

▶ A standardised framework makes working a lot easier

Aiming to address this problem, Bachmann electronics has teamed up with Norwegian design consortium OpenBridge to generate an open-source design framework to standardise bridge system integration. Ronald Epskamp, Maritime Business Unit Manager of Bachmann electronic, shares, “In choosing the best bridge solution for its fleet, an owner may have selected several suppliers, all of which will bring their own interfaces. But you have to consider the crew, since they have to work with all these different packages on a daily basis. Their work can be made a lot easier by having a standardised framework, a bridge working environment with the same look and feel, throughout the fleet and tailor-made to the client’s needs.”

Goal

This is the primary goal of OpenBridge; to create safe and efficient workspaces with seamless design, integrated technical systems, and within current regulations. While OpenBridge has designed all the elements inside the software, the flexibility and ability to create a configurable system originates from Bachmann. Neels Schueder, Application Engineer at Bachmann, has used Bachmann’s atvise® scada software to implement numerous functionalities to the Bachmann OpenBridge template.

Design

The design of OpenBridge is based on four different levels of screen brightness: night, dusk, day, and bright. This is crucial, as Mr Schueder explains, “If you have ever been in the wheelhouse of a ship at night, then you know how a screen that is too bright can affect your eyes. It has a great effect on what you can see at sea.” On the other hand, reading information off a screen in full sunlight is similarly difficult if the screen is not bright enough. The first thing you notice about a typical OpenBridge screen is the clarity of the information display. This belies the large amount of information that can potentially be shown. “A huge range of elements is defined in OpenBridge, which are implemented in atvise® builder”, Mr Schueder continues. These elements include maritime components with their data (such as thruster and main engine data, compass details, depth, heading, rudder position,

speed, and rate of turn), navigation components (including alarms and maps) and user interface components (such as buttons, sliders, and drop-down menus). Moreover, a ship-owner with multiple vessels will have the same applications and widgets on every vessel, providing the same look and feel throughout the fleet.

Reducing human error

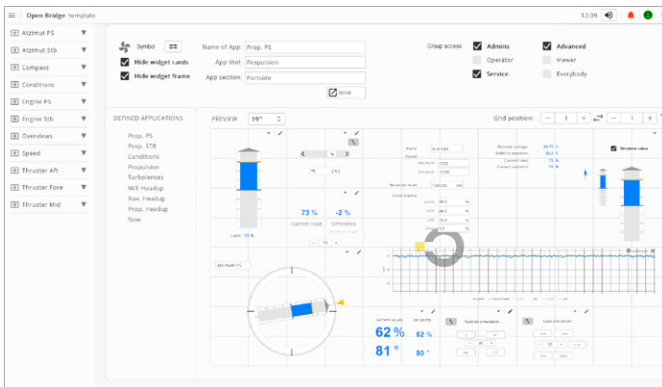
“An important feature that we have integrated is to give the end-user a chance to define their screens using the application launcher. Crew members working on the bridge can personalise their configuration of applications, fine-tuning the system to their personal preferences. “This called for the subsequent and simultaneous development of secure user management, with every user having their own unique username and password. Bachmann has also added OpenBridge-design functions to its engineering tool atvise® builder, which enables customers to quickly and easily create displays according to the OpenBridge standard. Our clients can

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do this themselves to create an even more personalised display. And for larger bridge workspaces with multiple screens, we have a global control display capable of controlling all the screens. This is also adaptable for various screen sizes."

With an eye on safety – and reducing the possibility of human error – Mr Schueder has added the diagnosis of the M1-controller hardware. Alarms are detailed to the extent that a user can see exactly what the problem is, and where it is occurring. This means that clear and well-defined action can be taken, rather than the trial-and-error approach of 'hot swapping' hardware. Furthermore, the display on the OpenBridge screen corresponds exactly to that of, for example, the electrical cabinet containing the M1-controller hardware.

Open source, but protected

The critical detail behind the cooperation between Bachmann and OpenBridge is that it is based on open-source software, which by definition is free to use. "Indeed, opensource systems are not blocked or locked", notes Mr Epskamp. The only investment clients would have to make is to purchase Bachmann's atvise® scada software and training. "It is our aim that people start using OpenBridge and collaborate with us to develop new components and features that would help them to automatically generate codes or import and export complete data sets. This will be a major advantage for clients in the future, saving them additional costs within a smooth and fully tested package."

Does Mr Epskamp think the maritime market is ready for open-source technology? He replies, "Let's find out! But don't forget that this is just the front end – the client's identity and knowledge is protected. And the client has the actual domain knowledge of their specific maritime sector, whether it's dredging or offshore wind installation."

A driving force for automation

With regard to automation solutions and collaboration, Bachmann aims to bring together a wide range of partners, customers, product managers, and application support engineers to share individual strengths, ideas, solutions, and technologies. "We learn from shipowners and translate their vision into tangible automation solutions so that each of us can create unique, high-quality, fully-tested solutions, reduce precious development and commissioning time, and become a driving force for automation in the maritime industry."



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