nerve

Case Study: Fill

Providing direct access to
machine data with Nerve

Fill is a leading international machine and plant engineering company headquartered in Austria. Its products are used in automotive, aviation, sports and construction industries for the highly automated processing of metal, plastic and wood.

Challenge

Fill has developed a solution for the Smart Factory called Cybernetics. Cybernetics connects to all machines in the factory and enhances them with intelligent algorithms that increase profitability and product quality. In addition, production and process data are collected and recorded. Customer-specific, platform-independent dashboards ensure optimal overview and enable detailed analysis of production and machines. In developing Cybernetics, the central question in the project was how data can be best transferred from the machine to the Cybernetics platform. An alternative to conventional fieldbuses was needed as they cannot offer the requisite data transfer speeds without overburdening the controller.

> "Nerve offers us high-performance data access in real-time to reliably connect machines worldwide and lets us host our own software applications. Working with our existing hardware and system environment enabled us to reduce cost and focus on our core competences,

says Stefan Murauer,
Team Leader Software at Fill.

Fill also wanted to run their own software applications locally, so that data can be processed before it is sent to a server or the cloud. Based on these requirements, Fill chose TTTech Industrial's Nerve software platform.

Solution

Nerve runs on edge devices, which are integrated into every Fill machine tool and then connected to a central management system. Nerve aggregates data from machines at high-speed and makes it available to the Cybernetics platform, where specific analyses and programs are hosted as Docker containers. It then sends the data to the customer's cloud solution of choice - this can be their own or the one offered by Fill. The Nerve Management System enables central management of machine software installed around the world and provides access to data that can be used for various analytics. This feature allows an immediate identification of and reaction to critical machine conditions.

Benefits

Nerve enables Fill to offer its customers open and secure data connectivity on the machine, in the factory, and to the cloud. It provides an edge computing infrastructure that allows Fill to focus development on its core areas of competence. In future, data evaluation-as-a-service will become a central point of Fill's business model. With Nerve, Fill can use global data records to determine, for example, the amount of wear specific machine parts are subject to across the machine pool, thus ensuring that customers always receive the best possible service. Customers not only receive feedback in the event of a malfunction, but also have the opportunity to plan maintenance in advance, better estimate production numbers and reduce costs.