

VDI

International VDI Conference 2017

Smart Construction Equipment

November 28 – 29, 2017, Munich, Germany

- Construction Job-Site of the Future
- Building and Pavement Information Modelling (BIM & PIM)
- 3D Printing with Concrete and Steel
- Telematics, Communication and Data
- Navigation and Drones in Construction
- On-Site-Safety of Smart Construction Sites

+ Excursion to Accenture's IIoT Innovation Centre Garching

+ Panel Discussion

+ Interactive Round Table Session

Meet international experts from:

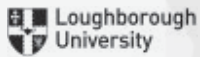


KOMATSU

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TEAMS WORK.



VÖGELE



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SCANIA

TOPCON



TERRA DRONE



TECHNISCHE UNIVERSITÄT
KAISERSLAUTERN

Trimble

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C/M/S
Law, Tax

An event organized by VDI Wissensforum GmbH
www.vdi-international.com/smartconstructionequipment



About us

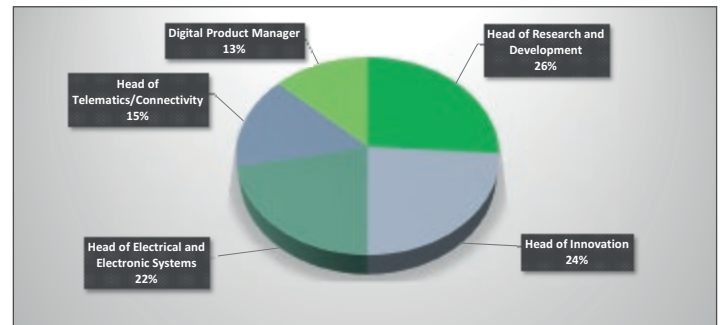


The Association of German Engineers (VDI) is one of the largest technical-scientific associations in Europe. Throughout the years, the VDI has successfully expanded its activities nationally and internationally to foster and impart knowledge about technology-related issues. As a financially independent, politically unaffiliated and non-profit organization the VDI is recognized as the key representative of engineers both within the profession and in public.

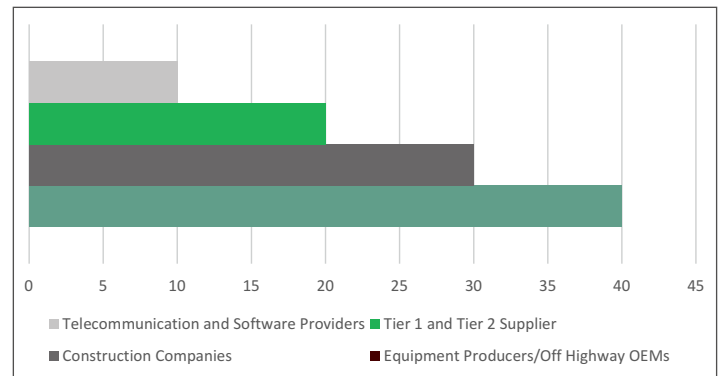
Reasons to attend

- Meet international Experts of the Construction and Off-Highway Industry
- Discuss the Impact of Automation and Digitalization on your Industry
- Get informed about Future Smart Sites, BIM and 3D Printing
- Learn about Chances and Challenges with Big Data, Connectivity and Drones
- Network with Peers from Equipment Producers, Suppliers and Construction Companies
- Benefit from parallel Events on Maintenance and Drones
- Prepare for the Digital Transformation

Expected Participants according to Functions



Expected Participants according to Industries



Visit Accenture's IIoT Innovation Center Garching

The IIoT experience area with a range of real-life IIoT demos and applications provide clients a hands-on experience of how new automation and IIoT solutions might improve their innovation, engineering, manufacturing and after sales strategies and operations. Explore demos about **Human-Machine-Interaction, Platforms and Services, Smart Products, Engineering, Manufacturing and Production, Cyber Security and others.**



