Further Information on "Industrie 4.0"

In its "Diskussionspapier Digitale Agenda", the ZVEI presents the major aspects of the German government's Digitale Agenda initiative from electrical industry's point of view, identifies obstacles and recommends solutions. The discussion paper can be downloaded from http://www.zvei.org/Verband/Publikationen/Seiten/Digitale-Agenda.aspx (Only available in German).

As a leading technology location, Germany depends on protection of its know-how. In its position paper on Germany's IT security law „Cyber Security: Element of a Strategic Industrial Policy", the ZVEI therefore calls for a strategic industrial policy regarding industrial IT security.
http://www.zvei.org/Verband/Publikationen/Seiten/Positionspapier-Cyber-Sicherheit.aspx
(Only available in German)

Read all about the history of how the smart work piece came into existence in the magazine "Ampere" 1.2013 on www.zvei.org/Ampere.
(Only available in German)

Link to the ZVEI image film
Industrie 4.0: Integrated Industry reaches the next level

http://youtu.be/ccB6e18VwsQ

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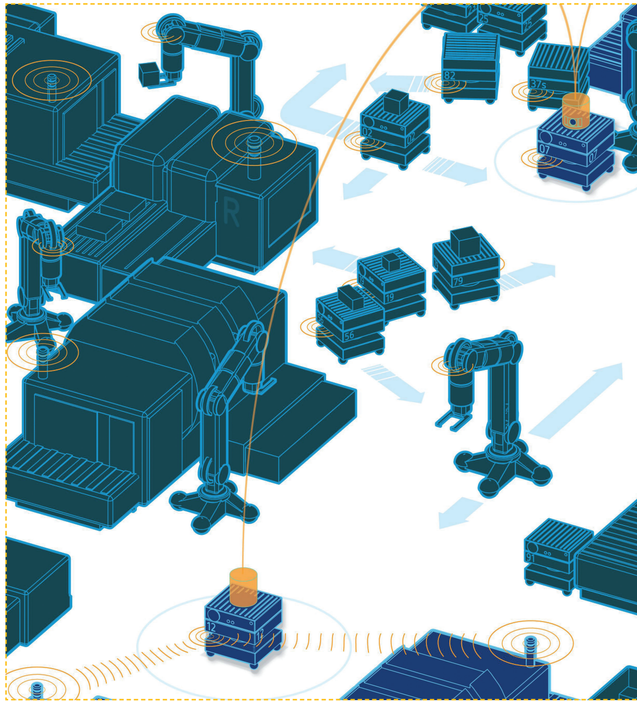
ZVEI
Die Elektroindustrie

Approaching the Smart Factory – "Industrie 4.0" Creates Value Networks



German Electrical and Electronic Manufacturers' Association

Approaching the Smart Factory – What is the Electrical Industry's Position?

By 2025, the smart work piece will be produced in the smart factory. Work pieces taking care of their own processing will be a perfectly normal phenomenon. What a great opportunity for the German electrical industry! Yet the path to such a scenario is still long. What should we expect? What still needs to be done? Answers from the ZVEI ...

What is the electrical industry's view on Industrie 4.0?

Industrie 4.0 stands for digitalisation of the economy. The combination of information and communication technology with automation technology (Internet of Things and Services) facilitates ever-higher degrees of networking within and between production facilities, from supplier to end customer. Ultimately, Industrie 4.0 is the realisation of the smart factory in a digital value network.

ZVEI President Michael Ziesemer

What is the automation industry's role on the way to Industrie 4.0?

In implementing Industrie 4.0, the German automation industry plays a key part. Its know-how, devices and systems are the prerequisite for switching to digitalised production beyond any geographical borders.

We assume this key position with responsibility.

Dr. Klaus Mittelbach
ZVEI Chief Executive Officer

Knowledge of industrial production and business processes is undoubtly a core competency of German electrical and automation manufacturers. So is the competence in producing cyber-physical systems.

Roland Bent, Phoenix Contact
Board Member of ZVEI Automation Division

What is behind the vision of the Smart Factory?

A lot of flexibility, whether in process or production automation. The vision of 'Lot Size 1' is becoming real: industrial production is cost-efficient even in small quantities. The smart factory forms a network with the other systems of the value chain – far beyond one single production location.

Gunther Koschnick, Managing Director,
ZVEI Automation Division

So Industrie 4.0 will change the entire industrial value creation?

Exactly, and this change will be fundamental. In future, we will consistently use all data generated in production, analyse it and link it together. This will produce a great variety of information with massive potential for application by user industries.

In this, new players keep joining us: Companies active in the internet economy are becoming increasingly involved in the market environment of Industrie 4.0.

Dr. Gunther Kegel, Pepperl+Fuchs
Board Chairman of ZVEI Automation Division

This brings us to the challenges. What is awaiting us?

Step by step, the ZVEI together with its partners in science and user industries is implementing Industrie 4.0 applications. We develop concrete Use Cases and thus make Industrie 4.0 tangible.

Dr. Bernhard Diegner
Head of ZVEI Research,
Human Resources Development,
Production Engineering Department

A time of fast changes. We are facing the challenge of opening up business models used in the Internet of Things and Services for ourselves, because other parties are also working on it. This includes working with preliminary structures.

Prof. Dr. Dieter Wegener, Siemens

What is the concrete use for electrical industry enterprises?

In the ZVEI's Use Case Workshops, experience is exchanged with user industries. In these regular meetings, generic approaches for development of Industrie 4.0 technologies are discussed and reviewed in the context of the respective industries.

Christoph Winterhalter, ABB

And how will all those different products, systems and machines communicate?

Interfaces must be defined for this, because in implementing Industrie 4.0, uniform semantics is a fundamental prerequisite. This is of particularly great interest to medium-sized enterprises. A lot of this exists already, but also new standards must be established to secure a leading position for German and European industry in the long term.

Haimo Huhle, Head of ZVEI
Technical Legislation and Standardisation Department

Which skills will be required of Smart Factory personnel?

Networking starts in people's minds. IT skills are just as crucial as the ability to shape industrial processes and transfer them into digital systems.

Marius Rieger
Manager, ZVEI Research,
Human Resources Development,
Production Engineering Department

What is the ZVEI's practice concerning data security?

To create values and offer solutions, the ZVEI is initiating a dialogue on secure data use in the Internet of Things and Services. We seek an exchange with policy-makers, business and industry as well as society in general.

Dr. Patricia Solaro
ZVEI Executive Management Politics,
Economy, Business Cycles

Prerequisite for this and for Industrie 4.0 is functioning cyber security in facilities and systems. Cyber security must include know-how protection and protection against cyber-attacks. To achieve this, we jointly define standards with the users.

Lukas Linke, Manager ZVEI Safety Division

And for this, we need broadband expansion and wireless technologies in production?

Exactly. Mobility requires wireless technologies. These facilitate easy connection of buildings, factories and facilities to broadband communication. The ZVEI is focusing especially on the matter of wireless communication and the European wireless standard EN 300328, which needs to be expanded by the concept of the '10 mW Factory'. There will be no Industrie 4.0 without wireless technologies.

Carolin Theobald, Manager ZVEI Automation Division