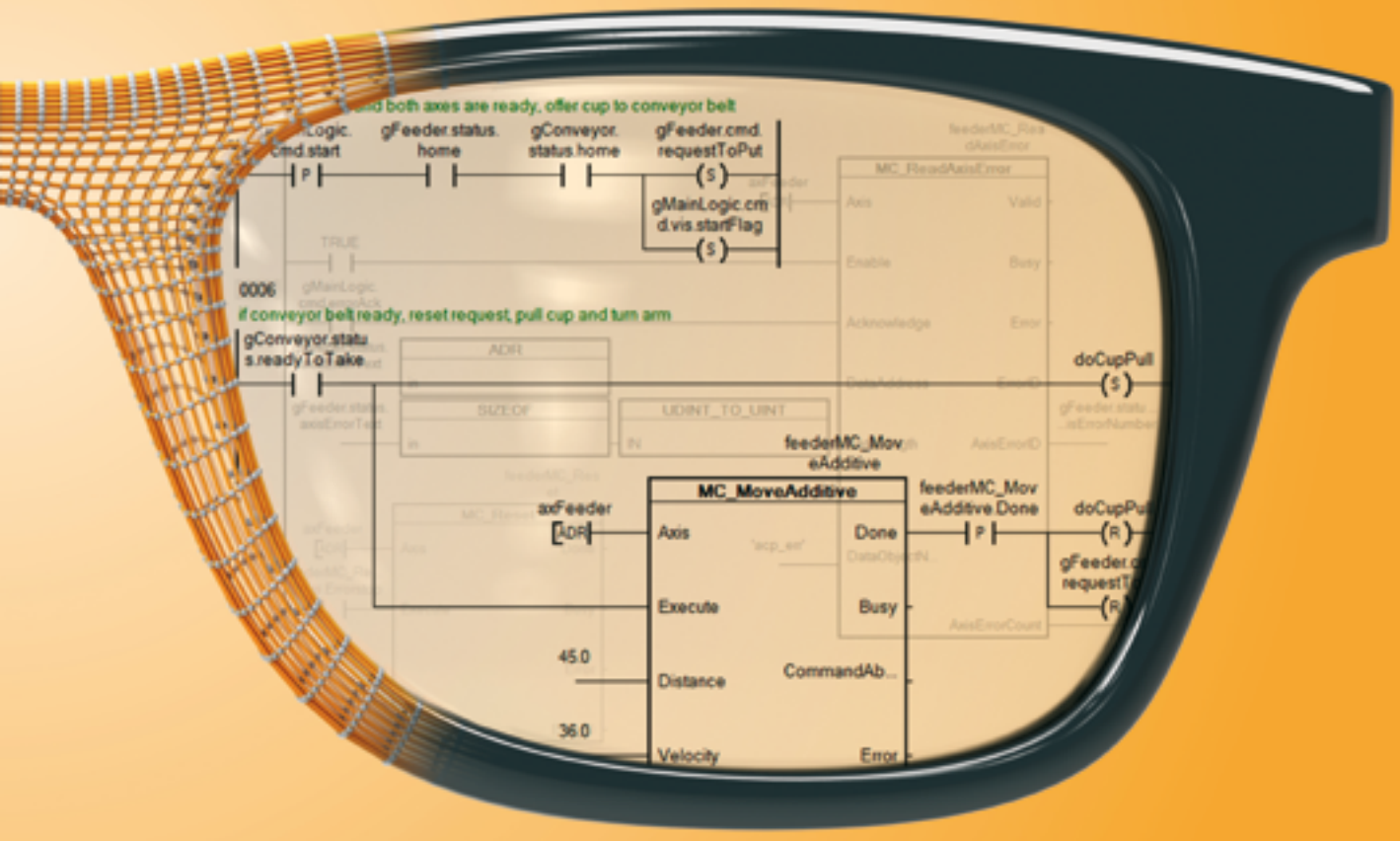
Web meets automation

With mapp View, B&R introduces web technology to the world of automation engineering.

Photo © B&R

The smartphone is the poster child for high-performance electronics with ultimate interface usability. Unsurprisingly, operators of industrial machinery and equipment desire nothing less for the interfaces they use every day. With mapp View, B&R now offers direct access to the wide world of web technology right from the engineering environment. For the first time, automation engineers have all the tools they need to create powerful and intuitive HMI solutions – and they don't have to be an expert web developer to do it.



