# Live Business Is Connected

## SAP and Partners at Hannover Messe

April 25-29, 2016
Stand C04, Hall 7

**www.sap.com/hannovermesse**

# Foreword

## Welcome

Industry 4.0 marks the beginning of a new era. Fully integrated production facilities, equipment networks, predictive analytics, and advanced engineering solutions are revolutionizing manufacturing around the world. German companies are now challenged to defend their innovative edge and develop sustainable strategies for digital transformation. At the SAP booth at HANNOVER MESSE, you can discover numerous real-world scenarios for the Internet of Things.

For example, you will witness how you can connect all the machines in your production facility, use their data to add value, and make product and system information available across your entire enterprise. Or how to autonomously control all systems and devices in your manufacturing line—more flexibly, efficiently, and sustainably than ever before. Even tailored job production can finally be executed as cost-effectively as mass production. Moreover, employees can carry out their processes optimally with the help of 3D visual instructions. Simply put, you will experience the fascinating aspects of a high-speed factory that sets new benchmarks and creates crucial competitive advantages—including innovative service models.

We hope you will come back with many new ideas and gain fresh inspiration.
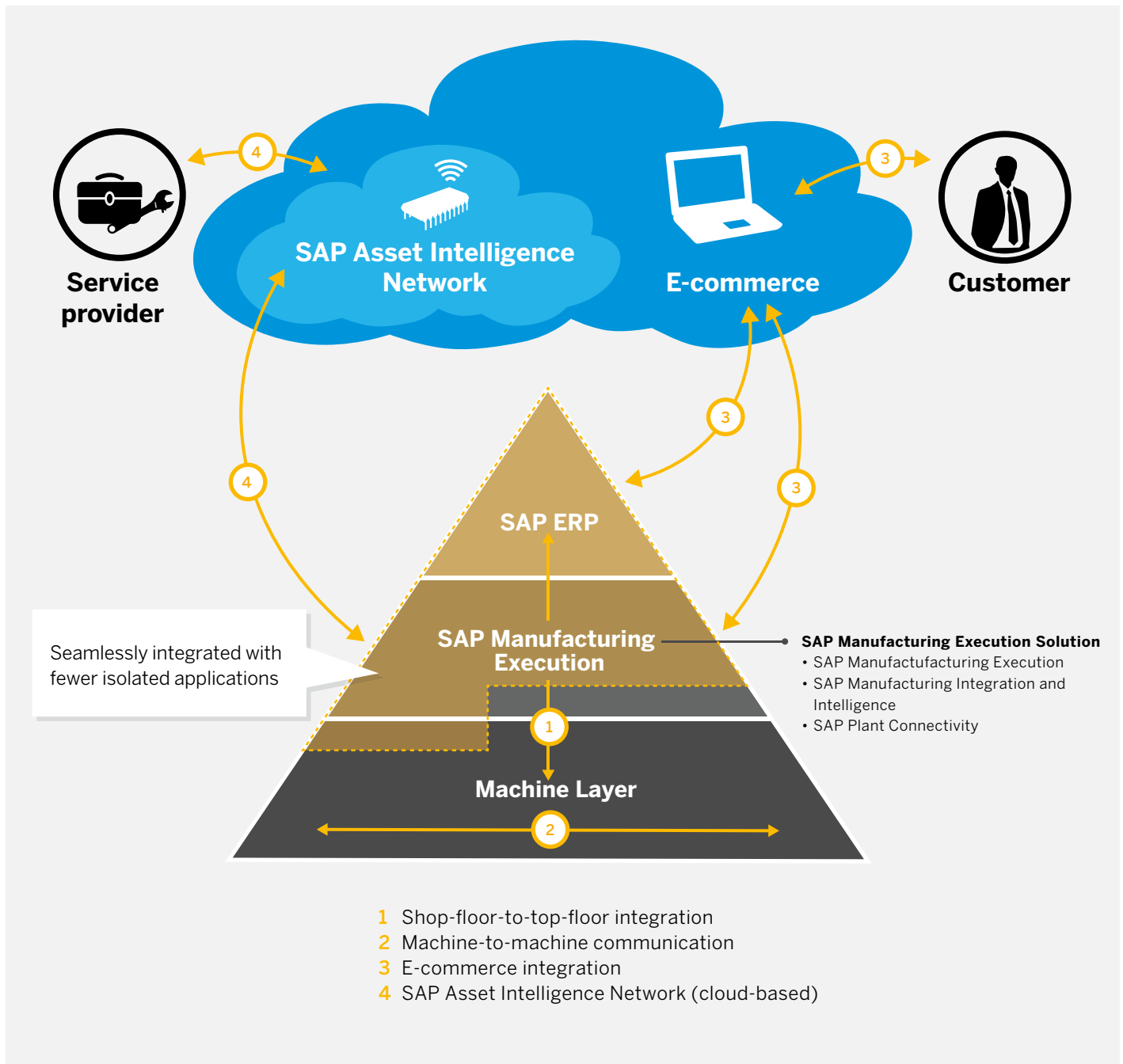
Kind regards,

**Dr. Daniel Holz**
Head of Sales in Manufacturing & Automotive and
Member of the Executive Board
SAP Deutschland SE & Co. KG

# Automation Reimagined



**Service provider**

**SAP Asset Intelligence Network**

**E-commerce**

**Customer**

Seamlessly integrated with fewer isolated applications

**SAP ERP**

**SAP Manufacturing Execution**

**Machine Layer**

**SAP Manufacturing Execution Solution**
- SAP Manufactufacturing Execution
- SAP Manufacturing Integration and Intelligence
- SAP Plant Connectivity

1  Shop-floor-to-top-floor integration
2  Machine-to-machine communication
3  E-commerce integration
4  SAP Asset Intelligence Network (cloud-based)

