

73<sup>rd</sup> International Conference on Agricultural Engineering

# LAND.technik AgEng 2015

Innovations in Agricultural Engineering for Efficient Farming

**ATTEND INNOVATIVE PRESENTATIONS AND PARTICIPATE  
IN DISCUSSIONS WITH EXPERTS FROM THE FIELDS OF  
ENGINEERING, PRODUCT DESIGN, MANAGEMENT AND SCIENCE:**



- Tractor testing, Tractor Transmission, Tractor and Suspension, Tractor Development
- Electric drives, Sensors, Hydraulics
- Communication Management, Data Management, Human Machine Interfaces
- Automation and Robotics, Automation, Navigation
- Sowing, Soil Protection and Tillage
- Grain Harvest, Harvest Technologies
- Industrial Engineering, Product Development and Concepts

## Time and venue



November 6–7, 2015, Hannover, Germany  
Exhibition Ground

## Sponsor



**TASKING**

## Opening Event of



## Official Partner



# FRIDAY

## 6 NOVEMBER 2015

10:00 Registration

Plenary Session Room 1A and 1B

12:00 Welcoming Address and Opening Remarks: VDI-MEG

Peter Pickel, President of May Eyth Society for Agricultural Engineering (VDI-MEG), Kaiserslautern, Germany

12:10 Welcoming Address and Opening Remarks: EurAgEng

Emmanuel Hugo, President, EurAgEng, Aubiere, France

12:20 Welcoming Address and Opening Remarks: DLG

Carl-Albrecht Bartmer, President, DLG e.V., Frankfurt, Germany

12:30 Agricultural Technology – The Farmers View

Hubertus Paetow, Finkenthal

13:00 Coffee Break

Room 2

### Traktor Testing

Hermann Buitkamp, Managing Director, DLG e.V., Groß-Umstadt, Germany

Room 1 A

### Electric Drives

Heinrich Prankl, HBLFA Francisco Josephinum, BLT Wieselburg, Austria

13:30 DLG PowerMix Chassis Dynamometer – The field on a Test Bench

Andreas Ai, Project Manager, Hans-Joachim Tauber, DLG e.V., Groß-Umstadt, Germany

Linear Actuators with Electric Power Supply

Zhenan Zhang, Research Assistant, Ludger Frerichs, Technical University of Braunschweig, Germany, Thomas Maier, Oswald Elektromotoren GmbH, Miltenberg, Germany

14:00 Advanced test stand for complete vehicle analysis to ,bring the road and field into the laboratory’

Bernd Rückert, Team Lead Vehicle Test Bench, AGCO GmbH, Marktoberdorf, Germany

Electrification as Enabler for New Tractor-Implement Solutions

Rainer Gugel, Senior Engineer, Barbara Böhm, John Deere GmbH & Co. KG, Mannheim, Germany

14:30 Real World Measurement of Carbon Dioxide Emissions of an Agricultural Tractor Using a Portable Emissions Measurement System

David Clare, Senior Lecturer, Miles W.J. Metcalfe, Robert Fillingham, Harper Adams University, Newport, United Kingdom

High Speed Electrical Single Wheel Drives for Mobile Machinery

Jan Schröter, Research Engineer, Georg Jacobs, RWTH Aachen University, Aachen, Germany, Martin Hoffmann, Liebherr-Components Biberach GmbH, Biberach, Germany

15:00 Exhaust Emissions and Fuel Consumption Under Real Driving Conditions on a Tractor Test Stand

Johannes Ettl, Research Assistant, Klaus Thuneke, Technologie- und Förderzentrum, (TFZ), Straubing, Germany, Heinz Bernhardt, Technical University Munich, Freising, Germany

Synergetic Utilization of Hydraulic, Electric and Electro-Hydraulic Drive and Control Systems in Agricultural Vehicles

Patrick Labenda, Technical Director, Christoph Kempermann, Leif-Eric Gebhard, Fluitronics GmbH, Krefeld, Germany

15:30 Coffee Break

### Tractor Transmission

Emmanuel Hugo, Head of Research Unit, Irstea-National Research Institute, Aubiere, France

### Communication Management

Peter Hieronymus, Head of Systems Engineering Software, Claas SE GmbH, Harsewinkel, Germany

