

VDI

4th international VDI Conference

# Smart Construction Equipment

December 09-10, 2020, Munich, Germany

Will take place  
on site or online

- Insights in the Construction Site of the Future
- Connected Construction Equipment & Big Data
- Latest Developments in Autonomous & Smart Construction Equipment
- The Use of Virtual Reality at Construction Sites
- Improvement of Safety on Construction Sites

+ Start-up Session

+ Panel Discussion: Rethinking of the Manufactures

Meet international Experts from:

ARCURE

BOSCH

CONTACT

HCSS  
Construction  
Software

HEXAGON  
ANALYTICS

machine26

MobileTronics

odd industries

PERI

propeller

Riedel  
Berger

SAINT-GOBAIN

SICK  
Sensor Intelligence

SMARTLOGSOLUTION

Stiller & Reichelt für  
Baumaschinen

TECCON

VIA IMC

VREX

WORLD W SENSING

XenomatiX

An event organized by VDI Wissensforum GmbH  
[www.vdi-international.com/01K0916020](http://www.vdi-international.com/01K0916020)

09:00 Registration & Welcome Coffee

**10:00 Chair's Welcome and Opening Address: Dr. Oliver Geibig**, Acting Managing Director Business Units & Engineering, fischerwerke GmbH & Co. KG, Germany

## I. Construction Site of the Future

Opening  
Keynote

### 10:15 Digitalization & Disruption of Business Models in Construction

- Digitalization of all areas of the construction industry leads to a change of the traditional business models of all actors
- Increased productivity and optimization of the cooperation of architects, planners, construction companies, suppliers and craftsmen
- New digital business models in the construction industry

**Dr. Kai-Stefan Schober**, Senior Partner & Head of Practice Group Construction, Roland Berger GmbH, Germany

### 10:45 Perspectives of a Connected and Automated Construction Site

- Wireless communication systems for construction sites: comprehensive data flow between machines, assets and a central management instance
- Key requirements for automated machine operation and construction work driven by digital models
- Research project „Bauen 4.0“ - from simple asset tracking devices to machine on-board systems up to site planning and management software

**Prof. Dr.-Ing. Frank Will & Volker Waurich**, both: Stiftungsprofessur für Baumaschinen, TU Dresden, Germany

### 11:15 Remote Operation and Service of Automated and Autonomous Transport Machines on Construction Sites

- Smart on board diagnosis: combining individual machine parameters with data collected on other machines to find the most probable cause of an error
- Remote operation centers: restart and control the machine
- Remote service centers: expert support for diagnosis and repair
- Examples, how operation and service of highly automated machines can be integrated into daily worksite operation

**Dr. Dipl. Ing. Christoph Mueller**, CEO, MobileTronics GmbH, Germany

### 11:45 Developments, Challenges and Opportunities for digitalizing Construction Sites

- Overview of the recent developments on digitalizing construction sites
- Opportunities with smart construction site solutions
- Partnerships as important element to drive future success

**Dr. Marc Jost-Benz**, Project Lead Amazon Private Label and Rental (PT/PJ-PLR), Robert Bosch Power Tools GmbH, Germany

12:15  Lunch

### 13:45 Shaping the Future of Construction with Remote Site Monitoring

- Future possibilities that computer vision, photogrammetry, drones, machine-learning, and big-data analytics will bring to the construction site
- Leverage as-built digital twins for progress monitoring, visual inspections, quality control, and supervision
- Harness the power of construction data

**JP Giometti**, Executive Director, Global Strategy and Corporate Development, HCSS, USA

### 14:15 Panel Discussion: Rethinking of the Manufactures

Panelist to be announced - including OEM's

Panel  
Discussion

15:15  Networking & Coffee Break

## II. Connected Construction Equipment & Big Data

### 15:45 Why the Process is the best Interface between Connected Machines

- Data driven continuous improvement
- Cost-benefit analysis of smart equipment & lean construction
- Human machine interaction

**Dr. Lucas Johannes Winter**, Managing Director, CONTACT GmbH, Austria

### 16:15 Making Construction Smarter, Safer and more Sustainable with Computer Vision

- Generating trustworthy data without friction using autonomous cameras
- Making data-driven decisions to collaborate with key stakeholders
- Reducing delays, rework and waste with real-time data
- Changing the way you plan by means of predictive information

