



Sustainable, efficient, innovative: How companies can manufacture more climate-friendly with digital solutions

- BORGWARNER: Controlling energy consumption in real time - and minimize CO2 emissions
- LESER GmbH & Co. KG: Increasing efficiency by 12% in a pilot phase
- REICH GmbH: Securing Quality via cloud across continental borders
- Smart factory solutions for every need and every company size

Ravensburg, July 2021. Digital technologies are key to the most important strategic goals of the manufacturing industry: efficiency, sustainability and innovative strength. For every business goal and company size, smart factory specialist FORCAM from Germany offers a suitable solution.

Dr. Andrea Rösinger, Co-CEO and CTO of FORCAM: "The factory of the future will operate largely without errors and waste, because workers will control it with real-time data. For this data-driven manufacturing, we are positioning ourselves as the best data supplier. Our solutions generate smart data from all signals of a factory for state-of-the-art applications: real-time analytics, predictions, artificial intelligence. Our data models help customers to manufacture in a more climate-friendly, efficient and innovative way."

Oliver Hoffmann, Co-CEO and CSO of FORCAM. "We live in the era of technology-driven innovation: Growth potential is offered to companies primarily through global data exchange, no longer solely through the provision of physical goods. With our new product portfolio, we are giving companies digital solutions for their most important goals of the future – sustainability, efficiency, and innovative strength."

The solution family FORCAM FORCE™ for the Industrial Internet of Things (IIoT)

Under the umbrella brand FORCAM FORCE™, companies can find solutions and components for a wide range of needs – from simple smart factory package solutions to individual IT architectures and cloud edge computing to digital connectivity for heterogeneous machine parks, scalable in global factory networks.

- For corporations: With the Connectivity as a Service-solution [FORCAM FORCE EDGE](#), corporations with global factory networks can connect all machines digitally – independent of their construction year or producer – and quickly scale up globally. FORCAM is a partner of SAP in this: FORCAM's connectivity will serve as a „molding“ around the joint clients' machine park and enable the transformation of any machine data into SAP's digital supply chain. Available on [SAP Store](#)
- For medium-sized companies: With the Platform as a Service-solution [FORCAM FORCE IIOT](#), medium-sized companies create their individual IT architecture. They can freely compose IT systems on one [platform](#) and have them communicate in hybrid IT infrastructures – on-premise, edge, cloud. All important MES apps (Manufacturing Execution System) are ready to use. [Microsoft AppSource](#)
- For SME: With the packaged Software as a Service-solution [FORCAM FORCE SAAS](#), small and medium-sized enterprises (SME) benefit from rapid efficiency advantages at a fixed monthly price. The basic hardware is supplied, and the software with predefined application scenarios operates in the Azure Cloud. [Microsoft AppSource](#)



Sustainability: How BorgWarner manages energy costs effectively

Connectivity is the supreme discipline: Global manufacturing companies need end-to-end digital connectivity for both old and new machines in order to protect their investments in existing equipment and to simultaneously enable innovative applications, for example for sustainable manufacturing.

The [FORCAM FORCE EDGE](#) solution easily connects existing machines in factories digitally - the so-called brownfield - and then networks identical machines worldwide in the shortest possible time. The latter is made possible by the Machine Repository component through a novel template approach. In addition, the solution converts the machine signals into smart data, which are necessary to be able to use innovative apps like real-time analyses, prediction and Artificial Intelligence properly.

Example of sustainability: "The connectivity solution of FORCAM enables us to quickly collect energy data in production and use it to create the corresponding evaluations for continuous energy monitoring," says Martin Strehl, Manager EHS, BorgWarner Cooling Systems GmbH (Markdorf, Germany). "We can call up this data in the system in real-time at any time. Thus we have our energy costs under control in the short and in the long term." This is an important lever for minimizing CO₂ emissions.