Agenda

16:00–16:20 Garching Introduction

16:20–17:50 Shop Floor Visit

17:50–18:30 Networking & Discussion with drinks and snacks

Venue: Schleißheimer Str. 93B, 85748 Garching near by Munich

Please note: Only a limited number of places is available

Afterwards a bus will transfer you to the NH München Ost Conference Center

Benefit from our parallel running conferences:

In order to offer participants an even wider range of topics and networking possibilities, this conference is allocated parallel to two additional international VDI conferences:

Drones: Industrial Applications

www.vdi-international.com/drones

Maintenance

www.vdi-international.com/maintenance

08:30 Registration & welcome coffee

10:00 Chair's welcome and opening address

Prof. Dr. Karsten Berns, Head of Robotics Research Laboratory, Department of Computer Science, University of Kaiserslautern, Germany

I. Construction Site of the Future & BIM

10:15 Future Smart Sites – The Road to Autonomy

- The vision for the construction job-site of the future
 - The importance of collecting reliable data
 - Analytics and visualisations to drive timely action on the job-site
 - Automation and autonomy as a driver for improving productivity
- Kjeld Jespersen**, Global Digital Product Manager, Caterpillar Inc., Switzerland

10:45 Concept of Smart Construction & BIM Implications

- Smart Construction principals and benefits
- BIM and mobile construction machines
- Implications for BIM: Data collection and as-built information

Richard Clement, Planning Manager, Komatsu UK Ltd, United Kingdom

11:15 Making Road Construction Site Processes intelligent – SMARTSITE

- Publicly funded development and demonstration project in road construction
- Reconciling design, production, supply and logistics through ICT-technology for main project stakeholders
- Increasing efficiency of production site and logistics processes
- Optimized managing of construction site contingencies through intelligent technologies

Dr.-Ing. Norbert Pralle, Head of Development & Innovation, co-author: Dipl.-Ing. Volker Natzschka, LEAN Expert for Road Construction, both: STRABAG SE c/o Ed. Züblin AG, Germany

11:45 PIM – Visions on Pavement Construction in the Netherlands

- Dutch pavement construction contractor, CE-marking for asphalt and the ASPARi initiative
- Pavement Information Modelling (PIM): Basic need for a modern pavement construction company
- Innovation and development of pavement construction with pavement lifecycle data
- Interconnecting pavement construction supporting systems and data exchange with pavement management systems

Berwich Sluer, Manager, R&D Department, Boskalis N.V., The Netherlands

12:15  Lunch

II. Optimizing Construction Processes & 3D Printing

13:45 Monitoring, Controlling and Optimization for Asphalt paving Process

- Current situation
- Process optimization – To increase efficiency and quality in road construction
- Temperature measurement as an indicator for quality
- Digital network to increase transparency of asphalt paving processes
- Practical experience and implementation

Dr. Stephan Weller, Head of Software Products, JOSEPH VÖGELE AG, Germany

14:15 Large Scale Additive Manufacturing for Construction: 3D Concrete Printing Processes and their Applications

- Review of international research and development on 3DCP
- Definition of the processes and their applications
- Drivers for and benefits of the technology

Dr. Richard Buswell PhD., Reader in Building Energy Systems, Loughborough University, United Kingdom

14:45 3D Printing a fully functional 10 meter Steel Bridge

- Designing for 3D printing
- Creating a large scale 3D printing technique 'Printing outside the box'
- Engineering a bridge with a new technique
- Project results

Tim Geurtjens, Co-CEO and CTO, co-author: Gijs van der Velden, Co-CEO, both: MX3D B.V., The Netherlands

15:15  Networking & coffee break

III. Big Data – Benefits and Challenges ahead

15:45 Telematics Value – For Customers and OEMs

- Fleet management use cases and benefits
- Real value of telematics for end users and OEMs
- Big Data vs. Smart Data

Mohamed Abd El Salam, Platform Manager Industrial Telematics & Machine Control, CNH Industrial Italy S.p.A., Italy

16:15 Vibration-based Monitoring in Heavy Duty Machine Driveline Parts

- Improving uptime in the heavy duty construction equipment business
- Adequate condition monitoring of the torque converter, gearbox, axles and bearings
- Signal analysis of the data using signal processing methods