## Connected from ERP to Sensor

Interoperability and connection are the key factors in a successful Industry 4.0 strategy. The automation system hierarchy becomes a network of autonomous, cyber-physical systems. This enables bidirectional, direct communication between the programmable logic controller (PLC) and the ERP or manufacturing execution systems (MES). At the same time, business and manufacturing IT systems are fully connected. The result is a transparent, highly efficient cycle of processes, data, and monitoring. You can experience this concept live in our "Open Integrated Industry—Generation 2016" showcase at our stand.
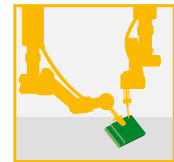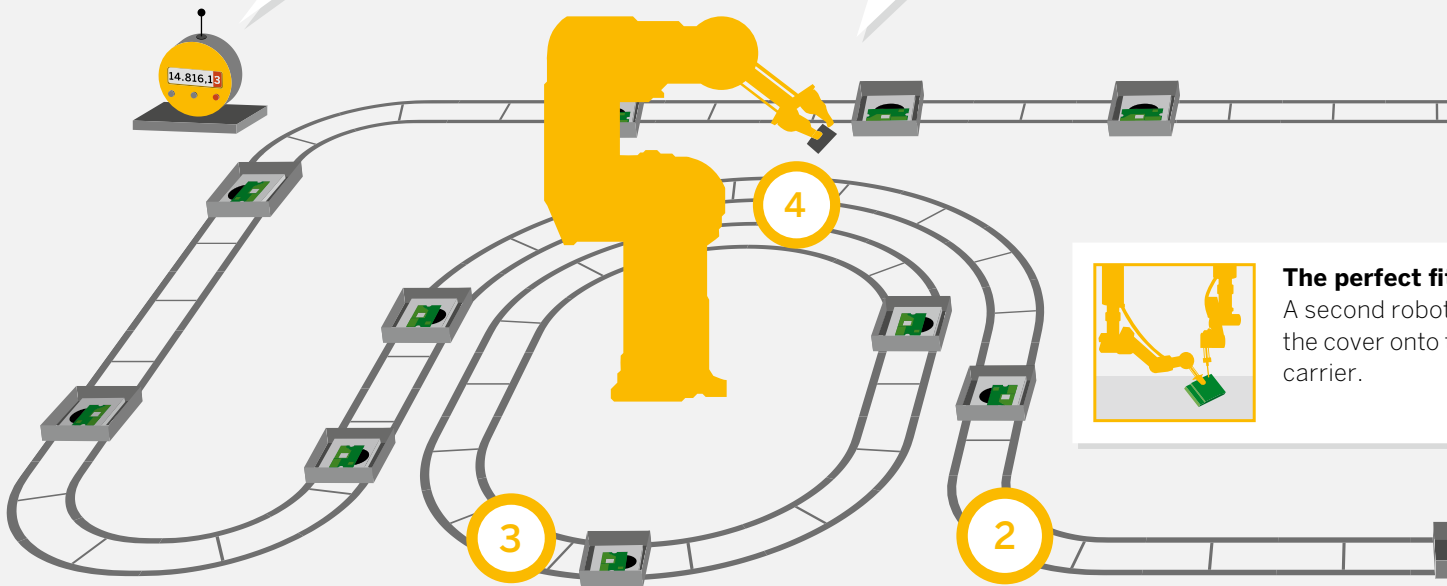
# Open Integrated Factory—Generation 2016
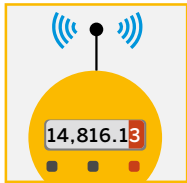
**Keeping an eye on energy**
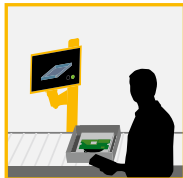A smart meter measures power consumption and sends the data to the cloud via OPC UA.

14,816.13
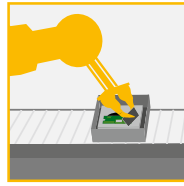
**Intelligent selection**
A robot arm receives information on which chip should be loaded onto the workpiece carrier.

**The perfect fit**
A second robot the cover onto carrier.

4

3

2

**Insert battery**
The worker prepares the chip for production with minimal effort.
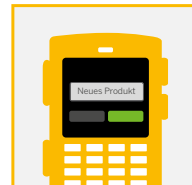
**Getting started in seconds**
The system retrieves the order and begins production following approval. The workpiece carrier is automatically and rapidly conveyed and positioned throughout the entire process.

Neues Produkt

This showcase is a co-innovation by:
- SAP
- Beckhoff Automation
- Honeywell
- Stäubli Robotics
- ASENTICS
- cab Produkttechnik
- ProGlove
- Stratasys
- itelligence
- OPC

**Now it's personal**
A laser printer engraves the cover precisely to the customer's specifications.

**Anything else?**
A worker manually reworks the product, if needed, and can instantly begin 3D printing a replacement part.

