# Next generation operator interfaces shorten OEM time to market

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***Operator interfaces accelerate time to market while enhancing machine functionality, quality, and reliability.***

Machine builders continually cope with increasingly challenging issues. OEMs, like most manufacturers, must do more with less, offer the latest technology, and deliver high-quality reliable machines. However, the big issue that worries nearly every machine builder and OEM is delivery time.

Minimizing the time to market is crucial for successful OEMs. It seems that as soon as machine orders come in, customers want their machines right now. End users may be under pressure to put their machines to work because of contractual obligations, or they may be eager to start the payback process for the machine investment.

Machine builders need solutions that help them reduce development time, enable easy integration, and accelerate time to market without sacrificing the reliability of their designs or the quality of the equipment they build. Historically, this has been a difficult task. Standardizing on solutions such as operator interfaces that help slash development time can help OEMs meet these demanding requirements.

## Reasons for reluctance

Speeding up time to market shouldn't require machine builders to make tradeoffs—especially when it comes to machine functionality, quality, and reliability. Shortened machine lead times mean there is less time for OEMs to learn the requirements for integrating new operator interface hardware and software into their designs.

Machine builders understand the economics of selling equipment for which they have recovered their initial design investment and development costs. If the margins are good, could they be even better with an operator interface upgrade? Machine designs may still be valid and the equipment may work when it leaves the factory. However, supporting older components and maintaining legacy controls can increase costs and erode those margins.

Having recouped development, design, and integration costs of using the same old operator interface is just one reason that OEMs are reluctant to make a change. Machine builders who insist on using what they have always used may be hesitant to venture too far from their comfort zone. Some may feel that using their existing operator interface technology is more expedient than having to "re-invent the wheel."

The software learning curve is another barrier. Although the existing operator interface development software may be a nuisance to work with for OEMs, it's a known entity. Many machine builders are reluctant to put themselves in a position of having to learn yet another new software platform and run the risk of it being problematic or difficult to learn as well.

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## Overcoming objections

Does integrating a new operator interface impede or enhance machine delivery times? Some next generation operator interfaces can play a significant role in speeding time to market for machine builders and OEMs.



Engineered for simple configuration and seamless integration—Eaton XV and XP series of operator interface solutions and Visual Designer™ software.

Toward that end, Eaton introduced a new family of next-generation operator interfaces. The XV and XP series of operator interfaces, along with the Visual Designer software development package, is designed for easy configuration and seamless integration, giving machine OEMs the ability to develop their applications faster and launch products sooner.

Eaton released the new operator interfaces to help machine OEMs such as those who design and sell material handling and packaging equipment, pump and compressor systems, alternative energy and automotive manufacturing equipment. However, the new operator interfaces and software were developed to provide exceptional value to OEMs in a range of global applications that require extensive connectivity.

When it comes to using a new type of operator interface, machine builders can realize the most value by implementing next-generation solutions very early in the machine design. That way, they can leverage features including advanced search and replace, online editing, an elegant and simple user interface, and troubleshooting tools such as database spy to drastically reduce their time to market and total design costs. Additionally, powerful features can be incorporated, such as data archiving, recipe management, multi-language support, SQL database access and Web serving.

OEMs tend to use existing designs as long as possible because redesigning their control systems and integrating operator interfaces—along with the associated development and programming—takes time. However, there comes a time when end users demand smaller, faster, more efficient, more functional machines.

It used to be that changing machine control systems, operator interfaces, and machine architecture automatically increased machine lead times and technical risks. And when users insist on reduced machine build times, there is less time to engineer and troubleshoot the hardware and software changes.

Eaton's next generation operator interfaces and development software can minimize these concerns. Instead of technical risks, these solutions provide machine builders with a reliable platform for developing advanced applications that actually shorten time to market because development is streamlined and troubleshooting time is reduced.

## Features and functionality

Machine builders use operator interfaces in applications that range from basic monitor and control functions to high-end Supervisory Control and Data Acquisition (SCADA). The XV, XP, and Visual Designer family completes Eaton's portfolio of operator interfaces and logic control products.

The Microsoft® Windows® CE 7 Professional operating system is embedded in the XV hardware. The XV series is available in 7- and 10-inch wide screen sizes. The multi-touch projected capacitive touch screen has a 1024 x 600 pixel resolution and can be mounted in either landscape or portrait positions.