16:00 CVDT – The Next Level in Tractor Transmission Technology

Michael Graf, Senior Design Engineer, Martin Brenninger, Richard Heindl, AGCO GmbH, Marktoberdorf, Germany

AEF ISOBUS Database – Experience and Features for Future Challenges

Norbert Schlingmann, Head of electronic integration department, Claas SE GmbH, Harsewinkel, Germany, Jan-Hendrik Wölker, Fuhrhop & partner, Bielefeld

16:30 DCT Technology: Carraro Vision for the New Agricultural Transmissions

Matteo Mottin, Agriculture Driveline Manager, Fulvio Lo Conte, Carraro Spa, Campodarsego, Padova, Italy

Bridging the Gap – Middleware for the Development of Agricultural Electronic Systems with AUTOSAR

Jochen Breidt, Technical Expert, ITK Engineering AG, Rülzheim, Germany

17:00 Research of Continuous Variable Transmissions for Efficiency Improvements of Self-Propelled Forage Harvesters

Dominic Böckemeyer Systems Engineer, Peter Weiss, Hannes Mählmann, Maschinenfabrik Bernard Krone GmbH, Spelle, Germany

Robust Communication for Agricultural Process Management in Rural Areas

Frank Nordemann, Faculty of Engineering and Computer Science, Ralf Tönjes, Elke Pulvermüller, University of Applied Sciences, Osnabrück, Germany

17:30 Break

Plenary Session Room 1A and 1B

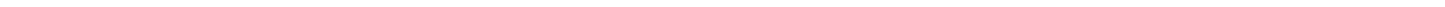
17:45 Awarding of the VDI-MEG Prizes / Awarding of the EurAgEng Award of Merit

18:45 Get-together Dinner



Room 1B	Room 3
<b>Automation and Robotics</b> <b>Arno Ruckelshausen</b> , Competence Center of Applied Agricultural Engineering, University of Osnabrück, Germany	<b>Grain Harvest</b> <b>Thomas Barreilmeyer</b> , Head of Development 1- Lexion, Claas SE GmbH, Harsewinkel, Germany
<b>AgriApps – An App-based Solution for Field-Robot-Based Agriculture</b> <b>Matthias Strobel</b> , Managing Director, InMach Intelligente Maschinen GmbH, Ulm, Germany	<b>Light Weight Cleaning Shoe: Development of a High Efficiency Cleaning Shoe for a New Generation of Combine Harvesters</b> <b>Martin Rittershofer</b> , SR Design Engineer, Volker Fuchs, John Deere GmbH & Co. KG, Zweibrücken, Germany, Jeffrey Walter, John Deere Global Crop Harvesting Product Development Center, East Moline, USA
<b>Automatic Control of Driving Speed in Autonomous Tractor Mower Using Drive Train Power Measurement</b> <b>Timo Oksanen</b> , University Lecturer, Aalto University, Espoo, Finland, Ole Green, Kongsilde Industries, Denmark	<b>Development of a Model to Optimize the Energy Requirement of a Grain Harvest</b> <b>Robert Fillingham</b> , Harper Adams University, Newport Shropshire, United Kingdom, Boris Kettelhoit, Claas SE GmbH, Harsewinkel, Germany, Huert Korte, University of Applied Science, Osnabrück, Germany
<b>Robotic Tools for Advanced Agriculture Automation</b> <b>Hannes Harms</b> , Research Assistant, Jan Schattenberg, Ludger Frerichs, Technical University of fBraunschweig, Germany	<b>Reduced Combine Harvesting Power Demand by Adaption of the Straw Chopping Intensity – Field trials during 2013 and 2104</b> <b>Gunnar Lundin</b> , Researcher, JTI – Swedish Institute of Agricultural an Environmental Engineering, Uppsala, Sweden
<b>Autonomous Agricultural Machinery for New Plant Production Systems</b> <b>Till-Fabian Minßen</b> , Research Assistant, Ludger Frerichs, Technical University of Braunschweig, Germany	<b>New Method to Detect Grain in Grain-MOG-Mixtures</b> <b>Konstantin Beckmann</b> , Development Engineer, Stefan Böttinger, University of Hohenheim, Stuttgart, Germany, Ralf Bölling, Claas SE GmbH, Harsewinkel, Germany