Elisabeth Källström tekn. lic., Industrial PhD Student Diagnostics, Volvo Construction Equipment AB, Sweden

16:45 Defining Standards for Agricultural Industry – How to avoid Potholes in the Road to safe Communication

- The scope of Agricultural Industry Electronic Foundation
- Major projects and tools solving communication issues with ISO11783
- Challenging automation with Tractor-Implement-Management
- Managing safety and security – Adequate level for Ag industry
- The highway to future of communications networking

Dipl.-Ing. Norbert Schlingmann, General Manager, AEF – Agricultural Industry Electronics Foundation e.V., Germany

17:15 Digitalization & Law – Data Protection and Data Ownership

- Data ownership and data licensing
- Protecting your company's digital "know-how"
- Data security requirements
- The new European data protection laws (EU-GDPR)

Dr. Markus Häuser, Laywer – Equity Partner, **Dr. Michael Dorner**, Laywer, both: CMS Hasche Sigle Partnerschaft von Rechtsanwälten und Steuerberatern mbH, Germany

17:45 End of conference day one



Get-together

At the end of the first conference day we kindly invite you to use the relaxed and informal atmosphere for in-depth conversations with other participants and speakers.

IV. Positioning and Drones in Construction

09:00 Autonomous Positioning and Control for Heavy Machinery

- Autonomous applications in heavy industries
- The evolution from guidance to autonomy
- Sensor requirements

Dr. Ulrich Vollath, Director Trimble Autonomous Technologies, Trimble Germany GmbH, Germany

09:30 Innovative Solutions to Construction Industry using a Drone

- Drone x construction x ICT
- CIM – 3D modelling
- Software – All workflows from the autonomous flight of a drone to image processing and analysis

Toru Tokushige, CEO, Terra Drone Corporation, Japan

10:00 Digital Construction 4.0 - Mass Data Capturing Solutions for Smart Construction Sites

- Current system solutions for mass data capturing
- Systems to data – Current software solutions
- Project examples and future vision

Dipl.-Ing. Heiko Lohre, Project Manager, Topcon Deutschland Positioning GmbH, Germany

10:30  Networking & coffee break

V. Round Tables

11:00 Round Table Discussions

- Deep learning and construction machines
- Automation and its impact on HMI
- Qualification of workers and recruitment of skilled workers
- Construction sites of the future

12:00  Lunch

VI. Automation in other Industries – How can we follow?

13:00 Benefits of Smart Logistics and Automation in the Mining Industry

- Using lean principles in mining transports
- What is your process and how do you know it works?
- Working with cycle time and tact time to balance the production flow
- Autonomous systems rather than autonomous vehicles

Jon Fangel M.Sc., Project Manager, Scania CV AB, Sweden

13:30 Automation and the Digital Transformation – How can the Construction Industry follow?

Panelists:

Mohamed Abd El Salam (CNH Industrial), **Dr. Richard Buswell PhD.** (Loughborough University) and further experts

14:00  Networking & coffee break

VII. Safety on Smart Job-Sites

14:30 On-Site-Safety – Challenges and Opportunities for Smart Construction

- Definition of on-site safety today and tomorrow
- Holistic system perspective
- Trust through communication – Facilitating safety
- Automation and safety

Dipl.-Ing. (FH) Martin Frank, Research Engineer, Specialist Intelligent and Autonomous Machines, Volvo Construction Equipment GmbH, Germany, co-authors: **Dr. Fares Beainy**, Engineer, Volvo Construction Equipment, USA and **Ryan Ruvald**, Researcher, Blekinge Tekniska Högskola BTH Karlskrona, Sweden

15:00 Safety for Construction Machines

- Sensor System
- Perception of human and other objects
- Behavior based implementation
- Experiments and construction scenarios

Prof. Dr. Karsten Berns, Head of Robotics Research Laboratory, Department of Computer Science, University of Kaiserslautern, Germany

15:30 Increasing Safety on Construction Sites with Artificial Intelligence

- Microsoft vision: AI & Cloud
- AI for security
- How could AI help to make construction sites safer?

