Press Release

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Virtual industrial services: Remote maintenance with Bilfinger

- **Remote access to IT systems for plant monitoring and control**
- **Connecting experts from other locations via augmented reality**
- **Pathway to the “virtual industrial plant”**

Many industrial plant operators are currently limiting access to their facilities in order to protect both their own employees and those of their service providers. With fewer people moving around the plant, the risk of the COVID-19 virus spreading is also lower. But many of these plants produce essential products for everyday use – including fuels and chemicals, for example. In order to ensure that these industrial plants can operate with reduced on-site personnel, Bilfinger is offering two solutions for "virtual" industrial services: The secure access to systems for controlling and monitoring production from any computer with an Internet connection as well as the connection of experts at other locations for on-site maintenance tasks using augmented reality (AR) glasses.

Using AR glasses to connect remote experts

Bilfinger Maintenance GmbH, for example, uses AR glasses when special knowledge is required for certain maintenance or repair tasks. Instead of sending the expert to the relevant location, he can connect to a colleague already on site via software. Despite a distance of hundreds of kilometers, the expert can see the plant in real time through the colleague's AR glasses and simultaneously discuss it with him by phone. If necessary, he can use a screen to display additional information on maintenance or repair in his colleague's field of vision. This can include technical data or manufacturer information. The colleague on site has his hands free and can carry out the repair or maintenance.

For a current project in Poland, Bilfinger provided one of the customer's employees with AR glasses at the plant in order to gain virtual access to the facilities. Actual access to the plant by Bilfinger employees was not possible at short notice due to the COVID 19 pandemic.

Customized offer even for difficult operating conditions

"AR glasses enable us to save time, reduce travel costs and reduce health risks in the current situation," says Jörg Stieglitz, Rollout Manager Digital Solutions at Bilfinger Maintenance GmbH. "We provide the appropriate hardware and software depending on the individual needs of colleagues or customers."

The harsh environmental conditions in the process industry put particularly high demands on the AR glasses and the software used. Safe use must be ensured in accordance with applicable standards – in the hazardous areas of a plant, for example. And even with loud background noise, the employee on site still has to be able to operate the AR glasses by voice control.

With this in mind, Bilfinger Digital Next GmbH has selected the most appropriate products for industrial services from the wide range of offers on the market. In recent years, the Group's digital subsidiary has developed and tested remote maintenance using AR glasses for Bilfinger. With the transfer to Bilfinger Maintenance GmbH, the technology is now being used in practice to work remotely in the maintenance business. "We will continue to develop our range of services in the future," says Stieglitz. "Because of the current significant increase in demand, we are looking at ways in which such remote expert involvement can also work with standard software and equipment such as cameras or smartphones."

Safe remote access to plant IT systems

Bilfinger GreyLogix GmbH also offers another solution for plant operation with reduced on-site personnel. Systems engineer Marvin Dunn sets up direct, encrypted access for industrial customers to their systems to control and monitor production plants. Using a Virtual Private Network (VPN) connection, customers can log into the plant systems as though they were on site themselves. "Basically, it's like a virtual extension of the cable connecting the computer to the plant IT systems," explains Marvin Dunn. "The computer can access the systems as if it were actually connected to them with a physical cable."

The Bilfinger GreyLogix team sets up access for customers and carries out the necessary security updates on an ongoing basis. "Our experience in industrial services is a real advantage here: We often have many years of knowledge about our customers' plants, systems and requirements," says Marvin Dunn.

Pathway to the “virtual plant”

A few weeks ago, a customer from Bilfinger GreyLogix in Hamburg approached Marvin Dunn and had remote access to their systems set up: "Our customer thus not only saves time, effort and costs, but also protects the health of its employees. Now colleagues no longer have to be sent to the plant specifically to gain access to the production systems".

In addition to convenient, location-independent access to the plant's control systems, Bilfinger GreyLogix offers further solutions for a virtual plant. If desired, the colleagues can also assume responsibility for regularly checking plant data and informing the customer in the case of irregularities. The Bilfinger subsidiary, which has sites in Germany, Austria, Switzerland, the Netherlands and Russia, can also ensure the recording and storage of data and modernize and maintain the IT infrastructure of the industrial plants. The plant is thus gradually "virtualized".

Accelerated use of new technologies

Jörg Stieglitz and Marvin Dunn agree: "The use of technologies such as AR glasses or remote access to plant control systems is the future - but at Bilfinger, the future has already arrived. The technologies are mature and projects that have already been executed successfully demonstrate their benefits. The significant increase in demand due to the current situation can thus become the first step for our customers on the path toward the virtual industrial plant".
