automatica
Optimize your Production

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Press Release

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Experience digital transformation live at automatica 2022

Productivity gains and climate neutrality through digitization

- **Greater productivity through data analysis**
- **Digital transformation contributes to climate neutrality**
- **Digitization is an automatica core topic**

There is potential to further increase productivity even in automated production. Digitization is the key word; smart data analysis provides the tool – and the environment benefits as well. At automatica, which will be held at Messe München exhibition center from June 21 to 24, 2022, visitors will get to see impressive use cases.

It almost seems too simple to be true: Take a modern, extensively automated production facility, collect data from various robots, handling systems, and machines and evaluate this data. When combined intelligently, this information has the potential to increase output by 15 to 25 percent without any additional investment in hardware.
This is not wishful thinking, but a reality. And such use cases will be exhibited at automatica. They illustrate what 'digital transformation' really means and what benefits it offers.

Greater productivity through smart data analysis
Example: A German car manufacturer collected and analyzed data from its almost 400 robots deployed in the body-in-white shop at one of its plants, and then used algorithms to correlate this data with environmental information – even including weather data. The findings were insightful and, among other things, led to changes in the welding parameters for joining hot-formed steel.

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The result: An increased hourly output from 18 to 21 car bodies. The perspective: In the future, such data is intended to be used in plant self-optimization or to detect imminent faults.

Downtime minimization for 2,500 welding robots
A second example is another body-in-white shop application at a premium car manufacturer and involves automatica exhibitor Festo. Its systems specialists installed additional software on the robot cell's existing plant PCs that collects diagnostic data from the welding gun and sends it to a cloud interface.

The cloud runs a maintenance application that doesn't just display this data in the browser on a maintenance dashboard, but also estimates the expected remaining service life using artificial intelligence. With the help of this predictive maintenance system, the car manufacturer was able to reduce welding robot downtime by 25 percent.

Digitization: the robots are ready
What does it take to unlock such efficiency gains? This question will be answered at automatica. In any case, the automation 'hardware' is already digitization-enabled. For example, it continuously collects data while welding, picking, assembling, and handling, thus creating the 'raw material' of the digital world – and a substantial amount of it.

Peter Pühringer, Managing Director of Stäubli Robotics: "Our robots provide all the data required for AI-based tasks and self-optimizing systems in real time. Our six-axis robots can continuously provide around 2,000 different pieces of information, including operating temperatures of each axis, speed and acceleration values, torques, and much more."

This large amount of data not only enables users to monitor the robot performance and integrate it into digital predictive maintenance concepts. The data

can also be passed on to other machines and integrated in higher-level IT systems. And today's robots are equipped with the interfaces requires for that.

A matter of interfacing

Interfacing requires standards such as OPC UA, a protocol used for communication across machines. Fanuc uses a wide variety of communication protocols such as OPC UA and MTConnect servers, both at fieldbus level and to interface with higher-level IT systems. The Japanese robot manufacturer also supports industry-specific protocols such as UMATI, which is commonly used in metal-cutting production. Among other things, it enables direct interlinking of machine tools and robots.

Open interfaces also play a role in the development of KUKA's new robot operating system and digital ecosystem. They are at the core of efforts to ensure that iiQKA enables everyone to access the world of automation – whether expert or not. The operating system is based on a modular software architecture. Developed by users for users, the new system software will make robot deployment faster, more efficient as well as accessible and easy to use for all. Usability is its core value.

Smart data evaluation – on site and in the cloud

As such concepts become a reality, users must also set up the appropriate IT infrastructure along with automated production facilities. What that means specifically: They will have to use edge computing and cloud computing as very large amounts of data are involved. And – as illustrated by the use cases outlined above – they will have to use artificial intelligence to comprehensively evaluate the data.

Those who consistently invest in digitization will be rewarded – for example, through significant efficiency gains. The vision is as follows: Products find their own way through production facilities. Machine components automatically detect and report wear and irregularities. And plants optimize their operation independently. This unlocks highly automated production of small series and unique

products at greatly reduced cost – just to give another example. And that is part of Industry 4.0's core concept.

Digital transformation contributes to climate neutrality

Volker Spanier, Head of Robotic Solutions at Epson, points out another aspect: "According to a study by the Bitkom industry association, digitization in production, if implemented consistently, could reduce CO_2 emissions in Germany by up to 64 megatons by 2030 – a huge step towards climate neutrality."

So this entire topic could hardly be more exciting and holds enormous potential in many respects. This is where automatica in June 2022 comes in: In Munich, visitors will learn how digital transformation will change automated production in the years to come.

Further information on automatica is available online: https://automatica-munich.com/en/

About automatica
automatica is the world's leading marketplace for automated smart production. It is the trend setting event for companies from all industry sectors, providing access to innovations, knowledge, and trends with a high degree of business relevance. automatica focuses and shapes the transformation of industrial production – from automated to autonomous facilities. Messe München GmbH and VDMA Robotics + Automation, conceptual sponsor of the trade fair, are behind the industry-driven concept of automatica.

Messe München
Messe München is one of the leading exhibition organizers worldwide with more than 50 of its own trade shows for capital goods, consumer goods and new technologies.
Every year, about 50,000 exhibitors and around 3 million visitors take part in more than 200 events at the exhibition center in Munich, at the ICM – Internationales Congress Center München, the Conference Center Nord and the MOC Veranstaltungscenter München as well as abroad.
Together with its subsidiary companies, Messe München organizes trade fairs in China, India, Brazil, Russia, Africa, Turkey and Vietnam. With a network of associated companies in Europe, Asia and South America, and with around 70 representatives abroad for more than 100 countries, Messe München has a truly global presence.