Sowing	Sensors
<b>Peter Schulze Lammers</b> , University Bonn, Germany	<b>Axel Munack</b> , Johann Heinrich von Thünen-Institut, Braunschweig, Germany
<b>Designing a Precision Planter to Place Oriented Corn Seeds</b> <b>Randal Taylor</b> , Professor, Oklahoma State University, Stillwater OK, USA, Adrian Koller, Lucerne University of Applied Sciences and Arts, Lucerne, Switzerland, Wesley Porter, University of Georgia, Tifton GA, USA	<b>Innovative Sensors for Fast Metering Units</b> <b>Nils Brunnert</b> , Development Engineer, Paulo Martella, Martin Liebich, Müller-Elektronik GmbH & Co. KG, Salzkotten, Germany
<b>Considerations for Site-Specific Implementation of Active Downforce and Seeding Depth Technologies on Row-crop Planters</b> <b>John Fulton</b> , Professor, The Ohio State University, Columbus, USA, Aurelie Poncet, Auburn University, Auburn Alabama, USA	<b>Miniaturized Radar Sensor Principle and Applications in an Agriculture Environment</b> <b>Michael Weigel</b> , Head of Business Unit Agriculture, Sensor Solutions, Baumer Electric AG, Frauenfeld, Switzerland, Dr. Bernhard Streit, School of Agricultural, Forest and Food Sciences HAFL, Zollikofen, Switzerland
<b>Exact Emerge – Integrated High Performance Corn Planting Solution</b> <b>Martin Kremmer</b> , Manager Automation Strategy, Valentin Gresch, Klaus Braunhardt, John Deere GmbH & Co. KG, Kaiserslautern, Germany	<b>Optical Position Transducer with Redundant System Architecture</b> <b>Christian Schwab</b> , Innovation Engineer, Weber Hydraulik GmbH, Güglingen, Germany