6

8

**And off to the warehouse**
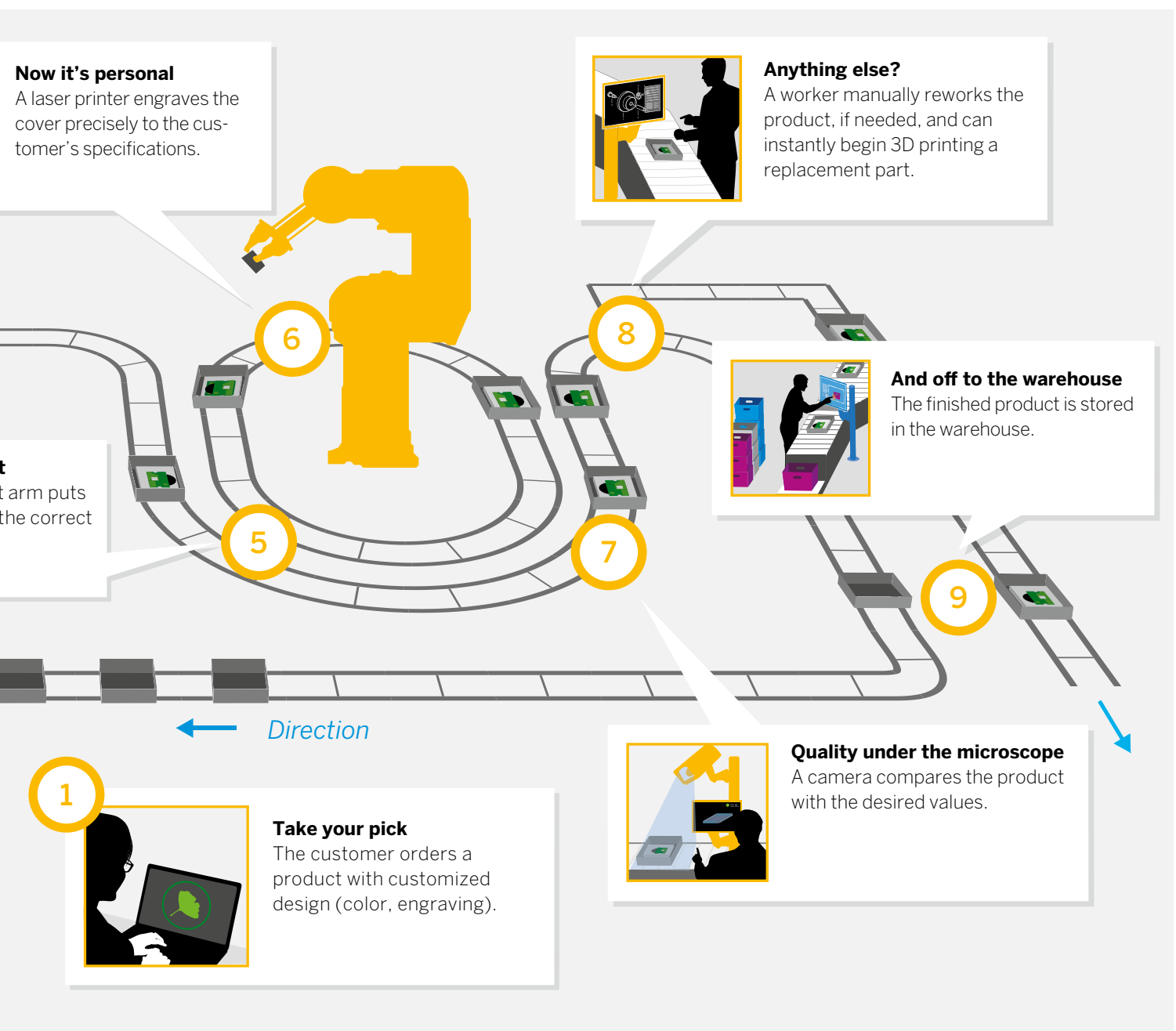The finished product is stored in the warehouse.

t arm puts the correct

5

7

9

← *Direction*

1

**Take your pick**
The customer orders a product with customized design (color, engraving).

**Quality under the microscope**
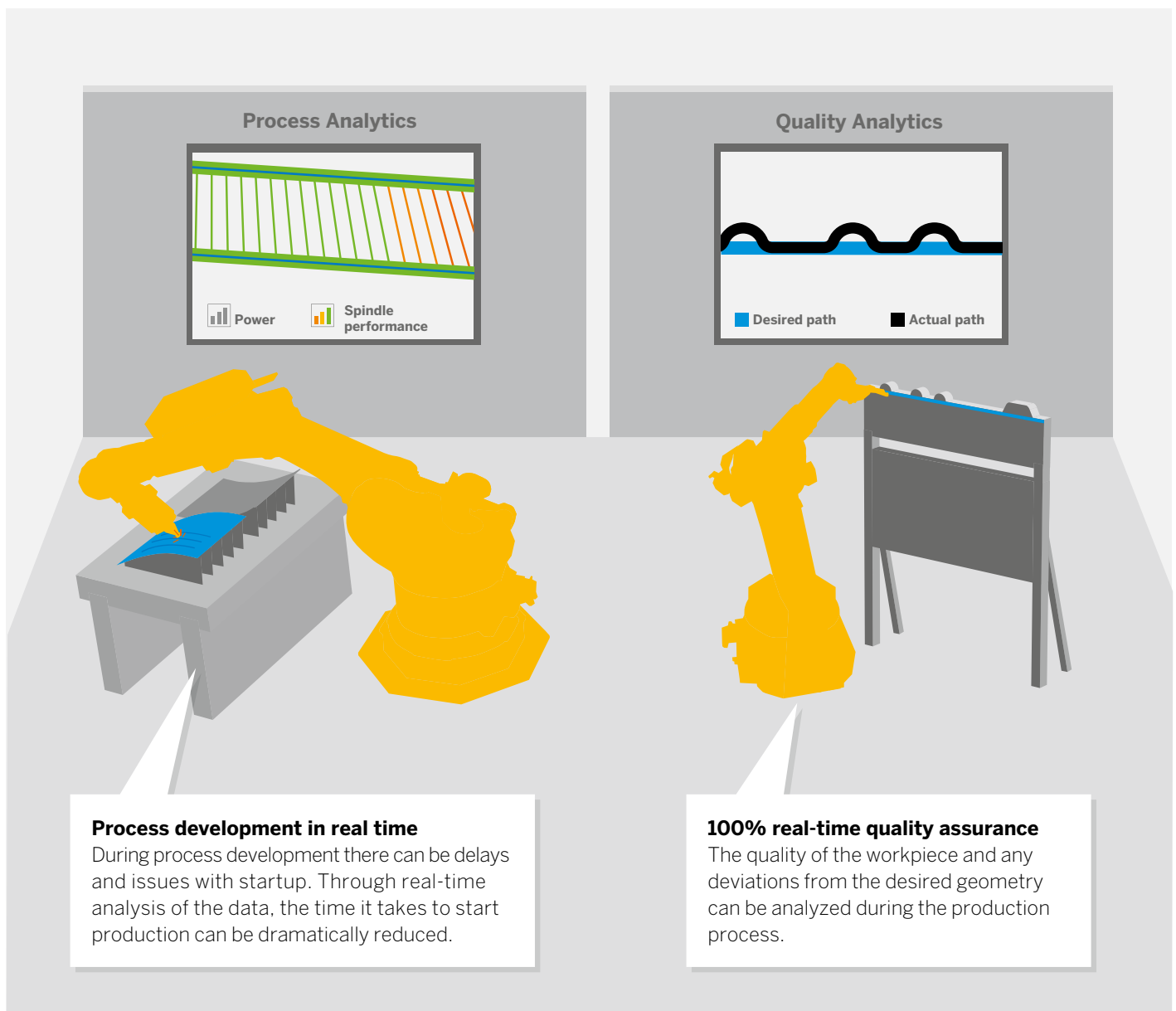A camera compares the product with the desired values.

