



Adaptable machines with remote 24/7 support - globally

With automation technology from Eaton, a range of different scenarios can be created for participants in fire simulation training at MAW GmbH's facilities

Location:

Ilshofen-Eckartshausen, Germany

Challenge:

MAW wasn't able to easily retrofit systems or provide a wider breadth of options for their firefighting simulation machine. In addition, it was a challenge to service and find parts globally.

Solution:

XV102 HMI/PLC, XI/ON-Module

Results:

MAW is now able to deliver their customers flexible solutions that can use any web platform. This allows trainers globally to give firefighters better training. In addition, MAW is able to retrofit and update systems easily using Eaton's remote global support system and portfolio of products.

"Thanks to Eaton's technology and iSATT's application expertise, we have gained a significant amount of flexibility which benefits our customer."

Michael Diehl, MAW

Metallbau Anlagen Werkstätten GmbH (MAW) is a comprehensive supplier of respiratory protection equipment and firefighters receive regular training for emergencies, using its specially designed facilities. The training equipment is used all around the world and maximum reliability and flexibility is required regarding control.

When MAW wished to upgrade their system, they chose automation components made by Eaton to meet these high standards and selected the Eaton's solution partner iSATT as system integrator for the project.

Background

Loud cries for help, restricted space, smoke and darkness – the possible scenarios have to be realistic when firefighters are training for emergencies. In facilities that are specifically

designed for this purpose, fire fighting teams have the perfect opportunity to prepare for demanding operations. Headquartered in Germany, MAW is a supplier of respiratory protection equipment, which the company exports worldwide.

In its training facilities, instructors can simulate different scenarios which firefighters may face in their day-to-day operations. The heart of each of these facilities is the control room. In here, the training instructor can lead the session using state-of-the-art technology to monitor the vital signs of the participants and collect all necessary data for reporting that can be used in a subsequent evaluation session with firefighters.



Powering Business Worldwide

Challenge

To make the training sessions more versatile, MAW wanted to develop and expand the scenarios a training instructor can simulate from the control room. In the past, MAW controlled simulations using a conventional DCC (Direct Digital Control) building automation control system.

Over time, they realized that this option was costly and inflexible as DCC control systems have set functions that are unable to be modified or adapted. In addition, the components weren't flexible and versatile for use and replacements worldwide. As a result, MAW sought a solution that provided greater flexibility at a lower cost, while gaining support they needed globally.

This is where Eaton's partnership with iSATT came into play. iSATT GmbH has over 15 years of expertise in automation projects in a range of industrial sectors. Headquartered in Bonn, the company offers everything from hardware design, software creation and visualization, to commissioning and software support. iSATT has been part of Eaton's solution partner program from the outset, is fully trained on all products and engaged in the development of new products and product updates. This ensures that clients such as MAW receive the optimum solution for their specific application, as well as comprehensive consultation and after-sales support at all times. The processes are greatly simplified for the customer with iSATT representing a seamless interface to Eaton.

Solution

As part of the development of the new MAW automation concept, iSATT programmed the respiratory protection equipment using Eaton's HMI/PLC XV102. The space-saving HMI/PLC controls and visualizes the processes, such as importing mist and sound effects.

Instead of using the old DCC control system, MAW took advantage of a flexible platform which provided programmable web server control and functionality through CoDeSys (IEC 61131). Thus, the training instructor can see the entire system on screen and can control it via any web browser.

"In one of our projects, we were also able to show where the participant could be found in the room," said Michael Diel, Assistant Manager at MAW. "That way, the training instructor can respond even more flexibly to the situation in the facility."

With CANopen and Eaton's compact I/O module XI/ON, the HMI/PLC communicates with the sensors, the fog machine and the sound player in the facility.

For the fog machine, it was a system-specific requirement for iSATT to develop a special communication interface for the HMI/PLC. This example specifically emphasizes the benefits the customer gets from system integrators like iSATT working with Eaton. Diehl from MAW agrees, "We benefit directly from the application expertise which iSATT brought to this project."

Furthermore, iSATT made a point of providing MAW with a control system that gave plant engineers the opportunity to manage the automation of future projects

independently. Now they can carry out configurations and program the exercise scenarios themselves. That was not possible with the previously used DDC control system, which relied on an external programmer.

Today, MAW is able to vary its training sessions with more scope, allowing better safety training to be delivered, which benefits everyone.

Retrofits also become easier, "because the hardware also supports flash cards, we can easily install our own software updates, where there is no network access to the control system," said Diehl.

Results

"The independence of our clients is a priority," explained Peter Hennes, CEO of iSATT. "With the help of Eaton components, we were able to present a flexible, open system, deliver automation expertise and enable industrial electricians to work independently with it after a three-day training course. If development is required in the future, we will be happy to provide appropriate training at MAW. The source code developed for this purpose will be held by the equipment manufacturer, therefore protecting their investment."

With this principle, iSATT maintains the sovereignty of its client, MAW, and smoothes out the path towards automation.

"We do not create relationships of dependency, but pursue our professional development together," emphasized Hennes. This has clearly made it easier for MAW to increase the degree of automation in their facilities.



MAW's specially designed training facilities prepare firefighters throughout the world for their duties



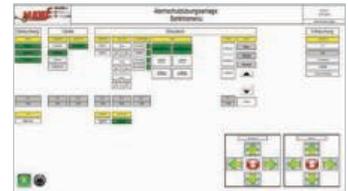
Scenarios are simulated in the pipeline exercise facilities, for which chemical protection suits are required, e.g. in the event of a chemical accident



The Eaton XV102 combined control and operating unit controls and visualizes the processes in the facility. The visualization is shown by the web server on a 22-inch touch monitor. This allows the training instructor to control devices, generate effects, darken the training room or play sound effects



In the control room, the training instructor can accurately and independently monitor and control the action in the training facility



The clear display of the facility allows a customized training process to be created

Eaton
EMEA Headquarters
Route de la Longeraie 7
1110 Morges, Switzerland
www.eaton.eu

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