bachmann.

atvise® in the Cyber Chair

DEEP DRILLING COCKPIT OF THE FUTURE

You will find this and other interesting articles in our customer magazine

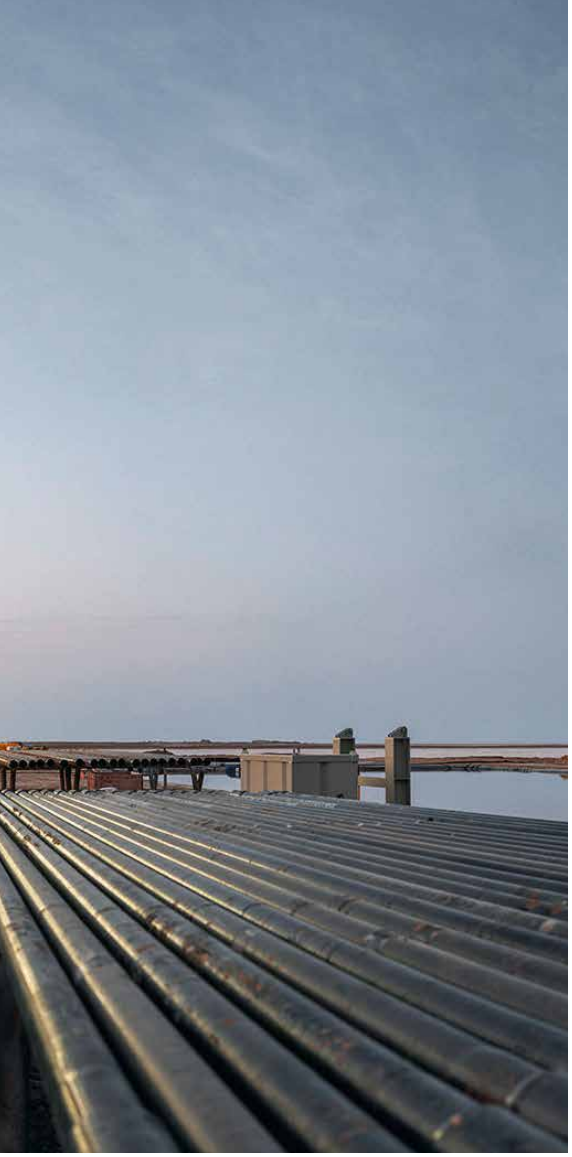
real.times

bachmann.info download-center

atvise® in the Cyber Chair

DEEP DRILLING COCKPIT OF THE FUTURE

Processes in the oil and gas industry have long been controlled by traditional operating elements. However, day-to-day drilling crew operations are now increasingly supported by digital systems. One key driver towards digitalization is Bentec's state-of-the-art control room, which features their cyber chair. Thanks to Bachmann's atvise®, demanding drilling processes can be clearly visualized and implemented.



Drilling technicians in the cyber chair stay in total control with the atvise® visualization and user interfaces, which are perfectly tailored to the application. The user interface was designed with usability experts to ensure high safety.

Everything at a glance with atvise®

Bentec develops and manufactures systems and equipment for oil, gas, and geothermal drilling. One of the company's most modern oil drilling rigs is in Oman. Several rig machines are connected via two redundant atvise® servers. Drilling technicians can monitor and control operations conveniently from a control room, located directly on the rig. Cyber chairs equipped with joysticks, rotary wheels, touch encoders, and numerous touchscreens provide complete control. A drilling assistant monitors operations across four screens. The office area, housed separately in containers, also provides process visualization on three monitors. The tank system and machines are equipped with their own local HMI.

Special application – special requirements

Bentec switched to atvise® for system visualization and operation once the previous solutions had reached their limits. "Our applications are special. This starts with the displays. We visualize processes from top to bottom, instead of from left to right, which is the usual approach. Our previous SCADA system was too inflexible," explains Michael Buhr, electrical engineer at Bentec.

Additionally, Bentec's systems, which were equipped with conventional switches, were increasingly being fitted with additional automation and optimization systems. This required drilling additional mounting holes and laying new cables. "In potentially explosive areas, adjustments like these require a lot of work," says Buhr.

The future is web-based

As well as a fully digital operating concept, which enables more flexible and efficient responses, Buhr was looking for a future-oriented, web-based foundation. Bentec's drilling systems remain in operation for up to 30 years. System-dependent solutions can inevitably cause driver problems when defective hardware must be replaced. Buhr is confident that open web technologies will continue to work well in the future.

During initial research, Bentec was disappointed by many web-based solutions. "Some of the interfaces were completely overloaded and garish, and many functions were predefined, which made them less applicable for us." However, things are different with atvise®: thanks to the openness of the Bachmann solution, all functionalities were customizable to Bentec's exact requirements.

Flexible engineering

Following initial training, Bentec developers started creating customized widgets for plant operation. They expanded existing atvise® elements to include numerous functionalities. These include different languages and measurement units for international operating personnel. However, rotary wheel increments, as well as automatic activation and resetting of touch encoders, were programmed to occur as soon as a specific field in the user interface was activated or deactivated. With atvise®, all these functions can be implemented directly via widget, eliminating the tedious task of searching for and grouping different components. Creating the interface is easy, too: Drag widgets from the catalog, scale and adjust them, observe the live values, and start your work. That's it," says Buhr happily.

Drilling technicians also benefit from a reduced workload. When interventions become necessary, care has been taken to minimize distraction from the actual process. For example, requests are communicated via voice call, meaning that technicians only need to look at the screen when necessary.

Safety first

Interface design was focused on maximizing operational safety right from the start. The visualization design was developed with the help of a team from the University of Osnabrück, who contributed expertise in safe user interface design for medical applications. "We gave a lot of thought to the color scheme and shape of the buttons. Separate controls for turning on and off also increase safety, as do the physical rotary wheels with touch encoders on the cyber chair, which we use instead of software sliders," explains Buhr.

Efficiency even away from the rig

A uniform look and feel across the various interfaces offers another advantage for Bentec. Michael Buhr's team compiled a catalog of individually configured widgets that can be reused for a wide variety of visualizations and applications. "The user interfaces of our other applications, such as battery storage, are already seeing benefits. This is because we can use the existing code base and the same clear Highcharts displays as for our drilling rigs," says Buhr happily. But that's not all. Bentec also plans to use atvise® for other oil rig systems to improve efficiency and safety.

»We use a redundant atvise® server and a higher-level user interface for our rig. The great thing about atvise® is that, even during the stand-alone operation of individual machines, the server still runs locally. This makes all widgets available on the local HMI, even in offline mode.«

Michael Buhr
Electrical Engineer, Bentec

BENTEC GMBH

- Systems and equipment for oil, gas, and geothermal drilling
- Headquarters in Bad Bentheim, Germany
- Over 125 years of industry experience

www.bentec.com

FIND OUT MORE

Maritime Automation

CONTACT

Ronald Epskamp
Manager Business Unit Maritime

T: +43 5522 3497-0
info@bachmann.info

bachmann.

www.bachmann.info

© 11/2025 by Bachmann electronic | Subject to modifications