## Connected Manufacturing

A keyring with a built-in smart chip and custom-designed shell is manufactured before your eyes at our stand. The special feature of this showcase is that, instead of following the conventional model for enterprise integration, all processes are connected in a decentralized way—from the customer's order to quality control, and from the production line to enterprise systems. This enables rapid and highly efficient job production. A dashboard maps out all processes in detail and detects and reports any failures in real time.

Discover how to:
- Manufacture customized products as economically as mass-produced products
- Use a single solution for everything from product design and execution to delivery
- Simplify your system architecture and data administration
- Create full transparency into all processes
- Build a completely unified data foundation
- Track the life cycle of your products with electronic device history records (eDHR)
- Take full advantage of the OPC UA communication protocol

**Live Business Is Connected**  April 25-29, 2016, Hannover

# Big Data Analytics in Manufacturing



### Process Analytics

**Power**  
**Spindle performance**

### Quality Analytics

**Desired path**  **Actual path**

**Process development in real time**
During process development there can be delays and issues with startup. Through real-time analysis of the data, the time it takes to start production can be dramatically reduced.

**100% real-time quality assurance**
The quality of the workpiece and any deviations from the desired geometry can be analyzed during the production process.

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**This showcase is a co-innovation by:**

• SAP

• Cisco Systems

• Grenzebach Maschinenbau

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## Ensure Error-Free Production

The systematic analysis of complex manufacturing processes in real time can optimize overall equipment efficiency.

This showcase features a live demonstration of a friction stir welding process with industrial robots and two Industry 4.0 applications, Process Analytics and Quality Analytics. You will witness how to:

• Significantly accelerate production and development
• Identify quality issues within series production in real time to achieve zero-defect manufacturing
• Gain real-time insights into running production processes by connecting process data from machines with manufacturing execution or ERP systems

# Connected Product Lifecycle

**6**

**An overview of the compressor's performance**

The compressor is given to the customer and the service team. Data that is generated during operation flows to the SAP Predictive Maintenance and Service solution (sensor data) and the SAP Asset Intelligence Network (configuration / production status). Employees can monitor the compressor live, enabling them to predict faults, prevent downtime, and increase availability.

**1**

**An inquiry from sales**

The desired item is a new compressor that is road-legal in the USA. It should be based on a similar, but not road-legal, product. A construction document is compiled from the available information, including bill of materials and CAD models.

**5**

**Final assembly made easy**

The technicians scan the compressor and identify which order it belongs to. The customized assembly manual shows them which components and software is required and guides them through the individual process steps. This ensures high quality, even for one-off jobs.

**4**

**Rapid production planning**

Based on this bill of materials, the assembly is planned using the SAP 3D Visual Enterprise. The 3D geometric data of each module is linked to the appropriate manufacturing step. In addition, an animation is automatically produced to show technicians how to handle the tools.

**2**

**Is it worth it?**

The product manager determines the extent of the changes that will need to be made and uses SAP Product Lifecycle Costing to estimate the costs. In this case, a new light bracket needs to be developed and manufactured.

**3**

**Simple development**

The development of the US version requires software to be adapted, in addition to mechanical changes and new parts. Using the SAP Engineering Control Center, these diverse development disciplines are integrated into the SAP ERP environment to create a new bill of materials.

## Seamlessly Integrated Product Lifecycle

Merging the digital and physical worlds: In this showcase, a compressor is used to demonstrate how product development, assembly, operations, and service can work together seamlessly. After starting up the compressor, data is captured from various sensors to identify possible failures, necessary maintenance work, and areas for improvement. This shows you how to:

- Accelerate innovation cycles through the parallelization of development processes from all domains: mechanics, electronics, and software
- Develop and constantly improve products to address real needs
- Devise new business models, such as marketing the services you offer rather than the product itself
- Improve the quality of maintenance and service
- Increase system performance through predictive maintenance based on analyses and forecasts from operating data

**This showcase is a co-innovation by:**

- SAP
- KAESER KOMPRESSOREN

# From the Development Process ...

Service requirements are identified using real-time analytics.
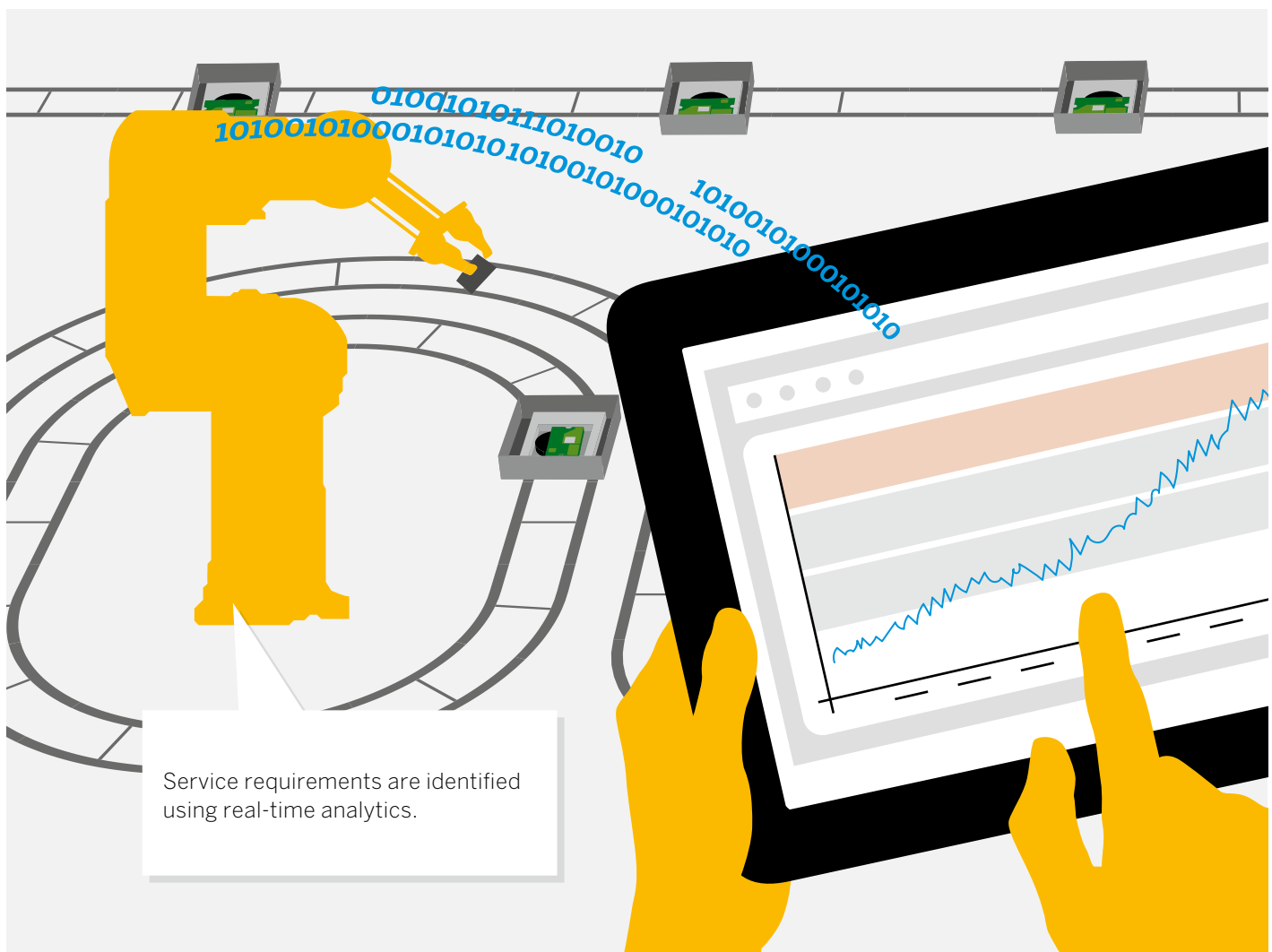
## Benefits for system operators:
- Increased overall equipment efficiency with a view of availability, performance, and quality of output.
- More efficient and cost-effective maintenance.
- Faster responses to alerts and errors.