Efficiency and empowerment for work 4.0: Pilot project results in 12 percent higher productivity

Internationally active medium-sized companies need a flexible factory IT architecture to integrate existing and required IT solutions and allow them to interact with each other. Free data exchange increases the efficiency of production and processes significantly.

The [FORCAM FORCE IIOT](#) solution offers a turnkey and flexibly customizable cloud platform that includes both open interfaces (Open API) for the smooth integration of IT systems and preconfigured MES (Manufacturing Execution System) software.

One application in factories used frequently is monitoring the OEE (overall equipment effectiveness). "We have increased OEE by more than 12 percent in eight bottleneck centers for complex molds during the pilot phase," says Kai-Uwe Weiß, Head of Global Industrial Engineering at LESER GmbH & Co. KG, the leading international manufacturer of safety valves. "Assuming an hourly rate of, for example, two euros per minute, one can imagine the effects that an increase in productivity has on liquidity."

Being smart means being open – open also for Factory Work 4.0: Included in the FORCAM FORCE IIOT solution is a certified connector to the app ecosystem [Microsoft Power Automate](#) with around 400 market-renowned applications, including Excel, Facebook, Outlook, Salesforce, Skype, Trello and many more. The "FORCE Bridge" connector bridges the gap between Microsoft's app ecosystem and a manufacturing company's production data. Factory teams can use brand-name apps to build smart ad hoc or alerting workflows, significantly minimizing errors or downtime.



Innovative Power: How REICH GmbH secures highest quality globally via the cloud

For the digitization of manufacturing, small and medium-sized enterprises (SMEs) need a solution that can be deployed quickly and that quickly delivers efficiency benefits. Installation must be simple and the costs must be attractive and plannable.

This market is addressed by the solution [FORCAM FORCE SAAS](#). The packaged software-as-a-service offering fits into existing IT structures. Additional IT resources are not necessary. For a fixed monthly price, SMEs receive all the benefits of a Smart Factory – hardware, operation, cloud infrastructure, service and support. The solution with FORCAM technology and Microsoft Azure is ready for use in just a few days.

The solution collects signals from a wide range of machines, converts them into usable data and sends them to the cloud. From there, factory teams receive visualized analyses on their screens. This enables them to accurately qualify operating states in real time. This creates transparency and brings greater efficiency and significant cost benefits.

The advantages of a cloud solution are used by automotive supplier REICH GmbH from Mellrichstadt in Bavaria. The hidden champion ensures the highest quality and delivery reliability in its factories in Germany and the USA. Production manager Christoph Renner: "We have accurate, real-time performance data available anytime, anywhere. It enables us to manage our production globally, efficiently, and adaptively."

And Stefan Helm, responsible for Sales & Operations Planning at REICH, explains how working with cloud infrastructure works on a day-to-day basis: "We communicate remotely via computer every day with the US team and everyone is looking at the same data. Both plants have reached the same higher level of performance after a short time."

[To the reference report REICH GmbH](#)

About FORCAM – www.forcam.com

In the era of the Industrial Internet of Things (IIoT), companies need an flexible IT architecture for manufacturing to significantly increase efficiency in production and planning. Based on the IIoT solution family FORCAM FORCE™, FORCAM offers modular products for data-driven manufacturing. The solutions enable comprehensive transparency through connectivity and through the digital twin of production, higher efficiency through edge and cloud computing as well as free composition and collaboration of IT systems. The basis is an open IIoT platform technology, which is rated as a leader by analysts and was awarded the Innovation Prize 2020 of the state of Baden-Württemberg. FORCAM technology is used by both large and medium-sized companies - including BorgWarner, Dynamax Aerospace, Howmet Aerospace, Kostal, Krones, Lockheed Martin, Richards Industrials and Schaeffler. More than 100,000 machines worldwide are monitored with FORCAM technology. The main shareholder of FORCAM is Dietmar Hopp. The company is headquartered in Ravensburg, Germany, with offices in USA (Cincinnati), England (Rugby) and China (Shanghai).



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