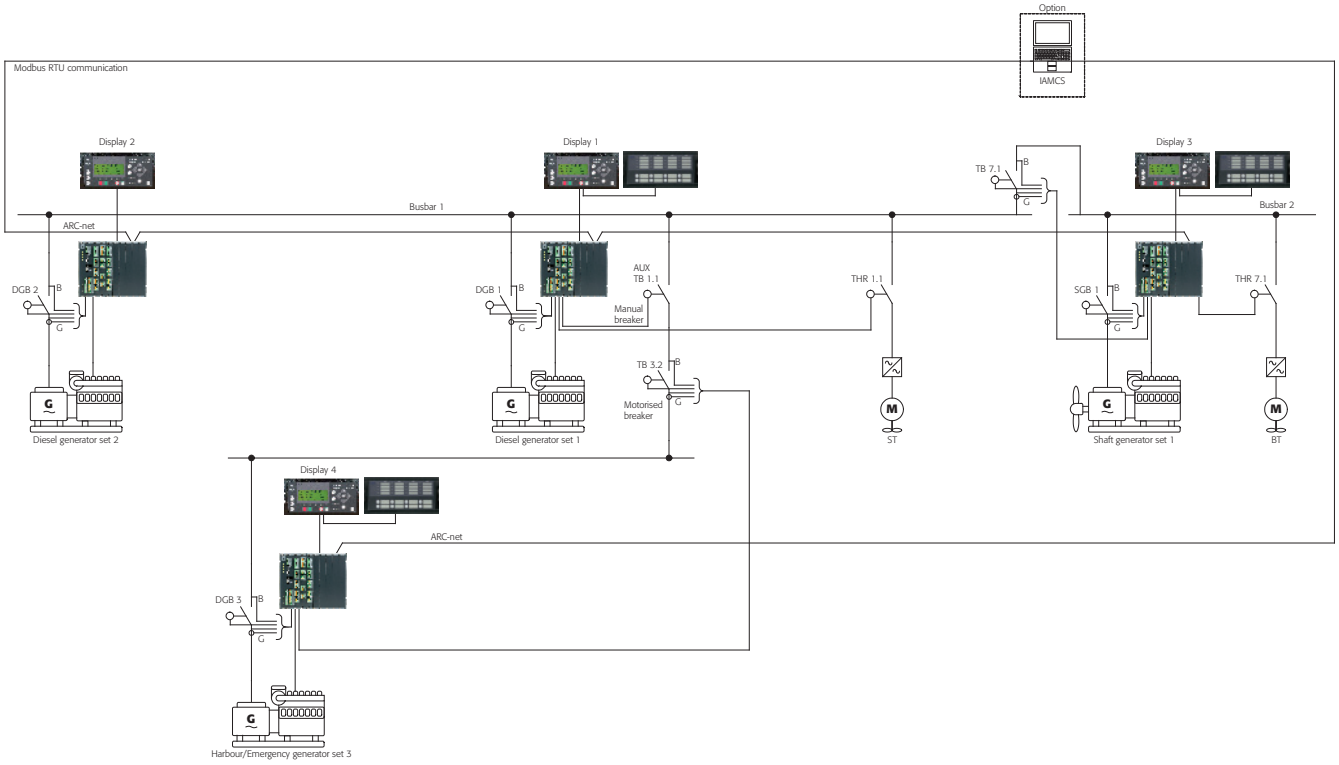
Power Management System, DM-4 Marine

The DEIF Solution

The system solution is based on DEIF's Delomatic 4 PMS and features one-touch operation for all six standard operation modes as well as custom-designed Power Take In and Shaft Boost modes that are selectable only from the controller pitch propeller. Utilising the Power Take Out (PTO) mode split function of DEIF's Delomatic PMS system, however, the shaft generator frequency becomes variable between 50-60 Hz without triggering any busbar alarms. This allows for a wide variation in main engine speed without affecting constant voltage and frequency for the ship's electrical network. "With the PTO mode, we're able to optimise the efficiency of the main engine, reducing both fuel consumption and service intervals" says Jon Sigurd Samuelsen. "It also makes for a smoother trip since it reduces vibrations in the vessel."

The system solution's "boost mode" enables the diesel generators to assist the main engine in running the propeller. "The added propulsion power is useful for instance when we're fishing for mackerel or in case of dynamic traffic conditions at sea," Mr. Samuelsen explains.

Case Diagram



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