## Benefits for system manufacturers:
- Increase profit from service by lowering costs.
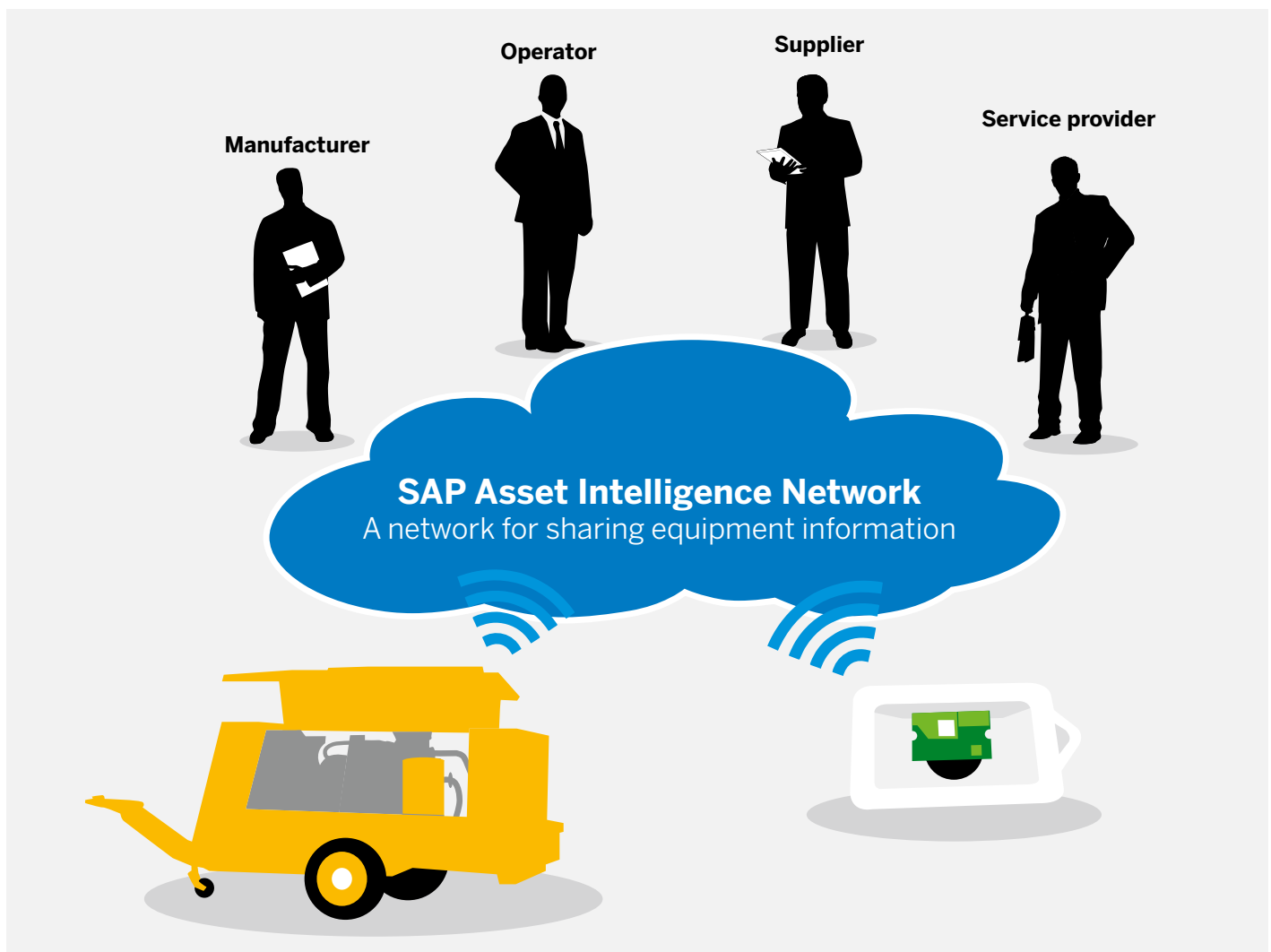- Generate new, constant revenue streams.
- Improve customer satisfaction and strengthen loyalty.

## SAP® Predictive Maintenance and Service

The robots involved in the production of the keyring are constantly monitored using the SAP® Predictive Maintenance and Service solution. The data that is captured helps to guarantee the availability of the system and enables new business models.

