

UTILITIES

MAINTENANCE IN THE CHEMICAL INDUSTRY

EVONIK IMPLEMENTS MOBILE ROBOT AND GETAC F110 ATEX TABLET FOR AUTONOMOUS INSPECTION ROUTES.

/ Challenge /

Evonik, one of the world's leading speciality chemicals companies, uses Boston Dynamics' mobile robot "Spot" for autonomous inspection of production facilities for the energy, chemical, oil and gas sectors. A key element of the setup is Getac's F110-EX tablet, which is used to train "Spot" for its inspection missions. Safety checks using the new robots generate a lot of data that has to be captured quickly and transferred in real time.

/ Solution /

Getac's F110-EX serves as an interface between the robot, the control software and the human operator, thus meeting Evonik's requirements for efficiency, safety, sustainability and value creation based on state-of-the-art computer technology.

/ Benefits /

The F110-EX was chosen due to its consistent fail-safe performance quality in all tests, even in the most adverse environmental conditions. Evonik thus benefits from the ruggedness, stable connectivity and high reliability as well as strong performance of the F110-EX, and can now perform its inspection rounds by robot without delays.

/ Evonik /

"Not only did we immediately recognise that the F110-EX would fit our needs at Evonik. Getac also responded promptly to our enquiry, acted quickly and provided the right solution. The F110-EX is extremely reliable, fail-safe and works flawlessly to meet our high standards. We are extraordinarily pleased with this choice."

THORSTEN SCHIMPF - Process Expert at Evonik



Getac F110-ATEX
Fully Rugged Tablet

/ Challenge /

As one of the world's leading speciality chemicals companies, Evonik operates in over 100 countries with more than 33,000 employees. Evonik products can be found in numerous everyday items including car tyres, tablets, mattresses and even pet food.

Maintenance and inspection of Evonik's production facilities require a high level of effort and safety, especially in potentially high-risk explosion-endangered areas. To achieve even greater levels of safety and efficiency, Evonik uses the mobile robot "Spot" to inspect its facilities. It is currently being used in an Evonik tank farm, a non-hazardous area with jacketed tanks. This is where Getac's F110-EX tablet plays a key role. It is used to efficiently train Boston Dynamics' "Spot" robot for autonomous inspection missions and routes.

With this setup, Evonik is evaluating the practicality of its robotic solution for future use in the energy, chemical, oil and gas sectors. The robot's main task consists of automated data collection along autonomously travelled inspection routes. This includes safety checks that cannot be performed remotely, or require considerable effort to do so. The primary aim is to achieve greater efficiency in inspection intervals, while also increasing the safety of inspections to prevent employees from having to enter hazardous areas as often.

Although it is possible to train inspection missions remotely, they should be carried out in the facility for safety reasons among other things. This requires rugged high-performance tablets. They must be resilient and ATEX-certified, as well as legible and fully functional outdoors in all weather conditions from heat to frost or rain.

Other requirements include a Windows operating system, rapid collection and processing of large amounts of data, and smooth real-time video transmission. Reliable connectivity for real-time applications is essential especially for displaying video, as is the availability of LTE connections,

because the tank farm has no Wi-Fi. A secure connection to the controller must be guaranteed and a practical carrying strap helps keep the hands free for simultaneous controller operation.

/ Solution /

To quickly capture and collect large amounts of data and measurements during delicate safety checks, the mobile "Spot" robot moves autonomously along predefined inspection routes. It is controlled and trained for its routes with the help of Getac's F110-EX. "Spot" is an intuitively guided robot equipped with sophisticated AI as well as powerful control and autonomy software made by Energy Robotics. To orient itself in the production facility, it is equipped with various sensors as well as optical and infrared cameras. It moves unerringly to defined points on the grounds, takes photos of measuring device displays including thermal images inside the facility, or records video, collects data and reads out flow rates as well as pressure values. This enables early detection of deviations including excessive temperatures, contamination and leaks.

The Getac F110-EX plays a key role in this, as it provides an interface between the user, the control software and the robot. An intuitive remote control is used to start missions as well as guide and train the robot. A specialist supports the robot by using the F110 device to access software on the web server for control and monitoring purposes. An additional Bluetooth controller is used for rapid manual intervention during the operation.

At the beginning of the project, Evonik used a competitor's rugged tablet. However, the device failed immediately when exposed to just small amounts of moisture. A few drops were enough to completely disrupt the mission. To avoid further delays, Evonik opted for a Getac device.

When re-evaluating its options, the company was impressed with the fully rugged Getac F110-EX tablet's performance.

/ Benefits /

In choosing the Getac F110-EX, Evonik is now using a highly reliable, powerful tablet to make all its scheduled missions feasible without losing any time. The often enormous amounts of data are transmitted securely, stably and in real time. The device's impressive ruggedness and reliability have meant that no missions have since had to be aborted due to bad weather or other equipment-related reasons. Getac's wide range of accessories is also proving to be extremely helpful. It is easy to wear the F110-EX with a carrying strap, so the operator's hands are free to use the controller at the same time. An additional assistant was required for this in the past.

Getac F110-EX tablets have been in full use at Evonik since March 2022. All the devices are working flawlessly, safely, without failure, and so well that Getac's extensive support service has not even been required thus far.

