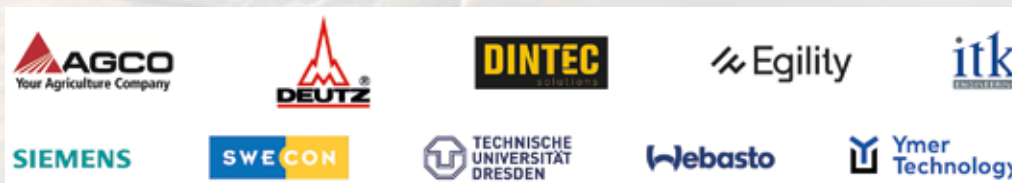


# International VDI Conference Electrified Off-Highway Machines

September, 17-18, 2024, Munich, Germany

- Hydrogen and Safety Innovations
  - Electrification and Thermal Management
  - Advanced Engineering and High-Power Interfaces
  - Fully Electric and Modular System
- + **Interactive World Café Session**  
+ **Parallel Conference „Connected Off-Highway Machines“**

Meet international Experts from:



09:00 Registration & Welcome Coffee

### 10:00 Chair's Welcome and Opening Address

Alex Woodrow, Managing Director, Knibb Gormezano and Partners, UK

## I. Hydrogen and Safety Innovations

### 10:15 Safety Concept Development for Hydrogen Tank Systems for Off-Highway Machines

- Hydrogen is a particularly promising alternative for commercial vehicles and work machines that are not suitable as battery-powered vehicles
- Development process for safety concepts for hydrogen-based gas tank systems (up to 700 bar) with the target to design the system under three major aspects: safe storage, controlled release and support of the refueling process for hydrogen
- Typical safety goals for hydrogen tank systems in the mobile sector
- Constructive (product safety), technical-functional (functional safety), and organizational realization

Dipl.-Ing. Alexander Straub, Software-Development Engineer, ITK Engineering GmbH, Germany

### 10:45 Research Tractor Fendt Helios - Results from the Field Tests

- H2Agrar in lower saxony
- Tractor design
- Results from the field tests
- Discussion

Dipl.-Ing. (FH) Wolfgang Breu, Team Lead R&AE Zero Emission, AGCO GmbH Marktoberdorf, Germany

11:15 tba

Alex Woodrow, Managing Director, Knibb Gormezano and Partners, UK

11:45  Networking & Coffee Break

## II. Electrification and Thermal Management

### 12:15 Fast Charging with Building Site Electricity?

- Challenges of charging for off highway machines
- Solutions
- Examples

Michael P. Schmitt, CEO, Egility, Germany

### 12:45 Smart Electrification with Standardized Batteries and Thermal Management Solutions

- Challenges in the electrification of off-highway machinery
- Overview of Webasto electrified product portfolio
- Customer cases - best practices

Stephan Dietrich, Product & Service Management Battery & eTM, Webasto, Germany

13:15  Lunch

### 14:45 Efficient and Customized Thermal Management Strategies for Battery-Electric, Hybrid and Fuel Cell Machineries

- Key challenges within thermal management of electric & fuel-cell machines
- Current stage of technology
- Simplified battery thermal management
- Modularized and standardized product approach to meet individual demands and requirements
- Technology outlook with natural refrigerants

Josef Graubmann, Managing Director, Ymer, Germany

## III. Advanced Engineering and High-Power Interfaces

### 15:15 Connecting Multiple HV-Networks with Electrical High-Power Interfaces/ Challenges, Solutions & Best Practice

- Electrical safety
- Functional safety
- Operation modes

Florian Asenkerschbaumer, Manager System Development, Dintec GmbH, Germany

15:45 tba

16:15  Networking & Coffee Break

### 16:45 Interactive World Café Session

Join us for interactive round table discussions with industry experts. Share and address challenges within your sector, identify problems and needs, and explore solutions. Bring your own experiences and cases to the table. Don't miss out on this chance to connect with your industry colleagues.

17:30 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.

**09:25 Chair's Welcome and Opening Address****IV. Fully Electric and Modular System****09:30 Holistically Electric: The EC230 - 23t Crawler Excavator**

- The challenge of sustainable transformation
  - 23t in full battery operation - technology & performance
  - Best practice
  - Holistically electric: charging infrastructure, service, know-how, consulting
- Julia Häser**, Head of Marketing & Product Management, **Christian Paffen**, Chief of Sales, Swecon Baumaschinen GmbH, Siek, Germany

**10:00 Development of a Modular Electric Drive System for Off-Highway Applications**

- Learn about Deutz AG's advanced 360-volt electric drive system and its applications, including airfield tractors and electric cranes, offering turnkey solutions for various industries
- Development process of E-DEUTZ's electric drive system, ensuring functional safety and meeting diverse customer requirements through cutting-edge technology and engineering practices

**Timm Martens M.Sc.**, Electrification & Green Technologies System Engineering and **Florian Huthmacher**, Development Engineer, Deutz AG, Cologne, Germany