This enables you to:
- Integrate control and sensor data into your maintenance and service processes.
- Identify expected machine downtime early through predictive analytics.
- Provide required replacement parts, tools, and information at the right time by using data from machines.
- Implement new, customer-centric business models, such as performance-based billing.

# ... to an Intelligent Internet of Things Product



Manufacturer  Operator  Supplier  Service provider

**SAP Asset Intelligence Network**
A network for sharing equipment information

## SAP Asset Intelligence Network

The SAP Asset Intelligence Network enables you to exchange equipment information with manufacturers, operators, suppliers, and service providers. Data on replacement parts, service and maintenance tasks, and operational data throughout the entire lifecycle can all be stored and shared via a digital twin. The showcases demonstrate two scenarios of varying complexity.

1. The keyring manufactured in the Open Integrated Factory—Generation 2016 Showcase is connected to the network throughout its entire lifecycle. Employees can access specific product information and up-to-date sensor data via a web portal.

2. In the Connected Product Lifecycle Showcase specific product information is provided to operators and service providers over a central network upon distribution of the compressor. The manufacturer can use the collected operational data from the equipment to find ways to improve the product.

**Discover how to:**
- Store data on all important events of a product's lifecycle, from development and use right through to scrapping.
- Share all equipment information with manufacturers, operators, suppliers, and service providers in a virtual and always up-to-date model.

# Partners

## SAP SE

As a market leader in enterprise software, SAP SE helps companies of all sizes and industries run better. From back office to boardroom, warehouse to storefront, desktop to mobile device—SAP empowers people and organizations to work together more efficiently and use business insight more effectively to stay ahead of the competition. SAP applications and services enable approximately 300,000 customers to operate profitably, adapt continuously, and grow sustainably. For more information, visit www.sap.com.

| | |
|---|---|
| **Headquarters:** | Walldorf, Germany |
| **Employees:** | 77,000 worldwide |
| **Website:** | www.sap.com |
| **Contact:** | info@sap.com |
| | Hasso-Plattner-Ring 7 |
| | 69190 Walldorf |

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PARTNERS FOR THE "OPEN INTEGRATED FACTORY—GENERATION 2016" SHOWCASE

## Beckhoff Automation GmbH & Co. KG

Beckhoff provides PC-based control technology for Industry 4.0 and IoT applications. In addition to classic control tasks, its TwinCAT automation software enables other applications, such as big data, condition and power monitoring, and data analytics. The production line presented in the showcase at Hannover Messe is based on the XTS linear transport system from Beckhoff. It transports the products being processed to each processing step and positions them there – individually and highly dynamically. The TwinCAT software is both the control platform for the XTS and the "order language" interface for SAP Plant Connectivity and the other machine units. The order communication is based on the service-oriented architecture (SOA), which is realized with OPC Unified Architecture (OPC UA). The XTS order interfaces, that are required for the interaction are released directly from the TwinCAT PLC. The simple plug and produce orchestration of SAP and IT security for access to the data and services is made possible by OPC UA.

**Hall 9, booth F06**

| | |
|---|---|
| **Headquarters:** | Verl, Germany |
| **Employees:** | 2,900 |
| **Main focuses:** | PC-based control technology |
| **References:** | Worldwide applications in machine building, building technology, and energy generation |
| **Website:** | www.beckhoff.com |
| **Contact:** | info@beckhoff.com |
| | Tel.: +49 5246 963 0 |

# Partners

## Elster GmbH—now part of Honeywell

We produce our smart meters in smart factories, and the same applies to our high-quality devices for residential and process heating. We are completely dedicated to the individual needs of our customers. This approach, combined with our long-term co-innovation partnership with SAP, led to a meeting in 2014 with Miao Wei, the Chinese Secretary for Industry and Information Technology, where Elster was invited to present the status of our Industry 4.0 activities. Today we are taking the next step in our Industry 4.0 journey: Predictive manufacturing. Short cycle times define our highly automated production processes. By working closely with the SAP Manufacturing development team, we realized our vision of predictive manufacturing. This enables the use of high-speed manufacturing execution systems for the shop floor through hybrid models. The cloud and Internet of Things will play a major role in the future. Systems such as the one described in this example are the reason that we can say "We produce our smart products in smart manufacturing networks."

**Hall 12, booth D39**

| | |
|---|---|
| **Headquarters:** | Lotte, Germany |
| **Employees:** | 1,000 |
| **Main focuses:** | Devices for the usage and supply of gas |
| **References:** | Products, systems and solutions for the global gas industry |
| **Website:** | www.elster-gas.com |
| **Contact:** | Roland Essmann |
| | roland.essmann@elster.com |
| | Tel. +49 541 12140 |

## Stäubli Tec-Systems GmbH Robotics

Stäubli offers a broad product range, including the FAST picker TP80, SCARA robots, and six-axis robots with a load capacity from 0.5 kg to 190 kg. This comprehensive offering is complemented by product ranges for sensitive environments, a consistent control series, software solutions for all users, and industry-specific application software. The six-axis robots featuring in the Showcase Open Integrated Factory—Generation 2016 are capable of executing various robotic tasks in Industry 4.0 production and can integrate a variety of process steps flexibly and reliably. At the same time, the robots can be deployed as consistent and safe production machines, as demonstrated in the assembly of smart chips and joining of lower and upper shells. The robot can also be used for quality management, thanks to its vision system. The production of a large variety of components at small batch sizes, typically associated with Industry 4.0, can be easily configured in the SAP system and directly transferred into robotic actions.

**Hall 17, booth E41**

| | |
|---|---|
| **Headquarters:** | Bayreuth, Germany |
| **Employees:** | 4,500 |
| **Main focuses:** | Production and sales of TP80 FAST pickers, SCARA robots, and six-axis robots |
| **References:** | Bosch, Siemens, Miele, Manz, Volkswagen |
| **Website:** | www.staubli.com/robotics |
| **Contact:** | Günter Heinendirk |
| | sales.robot.de@staubli.com |
| | Tel. +49 921 8830 |

## ASENTICS GmbH & Co. KG

Machine vision is one of the key technologies for the challenges posed by Industry 4.0. In the "Open Integrated Factory—Generation 2016" Showcase, ASENTICS is tasked with verifying and processing whatever has been "seen" in every phase of the production and then providing this to the systems that operate in the value chain network. The job does not merely require checking the quality of a component, but also requires subsequently controlling an intelligent action. ASENTICS optically monitors the individual production and assembly steps. During this, the position, dimensional accuracy, shape, color, surface, and assembly status are constantly checked to ensure flawless products for the subsequent manufacturing processes. In addition, the data of the peripherals, e.g. from workpiece carriers, magazines, and feeding units, are also captured and transmitted. What is new is the capability to communicate with other partners operating in the Showcase to facilitate cooperative handling actions. That means ASENTICS generates real-time production data that are clearly and virtually mapped so all partners can flexibly react to changing circumstances at all times.

