



A FOUNDATION YOU CAN BUILD ON

Ships fitted with an automation system

using Bachmann hardware

The openness of the system solution and its verification by standard shipping certificates were the reason why Ulstein Power & Control AS turned to Bachmann. Using the M1 controller as a basis, they created an automation system that can integrate any number of function units and be adapted to special customer requirements – and not just in shipbuilding.

Ulstein Power & Control AS is part of a Norwegian family business which has focused its operations on ship design and the construction of special ships. Two to three special ships are built each year in its own shipyard in Ulsteinvik (Norway). The subsystems they develop, such as for the ship's power supply or automation, are used by different ship builders all over the world.

Openness and shipping certification essential

Ulstein broke new ground in the development of an innovative automation system for ships: »Our aim was to create a system that was completely based on open source software and was entirely open in its application and further development,« explains Rune Volden, R&D manager at Ulstein Power & Control AS. »With this idea in

mind we set out to find hardware suppliers that could make such an implementation possible.« Two criteria were decisive for Ulstein to start talking with manufacturers at all: »It was vital that the individual components are certified to IEC 60945 or can be certified easily,« Rune Volden explains. »We also wanted a PC-based controller that would allow very simple data exchange with our software.« It was at Bachmann that Ulstein found this unique combination. »We were able to easily read the values on the PLC and also write on it. All relevant interfaces come already integrated,« Rune Volden explains.

Communication standard for extensive networks

The new ULSTEIN IAS® automation system is decentralized. »All ship automation tasks are



ULSTEIN®

Ulstein Power & Control AS is corporate branch of the Ulstein Group ASA. The family-owned company was founded in 1917 and specializes in the construction and development of special ships for research and for offshore use. Ulstein Group ASA is headquartered in Ulsteinvik (Norway) and has around 700 employees in seven countries all round the world.

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» We appreciate the collaboration with Bachmann very much. There were one or two challenges on the way but the team always solved problems – and, very importantly, always by the agreed time. «

Rune Volden,
R&D Manager at Ulstein Power & Control AS

therefore mapped to small independently operating subsystems,« Rune Volden describes. »The idea behind this is to ensure the functionality of the ship even in the event of a fault.« Ready-to-use standard modules for pumps and valves, for example, enable the fast implementation of the automation and reduce costs for the engineering. A well functioning communication standard is needed in order to provide all the data from the extensive network in time at the right place. »We work with the Data Distribution Standard (DDS), a communication protocol that is perfectly suited for distributed networks and can handle large data sets easily,« Rune Volden

describes. On the ULSTEIN IAS® the company uses open standards entirely.

Together towards success

Two ships have now been fitted with ULSTEIN IAS®. »Jan De Nul – a leading Belgian company in the field of dredgers and land reclamation – has ordered two multi-purpose vessels for subsea rock installation and a variety of other functions, in which we are using our new automation system,« a delighted Rune Volden says. »We passed the acceptance tests for the first sections very successfully– not least because we rely on standard modules, such as for pumps and valves

▼ ULSTEIN AMS™ optimize the efficiency of ship operations with optimized user interface, that make operations safer and reduces the risk of human errors.

▼ **Scalable and flexible:** The Jan De Nul multi-purpose vessels automated with Ulstein IAS® (Photo © Jan De Nul)



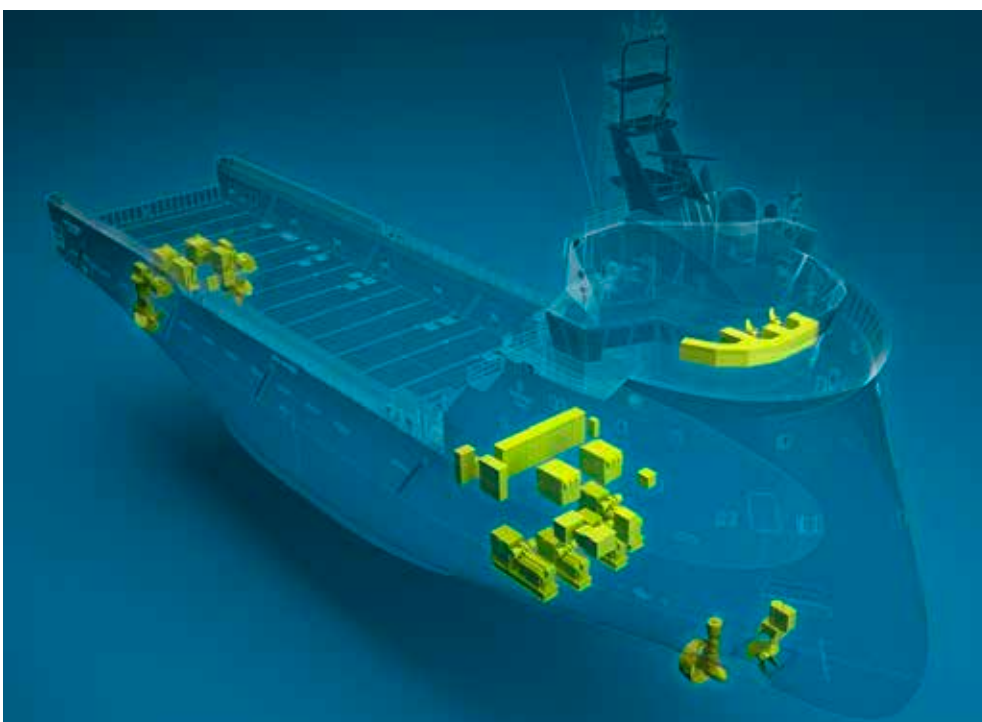
► **Installation at reduced cost:** New hardware and software components can be added to the configuration system and whilst the setup is automatically.



or also the ballast water system. This reduces engineering costs, reduces faults and increases the quality of our automation.« Thanks to the pleasing test results, the automation can be installed soon: »We are supplying the system to the shipyard in China in autumn 2016 and the ships will be launched in the early part of 2017,« Rune Volden describes the future schedule.

Bachmann has also played its part in the success of the ULSTEIN IAS®. »We appreciate the collaboration with Bachmann very much. There were one or two challenges on the way but the team always solved problems – and, very importantly,

always by the agreed time,« a delighted Rune Volden confirms. »In terms of technology, the openness of the system, the quality and reliability of the Bachmann products impressed us greatly.« And we are also sure of the course we will take in future. »We would really like to use our IAS in other areas such as in wind power. We are sure that it has been well worthwhile,« Rune Volden sums up. »We like working together with Bachmann. They are dedicated and innovative. These are good foundations for a long-term partnership.«



◀ The ULSTEIN IAS® automation system enables the control and monitoring of machines and drives, ship's power, alarm systems, power supply – and also management. However, it can also be used for other function-critical systems.