# SATURDAY 7 NOVEMBER 2015

Room 2		Room 1 A	
<b>Traction and Suspension</b> <b>Franz Handler</b> , Head of Department, HBLFA Francisco Josephinum, Wieselburg, Austria		<b>Hydraulics</b> <b>Peter-Michael Synek</b> , representative Managing Direcør, VDMA, Frankfurt, Germany	
08:30	<b>Agricultural Tyre Energy Efficiency Test Method Link with Specific Fuel Consumption for Measuring the Efficiency of Agricultural Tyres Under Real Conditions on Tractors</b> <b>László Kocsis</b> , Head of Unit, NARIC Institute of Agricultural Engineering, Gödöllő, Hungary, Emmanuel Piron, Irstea, Aubiere, France	<b>Energetic Optimization of the Power Flow Arrangement in a Hydraulic Hybrid</b> <b>Lennart Roos</b> , Research Assistant, Philip Nagel, Ludger Frerichs, Technical University of Braunschweig, Germany	
09:00	<b>A Fully Integrated Traction Assistance System</b> <b>Benno Pichlmaier</b> , Head of Research & Advanced Engineering, Thiemo Buchner, AGCO GmbH, Marktoberdorf, Germany	<b>Downsizing of Hydraulic Systems on Agricultural Machines with Hydraulic Accumulators</b> <b>Matthias Müter</b> , Project Engineer, Frank Bauer, Daniel Feld, Hydac System GmbH, Sulzbach, Germany	
09:30	<b>A Tractive Sensor – Integrated Measurement of Tire Soil Parameters for Tractors</b> <b>Jan Wieckhorst</b> , Thomas Fedde, Claas Industrietechnik GmbH, Paderborn, Germany, Ludger Frerichs, Technical University Braunschweig, Germany	<b>Development of a new hydrostatic motor in swashplate design</b> <b>Rolf Lasaar</b> , Director Testing, Linde Hydraulics GmbH & Co. KG, Aschaffenburg, Germany, Heinrich Schneider, Heinrich Dückinghaus, Claas SE GmbH, Harsewinkel, Germany	
10:00	<b>A Load Sensing Adaptive Hydro pneumatic Suspension for a Full Suspension Tractor</b> <b>Peter Swinnerton</b> , Principle Development Engineer, Lawrence Helmick, JCB Landpower, Stoke On Trent, United Kingdom	<b>„Two loops – five functions”: New hydraulic design and components for self propelled forage harvesters</b> <b>Thomas Rapp</b> , Manager Sales & Application Agriculture, Bosch Rexroth AG, Elchingen, Germany, Stefan Bohrer, Dominik Mika, John Deere GmbH & Co. KG, Zweibrücken, Germany	
10:30	Coffee Break		
<b>Tractor Development</b> <b>Marcus Geimer</b> , Mobima – Chair of Mobile Machines, Karlsruher Institute of Technology (KIT), Karlsruhe, Germany		<b>Industrial Engineering</b> <b>Herbert Coenen</b> , Director Business Development, Uniparts India Limited, Noida, India	
11:00	<b>K08 Panoramic Cabin</b> <b>Denis Rondeau</b> , Head if Cabin Development Department, Claas Tractor SAS, Velizy-Villacoublay Cedex, France	<b>Methodology for accelerated durability testing of agricultural machinery</b> <b>Dimitris Paraforos</b> , Research Assistant, Dietrich Kortenbruck, Hans-Werner Griepentrog, University Hohenheim, Stuttgart	
11:30	<b>Prospects on electrification and hybridisation of agriculture machinery – applications to tractors</b> <b>Abderrahmane Hammar</b> , Electrification Engineer, Anna Lisa Junge, Claas Tractor, Vélizy Villacoublay Cedex, France	<b>Field Data driven design approach for Agricultural Wheels: from real life stress to test bench parameters</b> <b>Gianpietro Bramé</b> , Chief Engineer GKN Wheels EMEA und Asia, GKN Land Systems, Cologno Monzese, Italy, Vincenzo Zuccarotto, Alberto Mazzoni, GKN Wheels, Carpenedolo, Italy	
12:00	<b>New innovative standard tractor concept up to 500 hp – demands-technical solutions-challenges</b> <b>Robert Heisler</b> , Development Engineer, Johann Dobler, AGCO GmbH, Marktoberdorf, Germany	<b>Combine Operator Training Simulator</b> <b>Brian Gilmore</b> , Advanced Systems Engineer, Tim Hunt, Michael Chitanda, Anhtuan Nguyen, John Deere, East Moline, USA	
12:30	<b>New Legislative Requirements for exhaust aftertreatment systems on the EPA-Market – Realization of a DEF-quality sensor in a Global Multibrand Company</b> <b>Thomas Merkel</b> , Development Engineer, AGCO GmbH, Marktoberdorf, Germany	<b>Standards of mobile Service and predictions for 2020 regarding aftersales, taking an example from Grimme Landmaschinenfabrik GmbH &amp; Co. KG</b> <b>Marcus Pier</b> , Aftersales Manager, Grimme Landmaschinenfabrik GmbH & Co. KG, Damme, Germany	
13:00	Lunch Break		

## VDI Wissensforum

The VDI Wissensforum organizes and provides seminars and conferences dedicated not only to engineers but also to academics and practitioners from widely diverse branches of the economy. Our activities are backed by the Verein Deutscher Ingenieure e.V. (VDI), a virtually inexhaustible fund of know-how constantly attracting new ideas and suggestions.



The Association of German Engineers (VDI) is one of the leading engineer's associations worldwide. The Max Eyth Society for Agricultural Engineering represents a technical division of the VDI. It bears the name of the founder of agricultural engineering as a distinct discipline in Germany, Max Eyth (1836-1906). [www.vdi.de/meg](http://www.vdi.de/meg)

Room 1B

## Harvest Technologies

**Stefan Böttinger**, University Hohenheim, Stuttgart, Germany

### **Simulation of Stalks in Agricultural Processes – Using the Discrete Element Method**

**Lars Thielke**, Research Assistant, Ludger Frerichs, Sebastian Kemper, Frederick Sümening, Technical University of Braunschweig, Germany

### **ADALS – A Database for Agricultural Materials and a New Approach in Parameterization of DEM Simulations**

**Andreas Prüfer**, Research Assistant, Till Meinel, Cologne University of Applied Science, Cologne, Germany

### **Modeling of Grain Harvest Logistics for Modern In-Field Equipment Complements**

**Scott A. Shearer**, Professor and Chair, Dustin Wolters, Andrew Klopfenstein, Ohio State University, Columbus, USA, Joe Luck, University of Nebraska, Lincoln, USA

### **Performance Stabilization of the Separation and Cleaning Process in a Combine Harvester Working on Slopes**

**Christoph Bußmann**, Software Development Engineer, Joachim Baumgarten, Jens Bußmann, Claas SE GmbH, Harsewinkel, Germany