**Hall 17, booth E42**

| | |
|---|---|
| **Headquarters:** | Siegen, Germany |
| **Employees:** | 54 |
| **Main focuses:** | Machine vision systems, intelligent cameras |
| **References:** | B. Braun, Beiersdorf, Continental, Dräger, Fresenius, Freudenberg, Gambro, Hilti, IBG Automation, Rhenus, Bosch, Siemens, Trelleborg, Uhlmann, Volkswagen, ZF |
| **Website:** | www.asentics.de |
| **Contact:** | Hans Tschaki |
| | h.tschaki@asentics.de |
| | Tel. +49 271 3039178 |

## cab Produkttechnik GmbH & Co. KG

cab sets technological milestones in the development and manufacturing of label printers, print and apply systems and marking lasers. Customers in the manufacturing industry, services, and commerce rely on the high quality standards. Currently, its global presence consists of sites in Germany, France, the USA, Mexico, South Africa, and Asia, plus 820 distribution partners in over 80 countries. The Open Integrated Factory Showcase features cab's THS+ Basic laser marking system based on the FL+ ytterbium fiber laser. Components to be labeled are individually inserted into a jig, fed via a motor, marked, and then automatically ejected. User software and connectivity are key technologies in Industry 4.0 production. cab printers and marking laser systems are therefore supplied with all necessary programs and data interfaces.

**Hall 17, booth D52**

| | |
|---|---|
| **Headquarters:** | Karlsruhe, Germany |
| **Employees:** | 350 |
| **Main focuses:** | Devices for marking components, products and packaging |
| **References:** | German Packaging Award 2015 in the category "Labels and other packaging aids" |
| **Website:** | www.cab.de/en |
| **Contact:** | Hans Löhner |
| | h.loehner@cab.de |
| | Tel. +49 6232 621502 |

# Partners

## ProGlove

ProGlove specializes in wearables for the industrial sector. Their first product is an intelligent glove that enables the user to scan hands-free. The glove gives direct feedback to its user and enables a new level of business intelligence through additionally gained data points.

| | |
|---|---|
| **Headquarters:** | Munich, Germany |
| **Employees:** | 14 |
| **Main focuses:** | Wearables for the industrial sector, efficiency, and quality improvements through increased transparency into processes |
| **References:** | Automotive, manufacturing and logistics industry |
| **Website:** | www.proglove.de |
| **Contact:** | Tarek Ouertani |
| | tarek@proglove.de |

## Stratasys Ltd.

For more than 25 years, Stratasys Ltd. has been a defining force and dominant player in 3D printing and additive manufacturing—shaping the way things are made. Headquartered in Minneapolis, Minnesota, and Rehovot, Israel, the company empowers customers across a broad range of vertical markets by enabling new paradigms for design and manufacturing. The company's solutions provide customers with unmatched design freedom and manufacturing flexibility, reducing time-to-market and lowering development costs while improving designs and communications. Stratasys subsidiaries include MakerBot and Solidscape, and the Stratasys ecosystem includes 3D printers for prototyping and production; a wide range of 3D printing materials; parts on-demand via Stratasys Direct Manufacturing; strategic consulting and professional services; and the Thingiverse and GrabCAD communities with over 5 million 3D printable files for free designs. With 3,000 employees and 800 granted or pending additive manufacturing patents, Stratasys has received more than 30 technology and leadership awards. .

| | |
|---|---|
| **Headquarters:** | Rheinmünster, Germany |
| **Employees:** | > 3,000 |
| **Main focuses:** | Rapid prototyping, direct digital manufacturing solutions, additive manufacturing materials |
| **Website:** | www.stratasys.com |
| **Contact:** | Karolina Radosevic |
| | emea@stratasys.com |
| | Tel.+49 7229 77720 |

# itelligence AG

itelligence is one of the leading full-range service providers in IT and represents one of the most successful SAP consulting firms worldwide. The companys service portfolio ranges from SAP strategy consulting and license sales to application management and hosting services. Its success is not only represented by more than 5,000 satisfied customers but also by the consistent growth of the company. itelligence now has 5,000 highly-skilled employees working in 23 countries.

In the "Open Integrated Factory—Generation 2016" showcase, the it.mobile IoT Sensor App is used as middleware between the sensor data of the produced keyring and the SAP Asset Intelligence Network. The mobile data from the sensor and the user's IOS device will be uploaded to the network via the Sensor App. This scenario exemplifies how the exchange of sensor data between facility operator and equipment manufacturer creates and enables opportunities for product optimization and new service concepts.

**Hall 7, booth C04**

| | |
|---|---|
| **Headquarters:** | Bielefeld, Germany |
| **Employees:** | 5,000 |
| **Main focuses:** | SAP solutions for SMEs: SAP S/4HANA, Analytics, Omni channel, Industry 4.0 solutions, Internet of Things and Cloud, SAP Supply Chain Management, SAP Product Lifecycle Management, SAP Enterprise Content Management, strategic process consulting, and managed services. |
| **Website:** | **www.itelligencegroup.com** |
| **Contact:** | Wolfgang Möller |
| | wolfgang.moeller@itelligence.de |
| | Tel. +49 521 91448-503 |

