

80<sup>th</sup> International Conference on Agricultural Engineering  
**LAND.TECHNIK AgEng 2023**  
The Forum for Agricultural Engineering Innovations

**The following topics will be discussed:**

- **Tractor Drive Trains, Tires, Concepts**
- **Combine Harvester, Harvesting Machines, Sensors**
- **Automation, Prepare for Autonomy, Test Concepts**
- **Fuel Cells, Safety, Electrical Agricultural Machines**
- **Environmental Improvement, Sustainability, Cultivation**
- **Sensors and Detection, Simulation, Concepts and Agronomy**

**Scientific Chairman**

Prof. Dr. Henning Meyer, Technische Universität Berlin, Germany

**Only online!**

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**1<sup>st</sup> Conference Day**  
Friday, 10 November 2023

10:00 Registration



**Plenary Session** (Room 1A and 1B)

12:00 Welcoming Address and Opening Remarks: VDI MEG

**Dr. Markus Demmel**, Chairman of Max Eyth Society for Agricultural Engineering (VDI-MEG), Freising, Germany

12:10 Welcoming Address and Opening Remarks: EurAgEng

**Prof. Dr. Barbara Sturm**, President of European Society for Agricultural Engineers (EurAgEng) Potsdam, Germany

12:20 Welcoming Address and Opening Remarks: DLG

**Hubertus Paetow**, President, Deutsche Landwirtschaft-Gesellschaft (DLG), Frankfurt, Germany

12:30 The future of responsible plant nutrition

**Dr. Achim Dobermann**, Chief Scientist, ifa International Fertilizer Association, Paris, France

13:00 Coffee Break



**Tractor Drive Trains** (Room 1A)

**Moderation: Dr.-Ing. Heinz Böhler**, Head of Validation Strength, NVH and Simulation, AGCO GmbH, Marktobendorf, Germany

13:30 An Analysis of Mixed Hydraulic and Electric Configurations for the Actuation of Tractor Auxiliary and Implement Functions to Reduce Power Consumption

**Davide Cristofori M. Sc.**, R&D Engineer, Advanced Hydraulics, CNH Industrial, Modena, Italy, PhD. Xin, Tian, CNH Industrial America LLC, Burr Ridge, IL, USA

14:00 The development of a reference working cycles for agricultural tractors

**Prof. Michele Mattetti**, Department of Agricultural and Food Science, University of Bologna, Italy

14:30 Performance optimization of CVT standard tractors in front loading application

**Christian Schaub M. Sc.**, Development Engineer, **Robin Schütte M. Sc.**, CLAAS Industrietechnik GmbH, Paderborn, Germany

15:00 Numerical simulation of alternative powertrains and fuels in agricultural tractors

**Dr. Antti Lajunen**, Associate Professor, Department of Agricultural Sciences, University of Helsinki, Finland

15:30 Coffee Break



**Fuel Cells** (Room 1A)

**Moderation: Prof. Dr.-Ing. Marcus Geimer**, Director, Institute of Mobile Machines, Karlsruhe Institute of Technology, Karlsruhe, Germany

16:00 A Fuel Cell Tractor in Operation – Concepts and Field Data

**Christian Nöß M. Sc.**, Project Engineer, **Jakob Weller M. Sc.**, Project Engineer, AGCO GmbH, Marktobendorf, Germany

16:30 Fuel cell electric powertrain for the agricultural tractor FCTRAC: development, performance, and benchmarking

**Dr. Johannes Konrad**, Assistant Professor, Institute of Powertrains and Automotive Technology, Technische Universität Wien, Austria

17:00 Fuel cell electric tractor powered with biogenic hydrogen – vehicle design and architecture

**Christian Mayer M. Sc.**, Tractor Product Engineer – BEV, CNH Industrial Österreich GmbH, St. Valentin, Austria

17:30 Break

17:45 Plenary Session Awarding of the VDI-MEG Prizes/Awarding of the EurAgEng Award of Merit (Room 1A and 1B)

19:00 Get-together Dinner



**Cultivation** (Room 1B)

**Moderation: Burkhard Sagemüller**, CTO, Head of R&D, LEMKEN GmbH & Co KG, Alpen, Germany

„GrindStar“ – More efficiency, effectiveness, and economy with ultra-shallow soil cultivation

