

Making the Business Case for Industry 4.0 / Smart Manufacturing

**2-3
March
2017**

Place:
**Fraunhofer
institute
Stuttgart,
Germany**

AIMS OF THE WORKSHOP

At the end of the seminar, participants will be able to identify and evaluate potential Industry 4.0 entry points for their own company and to initiate the first necessary steps towards implementation.

KEY TOPICS

- Fourth industrial revolution - Benefits and risks for manufacturing companies
- Application scenarios (use cases)
- Industry 4.0 Readiness Check: hands-on guide for exploring Industry 4.0 opportunities in your business
- Migration scenarios out of existing production and towards industrial production 4.0 – 7-step model for implementation
- Guided tour and explanation of Industry 4.0 concept realizations in IPA/IFF application center and by manufacturing companies.

BENEFITS OF ATTENDING

- Gain in-depth knowledge from up-to-date case studies, real-life examples and best practices
- Explore opportunities for your own company with the guidance of highly recognized experts
- Network with your industry peers
- Save time by taking part in a non-vendor-driven training which brings together solution-oriented professionals
- Enjoy a congenial atmosphere and great interactivity in a group of no more than 20 participants.

PRACTICAL WORKSHOP

led by recognized experts from Fraunhofer Institute on the application of the Industry 4.0 in manufacturing

**TWO-DAY
interactive
workshop**

Organized by:

WORKSHOP STYLE & OBJECTIVES

The course will be an interactive 2 day master – class training that will bring together manufacturing professionals from Europe.

By presenting inspirational examples, case studies and lessons learned from actual projects, the training will allow participants to familiarize themselves with all key aspects of the transformation towards smart manufacturing. In addition, delegates will benefit from the opportunity to network with other senior professionals within the group.

About your prominent trainers:



Andreas Bildstein

**Group Manager “IT Applications and Services for Production”
at the Fraunhofer IPA Competence Center DigiTools for Production**

Mr Andreas Bildstein is leading the group “IT Applications and Services for Production” at the Fraunhofer IPA Competence Center DigiTools for Production. His research fields include dynamic production networks, cloud-assisted production, Industry 4.0 and “smart production” via cyber-physical systems. A particular focus of his research is the digitization and interconnection of production and production-related processes through information technologies and Internet of Things (IoT)-related concepts.

He is leading the Industry 4.0 Seminar Series at the Stuttgart Production Academy, a cross-sectoral department of

Fraunhofer IPA, and is the primary contact at Fraunhofer IPA for the planning and implementation of tailored Industry 4.0 seminars. In addition, he coordinates the Big Data activities of Fraunhofer IPA, not only within Fraunhofer IPA but also in cooperation with the Fraunhofer Alliance Big Data.

Furthermore, he is the course coordinator for the lecture “Knowledge and information management in production processes” at the University of Stuttgart, together with the Director of the Fraunhofer Institute for Production Technology and Automation (IPA) and the Institute for Industrial Manufacturing and Management (IFF) Prof Dr-Ing. Thomas Bauernhansl.

BOOKING LINE: *tel.: +421 948 871 998, email: trainings@industry40insights.com
www.industry40insights.com*



Felix Georg Müller

**production technology engineer within the department
“Factory Planning and Production Optimization” at the Fraunhofer
Institute for Production Technology and Automation**

Felix Georg Müller has worked as a production technology engineer within the department “Factory Planning and Production Optimization” at Fraunhofer Institute for Production Technology and Automation (IPA) in Stuttgart. There, he has worked since 2013 on production planning systems to optimize existing manufacturing and assembly systems and on the new concept of intelligent manufacturing systems in the framework of bilateral research and development projects, directly with industrial partners. Another area of his work is applied research in intelligent analysis systems for connected production lines and the development of related algorithms, which has led to the filing of several patents over the past 2 years, as well as to the development and practical testing of prototypes. One example would be the “Smart Systems Analysis and Optimization”, which is a smart, connected optimization tool that identifies dependency losses and micro stops in interlinked systems automatically, thanks to the use of semantic technologies and intelligent cameras.

