

SUCCESS STORY

Retrofit Project Railway

In this typical retrofit project we will learn how a Revolution Pi system was used to upgrade an existing fresh water filling station at several German railway stations with typical IIoT features such as real-time monitoring and remote access. In addition, the RevPi is also used as a small control unit.

Even electrically operated trains have to go to the filling station. No, of course not to fill up on fuel, but to fill up their fresh water tanks and pump out waste water. To ensure that these refueling processes run smoothly, a Revolution Pi system takes over the control of such a fresh water filling station.

The Revolution Pi system in this project consists of a RevPi Core and the RevPi DIO digital I/O expansion module. Two electrical closures with attendance detection, which secure the hose couplings against removal, buttons and LEDs on the control panel, a switch cabinet and two pipe trace heaters, a water meter, a magnetic ball valve, as well as the work lighting are controlled by the Revolution Pi system.

For hygienic reasons, the Revolution Pi system ensures that drinking and waste water hoses can never be removed at the same time. In addition, after 24 hours of non-use a 60-second hygiene flushing takes place.

Connected to the Internet via a separate DIN rail router, the Revolution Pi system retrieves weather and temperature data and activates the connected heaters if needed.

Minimizing downtime thanks to IIoT

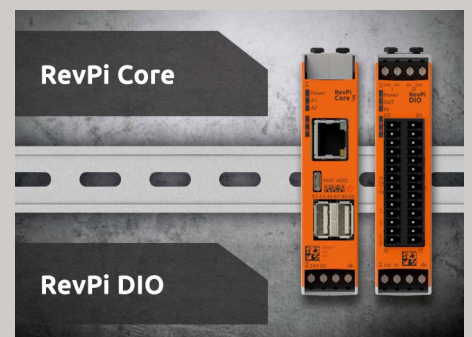
If malfunctions occur during operation, they are transmitted in real time to a connected Siemens system in the control center and graphically displayed on a specially created dashboard. At the same time, all responsible service technicians receive a message via SMS and e-mail with detailed information about the respective malfunction. If there is damage to the control elements on site, all important functions of the system can also be controlled remotely. All actions of the system are also logged. Thus, for example, the required function tests can be exactly reproduced by the Federal Railway Authority and monitored remotely. Recorded consumption and usage statistics of the system also ensure rapid detection of leaks.

Implementation

This project was implemented by **erminas**, a system integrator and product developer in the field of Industrial IoT from Northern Germany. Their main focus is the support of production processes and the digitalization of products.



Modules used



REVOLUTION PI

Web revolutionpi.com
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[linkedin.com/showcase/revolution-pi](https://www.linkedin.com/showcase/revolution-pi)