**Prof. Dr. Wolfgang Kath-Petersen**, Phillip Müller M. Sc., Institute for Construction and Agricultural Machinery, Cologne University of Applied Sciences (TH Köln), Cologne, Germany

High Accuracy and High-Speed Crop Root Detection for Green-on-Green Mechanical Weeding

**Bram Teurlinx M. Sc.**, AI Engineer, Thijs Ruigrok M. Sc., Track32, Ede, The Netherlands

A comparison between conventional calibration experiments and the „excavator test“ for DEM soil calibration

**Felix Gerdes M. Sc.**, Research Assistant, Institute of Mobile Machines and Commercial Vehicles, Technische Universität Braunschweig, Germany

Technological and energetic aspects of a transverse pull principle

**Dr.-Ing. Dr.sc.agr. Klaus Kromholz**, Freelance Engineer, Stockach, Germany



**Sensors and Detection** (Room 1B)

**Moderation: Dipl.-Ing. Andreas Möller**, Managing Director, ADVES GmbH & Co. KG, Goldenstedt, Germany

Classifying tractor operational modes using a machine learning model

**Dr. rer. Nat. Rosina Grimm**, Data Analytics Lead Engineering, Dr.-Ing. Josef Mayer, AGCO GmbH, Marktobendorf, Germany

Sensing and analyzing crop characteristics and yield data in potato harvesting

**Dipl.-Ing. Hannes Harms**, Senior Designer Systems Engineering, GRIMME Landmaschinenfabrik GmbH & Co. KG, Damme, Germany

Fault detection using Convolutional Neural Networks in Disc Mower

**Prof. Dr.-Ing. Timo Oksanen**, Chair of Agrimechatronics, Technical University of Munich (TUM), Freising, Germany

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12:30 The future of responsible plant nutrition

**Dr. Achim Dobermann**, Chief Scientist, ifa International Fertilizer Association, Paris, France

13:00 Coffee Break



### Combine Harvester (Room 2)

**Moderation: Dr.-Ing. Thomas Göres**, Director SF Advanced Development CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany

13:30 Side Slope Compensation Conveyor for Combine Harvesters

**Daniel Jung M. Sc.**, Development Engineer, Martin Rittershofer, John Deere GmbH & Co.KG., Zweibrücken, Germany

14:00 Automatic Closed-Loop Chop Quality Control Based on Camera Images on a Combine Harvester

**Dr. Ir. Jasper Vanlerberghe**, Innovation Engineer, CNH Industrial, Zeldegem, Belgium

14:30 Double cross auger cleaning system including cross distribution control

**Michiel Joris Vanderstichele M. Eng.**, Engineering Manager Combine Cleaning and Drives, CNH Industrial, Zedelgem, Belgium

15:00 Forward looking Feedrate control for Combine Harvesters

**Bert Vandewalle M. Sc.**, Innovation Engineer, CNH Industrial, Zedelgem, Belgium

15:30 Coffee Break



### Harvesting Machines (Room 2)

**Moderation: Dipl.-Wirt.-Inf.(FH) Jan Horstmann**, Managing Director, Maschinenfabrik Bernard KRONE GmbH & Co. KG, Spelle, Germany

16:00 Avoiding downtime on combine harvesters by monitoring its vibrations

**Dr. Ir. Steven Devos**, Innovation specialist, Dr. Bart Missotten, CNH Industrial, Zedelgem, Belgium

16:30 Frictional characteristics of wheat straw under varying contact pressure

**Felix Appich M. Sc.**, Research Assistant, Peter Maximilian Roth M. Sc., Department Fundamentals of Agricultural Engineering, University of Hohenheim, Stuttgart, Germany

17:00 Development approach for process monitoring of agricultural work processes in context of autonomous machine guidance of a tractor implement combination

**Andrej Baiser M. Sc.**, Research Assistant, Prof. Dr.-Ing. Bernd Johanning, Laboratory for agricultural engineering and mobile working machines, University of Applied Sciences Osnabrück, Germany

17:30 Break

17:45 Plenary Session: Awarding of the VDI-MEG Prizes/Awarding of the EurAgEng Award of Merit (Room 1A and 1B)