**Leo Prieto**, CEO, Odd Industries, Chile

### 16:45 Making the Survey Manager Look like a Hero

- On-site learnings from earthmovers using drone surveys and propeller
- Combining drone surveys and mixed-fleet machine data
- The ROI of bringing survey data to field personnel's mobile devices

**Jan Wouter Kruyt**, Director of European Operations, Propeller, The Netherlands

### 17:15 iWin – Glass as Data Carrier

- Databases, BIM, ERP and the delivery note
- Tracking is more than traceability
- The digital twin meets its analog part

**Dipl.-Ing. Andreas Bittis**, International Market Manager, Business Unit Façade, Saint-Gobain Building Glass, France

### 17:45 End of Conference Day One



### 18:00 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.

08:00 Registration & Welcome Coffee

09:00 Chair's Opening

### III. Autonomous & Smart Construction Equipment

#### 09:15 Digital Transformation of Earthmoving: Keep the Distance by Digital Assistance

- Assisted automation in the movement of earth and measurement of terrain
- Digital transformation; from data to knowledge
- Digital twinning of processes and remote jobsite management

**Karsten Elles**, Smart Construction Market Development Manager & **Ian De Dobraelaere**, Smart Construction, both: Komatsu Europe International, Germany

#### 09:45 3D Snapshot Sensor Data for Smart Automation Tasks in Construction

- Overview & top analysis on 3D snapshot camera principles
- From 3D camera to 3D sensor: make data useful edge computing
- Work with analogies: examples from logistics and robotics automation world to construction world, what can be adapted by construction sector?
- Field examples of 3D data use in construction sector

**Dr. Anatoly Sherman**, Head of Business Unit 3D Compact Systems, Product Management and Applications Engineering & **Dr. Fabian Zimmer**, Applications Engineering, both: SICK AG, Germany

#### 10:15 3D Models in Road Construction - Opportunities & Challenges

- 3D point clouds for a 30 km long construction site
- Creation of 3D model for the entire construction site based on existing data
- Use case record the performance on the construction site
- Use of drones and AI technology on the BAB A7 for mass and quantity determination

**Dr. Dirk Ebersbach**, Managing Director VIA IMC, Germany & **Philipp Richter**, Project Manager ARGE CJV A7 Bockenem - Göttingen, Germany

10:45  Networking & Coffee Break

### IV. The Use of Virtual Reality at Construction Sites

#### 11:15 Development and Application of an XR Ecosystem for Formwork and Scaffolding

- Motivation for a construction supplier to go into XR
- The PERI XR journey and learning curve
- Latest state of the XR ecosystem, outlook and hands-on

**Sven Peper**, BIM Manager; PERI Group, Germany

#### 11:45 Opportunities in Using Virtual Reality with BIM

- What does it mean to use VR with BIM?
- The potential benefits on the triple-bottom-line; cost & time, the environment, and the human factor
- Use cases of how to get value from using the technology
- Limitations, and where we are heading with VR, AR, and MR

**Rune Vandli**, CEO, Vixel, Norway

12:15  Lunch

### Start-up Session

13:15 Learn about the newest start-ups of the construction industry

- **Machine26 GmbH**  
**Steffen Schweiger & Niklas Fritz**, Co-Founders & Managing Directors
- **Technical Connectivity Wear GmbH**  
**Tim Weckerlein**, Co-founder and Managing Director
- **XenomatiX**  
**Karsten Bronowski**, Business Development Manager
- **Vemcon GmbH**  
**Andreas Wilde**, Product Manager CoPilot Platform

### V. Safety on Construction Sites

#### 14:15 AI and IoT Serving Safety Working Environment

- Smart equipment to avoid collisions between vehicles and workers
- An insight of the safety on your worksite
- Data can prevent accidents in a long term

**Dr. Sabri Bayouh**, Head of Innovation & **Jean-Gabriel Pointeau**, VP Sales, both: Arcure, France

#### 14:45 The Utilization of Smart Equipment in a Hybrid Construction Environment

- Combining Detection sensors to increase Worker and Operator Safety
- Advantage of Ground penetration Tools to avoid damage on site
- Increase efficiency using BIM Models on Machine Operators Displays

