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## **Industry 4.0 at productronica 2015:**

### **The future of electronics production in the networked factory**

**The world's leading trade fair examines the opportunities and challenges associated with the fourth industrial revolution with a focus on cyber security.**

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**Industry 4.0 is on its way—in electronics production as well as in every other branch of industry. The industrial Internet of things is fundamentally changing the prerequisites for production and electronics manufacturing: The transformation to the networked factory means that production facilities and value chains will be linked to one another digitally in the future. That has plenty of advantages, but it also leaves companies facing some major challenges. To bundle topics and interests, the German trade associations BITKOM, VDMA and ZVEI have established "Plattform Industrie 4.0" to promote the ongoing development and implementation of this future-oriented project. As the world's leading trade fair for electronics development and production, this year's productronica will focus on issues regarding to Industry 4.0: Visitors and exhibitors will discuss the challenges and examine possible solutions and best practice examples.**

When it comes to Industry 4.0, companies have to deal with a variety of challenges: What opportunities and risks are associated with the Internet of Things (IoT)? How can companies ensure that they are perfectly prepared for them? How can intelligent production planning further optimize capacity utilization of production facilities? Answers to these questions will be available at productronica 2015, particularly thanks to the new Future Markets cluster and

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[IT2Industry](#), the trade fair and open conference for intelligent, networked working environments that is being held in conjunction with productronica for the first time. IT2Industry takes a comprehensive look at what Industry 4.0 means in electronics manufacturing and where the trend in the electronics industry is headed—from industrial IT security concepts to cloud computing, big data and analytics and software engineering to energy efficiency. Within the scope of the Future Markets cluster, it focuses on topics that pertain to hardware such as the capabilities that cyber-physical systems have to offer.

### **CEO Roundtable: Focus on cyber security**

When discussing Industry 4.0, the topic of IT security is of key significance for hardware and software alike, as we have seen time and again: Hackers have attacked the federal government, airlines, the vehicle registration center and television networks—every company and organization appears to be a potential target. A study conducted by the VDE (Association for Electrical, Electronic & Information Technologies) confirmed that, for seven of ten people surveyed, concerns about IT security are currently the largest obstacle to the proliferation of Industry 4.0 in Germany. Nevertheless, universal digitalization and complete networking of production operations has already started: According to a representative survey by BITKOM, four out of ten companies in key industrial sectors are already using Industry 4.0 applications and must ensure that their production facilities are secure.

That is why productronica and the ZVEI are dedicating this year's CEO Roundtable on the opening day of the fair on November 10, 2015 (11:00) to the topic of "Cyber Security—Challenges for the Manufacturing Industry". Experts from the commercial, political and scientific sectors will discuss existing cyber threats and how to recognize and stop them. The objective is to sensitize all companies and organizations to cyber security issues. Besides priorities in office IT such as virus and malware attacks, special aspects of cyber security in manufacturing that emerge as companies transform to the smart factory will also

be discussed. "Cyber security is a key topic for Industry 4.0 to succeed," says Carolin Theobald from the Automation Division of the ZVEI. "Linking and analyzing data in the digital age can have great advantages, but they can also be associated with risks and cause a great deal of concern in many companies. We need accepted rules, but we also need to trust the fact that the digital world offers security. That is why cyber security is one of the key topics of our time."

### **Cyber security in production: Holistic concept needed**

Anyone who wants to reliably protect their company against hacker attacks must follow a holistic approach. Cyber security in manufacturing starts with office IT security because all Industry 4.0 scenarios include several interfaces between both IT worlds. An attack on a steel plant in Germany in December 2014 illustrates the dangers that are involved: First the plant's office network was infected, then the plant's industrial network, and that ultimately triggered a safety stop of the plant's blast furnace. The operating company suffered extensive damage.

Manufacturing companies also face another challenge: In some cases, several partners such as suppliers, customers, logistics companies and other service providers are closely integrated into the production network. As a result, known procedures for setting up and operating security-management systems must be expanded accordingly.

So, mere island solutions for industrial IT do not provide the desired result, and universal protection of the entire IT platform with a holistic concept must have top priority. That also calls for changes in the organizational structure during implementation. Until now, security in the office and in production have been separated with regard to personnel, organization and content. According to Dr. Lutz Jänicke, Chief Technology Officer at Innominate Security Technologies and a speaker at the productronica CEO Roundtable, it actually makes sense to

have one person in charge of all these responsibilities in the future: "Technically speaking, office and production IT are more similar than one would think. However, security in production is associated with very special challenges that IT managers are not always familiar with. At the same time, production employees also need to be sensitized to security-related topics. In this case, a Chief Information Security Officer who is responsible for IT security in the entire company would be ideal."