## Harvest Technologies

**Martin Büermann**, Manager Combine Engineering, John Deere GmbH & Co. KG, Zweibrücken

### **Systematic analysis of the influences on the wear of cutting knives**

**Luise Merbach**, Research Fellow, Frank Benke, Sebastian Hartwig, University of Applied Science Schmalkalden, Germany

### **Performance enhancement in combine harvesters through AUTO CROP FLOW CONTROL**

**Bastian Bormann**, Development Engineer, Claas SE GmbH, Harsewinkel, Germany

### **Efficiency Increase in the Residue Management Process**

**Jörn Brinkmann**, Project Manager, Christian Beulke, Claas SE GmbH, Harsewinkel, Germany

### **Development of functional solutions for continuous compaction processes in large square balers**

**Jens Fehrmann**, Research Assistant, Technical University of Dresden, Germany, Hannes Stefan Hannenheim, Klaus Weidig, Raussendorf Maschinen- und Gerätebau GmbH, Obergurig, Germany

Room 3

## Automation

**Rainer Hofmann**, Director Engineering Global Tractors, AGCO GmbH & Co. KG, Marktoberdorf, Germany

### **HIL-Tests with Slip Control for Electric Single Wheel-Drives – Results and Traction Test Stand Concepts**

**Pavel Osinenko**, Research Associate, Mike Geißler, Thomas Herlitzius, Technical University of Dresden, Germany

### **Optimizing Ergonomics with a Process-Oriented Distributed Multi Screen Approach for ISOBUS Systems**

**Andreas Ganseforth**, Sales Manager, Stefan Bilsing, ANEDO Ltd. Eydelstedt, Germany, Clemens Westerkamp, University of Applied Science Osnabrück, Germany

### **Modular and high scalable electronic control architecture for higher development efficiency and lower production costs**

**Thomas Meyer**, Development Manager, Alexander Krieger, Andreas Möller, ANEDO Ltd., Eydelstedt, Germany

### **Automated parameterization of the transmission control unit of a power split tractor transmission**

**Christopher Körtgen**, Research Scientist, G. Jacobs, RWTH Aachen University, Aachen, Germany, Garbiele Morandi, CNH Industrial, Modena, Italy

## Soil Protection and Tillage

**Karlheinz Köller**, Universität Hohenheim, Stuttgart, Germany

### **A long-term study on the effects of traffic and tillage systems on crop, soil and energy requirements**

**Emily Smith**, David White, Harper Adams University, Shropshire, United Kingdom

### **Strip tillage in oilseed rape: Comparing two tillage practices and two fertilizer regimes**

**Iain Dummet**, Cranfield University, Bedfordshire, United Kingdom

### **Determination of soil surface properties with laser and 3D-camera**

**Johan Arvidsson**, Professor, Swedish University of Agricultural Sciences, Uppsala, Sweden

### **Measurement of the soil pressure on a plough**

**Giovanni Molari**, Vice dean of department, M. Mattetti, University of Bologna, Italy, F. Morelli, Gruppo Nardi, Perugia, Italy



The European Society of Agricultural Engineering (EurAgEng) exists to promote the professions of Agricultural and Biosystems Engineering and the people who serve it. The Society is particularly active in conferences, Special Interest Groups, publications, networking, and international lobbying.  
[www.eurageng.net](http://www.eurageng.net)

### **AGRITECHNICA ADMISSION-TICKETS**

“Exklusivtageskarte” Ticket for AGRITECHNICA for 8<sup>th</sup> or 9<sup>th</sup> November 2015 will be sold to LAND.technik AgEng 2015 conference participants during the breaks at the price of EUR 50,00 (regular price EUR 75,00)