Since 2015, Mr. Müller is leading part of the research project “Application Center Industry 4.0” at Fraunhofer IPA and is

responsible for the field “production systems 4.0”. This includes the development of accompanying demonstrators in order to present an autonomous factory operation and a self-optimizing production system. In the project “IQ4.0 - intelligent quality control systems”, led by the Federal Ministry for Education and Research, he is responsible for the development of smart rules for independent derivation of product quality problems from continuous process data for discrete manufacturing processes. The testing of self-learning models takes place directly with the consortium’s manufacturing companies.

As coordinator and co-author of the Fraunhofer IPA study published in July 2016 “Industry 4.0 fields of development for SMEs - Current obstacles and concrete needs”, Mr. Müller and his team carried out a survey of 270 companies and subsequently discussed survey results and estimates with a group of 30 experts from industry and academia. This led to the synthesis of concrete development fields whose benefits are evaluated. The findings also serve as development roadmap for the demonstrators of the Application Center Industry 4.0 at Fraunhofer IPA.



Dr Sebastian Schlund

**Head of the Competence Center “production management”
at the Fraunhofer Institute for Industrial Engineering**

Dr Sebastian Schlund is Associate at the Institute of Industrial Science and Technology Management at the University of Stuttgart. Since 2012, he also leads the Competence Center “production management” at the Fraunhofer Institute for Occupational Economics and Organization (IAO).

In this role, he is responsible for research projects in the field of industrial engineering and digitization / automation of production work. He currently heads the Ministry for Education and Research’s project “MyCPS - migration support for the implementation of human-centered cyber-physical system.” Furthermore, he is leading numerous industrial projects in the area of industrial engineering and work organization, with

a focus on factory structure and assembly planning, Lean Management, Shopfloor IT in various industries and company sizes. As co-author of the Fraunhofer pilot study “production work of the future - Industry 4.0”, he is shaping Fraunhofer IAO’s activities in the field of Industry 4.0 and production work. In this context, he is responsible for research and industrial projects as well as committee work in partnership with industrial associations and policy representatives.

For numerous workshops, interviews and project activities, Dr Schlund is the primary contact for questions related to production work design, and the analysis of the possible implications of the digitization and automation of industrial value creation.

8:30 Registration, coffee, distribution of training handouts

09:15 WELCOME AND INTRODUCTION TO THE SEMINAR

09:30 KEY TECHNOLOGIES AND DRIVERS OF INDUSTRY 4.0

- *What are the core concepts and driving ideas of Industry 4.0?*
- *Enabling technologies in the factory of the future*
- *Introduction of new concepts for production IT*
- *Ways of Bringing the Internet of Things into production*

11:00 COFFEE BREAK



11:15 REAL-LIFE CASE STUDY: HOW TO CREATE AN INDUSTRY 4.0 ROADMAP WITH A TECHNOLOGY FOCUS

- *7-step methodology to introduce Industry 4.0 in production processes*
- *How to create a roadmap of activities*
- *Exploring areas for potential*
- *Methods to identify use cases*
- *Implementation of use cases and evaluation*

12:45 LUNCH



13:30 HANDS-ON WORKSHOP: ASSEMBLY TASK

- *Process optimization with Industry 4.0*
- *Lean principles as an integral part of implementing Industry 4.0*
- *Supporting assembly process with IT*
- *Generating data to create transparency*
- *Tracking and tracing apps.*

15:45 COFFEE BREAK



16:00 MOVING FROM PREVENTIVE TO PREDICTIVE MAINTENANCE- CASE STUDY

- *Introducing smart maintenance using smart components and adaptive maintenance models*
- *Real-life example from a manufacturing facility.*

16:45 CONCLUSION OF DAY 1

09:00 WELCOME AND INTRODUCTION TO DAY 2

09:15 CASE STUDY -DESIGN OF INTELLIGENT MANUFACTURING SYSTEMS: INDUSTRY EXAMPLES OF STEP-BY-STEP PROCESSES FOR DESIGNING NEW OR UPGRADING EXISTING SYSTEMS THE “SMART WAY”

- Identification of target smart data
- Analysis of potential opportunities and definition of project objectives
- Implementation of prototypes
- Pitfalls and bottlenecks of implementation
- Generated added-value and ROI

10:45 COFFEE BREAK



11:00 APPLICATION CENTER INDUSTRY 4.0: WALKING TOUR AND PRESENTATION BY DIFFERENT DEMONSTRATORS

- Smart production model
- Upgrading standard production systems with smart features
- Future models of production.