Mario Noioso, Digital Transformation Advisor, Microsoft S.r.l., Italy

16:00 Conference chair's closing remarks

16:15 End of conference

International VDI Workshop

Utilizing UAV Solutions to automate manual Processes and digitize Workflows

Workshop Chair:

Benjamin Federmann, CEO & Founder, doks. Innovation GmbH, Germany

Date and venue:

November 27, 2017
Munich, Germany

Time:

10:00 – 16:00

Content

UAV and drones are part of the global automation of mobility. Aerial data capturing, logistics processes and real-time inspection are only a few examples how to use air space G. Working with UAV means many challenges. One are the regulations and restrictions. The integration of UAV workflows in the daily business in various industries might be the biggest. The capabilities of UAV and suitable sensors are constantly enhanced. Every new development means new challenges and way more chances to exploit potential.

In this workshop, the major goal is to learn more about the integration of UAV solutions (hard- and software) in different industries. This includes an overview of existing system technology and software solutions for construction, surveying, utility, infrastructure, agriculture and public safety as well as the commercial benefits of UAV for logistics and monitoring.

Introduction

Overview of status quo

- UAV technology
- Workflows
- Software

Best practice examples

- Construction
- Surveying
- Inspection
- Logistics

Step-by-step integration of UAV in existing businesses

- Standard integration process
- Development of individual integration workflow with participants

Summary and Feedback

International VDI Workshop

IT Security for Connected Off-Highway Machines

Workshop Chair:

Dipl.-Phys. Hartmut Kaiser, Dipl.-Inf. (FH) Harry Knechtel, both: secunet Security Networks AG, Munich, Germany

Date and venue:

November 30, 2017
Munich, Germany

Time:

09:00 – 16:00

Content

This workshop provides an overview on security for connected/autonomous off-highway machines and allows participants to interactively exchange information with peers. Transferring know-how and experience from passenger vehicles, trucks and combining it with the automotive real world cryptography allows us to discuss and get a better understanding of security requirements and concepts for secure connected/autonomous off-highway machines. The main part of the workshop consists of breakout sessions in which important topics will be elaborated on followed by moderated discussions. Participants are invited to actively contribute during the breakouts. All breakouts are started by a short presentation, including comparisons with similar developments as occurred in other industries if available. At the end of each session participants present their results and discuss them with their peers and the workshop chairs

Introduction

- Overview of attack landscape
- Methodology and best practice in automotive risk analysis, security requirements engineering and security concepts
- Adaptation for connected/autonomous off-highway scenarios

Breakout Sessions – Planned topics include:

- Security requirements of selected connected/autonomous off-highway machines use cases
- Security measures and defense-in-depth building blocks

Discussion and conclusion

- Main findings of the workshop day
- Outlook into the future of connected/autonomous off-highway machines security

(Please note that the number of participants is limited. Registrations and individual parts and segments of the workshop are subject to confirmation)

Exhibition / Sponsoring

If you want to meet with and reach out to the first-rate experts attending this VDI conference and to powerfully present your products and services to the well-informed community of conference participants, please contact:

Martina Slominski

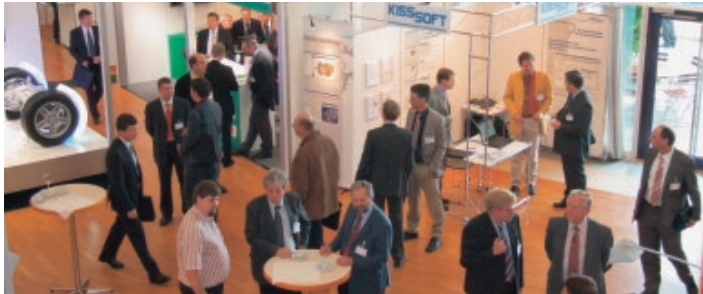
Project Consultant

Exhibitions & Sponsoring

Phone: +49 211 6214 - 385

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Email: slominski@vdi.de



Become a speaker

Become a speaker at our international VDI Construction, Off-Highway and Automotive Conferences. Make yourself known in the industry and discuss best practice examples with other international experts. We are looking for speakers on: BIM, Automation and Digitalization in Construction, Connected of Highway Machines as well as Smart Cars and Automated Driving.