19:00 Get-together Dinner



### Automation (Room 3)

**Moderation: Dipl.-Ing. Herbert Coenen**, Uniparts India Ltd./Noida, India

**Introducing a hybrid system architecture based on cloud and onboard services for combined task and motion planning as well as motion control for different combinations of highly automated implements and traction units**

**Alexander Grever M. Sc.**, Team Leader Software Development, Maschinenfabrik Bernard KRONE GmbH & Co. KG, Spelle, Germany, Prof. Dr.-Ing. Bernd Johanning, University of Applied Sciences Osnabrück, Germany

**Multidimensional Three-Point-Hitch Control to Optimize Performance, Efficiency and Working Quality of Tractor-Implement Combinations**

**Dr.-Ing. Christian Birkmann**, System Engineer for CLAAS Electronic Machine Optimization Systems for Tractors(CEMOS), CLAAS Tractor, Paderborn, Germany

**Teleoperation of an Agricultural Mobile Robot inside Berry Orchard using LoRaWAN Sensors**

**Dr. Ph.D. Redmond Shamshiri**, Scientific Researcher, Leibniz Institute for Agricultural Engineering and Bioeconomy e. V., Potsdam, Germany

**LiDAR Assisted Semi-automatic Mapping and Path Planning Approach for Autonomous Mobile Robots in Vineyards and Orchards**

**Tjark Schütte M. Sc.**, Doctoral Researcher, Leibniz-Institut für Agrartechnik und Bioökonomie e. V., Potsdam, Germany



### Safety (Room 3)

**Moderation: DI Franz Handler**, Head of Agricultural Process Engineering, HBLFA Francisco Josephinum, Wieselburg, Austria

**Integration of Safety, Automation and AI in Ag Equipment**

**Alex Foessel PhD**, Managing Partner, Rick Weires, Balanced Engineering LLC, Dubuque, IA, USA

**Robot Operating System ROS 2 in safety critical agricultural robot applications**

**Tommy Ertbølle Madsen M. Sc.**, CEO and Cofounder, Antoni Benavent M. Sc., AgriRobot, Kgs. Lyngby, Denmark

**New approach for safe environmental perception – a key technology for highly automated and autonomous machines**

**Dr.-Ing. Christian Meltebrink**, Global Industry Center-Global Application Consulting, Bastian Kriebel, SICK AG, Waldkirch, Germany

**2<sup>nd</sup> Conference Day**  
Saturday, 11 November 2023



**Tractors And Tires** (Room 1A)

**Moderation:** Prof. Dr.-Ing. Stefan Böttinger, Institute of Agricultural Engineering, University Hohenheim, Stuttgart, Germany

**08:30** **Tractive effort prediction based on dynamic soil parameters**  
**César Andrés Arévalo-Montana M. Eng.**, Doctoral student, Agricultural Engineering, Prof. Dr.-Ing. Stefan Böttinger, University of Hohenheim, Stuttgart, Germany

**09:00** **Tyre testing methodology to evaluate contact pressure distribution and simulation of the resulting soil compaction risk**  
**Prof. Dr. Ing.-habil. Thomas Herlitzius**, Chair of Professorship, Chair Agricultural Systems and Technology, Technische Universität Dresden, Germany

**09:30** **High-fidelity simulation modelling of agricultural mobile robots**  
**Dr. Antti Lajunen**, Associate Professor, Department of Agricultural Sciences, D.Sc. (Tech.) Klaus Kivekäs, University of Helsinki, Finland

**10:00** **Traction test methods to assess the energy efficiency of agricultural tractors and tires**  
**Leonardo Angelucci M. Sc.**, PhD Student, Prof. Michele Mattetti, Department of Agricultural and Food Sciences, University of Bologna, Italy

 **10:30** **Coffee Break**



**Concepts In Tractors** (Room 1A)

**Moderation:** Prof. Dr. Ing.-habil. Thomas Herlitzius, Chair of Professorship, Chair Agricultural Systems and Technology, Technische Universität Dresden, Germany

**11:00** **Innovative drivetrain concept for a high horsepower 4WD CVT tractor**  
**Dipl.-Ing. Christian Richard**, Systems Engineer, Tobias Uesbeck M. Sc., Development Engineer, CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany

