



New pay-per-use assembly solution: Analytics-supported control of intelligent radio cordless screwdrivers from the MES

Bosch Rexroth, iTAC and OpenText demonstrate machine monitoring and screw solutions from the cloud.

Montabaur, 15 January 2018 – Bosch Rexroth, iTAC and OpenText have focused their expertise in IIoT applications on a new pay-per-use system. Based on the iTAC.MES.Suite dockerized, supported by the OpenText Information Hub iHub and using the I4.0-capable cordless Nexo screwdriver from Bosch Rexroth a pay-per-use application scenario has been set up in a real just-in-sequence assembly cell. The cooperation partners are demonstrating the solution at the Industrial Internet of Things Innovation Center run by Accenture in Garching near Munich.

This solution by iTAC, OpenText and Bosch Rexroth will be a door-opener to Internet of Things. The basis is an ecosystem comprising ERP, MES, and BI solutions as well as the Nexo screw technology. This is a radio cordless screwdriver from Bosch Rexroth which has an intelligent controlling system following the ZVEI guidelines “Which Criteria do I4.0 products have to fulfill?” - a global innovation that makes Industry 4.0 applications possible.

The product can be communicated to online, it supplies and takes data and is plug-and-play ready for Industry 4.0-conform services. It also creates standardized data with cross-manufacturer unique identification that can be read by a scanner.

Radio cordless screwdriver communicates with MES

Based on the Nexo features a pay-per-use application scenario was built in a real just-in-sequence assembly cell at the Accenture IIoT Innovation Center. This scenario shows how the screwdriver supports assembly processes. It has been set up as a steering wheel assembly and demonstrates how the radio cordless screwdriver automatically recognizes whether the steering wheel being assembled is correct. The screw system

provides its own data via process interlocking mechanisms. If the steering wheel is not correct, the process is stopped automatically by the iTAC.MES.Suite dockerized with which the screwdriver communicates.

The iTAC.MES.Suite dockerized is a platform-independent, cloud-capable MES solution with a container-based character available on the leading IoT platforms such as Microsoft Azure, AWS, IBM Bluemix etc. The MES services of iTAC.MES.Suite dockerized such as quality analysis, gapless traceability, automatic material procurement or simultaneous multi-resource planning can be used as a public-cloud, on-premises or edge-device solution.

Integrated BI system for process transparency

The system enables steering wheels to be assembled according to their type. It not only shows and controls if the correct material has been used but also, for example, whether the steering wheel has been assembled using the correct torque. The process is supported by the OpenText Analytics Information Hub platform iHub, which visualizes what occurs during production by supplying different production data such as torque and screw angle. The embedded analysis function enables process optimization by monitoring important metrics in real time, identifying target deviations and learning why these deviations occur.

Pay-per-use – Needs-based invoicing

With this system the worker only has to scan the barcode once. The pay-per-use system calculates different rates depending on torque speed. This allows invoices to be calculated per torque.

Invoicing takes place in ERP. The MES communicates with ERP via interfaces. The invoice is generated fully automatically in ERP for the factory as a closed-loop scenario. The systems can communicate with each other via integration services.

The application system based on a closed-loop hybrid cloud guarantees low or no initial costs for the infrastructure. As well as an increase in productivity, production quality and process safety, needs-based usage and



invoicing are possible leading to better transparency. This project is an outstanding example of practical Industry 4.0 applications. The solution can be viewed from now at the Accenture IIoT Innovation Center in Garching.

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About iTAC Software AG

iTAC Software AG, an independent company of the mechanical and plant engineering group Dürr, provides Internet-enabled information and communication technologies for the manufacturing industry. Founded in 1998, the company is one of the leading MES providers in Germany. The iTAC.MES.Suite is a cloud-based Manufacturing Execution System that is used worldwide by companies in different industry sectors such as automotive manufacturers and suppliers, electronics/EMS/TC, medical technology, metal processing and energy. Additional services and solutions enable the implementation of industry 4.0 and IIoT requirements. iTAC's philosophy is connecting people, data and systems.

iTAC Software AG has its headquarters in Montabaur (Germany) as well as a branch in the USA and a global partner network for sales and services.

The Dürr Group is one of the world's leading mechanical and plant engineering firms. Products, systems and services offered by Dürr enable highly efficient manufacturing processes in different industries. Business with automobile manufacturers and their suppliers accounts for approximately 60% of Dürr's sales. Other market segments include, for example, the mechanical engineering, chemical and pharmaceutical industries and the woodworking industry.

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