# SATURDAY 7 NOVEMBER 2015

Room 2 <b>Product Development and Concepts</b> Thomas Göres, Head of Department, Claas SE GmbH, Harsewinkel, Germany	Room 1 A <b>Data Management</b> John Reid, Director, Product Technology and Innovation, John Deere, Moline, IL, USA
<b>14:00 Sustainable energy for agricultural applications: Working prototype and possibilities of fuel cell energy sourcing</b> Johannes Bosch, Project Manager, ImMach Intelligente Maschinen GmbH, Ulm, Germany, Stefan Kneher, SWU Stadtwerke Ulm, Neu-Ulm, Germany	<b>Anomaly Detection and Performance Evaluation of Mobile Agricultural Machines by Analysis of Big Data</b> Thilo Steckel, Development Engineer, Claas E-Systems KGaA & mbH & Co. KG, Gütersloh, Germany, Oliver Niggemann, Fraunhofer IOSB-INA, Lemgo, Germany, Ansgar Bernardi, Deutsches Forschungszentrum für Künstliche Intelligenz, Kaiserslautern, Germany
<b>14:30 Theory meets practice – Developing a big disc mower in the conflict area between development planning and operative project management</b> Cornelia Paul, Development Planner, Manfred Geng, Claas Saulgau GmbH, Bad Saulgau, Germany, Martin Hawlas, Claas KGaA, Harsewinkel, Germany	<b>FLEET VIEW</b> André Kluge, Head of Customer Function Data management, Florian Kreis, Sven Paulus, Claas E-Systems KGaA mbH & Co. KG, Gütersloh, Germany
<b>15:00 Mobile Cyber Physical System concept for controlled agricultural environments</b> Thomas Herlitzius, Chair of Professorship, Technical University of Dresden, Germany, Arno Ruckelshausen, University of Osnabrück Germany, Klaus Weidig, Raussendorf Maschinen- und Gerätebau GmbH, Obergurig, Germany	<b>Real-time Operator Performance Analysis in Agricultural Equipment</b> Sebastian Blank, Product Engineer, Dohn Pfeiffer, Deere & Company, Moline, USA
15:30 Break	
<b>15:50 Plenary Session, Room 1A and 1B</b>	
<b>15:50 25 Years AGCO</b> Prof. Martin H. Richenhagen, Chairman, President und CEO der AGCO Corporation	
<b>16:20 Closing Remarks</b> Henning Meyer, Scientific Chairman of the Conference	
<b>16:30 End of the Conference</b>	

## COLLABORATIVE WORKSHOP OF ERA-NET ICT-AGRI AND THE MANUFUTURE SUB-ETP AGRICULTURAL ENGINEERING & TECHNOLOGIES (AET)

**Friday, 6 November 2015**

Convention Center (CC), Deutsche Messe AG, Hannover  
Room 13/14

### Schedule

- 08:30 Registration and welcome coffee in Room 13/14
- 09:00–10:20 Section 1: Agricultural Research Objectives
- 10:00–10:20 Coffee Break
- 10:20–11:50 Section 2: Reports from MANUFUTURE AET & ERA-Net ICT-AGRI
- 12:00–13:00 Joint Plenary Session with LAND.technik AgEng 2015
- 13:00–13:30 Coffee break
- 13:30–15:30 Section 3: EU Key Objectives, Projects & Research Results
- 15:30 End of the Workshop

The final programme will be sent out electronically about 1 month before workshop.  
Information for this 8th workshop of the MANUFUTURE AET on [http://www.manufuture.org/manufacturing/?page\\_id=668](http://www.manufuture.org/manufacturing/?page_id=668).

Registration by email to Jens Fehrmann ([fehrmann@ast.mw.tu-dresden.de](mailto:fehrmann@ast.mw.tu-dresden.de)).

For participation in the International LAND.technik AgEng 2015 Conference register separately at page 8 of this brochure.

## INFORMATION

### ROUTE TO THE EXHIBITION GROUND

**By car:** arrival via expressway to the exhibition center, "Parkhaus Süd 26" or "Parkhaus Süd 27". Access to the Convention Center through the "Ost 3" entrance via the "Skywalk" and the Exponale.  
**By public transportation:** from Hannover main railroad station via subway line 8 to terminal station "Hannover Messe/Nord", access to the Convention Center through the "Nord 2" entrance.

### ACCESS TO THE CONVENTION CENTER

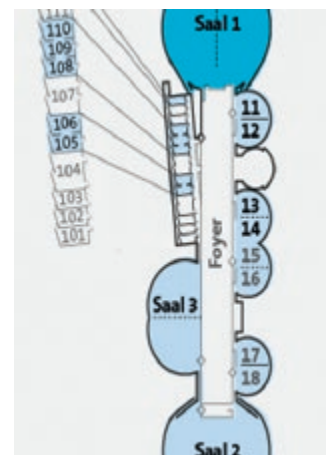
Through entrance "Süd", entrance "Nord" will be closed.