**11:30** **Design and development of adaptive control elements on agricultural tractors based on ISOBUS communications**  
**Björn-Gerrit Hülle M. Sc.**, Research Assistant, Dept. of Fundamentals of Agricultural Engineering, Marcel Racs M. Sc., University of Hohenheim, Stuttgart, Germany

**12:00** **Simulation of refuelling strategies for a hydrogen operated tractor in agricultural process chains**  
**Lukas Reuter M. Sc.**, Research Assistant, Institute of Mobile Machines and Commercial Vehicles, Technische Universität Braunschweig, Germany

**12:30** **Design of a lightweight stilt tractor for the application of biological plant protection in corn**  
**Robert Konradt M. Sc.**, Research Assistant, Institute of Mobile Systems, Otto von Guericke University Magdeburg, Germany, Prof. Dr.-Ing. Stephan Schmidt, University of Applied Sciences Merseburg, Germany

 **13:00** **Lunch Break**

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**Sensors In Harvesting Machines** (Room 1B)

**Moderation:** Prof. Dr.-Ing. Cornelia Weltzien, Head of Department and Chair at University, Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Potsdam, Germany

**Spatial Resolution of Yield Monitors to Differentiate Yield Differences in Support of On-Farm Experimentation**  
**Prof. John Fulton**, Department of Food, Agricultural and Biological Engineering, Prof. Scott, Shearer, Ohio State University, Columbus Ohio, USA

**App based chop quality estimation for silage maize harvest quality optimization**  
**Sven Belau M. Sc.**, Development Engineer, CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany

**Grain Kernel size estimation for yield deviation analysis and success documentation**  
**Renke Gralfs M. Sc.**, Solution Marketing Specialist, John Deere GmbH & Co. KG, Kaiserslautern, Germany

**Efficient and Reliable Employment of Stereo Cameras in Precision Agriculture**  
**Frederick Eichhorn M. Sc.**, Intern Guidance & Automation, Jonathan Becker M. Sc., John Deere GmbH & Co. KG, Kaiserslautern, Germany



**Concepts and Agronomy** (Room 1B)

**Moderation:** Prof. Dr. Henning Meyer, Chair Machinery System Design, Technische Universität Berlin

**Potentials of Functional-electrified System Topologies for the Powertrain Design on Combine Harvester Applications**  
**Fabian Wohlfahrt M. Sc.**, Development Engineer, CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany, Dipl.-Ing. Philipp Heymann, CLAAS Industrietechnik GmbH Paderborn, Germany

**Cost simulation of future agricultural machinery concepts**  
**Lennart Buck M. Sc.**, Research Assistant, Institute of Mobile Machines and Commercial Vehicles, Technische Universität Braunschweig, Germany, Dr. Thomas de Witte, Thuenen Institute of Farm Economics, Brunswick, Germany

**Methods to develop a real 360° illumination around the tractor with the focus of the close area to increase the safety and performance for the customer**  
**Ing. Guiseppe Scotto di Vetta**, Advanced technology and Innovation, CNH Industrial Italy S.p.A., Modena, Italy, Ing. Jakob Ladinger, CNH Industrial Österreich GmbH, St. Valentin, Austria

**User experience evaluation, based on Ergonomics and Virtual Reality tools on CNH agricultural tractors**  
**Dr. Claudia Campanella**, Director of Ergonomics, CNH Industrial Italia S.p.A., San Matteo, Modena, Italy

**The Conference is Supported by**

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



### Simulation (Room 2)

**Moderation: Prof. Dr. Ludger Frerichs**, Institute for Mobile Machines and Commercial Vehicles, Technische Universität Braunschweig, Germany

#### 08:30 Grain Handling Simulations in Combine Harvester Development, Validation and Optimization

**Dr. Martin Roberge**, Manager, Soil and Crop Modeling (SCM) Team, CNH Industrial Canada Ltd, Saskatoon, Canada, **Dr. Ashutosh Tamrakar**, CNH Industrial America LLC, New Holland (PA) USA

#### 09:00 Study on the use of DEM for the optimization of pelleting rollers

**Dr.-Ing. Christian Korn**, Chair of Agricultural Systems and Technology, Technische Universität Dresden, Germany, **Dipl.-Ing. Andreas Afting**, Maschinenfabrik Bernard KRONE GmbH & Co. KG, Spelle, Germany