# OPC FOUNDATION

Since 1996, the OPC Foundation has facilitated the development and adoption of the OPC information exchange standards. As a nonprofit organization, the OPC Foundation works with industry vendors, end-users, and software developers to help them maintain interoperability in their manufacturing and automation assets. The OPC Foundation is dedicated to providing the best specifications, technology, process, and certification to achieve multivendor, multiplatform, secure, reliable industrial interoperability in industrial automation and related domains. The showcase is all about OPC UA enabling quick and easy integration of new machines into the production scenario—Plug and produce with integrated IT security. Real production objects such as transport systems, robots, cameras, and printers provide services and data via an OPC US server. This allows other sap manufacturing execution systems to find, identify, and select services in the network easily. Most objects provide an additionally integrated OPC UA client that enables independent communication from the devices to other process devices to be initiated.

| | |
|---|---|
| **Headquarters:** | Scottsdale, USA |
| | Other sites in Germany, China, and Japan |
| **Mitglieder:** | 440 |
| **References:** | Worldwide applications in various markets, including industrial automation, IT, Internet of Things (IoT), building automation, oil and gas, and the energy sector |
| **Website:** | **www.opcfoundation.org** |
| **Contact:** | info@opcfoundation.org |

# Partners



**PARTNERS FOR THE "BIG DATA ANALYTICS IN MANUFACTURING" SHOWCASE**

## Cisco Systems, Inc.

Cisco is the worldwide technology leader that has been making the Internet work since 1984. Ciscos people, products, and partners help society securely connect and seize tomorrow's digital opportunity today. Discover more at thenetwork.cisco.com and follow Cisco on Twitter at @Cisco.

| | |
|---|---|
| **Headquarters:** | San José, California, USA |
| | Headquarters in Germany: Hallbergmoos |
| **Employees:** | Over 71,500 |
| **Main focuses:** | Computer networks and telecommunications |
| **Website:** | www.cisco.com |
| **Contact:** | Björn Riebel |

# Grenzebach Maschinenbau GmbH

Grenzebach is a business group headquartered in Bavaria employing around 1,600 employees worldwide. Due to new and further product development, Grenzebach has achieved technological leadership in its core markets. For the capital goods industry all over the world, Grenzebach has developed customized solutions to handle the complex manufacturing and automation tasks of their customers. Providing industrial safety for the detection, evaluation, and transmission of data is one of Grenzebach's main priorities. For many years now, the company has focused on Industry 4.0 and Big Data. Grenzebach will present two of those applications at Hannover Messe.

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|---|---|
| **Headquarters:** | Asbach-Bäumenheim/Hamlar, Germany |
| **Employees:** | 1,600 |
| **Website:** | **www.grenzebach.com** |
| **Contact:** | Lisa Kleebauer |
| | Lisa.Kleebauer@grenzebach.com |
| | Tel. +49 906 9822000 |

PARTNER FOR THE "CONNECTED PRODUCT LIFECYCLE" SHOWCASE

# KAESER KOMPRESSOREN SE

Compressed air is one of the main energy sources used in the manufacturing industry today. Maximum availability, efficiency, and lowest possible costs are essential criteria. Industry 4.0 is opening up a world of opportunities in these areas and more. For example, enterprises can predict what is most likely to happen tomorrow, connect components, and use data to their advantage like never before. This is all made possible by the SIGMA AIR MANAGER 4.0 by KAESER KOMPRESSOREN. It coordinates every component for compressed air production and treatment, optimizes pressure values, and automatically adjusts compressor-station delivery to accommodate fluctuating demand. It can also precisely tune energy efficiency based on the relationship between control and switching losses and pressure flexibility and even prepare the compressed air station for future services such as predictive maintenance. All of these benefits combine to maximize reliability and efficiency while minimizing energy costs.

| | |
|---|---|
| **Headquarters:** | Coburg, Germany |
| **Employees:** | 5,000 |
| **Main focuses:** | Compressed air systems |
| **Website:** | **www.kaeser.com** |
| **Contact:** | Uwe Grundmann |
| | Tel. +49 9561 6400 |

# Partners

The quick way to making connected manufacturing a reality: Experienced SAP partners from all over Germany to support you in your digital transformation projects.

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**All for One Steeb AG**
All for One Steeb, a leading IT company and SAP partner for German-speaking countries, demonstrates how enterprises can integrate the Internet of Things into their existing business processes and KPI reports.
www.all-for-one.com

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**Boldly Go Industries GmbHBoldly Go Industries GmbH**
Innovate. Design. Transform. SAP consultants for Industry 4.0 and digital business.
www.boldlygo.de

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**Cenit AG**
CENIT is a long-term SAP partner specializing in software development. It provides comprehensive SAP Product Lifecycle Management (SAP PLM) consultancy and integration, SAP process management for optimized engineering, and SAP multi-CAD integration.
www.cenit.com

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**CIDEON Software GmbH & Co. KG**
CIDEON is an international software and solution provider, specializing in engineering and real estate processes for SAP users.
www.cideon-software.de

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**Deutschsprachige SAP® Anwendergruppe e.V**
The SAP users' group for German-speaking countries, made up of 55,000 individuals and 3,000 companies, gives new impetus to Industry 4.0 and provides a network where members can share their experiences.
www.dsag.de

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**DSC Software AG**
DSC Software provides technology for SAP Engineering Control Center, the strategic platform for product development with CAx-integration solutions and intuitive UIs.
www.dscsag.com

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### Freudenberg IT GmbH & Co. KG
Freudenberg IT is a global, full-service IT provider and has been a reliable partner of SMEs for over 35 years. Its services cover the entire SAP portfolio.
www.freudenberg-it.com

### HARTING IT System Integration GmbH & Co. KG
HARTING helps its customers to make the factory of the future a reality, including manufacturing, logistics, and maintenance. The company provides technology, process consulting, and digital solutions for Industry 4.0.
www.harting.com

### IGZ GmbH
IGZ, the leading SAP project center for the manufacturing industry, implements SAP manufacturing execution systems solutions with SAP ME and SAP MII for the discrete and process manufacturing sectors.
www.igz.com

### SALT Solutions GmbH
SALT Solutions, the leading IT consultancy and software center, implements big data solutions for manufacturers and manufacturing execution systems, from production planning to shop floor.
www.salt-solutions.de

### SYSTEMA Systementwicklung Dipl.-Inf. M.Austen GmbH
SYSTEMA is a strategic SAP partner for the Manufacturing Suite, specializing in system integration and manufacturing automation.
www.systemagmbh.de

### Trebing + Himstedt
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