### OVERVIEW

Exhibition Ground



Convention Center (CC)



○ Access through entrances "Nord 2" and "Ost 3"

For more information please see the website [www.vdi.de/landtechnik-ageng](http://www.vdi.de/landtechnik-ageng)

#### Room 1B

### Human Machine Interface

**Thomas Engel**, Manager Technology Innovation Strategy, John Deere GmbH & Co. KG, Kaiserslautern, Germany

#### The programmable force feedback joystick for enhanced operator comfort und performance

**Marco Boving**, Product Manager, GRAMMER EiA Electronics, Aartselaar, Belgium

#### Agricultural HMI-Visions 2020-30 Different concepts for new harvesting systems and user oriented operating solutions

**Jens Krzywinski**, Junior Professorship, Sebastian Lorenz, Frank Apitz, Technical University of Dresden, Germany

#### Operator assistant system for forage harvesters

**Philipp Münch**, Sensor Specialist, John Deere GmbH & Co. KG, Kaiserslautern, Germany

#### Room 3

### Navigation

**Thomas Hoffmann**, Department Manager, Leibniz-Institut für Agrartechnik Potsdam-Bornin e.V., Potsdam, Germany

#### Study on a machine vision base guidance system for hoeing in row crops

**Thomas Stehle**, Martin Holpp, Hans W. Griepentrog, University Hohenheim, Stuttgart, Germany

#### integrated 2 point solution to locate trailed implement paths in a repeatable manner according to geo-localization signal

**Hubert Defrancq**, President, Laforge SAS, Guignicourt, France, Alexander C. Kubik, Laforge LLC, Waterloo, USA

#### Innovative Assistance Systems based on a Backward-Looking 3D-Time of Flight Camera

**Tobias Blume**, Research Assistant, Jan Schattenberg, Ludger Frerichs, Technical University Braunschweig, Germany

### PROGRAM COMMITTEE

**Heinz Böhler**, AGCO GmbH, Marktoberdorf

**Stefan Böttinger**, Universität Hohenheim, Stuttgart, Germany

**Hermann Buitkamp**, DLG e.V., Groß-Umstadt, Germany

**Herbert Coenen**, Uniparts India Ltd., Noida, India

**Thomas Göres**, Claas SE GmbH & Co.KG, Harsewinkel, Germany

**Franz Handler**, BLT Wieselburg, Österreich

**Andreas Herrmann**, Verein Deutscher Ingenieure e.V., Düsseldorf, Germany

**Peter Hieronymus**, CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany

**Thomas Hoffmann**, Leibniz-Institut für Agrartechnik Potsdam-Bornim e.V., Potsdam, Germany

**Robert Kaufmann**, Agroscope ART, Ettenhausen, Switzerland

**Karlheinz Köller**, Universität Hohenheim, Stuttgart, Germany

**Axel Munack**, Johann Heinrich von Thünen-Institut, Braunschweig, Germany

**Peter Pickel**, John Deere European Technology Innovation Center, Kaiserslautern, Germany

**Peter Schulze Lammers**, Universität Bonn, Germany

**Peter-Michael Synek**, VDMA e.V., Frankfurt/M., Germany

### SCIENTIFIC CHAIRMAN

**Henning Meyer**, Technische Universität Berlin, Germany

### TECHNICAL CHAIR

Max Eyth Society for Agricultural Engineering (VDI-MEG)  
European Society of Agricultural Engineers (EurAgEng)

### THE CONFERENCE IS SUPPORTED BY

Deutsche Landwirtschaft-Gesellschaft (DLG), Frankfurt/M., Germany  
Deutsche Messe AG, Hannover, Germany

### OFFICIAL CONFERENCE LANGUAGE

The official language of the conference will be English.  
Simultaneous translation will not be available.

### NEW IN HALL 15-17

#### Future Farming

– Technologies today and tomorrow –

Platform of agricultural machinery and equipment experts



#### Forward-looking dialogue between experts

“Future Farming”, the guiding leitmotif of the international platform “Systems & Components” lays the groundwork for the agricultural machinery and equipment of tomorrow. Innovations, new products and valuable contacts.

The current trends: efficiency, reliability, safety/ergonomics and environmental protection form the common thread of the flanking, three-part technical programme: Forum, Pathways and Special Show.

