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Changes for the Better

Automating the World

Mitsubishi Electric and Fire GO improve safety for firefighters with advanced simulation training

Fire GO's mobile aircraft fire trainer, which is controlled by Mitsubishi Electric systems, brings realistic firefighter trainings directly to airports

Ratingen, Germany - March 2026

Fire GO GmbH has implemented Mitsubishi Electric's industrial automation solutions to manage its mobile aircraft fire trainer. The German manufacturer uses these technologies to provide realistic training environments for airport firefighters, enabling safer and more effective emergency response preparation.

The need for greater mobility

Fire GO GmbH based in Alsdorf, Germany, manufactures fire simulation systems for emergency services worldwide. The company builds fireproof structures that simulate real aircraft fires using controlled gas systems. These systems respond authentically to firefighting foam and water. "Everything that can catch fire in reality and requires fire brigade intervention, we build from fireproof materials and allow it to burn realistically," explains Jochen Schürgers, Managing Director of Fire GO. "The system is computer-controlled, gas-powered, and it reacts to extinguishing agents just like a real fire."

Building on this expertise, the company recently tackled a new challenge. Its latest project involved creating a full-scale aircraft replica from ten 20-foot containers, complete with 28 fire simulation points representing various emergency scenarios from cockpit fires to engine blazes. The company needed to develop a mobile aircraft simulator that could be

quickly deployed at different airports. This would make high-quality training more accessible while ensuring reliable operation in safety-critical scenarios. Traditional stationary systems lacked the deployment flexibility required for comprehensive training programmes at multiple airport locations.

Where consistent performance is essential

Working with Siebers Mechanical Engineering from Marsberg, Fire GO selected Mitsubishi Electric's automation technologies to control the mobile simulator. The MELSEC System-Q PLC control system manages all simulator functions. It manages complex scenarios across the full-scale fire trainer, replicating an A320/B737 aircraft with an authentic cockpit, passenger cabin, and cargo hold environments. It also coordinates gas flows, safety systems, and fire behaviour parameters. The GOT2000 (Graphic Operation Terminal) is an HMI touchscreen of Mitsubishi Electric. These terminals allow instructors to monitor training sessions and adjust fire scenarios in real time. For example, they can increase flame intensity or change wind direction in order to test different firefighting strategies.

The data monitoring platform offered in GENESIS solution from Mitsubishi Electric, records everything that happens during training sessions. This includes how quickly firefighters respond to specific scenarios and which techniques prove most effective. This information helps training instructors identify in which areas where individual firefighters need to practice more. It also allows fire departments to improve their overall emergency procedures.

"The reliability of our MELSEC System-Q platform, combined with the HMI GOT interface and the data collection, provides a robust foundation for training systems where consistent performance is essential," comments Jörg Springsguth, Sales Engineer at Mitsubishi Electric Europe. "When firefighters depend on their training to save lives, every component must function reliably."

Simulated mistakes lead to real improvements

The Mitsubishi Electric automation system has delivered measurable improvements in training capability. The control system maintains precise management of fire simulations, ensuring that scenarios remain realistic but safe. Firefighters can practice dangerous techniques without risking injury or damage to equipment. The mobile design enables training to occur directly at operational airports. This allows firefighters to practice with the specific aircraft types and layouts they will encounter in real emergencies.

With 28 fire simulation points, training can be conducted on diverse scenarios, including engine fires, landing gear incidents, cabin emergencies, and fuel spills, providing comprehensive preparation for real-world airport emergencies. Data monitoring capabilities provide detailed insight into training effectiveness. Instructors can track how different firefighters respond to various scenarios and identify the most effective techniques. The system's reliability ensures that training sessions can proceed without technical interruptions that could undermine learning. "Regular preventive maintenance, a smooth supply of spare parts, and a reliable troubleshooting service keep our systems fully operational and ready for use," notes Schürgers.

Research demonstrates the value of this approach

Fire GO's mobile simulator addresses key challenges in firefighter preparation. Automation technology ensures consistent, high-quality scenarios in every training session, regardless of location. The system enables firefighters to practice decision-making in controlled environments. In these environments, mistakes become learning opportunities rather than life-threatening situations.

The mobile deployment capability means that training can occur at the airports where firefighters will actually work. This provides contextual preparation that enhances the effectiveness of emergency response training programmes. Research conducted by the Allen Fire Department in Texas, USA, demonstrates the value of such simulation-based training, showing that simulation training can improve firefighter decision-making competency by 22 per cent.

Beyond airport operations, the mobile simulation solution is highly relevant to other industries with comparable safety requirements, such as chemical production, energy facilities, transport infrastructure and logistics hubs. In such environments, it is essential to be able to create controlled and repeatable training scenarios in order to prepare teams to act under extreme conditions. By combining advanced automation technology with specialised engineering expertise, complex fire dynamics can be replicated with precision and reliability. This enables emergency personnel to train in realistic yet safe conditions, while objective data collection supports continuous skill and decision-making improvement across different industries.