Besides the cyber-security aspect of "software", using hardware measures to improve cyber security is also a central topic at productronica. As part of the "Manufacturing Industrial Electronics" highlight day on November 12, questions on this topic and possible solutions will be presented. The day is being organized by VDMA Productronic and the Konradin Media Group.

### **Security in production: Guaranteeing availability**

When it comes to cyber security in the automation sector, guaranteeing system availability is essential. IT-security solutions from office IT such as upgrades and patches can only be used to protect industrial endpoints and networks to a certain extent—in manufacturing operations, applications usually have to run without interruption for several months and cannot be restarted every day for an update. In addition, technical IT security measures for production facilities that are available right now are usually installed in addition to the actual automation-technology components, which makes them complex and difficult to control. "When it comes to production machinery, security is not yet a competition characteristic," says Jänicke. "In this case, it is up to the operators to establish mandatory standards on the market that are drafted together with the manufacturers and to make them part of the conditions of purchase."

The new NAMUR Recommendation NE 153 "Automation Security 2020—Design, Implementation and Operation of Industrial Automation Systems" takes

the first step in that direction. It summarizes a few fundamental requirements for future automation solutions to find alternatives to currently available technical IT security measures for production facilities. Reliability, availability, sustainability and investment security play a central role here. Carolin Theobald from the ZVEI says: "Our companies understand that the time has come to develop economically feasible security concepts. They share the objectives and provisions of NE 153 and are fully aware that all partners in this sector, i.e. the manufacturers, the integrators and the operators of automation solutions, must make a serious effort here. Naturally, we provide them assistance."

Awareness about security in the context of Industry 4.0 has increased significantly during the past few years and the first steps have been taken. However, when it comes to electronics manufacturing as well as other branches of industry, a number of questions about securing networked machines and systems that are becoming increasingly intelligent must still be answered. Besides productronica, IT2Industry will also deal with the topic of IT security in its open conference. The Employers' Associations for the Bavarian Metalworking and Electrical Industries (bayme vbm) will present approaches and solutions for industrial IT security on Wednesday, November 12. The next day, "Sicherheitsnetzwerk München" (Munich Security Network) will give interested visitors insights into typical problems and weaknesses of commonly used IT systems that are currently in use in the production world.

Further information about the trade fairs you'll find here:  
[www.productronica.com](http://www.productronica.com) und [www.it2industry.de](http://www.it2industry.de)

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### **About productronica**

productronica is the world's leading trade fair for electronics development and production and is supported by the Productronics Association in the German Engineering Federation (VDMA) as a conceptual partner. It has taken place in Munich every two years since 1975 and is a core element of the electronics trade fair network of Munich International Trade Fair. 2013 1,220 exhibitors from 39 countries and more than 38,000 visitors took part at productronica. The next productronica takes place from November 10 – 13, 2015. [www.productronica.com](http://www.productronica.com).

### **productronica worldwide**

In addition to productronica, Messe München also organizes productronica China and productronica India. Its network of electronics trade fairs also includes electronica in Munich, electronica China, electronica India and eAsia.

### **Messe München**

Messe München is one of the world's leading trade-show companies. It organizes some 40 trade shows for capital and consumer goods and key high-tech industries in Munich alone. 14 of those events are number 1 in the world in their respective industries. Each year more than 30,000 exhibitors and some two million visitors take part in events held at the Messe München trade-fair center, the ICM – Internationales Congress Center München and the MOC Veranstaltungszentrum München. In addition, Messe München organizes trade shows in China, India, Turkey and South Africa. Messe München has a global business presence with affiliates in Europe, Asia and Africa and more than 60 foreign representatives serving more than 100 countries.

### **About VDMA Productronic and VDMA Electronics, Micro and Nano Technologies**

The Sector Group Productronics is part of the VDMA Sector Association Electronics, Micro and Nano Technologies. It represents about 75 member companies along the entire process chain of electronics production. The member companies produce machines, equipment, materials and components for a wide range of electronic products, including semiconductors ("microchips"), printed circuit boards (PCBs), electronic assemblies, flat panel displays, data storage, photovoltaics and electrical energy storage. The VDMA sector association Electronics, Micro and Nano Technologies leverages synergies between the two sectors groups Productronic and Micro Technologies. In these groups, activities that match the specific requirements of each sub-sector are defined and implemented. Joint activities are launched in the sector association.

<http://emint.vdma.org>

The German Engineering Federation represents more than 3,100 companies in the engineering industry, many of which are small and medium sized enterprises. With 1,006,000 employees all over Germany (June 2015) and a sales turnover of 212 billion Euros (2014) the engineering sector is the biggest employer and one of the leading sectors of German industry.

<http://www.vdma.org>