In the **Forum**, suppliers present pioneering ideas and visions of agricultural production processes for buyers and developers. Four **Pathways** guide visitors from the agricultural machinery and equipment and related industries through Systems & Components by analogy with the trend themes set out above. The **Special Show** in the Lounge of this sector simulates a scenario of reciprocal interconnection between farmers – suppliers – production/industry. “Future Farming” – practical and end-customer-centred.

# 73<sup>rd</sup> International Conference on Agricultural Engineering LAND.technik AGENG 2015



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## Wissensforum

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E-Mail: [wissensforum@vdi.de](mailto:wissensforum@vdi.de)  
[www.vdi.de/landtechnik-agenz](http://www.vdi.de/landtechnik-agenz)

☐ I will be attending the 73<sup>rd</sup> International Conference on Agricultural Engineering November 6–7, 2015, Hannover (12TA001015)

Please select your price category

	PC	Price per person + VAT
Conference Fee	1	<input type="checkbox"/> EUR 670,–
VDI and EurAgEng Members	2	<input type="checkbox"/> EUR 620,–
VDI and EurAgEng Members of Universities	4	<input type="checkbox"/> EUR 335,–
Doctorial Candidates VDI and EurAgEng Members	3	<input type="checkbox"/> EUR 210,–
VDI-Mitgliedsnummer*		

\* For price levels 2, 3 and 4 the membership number must be quoted

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Address for invoices if different from above

Attendees with invoicing addresses outside of Germany, Austria and Switzerland are requested to pay by credit card.

☐ Visa ☐ Mastercard  
☐ American Express

Card holder

Card No.

Security code  Valid until (MM/YY)

Date  × Signature

**Applications** must be in writing. Registration confirmation and invoice will be mailed out. Please do not pay until you have been billed. For more information please see [www.vdi.de/landtechnik-agenz](http://www.vdi.de/landtechnik-agenz).

### Conference location and conference desk

Convention Center (CC), Deutsche Messe AG, Exhibition Ground, 30521 Hannover, Germany

### Conference desk at the Convention Center

You can reach the conference desk at the following number:  
Phone: +49 151 14259017

The price includes the conference proceedings (VDI report 2251), coffee-break beverages, lunch and the evening event. The proceedings will be handed out at the beginning of the conference.

### Room Reservation

List of hotels with VDI preferential rate for the conference participants, please see the website [www.vdi.de/landtechnik-agenz](http://www.vdi.de/landtechnik-agenz)  
For further individual hotel reservation for AGRITECHNICA visitors please contact  
Hotelzimmervermittlung Accommodation Service  
Hannover Marketing & Tourismus GmbH  
Telefon: +49 511 16849-792  
Email: [hotels@hannover-tourismus.de](mailto:hotels@hannover-tourismus.de)  
Code "VDI"

More Hotels close to the conference venue may be found via our HRS service [www.vdi-wissensforum.de/hrs](http://www.vdi-wissensforum.de/hrs).



**Exclusive offer:** All participants at this event are entitled to a free three-month trial VDI membership. (Offer applies exclusively to new members.)

**Terms & conditions:** By registering for this event you declare that you agree with the terms and conditions of business of VDI Wissensforum GmbH. Cancellations must be received in writing. Cancellations received up to 14 days prior to the start of the event will incur a charge of € 50.00 + VAT. Cancellations received later than that will incur the full conference fee. The date of receipt shall apply. In this case, on request we will send the conference proceedings to you. It is possible to nominate a substitute attendee in consultation with us. It is not possible to book individual parts of the event. If an event has to be cancelled due to unforeseen circumstances, all registrants will be notified immediately. In this case we are only obliged to refund conference fees already paid. In exceptional cases we reserve the right to replace speakers and/or make changes to the programme. In every case the liability of VDI Wissensforum GmbH is limited exclusively to the conference fee.

**Data protection:** VDI Wissensforum GmbH collects and processes your address data for its own advertising purposes and enables well-known companies and institutions to contact you with information and offers within the scope of advertising measures. We sometimes appoint external companies to carry out data processing services. If you no longer wish to receive any information or offers from us, you have the right to object to the use of your data by us or third parties for advertising purposes at any time.

To do this, please write to [wissensforum@vdi.de](mailto:wissensforum@vdi.de) or one of the other contact options specified.