Please submit your topic to:

Katharina Neumann

Product Manager

International Business Development

Phone: +49 211 6214 - 621

Email: neumann_ka@vdi.de

Registration

Terms and Conditions

Registrations: Registrations for conference attendance must be made in writing. Confirmation of your registration and the associated invoice will be mailed to you. Please do not pay your conference attendance fee until you have received our invoice and its invoice number to be stated for transfer. German VAT directives apply. Please state your VAT-ID with your registration.

Conference venue

NH München Ost Conference Center

Einsteinring 20

85609 Aschheim near by Munich, Germany

Phone: +49 89 940096-0

Email: nhmuenchenost@nh-hotels.com

Website: www.nh-hotels.de/hotel/nh-muenchen-ost-conference-center



Das Hotelportal

You will find more hotels
close to the venue at
www.vdi-wissensforum.de/hrs

Hotel room reservation: A limited number of rooms has been reserved for the benefit of the conference participants at the NH München Ost Conference Center. Please refer to "VDI Conference". For more hotels: www.vdi-wissensforum.de/hrs

VDI Wissensforum service package: The conference package includes the conference documents (online), beverages during breaks, lunch and the get-together on November 28, 2017.

Conference attendance conditions and terms: By way of your registration you accept the conference attendance conditions and terms of VDI Wissensforum GmbH as binding. Any cancellation of your registration must be made in writing. We will charge you only an administrative fee of € 50.00 plus German VAT if you cancel your registration earlier than 14 days ahead of the conference date.

Any cancellation that reaches us after this deadline will entail the conference attendance fee as stated in our invoice to be charged in full. The date of the post office stamp of your written cancellation will be the decisive criterion. In that case, we will gladly mail you the conference documents on request. Subject to agreement, you may name a substitute participant. Individual parts and sections of conferences and seminars cannot be booked. You will be informed without delay if an event has to be cancelled for unforeseeable reasons. In that instance, you will be entitled only to a refund of your conference attendance fee if already paid. We reserve the right to exchange speakers and/or change the program sequence in exceptional cases. In any case, the liability of VDI Wissensforum GmbH is restricted exclusively to the conference attendance fee.

Data protection: VDI Wissensforum GmbH captures and processes the address data of conference participants for their own corporate advertising purposes, enabling renowned companies and institutes to reach out to participants by way of information and offers within their own marketing activities. We have outsourced in part the technical implementation of data processing to external service providers. If you do not want to receive any information and offers in the future, you may contradict the use of your personal data by us or any third parties for advertising purposes. In that case, kindly notify us of your contradiction by using the email wissensforum@vdi.de or any other of the contact options mentioned.

International VDI Conference 2017

Smart Construction Equipment

VDI

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Participants
are eligible to
attend the parallel
conferences free of
extra charge

Yes, I will participate as follows:

Participation Fee + VAT

VDI Conference 28.-29. November 2017
(01K0916017) € 1,590

Workshop 27. November 2017
Utilizing UAV Solutions (02ST902001) € 850

Workshop 30. November 2017
IT Security (01ST192001) € 850

Package Price please tick the boxes

(conference and 1 workshop) € 2,190
 (conference and 2 workshops) € 2,950

Personal VDI members + VAT

VDI Conference 28.-29. November 2017
(01K0916017) € 1,490

Workshop 27. November 2017
Utilizing UAV Solutions (02ST902001) € 800

Workshop 30. November 2017
IT Security (01ST192001) € 800

Package Price please tick the boxes

(conference and 1 workshop) € 2,040
 (conference and 2 workshops) € 2,750

Visit IloT Innovation Center Garching 27.11.2017 - € 50 + VAT (Registration is necessary - limited places. Only possible in connection with a conference registration)

I am interested in sponsoring and/or exhibition

VDI membership no.

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