12:30 LUNCH BREAK



13:15 HUMANS IN FOCUS: INDUSTRY 4.0 TO IMPROVE MANUFACTURING WORK

EXPLORING THE INTERPLAY BETWEEN INDUSTRY 4.0 AND HUMAN RESOURCES. USING INDUSTRY 4.0 TO FACILITATE OPTIMAL ALLOCATION OF EMPLOYEES' TIME AND SKILLS

- Industry 4.0 and the role of humans – intelligent objects and humans decide together
- Impact on work, task organization and qualification
- Manufacturing work of the future
- New opportunities of social media at shop-floor level
- Use Case “KapaflexCy” – challenge, concept and success

15:45 SUCCESSFUL IMPLEMENTATION OF INDUSTRY 4.0 APPLICATION

- Involvement and commitment of important stakeholders
- Alignment of IT implementations on user demands and process optimization
- Agreement on rules for Industry 4.0 applications
- Role-playing game

16:45 CONCLUSION OF DAY 2

17:00 Expected end of the seminar

MAKING THE BUSINESS CASE FOR INDUSTRY 4.0 / SMART MANUFACTURING

2 – 3 March 2017 | Fraunhofer institute, Stuttgart, Germany

SALES CONTRACT

event code: I4.0 DE

PLEASE COMPLETE THIS FORM AND SEND IT BACK TO:

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Fax to: +421 2 54418515

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Name: _____

Job Title: _____

Email: _____

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Name: _____

Job Title: _____

Email: _____

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Name: _____

Job Title: _____

Email: _____

COMPANY/ORGANISATION DETAILS

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Daniel Laco, Director



Terms and Conditions:

These terms and conditions represent an integral part of this contract between FBE Bratislava, s.r.o. representing Industry40insights brand and a client, which is specified above, and who by signing this registration form fully and without any doubt or uncertainty accepts all following terms and conditions:

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2. Hotel accommodation. Overnight accommodation is not included in the registration fee.
3. Cancellation by client. The client has the right to cancel his/her participation in the event. Cancellation must be received by FBE in writing, either by mail, email or fax. If the client cancels with more than one month's advance notice before the start of the event, FBE shall be entitled to retain and charge 50% of the total invoiced amount. If the client cancels with one month's (or less) advance notice, or fails to attend the event, then the client shall not be entitled to any refund nor any discount. Client's failure to attend the event does not cancel, decrease or in any matter waives the client's obligation to fully pay the fee invoiced to the client by FBE.
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include but are not limited to acts of terrorism, war, extreme weather conditions, compliance with government requests, orders and legal requirements, failure of third party suppliers to timely deliver, and failure to register the minimum targeted amount of attendees for a given event. FBE reserves the right to change the content, date(s), location or venue and/or special features of an event, to merge the event with another event, or to postpone it or cancel it entirely as appropriate under the circumstances. Client agrees that FBE shall not be liable for any cost, damage or expense which may be incurred by client as a consequence of the event being changed, merged with another event, postponed or cancelled and client agrees to hold FBE harmless and to indemnify FBE for any liability caused by any such changes, mergers, postponements or cancellations to the Client.

5. Cancellation of the event. In case FBE cancels the event, FBE may offer the client a full credit up to the amount actually paid by the client to FBE. This credit shall be valid for up to one year from the issue date of the invoice to attend any of FBE's and Industry 40 Insights events. The client shall not be entitled to this credit as a contractual right.
6. Clients identification information. By signing of this sales contract and these terms and conditions the client gives full right to FBE to share the client's identification information such as, but not limited to, client's name, address, email addresses, phone numbers and names of representatives with third parties, which participated on the same event as the client.
7. Governing law. This contract shall be governed and construed in accordance with the laws of the Slovak Republic (not including its conflict of laws provisions). Any disputes arising out of this contract shall be brought before the courts of the Slovak Republic situated in the city of Bratislava in the Slovak Republic.