**Dietmar Bernert**, VP & Business Development, Hexagon Geosystems, Germany

#### 15:15 Digital Command & Control Center for Worksite Operations

- Reduction of costs deviations by progress monitoring of the main construction activities
- Enhancement of workers health & safety by geopositioning, geofencing, alerts and evacuation
- COVID-19 Management on worksite by contact tracing, infected zones and density monitoring
- Increase of productivity by connected equipment integration and tasks execution control

**Jeremy Fraissinet**, Solutions Sales Director, Worldsensing, Spain

15:45 Conference Chair's closing Remarks

16:00 End of Conference

Start-up  
Session

International VDI Workshop

# The Smart Construction Project – Current Trends, Developments and State of the Art Technologies

## Workshop Chair:

Dr. Selim-Tuğra Demir, MBA, M.Eng., Head of construction and construction supply industry, fischer Consulting GmbH, Germany

## Date and Venue:

December 08, 2020, Munich

## Time:

10:00 - 16:00

## Content

There is probably no other decade in history in which research and development of new technologies has had a stronger impact on the construction industry like nowadays. New PropTech start-ups are occurring daily and continuously BIM applications get more and more sophisticated and lead to a connected construction site. Construction will change over the next years: new platforms, working robotics, semi-robotic tools, all kinds of sensor technologies and many more. However, what all these technologies have in common is that, it is perceived as the future, but not as the present. This futuristic view results to the consequence that the construction industry is waiting for these disrupting technologies. But waiting will lead to disruption. Therefore, the aim of this workshop is to map existing new technologies which can already be used in construction projects in a holistic and cross-phase manner. The result is a smart construction project.

## Agenda

### Introduction

- The need for performance improvement in construction
- The requirements for a smart construction project
- A brief overview on current technologies
- The future of construction

### Break-out session

- Mapping existing technologies for the execution of construction projects
- Mapping existing technologies for the design of construction projects
- What is a smart construction project?

### Discussion and conclusion

- Presentation of results from breakout sessions
- Main findings of the workshop day
- Outlook into the future vision and next steps of a smart construction project



## 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:

Vanessa Ulbrich

Project Consultant Exhibitions & Sponsoring

Phone: +49 211 6214 - 918

Email: [ulbrich@vdi.de](mailto:ulbrich@vdi.de)



## Become a speaker

Become a speaker at our international VDI Conferences. Make yourself known in the industry and discuss best practice examples with other international experts. We are looking for speakers on: Connected Off-Highway Machines, Automotive CAE, Autonomous & Electrified Buses and Smart Construction Equipment.

Please submit your topic to:

Annick Cathrin Pauwels

Product Manager

International Business

Phone: +49 211 6214 - 8646

Email: [pauwels@vdi.de](mailto:pauwels@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

München Airport Marriott Hotel

Alois-Steinecker-Str. 20

85354 Freising

Phone: +49 8161/966-0

Email: [muenchen.airport@marriotthotels.com](mailto:muenchen.airport@marriotthotels.com)



You will find more hotels

close to the venue at

[www.vdi-wissensforum.de/hrs](http://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 München Airport Marriott Hotel. Please refer to "VDI Conference". For more hotels: [www.vdi-wissensforum.de/hrs](http://www.vdi-wissensforum.de/hrs)

**VDI Wissensforum service package:** The conference package includes the conference documents, beverages during breaks, lunch and the get-together on December 09, 2020.

**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 € 250.00 plus German VAT if you cancel your registration earlier than 28 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.

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## Register online!

[www.vdi-international.com/01K0916020](http://www.vdi-international.com/01K0916020)



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Yes, I will participate as follows:

### Participation Fee + VAT

**VDI Conference 09.-10.12.2020**  
(01K0916020) € 1790

and/or

**Workshop 08.12.2020**  
(015T951001) € 950

and/or

### Package Price (Please tick the boxes)

(Conference + 1 Workshop) € 2470

I am interested in sponsoring and/or exhibition

Participation Fee VDI-Members\* Save 50 € for each Conference Day.

\* For the price category 2, please state your VDI membership number

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