Highly configurable—landscape or portrait orientation.

The Windows Embedded Standard 7 operating system is core to the XP hardware. The XP series is available in 10.1-, 15.6-, and 21.5-inch wide screen (16:9) sizes. The screen has a multi-touch projected capacitive touchscreen (PCT) supporting up to four simultaneous touches, with non-reflective, scratch-resistant safety glass. Screen resolutions are 1024 x 600 (10.1-inch), 1366 x 768 (15.6-inch), and 1920 x 1080 (21.5-inch).



Sophisticated operator interface solutions save time and lower total cost of ownership.

The Visual Designer development software package runtime and Web server licenses are pre-installed on all XV and XP models, eliminating the need and cost for OEMs to purchase and install them separately. Single applications can be scaled across the entire XV and XP series just by changing screen resolution, which simplifies development. The Visual Designer software development package is optimized for OEMs, using advanced features such as remote access and control and advanced search and replace to streamline sophisticated application design.

## It's in the code

Software is the foundation of a good operator interface. When coupled with Visual Designer, the XV and XP series of operator interfaces can communicate with virtually any network, PLC, Web client, or database.

The Visual Designer software runs on Eaton's XV and XP families of operator interface. Machine builders have the option to purchase a USB hardware key that allows them to use Visual Designer to program everything, or a lower-cost key that allows CE unit programming only. Because the Visual Designer runtime license is pre-installed on these operator interfaces, OEMs don't have to purchase and install separately.



Build applications faster and work smarter with Visual Designer software. Robust debugging and remote management tools enable faster startup.

The Visual Designer software package includes many advanced development functions such as the ability to convert legacy PanelMate™ configurations; an optional PanelBuilder™ conversion utility; online configuration and editing; advanced search and replace; automatic Web client scaling; customizable application symbols; and reusable controls, images, and screens via indirect tag and/or PLC assignments. In addition, the software offers full remote access and control without adding software to the remote PC through a Zero Admin Client connection.

Windows Internet Explorer is the only requirement for using Visual Designer's remote access feature. Machine builders can monitor and control remotely and view independent pages or screens regardless of what the operator is viewing. With Visual Designer development software on the remote PC, the machine builder can also remotely make and save necessary changes—without having to shut down the operator interface or incurring travel costs to support equipment in the field.

The OEM's PC becomes a Zero Admin Client when it is remotely connecting to the operator interface without having to install additional software. The remote client is connected using an IP address once the security requirements of the customer's site are met. The login and password security that applies at the machine location also applies remotely. Typically, the operator has access to only a few screens and can touch only certain buttons. The developer can create the application so that the operator can view the screens in one language, while a remote user (simultaneously) views it in another language. This can be accomplished by associating the language setting with the login and password.

Whether developing the next application or remotely supporting equipment in the field, online editing is a tremendous time saver. Online editing allows machine builders to make changes on-the-fly without having to perform multiple compile and reboot cycles. For example, adding a button to a screen is as simple as opening the application in Visual Designer, connecting to the remote unit using an IP address, adding the button, saving the screen, and confirming that the change should be sent to the target. The button appears, it's functional, and the task is completed without having to wait for the system to compile, download, and reboot.

While remote programming, troubleshooting, and support can provide tremendous value and save time, Visual Designer shortens the learning curve with a "getting started" guide, built-in context-sensitive help, and interactive training videos. An interactive training CD includes sample applications with both commonly used and advanced features to help shorten the learning curve.

Another enhancement that minimizes the learning curve is the software's integrated drivers. Visual Designer is designed to open standards such as XML, OPC, ActiveX, .NET, ODBC, ADO, and SOAP. This integrated approach allows seamless integration with third-party hardware, software, and databases. Having these drivers integrated into the software also eliminates the need to switch between two or more software packages for tag integration—another time saver.

## Conclusion

Most machine OEMs are concerned with increasing pressure to design newer, faster, better machines and deliver them to their customers more rapidly than ever. They are faced with keeping costs low, margins high, and customers satisfied.

When designing a new machine or redesigning an existing machine, machine builders can rest assured that using the next generation operator interfaces can actually help accelerate their time to market.

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