**10:30 From Less to Zero: ZF's modular system approach to decarbonize and electrify off-highway machinery**

- On the road to Vision Zero
- Modular electric central drive system for off-highway applications
- All-electric and sustainable drive system eTRAC eCD60 for compact vehicles

**David Stockbauer-Muhr**, Head of Electric Systems Development for Off Highway Applications, ZF Friedrichshafen AG, Germany

11:00  Networking & Coffee Break

**11:45 Application Potential and Limits of Alternative Drive Technologies for Mobile Machinery**

- Wide range of power and energy requirements leads to various drive system designs for construction machinery
- Segmentation of the market (battery, hydrogen fuel cell, hydrogen combustion engine, e-fuels) is a cost driver by reducing the number of units
- Energy and power supply for construction sites (electrical power and hydrogen) still needs to be resolved
- Decarbonisation of construction machinery is possible but expensive, requires significant investment incentives

**Prof. Dr.-Ing. Frank Will**, Chair of Construction Machinery, TU Dresden, Germany

**12:15 Recap World Café Session**

We will be reviewing the results and key takeaways gained from the diverse perspectives shared by our participants. This is an opportunity to reflect on the ideas and solutions generated during the World Café and to gain a deeper understanding of the challenges and opportunities facing our industry.

12:45  Lunch

**14:15 Virtual Engineering Workflow of an Electric-Hybrid Wheel Loader**

- Virtual engineering starting from powertrain presizing to detailed design and integration
- Mean value engine modeling combined with reduced order modeling (ROM) techniques
- Operator-in-the-loop validation ensures that the hybrid wheel loader meets operational requirements and operator expectations

**Romain Nicolas**, Business developer for Simcenter Amesim, Siemens Digital Industries Software, France

**14:45 Closing Remarks**

15:00 End of conference

## 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.

## Exhibitors

Arcure SA  
IPG Automotive GmbH

## Reasons to attend

**Gain** valuable insights into the latest trends, challenges, and innovations within the Off-Highway industry.

**Connect** with industry experts, professionals, and potential collaborators

**Stay** updated on emerging technologies and their impact on the Off-Highway Industry.

**Explore** the latest products, tools, and solutions designed specifically for Electrified Off-Highway Machines

**Engage** with internationally renowned Off-Highway specialists during interactive sessions, breaks and at the evening reception

## International VDI Conference

# Connected Off-Highway Machines

From Smart Sensors to Smart Systems

### Date and venue:

September 17-18, 2024  
Munich, Germany

### Renowned speakers will present their results on the following topics:

- Digital Innovation & Connectivity in Off-Highway
- Autonomous Systems & Mobile Machines
- Software Integration & Extended Reality
- Data Management & Regulations

<https://www.vdiconference.com/01K0902>



## 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



## Become a speaker

---

Become a speaker at our international VDI Automotive Conferences. Make yourself known in the industry and discuss best practice examples with other international experts. We are looking for speakers on: Cyber Security for Vehicles, Software Defined Vehicle, Autonomous Driving and Autonomous Trucks.

Please submit your topic to:

**Birgit Bremer**  
Product Manager International Business  
Phone: +49 211 6214-273  
Email: Birgit.Bremer@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. Dutch VAT directives apply. Please state your VAT-ID with your registration.

**Conference venue**  
Holiday Inn Munich - Westpark  
Albert-Rosshaupter-Strasse 45  
81369 Munich, Germany  
Phone: +49 89 411 113-0  
Email: info.wp@himuc.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 Holiday Inn Munich - Westpark. 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 (online), beverages during breaks, lunch and the get-together on September 17, 2024.

**Conference attendance conditions and terms** can be found on our website: [www.vdi-wissensforum.de/en/terms-and-conditions/](http://www.vdi-wissensforum.de/en/terms-and-conditions/)

**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](mailto:wissensforum@vdi.de) or any other of the contact options mentioned.

International VDI Conference

# Electrified Off-Highway Machines



**Register online!**

[www.vdiconference.com/](http://www.vdiconference.com/) 01K0934024



VDI Wissensforum GmbH  
P.O. Box 10 11 39  
40002 Düsseldorf, Germany  
Phone: +49 211 6214-201  
Fax: +49 211 6214-154  
Email: [wissensforum@vdi.de](mailto:wissensforum@vdi.de)  
[www.vdiconference.com/](http://www.vdiconference.com/) 01K0934024

VDI Wissensforum GmbH | VDI-Platz 1 | 40468 Düsseldorf | Germany

Yes, I will participate as follows:

**Participation Fee + VAT**

**VDI Conference 17.-18.09.2024**  
(01K0934024) € 1990

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

VDI membership no.

Title

First Name

Last Name (Family Name)

Company/Institute

VAT-ID

Department

Street

ZIP Code, City, Country

Phone

Fax

Email

Please state your invoice address if this differs from the address given

Participants with an invoice address outside of Austria, Germany and Switzerland are kindly requested to pay by credit card.

Please register at [www.vdi-international.com](http://www.vdi-international.com). Your credit card information will be transmitted encrypted to guarantee the security of your data.