

Fast and agile in rough seas

Testing with imc systems on fast patrol boats and government vessels



© Photo: Marine Alutech Oy Ab

Power and reliability

The Finnish company Marine Alutech Oy Ab produces professional work boats for navy, coast guard, sea rescue and port authority use. The vessels are typically aluminium hulled, fast and agile. At sea trials, imc measurement systems are used to capture and record data from IMU systems and GPS sensors.



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The Watercat M12 is a boat which can be used for landing and transportation purposes in all weather conditions. Equipped with Rolls-Royce water jets, it has excellent manoeuvrability. When necessary, the boat can be stopped almost within one boat's length from full speed ahead.

An essential advantage in coastal use is that due to the water jet propulsion, the bottom of the boat is perfectly smooth. This enables the boat to operate safely in very shallow waters.



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For troop transportation there are 20 individually damped seats with seat belts on fore deck.

Beside landing craft, Watercat boats are made also for patrol, rescue and pilot use.



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Measuring boat dynamics

The manoeuvrability and performance of these boats is greatly dependent on the operation of the water jets and the vessel design. Marine Alutech uses mainly Rolls-Royce water jets which are made in Kokkola on the Finnish west coast.

At sea trials, imc measurement systems are used to capture and record data from IMU systems and GPS sensors. Force, position, RPM and vibration signals, along with engine control data is collected simultaneously. The signals are later analyzed with the signal analysis software imc FAMOS and the results are used for improving the boat dynamics.



Versatile & compact measurement system:
imc C-SERIES

With its compact size and broad selection of inputs, the universal measurement system imc C-SERIES CS-7008-N is ideally suited for this measurement task. Data from on-board systems can be collected using the field bus interfaces (CAN), while the analog channels are used for signals which require more bandwidth. The special conditioner for encoder signals in the measurement device makes it easy to connect RPM signals from shafts and rotary encoders.

the variety of applications in this field is only increasing in number.

Measuring durability

Shocks and vibration from rough seas, weapon systems and engines all affect the durability of the boat and the operating comfort of the crew. All crew seats in the boat have suspension systems. Electronic equipment must also be protected from shock and acceleration. Tests at sea must be made to verify that the suspension systems work as designed.

This is another perfect task for the imc C-SERIES. Shock and vibration measurements can be measured together with data from the propulsion system. If video from the test is available, this can be linked with the measurement data in the signal analysis software imc FAMOS.



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Rapid deployment

imc products play numerous roles in the process, starting from the development of the motor and propulsion system to testing the effects of new refitting. As the measurement system is compact, flexible and easy to set up,



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imc Test & Measurement GmbH is a manufacturer and solution provider of productive test and measurement systems. imc implements metrological solutions for research, development, service and production. imc has particular expertise in the design and production of turnkey electric motor test benches. Precisely outfitted sensor and telemetry systems complement our customer applications.

Our customers from the fields of automotive engineering, mechanical engineering, railway, aerospace and energy use imc measurement devices, software solutions and test stands to validate prototypes, optimize products, monitor processes and gain insights from measurement data. As a solution

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