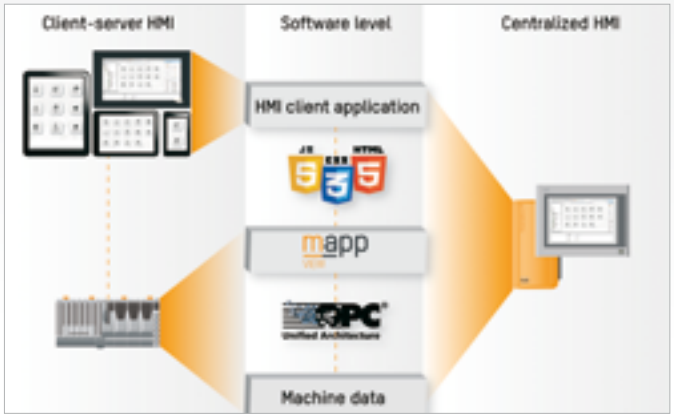
Modern websites and smartphone operating systems are designed by large teams of usability, design and ergonomics specialists. "An OEM doesn't typically have those kinds of resources at their disposal," says B&R's marketing manager, Stefan Schönegger. To bridge the gap, what they need are easy-to-use tools integrated in their familiar programming environment.

The right info at the right time

Operators aren't impressed by fancy graphics and multi-touch navigation alone. "The HMI needs to directly facilitate the primary goals of industrial production: maximum productivity and minimum downtime," explains Schönegger. The key to both of these goals is having the right information at the right time. Important notifications need to reach their intended audience every time, whether that happens on the main operator terminal, a small info screen, a smartphone or tablet. At the same time, the design must be able to prevent human error.

100% web technology

"With mapp View, we solve these challenges by relying 100% on web



With its modular organization, mapp View can just as easily be used as a centralized HMI solution or in a client-server architecture.

The automation engineer builds HMI pages in the familiar Automation Studio environment.

mapp VIEW

standards," says Schönegger. These technologies allow content to be displayed optimally on any output device or even customized for specific users or user groups. "Conventional approaches require considerable resources and expertise to develop pages for all the different output media," explains Schönegger.

Working in a familiar environment

What makes mapp View unique is the way it integrates web technology right into the engineering environment. "While mapp View is built on HTML5, CSS3 and JavaScript, automation programmers never need to deal with these languages," ensures Schönegger. "Instead, they can continue to focus on their own areas of expertise." HMI pages are built in the familiar Automation Studio environment. All GUI functionality is encapsulated in modular control elements called widgets, which are simply dragged and dropped into place and configured.

One of the main advantages of web technology is the way it separates content and layout. Even after the content of the HMI application has been finalized, developers can fine-tune the layout and style to optimize usability after initial field testing. Widgets are available in a number of standard themes, or they can be customized with the user's corporate design. Thanks to the use of web technology, the content can easily be adapted to different output media – whether it's a widescreen operator panel or a small smartphone screen.

Ideal for modular architectures

"It's not just the content and layout that are separate from one another," continues Schönegger. "The machine control and HMI applications are also completely decoupled." The HMI software or individual GUI components can be reused and modified at any time, making mapp View ideal for flexible, modular machine architectures. This also reduces maintenance costs and improves overall quality.

The web is subject to continuous change and progress, yet web technology itself has remained remarkably constant over time. "HTML pages created in 1985 are still displayed correctly in any of today's browsers," says Schönegger. mapp View is built on the globally accepted web standards HTML5, CSS3 and JavaScript.

"Unlike proprietary platforms like Flash or Silverlight, these standards are updated continually and remain usable for decades."

Open with OPC UA

mapp View is fully integrated in B&R's Automation Studio engineering environment. Controllers from other vendors can easily be incorporated in the HMI via OPC UA. "mapp View is the first web-based HMI tool in the world that doesn't require developers to know web programming languages." ←

Photos © B&R

mapp View offers a large selection of preprogrammed HMI widgets in various design themes. The design is independent of the HMI application and can be modified at any time.

With mapp View, any automation engineer has all the tools and knowledge it takes to create powerful, intuitive HMI pages.

Stefan Schönegger, **Marketing Manager, B&R**

B&R introduced mapp technology about a year ago – heralding a revolution in software development. Now you're following that up with mapp View. What do the two have in common?

They're based on the same principle. Both mapp and mapp View provide encapsulated functions that all communicate with each other within a single framework. The two technologies complement each other perfectly. Just as mapp technology simplifies and accelerates the development of machine control software, mapp View does the same for HMI software. Each mapp component includes an HMI element that makes it even easier to display and modify the corresponding data.

mapp and mapp View are both software products. What's the reasoning behind B&R's heightened focus on software?

The complex processes required of modern machinery can no longer be handled by mechanical and electrical technology alone. The market's insatiable demand for flexibility is resulting in more and more processes being implemented in the form of software. With mapp and mapp View, we're helping our customers stay at the forefront of these trends in an extremely efficient and cost-effective way.