Sources:

1. https://www.firehouse.com/technology/article/55237747/sparking-excellence-in-firefighting-through-simulation-training

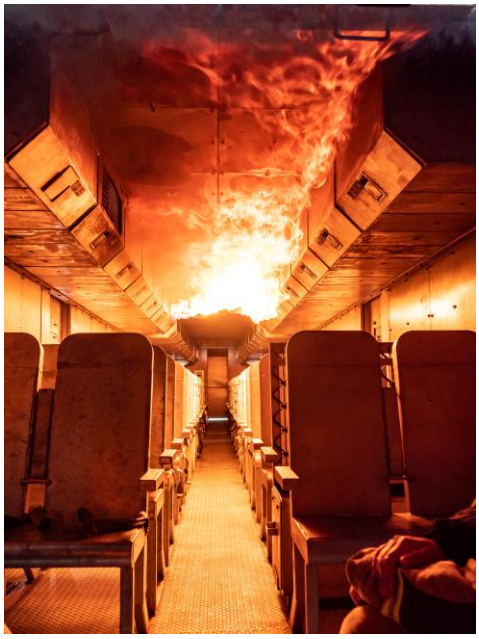
Video:

https://www.youtube.com/watch?v=ivBahmyu660

Pictures:

Pic 1 and 2: A320/B737 aircraft replica during training session

Source: Fire Go GmbH



Pic 3: Spectacular training situation inside the aircraft replica.

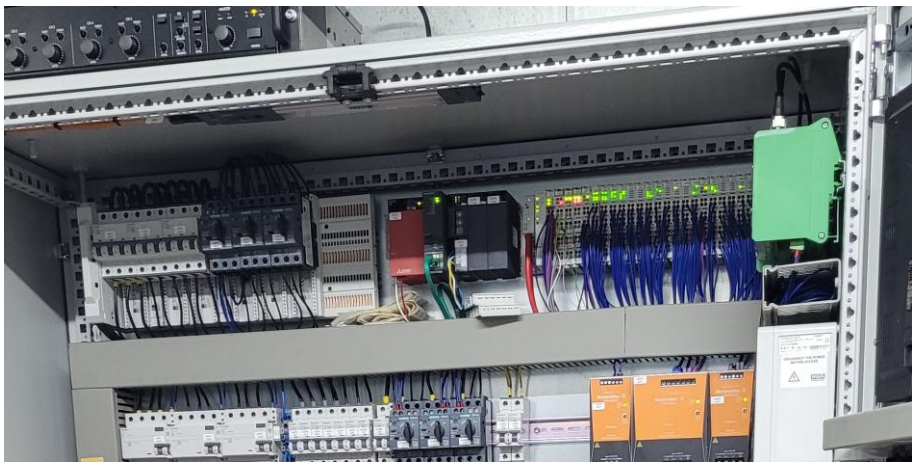
Source: Fire Go GmbH

Pic 4: Jochen Schürgens, Managing Director of Fire GO, in the aircraft replica

Source: Fire Go GmbH

Pic: 5 Control cabinet with Mitsubishi Electric GOT2000 HIMI

Source: Fire Go GmbH



Pic 6The MELSEC System-Q PLC control system manages all simulator functions

Source: Fire Go GmbH

About Fire Go GmbH

Fire Go GmbH, headquartered in Alsdorf (NRW), develops and maintains advanced fire simulation systems designed for realistic live fire training. The company provides both servicing and new designs of gas-powered, computer-controlled installations, ensuring safe and reliable training environments for fire departments and emergency services.

firego.de

About Mitsubishi Electric Corporation

With more than 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognised world leader in the manufacture, marketing, and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation, and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its "Changes for the Better." The company recorded a revenue of 5,521.7 billion yen (U.S.$ 36.8 billion*) in the fiscal year ended March 31, 2025.

For more information, please visit www.MitsubishiElectric.com

*U.S. dollar amounts are translated from yen at the rate of ¥150=U.S.$1, the approximate rate on the Tokyo Foreign Exchange Market on March

31, 2025.

About Mitsubishi Electric Factory Automation Business Group

Offering a vast range of automation and processing technologies, including controllers, drive products, power distribution and control products, electrical discharge machines, electron beam machines, laser processing machines, computerised numerical controllers, and industrial robots, Mitsubishi Electric helps bring higher productivity – and quality – to the factory floor. In addition, its extensive service networks around the globe provide direct communication and comprehensive support to customers. The global slogan "Automating the World" shows the company's approach to leveraging automation for the betterment of society, through the application of advanced technology, sharing know-how, and supporting customers as a trusted partner.

For more about the story behind “Automating the World” please visit:

www.MitsubishiElectric.com/fa/about-us/automating-the-world

Factory Automation EMEA

Mitsubishi Electric Europe B.V., Factory Automation EMEA has its European headquarters in Ratingen near Dusseldorf, Germany. It is a part of Mitsubishi Electric Europe B.V. which has been represented in Germany since 1978, a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan. The role of Factory Automation EMEA is to manage sales, service, and support across its network of local branches and distributors throughout the EMEA region.

For more information, please visit emea.mitsubishielectric.com/fa

About e-F@ctory

e-F@ctory is Mitsubishi Electric's integrated concept to build reliable and flexible manufacturing systems that enable users to achieve many of their high-speed, information-driven manufacturing aspirations. Through its partner solution activity, the e-F@ctory Alliance, and its work with open network associations such as the CC-Link Partners Association (CLPA), users can build comprehensive solutions based on a wide-ranging "best in class" principle.

In summary, e-F@ctory and the e-F@ctory Alliance enable customers to achieve integrated manufacturing but still retain the ability to choose the most optimal suppliers and solutions.

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