

in cooperation with

intel KUKA

Automation Excellence Meets Professional IIoT Infrastructure

# Off to data-driven production

KUKA offers all-in-one package for the manufacturing industry

**T · Systems ·** Let's power higher performance



Many companies in the manufacturing industry have recognized the importance of digitalization and data for their business. They know: To gain a competitive edge they have to set up their production in a sustainable and flexible manner and they need to develop solutions for current and future challenges. Better knowledge of central production data leads the way towards that goal.

Shop floor managers can use data from machines, robots and entire production systems to record and specifically control the performance of production. They are aimed at higher overall equipment efficiency, higher product quality, more sustainable production and many other added business values.

## Starting into the factory of the future

The good news: Mechanical engineering companies are already providing products that help manufacturing companies make this vision of Smart Factories respectively Industry 4.0 a reality. A prominent example of this is KUKA, one of the world's leading providers of intelligent automation solutions. KUKA not only provides its customers with robots, but also offers an operating system which not only allows flexible programming and control of the robots, but also obtains a wealth of information from the operation of the robot making the device smart.

IIoT packages from KUKA open up the opportunities of the Industrial Internet of Things (IIoT) also for small and medium-sized companies. The use of products for robot-based applications does not

need a new factory – manufacturers can also use them in a brownfield approach, i.e. in existing environments.

However, the storage and analysis of the data requires powerful computing and storage capacities that the robots usually do not have on board. The easiest way would be to outsource these contributions to the cloud. But the cloud poses two new, fundamental challenges: On the one hand, there is sometimes significant network load with corresponding latencies (which makes real-time analysis difficult). On the other hand, with the use of the cloud, users lose their sovereignty over their data. No company wants to take the risk that the valuable insights into production get available to external parties. The solution lies in edge computing resources. With that manufacturing companies use computers and storage media located on their own premises.

## Edge Computing is part of Smart Manufacturing

With an edge architecture, data sovereignty and performance can be guaranteed – all data is collected, processed and stored directly at the customer's premises via Industry PCs/edge servers. This approach also realizes a high level for data security: Edge systems can be operated without a connection to external networks such as the Internet.

But with the edge architecture, a new question comes to the fore: Who is responsible for the provision and maintenance of the edge systems? Automation specialist Kuka has found an answer to this and put together a unique all-in-one package for its clients containing robots, software, IT hardware including maintenance from a single source.



## Strong partnership for an all-in-one bundle

Kuka is partnering with Intel and T-Systems. Intel provides powerful hardware for edge servers that are perfectly tailored to the requirements of industry: The second and third generation Intel® Xeon® scalable processors offers high security and immense performance, which also allows the operation and development of applications with Artificial Intelligence (AI), e.g. video and speech analysis. For this purpose, the processors have built-in AI acceleration. The OpenVINO™ toolkit facilitates the development of AI applications.

T-Systems bundles the Intel-powered hardware with operating services for the edge resources. T-Systems thus contributes the complete management of IT resources as a managed service, named EdgAIR.

The Kuka employees deliver the system components of the complete solution to the customer and put them into operation. The KUKA service employees also act as the primary contact for the customer. The customers do not have to spend any additional time on management or implementation. They can focus on evaluating the data and optimizing their production.

## Explore new options with data-driven production and AI

The complete solution opens up completely new horizons for the manufacturing industry. A wide range of analyses can be created on the basis of the data, which help to optimize throughput times, reduce energy consumption or identify errors more quickly. Since the analyzes can not only be created at the level of individual robots, complete production chains can also be improved.

At the same time, the KUKA IIoT approach establishes new options for service. Remote access for software updates often avoids local servicing. In lieu thereof robots can be maintained or repaired depending on the specific situation – resulting in lower operation cost and offering big advantages e.g. during a pandemic phase.

Furthermore, the solution paves the way to the world of future AI technology, with which companies can additionally revolutionize their efficiency or create completely new application scenarios for modern work.

All in all, a step into the future – towards greater competitiveness empowered by digitalization from a single source.

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