#### 09:30 CFD/DEM coupling for the optimization of future pneumatic seed drills

**Simon Becka M. Eng.**, Head of Simulation, LEMKEN GmbH & Co. KG, Alpen, Germany

#### 10:00 Simulation of filling and venting operations in agricultural cold heat networks by using CFD and the Volume of Fluid method

**Dipl.-Ing. Sören Geißler**, Research Assistant, Technische Universität Dresden, Germany



#### 10:30 Coffee Break



### Sustainability (Room 2)

**Moderation: Prof. Dr.-Ing. Peter Pickel**, John Deere European Technology Innovation Center, Kaiserlautern, Germany

#### 11:00 An examination of viable sustainable solutions for off-road mobile machinery and agriculture

**Dr. Danan Dou**, Chief Technologist (Power Systems), John Deere Power Systems, Cedar Falls, IA, USA

#### 11:30 Potential uses of bioenergy in the mobility sector and agricultural machinery

**Dipl.-Ing. Jenny Rieck**, Research associate, Chair of Energy Process Engineering and Conversion Technologies for Renewable Energies, Technische Universität Berlin, Germany, **M. Sc. Felix Gerdes**, Technische Universität Braunschweig, Germany

#### 12:00 Platform-Based and AI-Enabled Farming to Foster Agricultural Ecosystems

**Dr. Sebastian Bosse**, Head of Interactive & Cognitive Systems Group, Fraunhofer HHI, Berlin, Germany

#### 12:30 New technical approaches to produce high protein feed from alfalfa

**Dr. Jan Maxa**, Researcher, Institute for Agricultural Engineering and Animal Husbandry, Bavarian State Research Centre for Agriculture, Freising, Germany



#### 13:00 Lunch Break

## Official Conference Language

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



### Environmental Improvements (Room 3)

**Moderation: Prof. Dr. agr. Heinz Bernhardt**, TUM School of Life Sciences, Technische Universität München, Freising, Germany

#### Quo Vadis bale twine?

**Dr. Boris Marx**, Post-Doc, Fiber and Material Development, Prof. Dr.-Ing. Axel S. Herrmann, Faserinstitut Bremen e. V., Bremen, Germany

#### Systems Engineering Development and Analysis Approach to Improving Self-Propelled Sprayer Boom Height Control

**Kyle Blaylock, Alex Irlbeck**, Dr. Bailey Adams, Agricultural and Biosystems Engineering, Iowa State University, Boone, Ames, IA, USA

#### Lateral distribution of a spray drone applying different nozzles and measuring methods

**Dr. Thomas Anken**, Head Digital Production, Sustainability assessment and agricultural management, Agroscope, Ettenhausen, Switzerland

#### Broad-leaved dock control by UAV

**Dipl.-Ing. Markus Sax**, Research assistant/project manager, Sustainability assessment and agricultural management, research group: digital production, Agroscope, Ettenhausen, Switzerland



### Prepare for Autonomy (Room 3)

**Moderation: Prof. Dr.-Ing. Timo Oksanen**, Chair of Agrimechatronics, Technical University of Munich (TUM), Freising, Germany

#### Necessity and implementation of a smart transportation concept for autonomous agricultural machines.

**Dr.-Ing. Matthias Müter**, Technical Project Head, LEMKEN GmbH & Co. KG, Alpen, Germany

#### Data-driven algorithms for predicting energy-efficient operating points in agricultural soil tillage

**Benjamin Kazenwadel M. Sc.**, Research Assistant, Institute of Mobile Machines (Mobima), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

#### Seeing through dust. Phased array radar applications in agriculture

**Rhett Schildroth B.S.M.E, M.B.A**, Chief Technology Officer, Mach Inc, Ely, USA

#### Outdoor computer vision for aiding agricultural implement hitching by autonomous tractor

**PhD Nguyen Van Nang**, Researcher, Wonjae Cho, Institute of Agricultural Machinery, NARO, Japan, Tsukuba City, Japan

## Agritechnica Admission Tickets

All participants have the possibility to buy „Preview“ Day Tickets for AGRI-TECHNICA for 12th or 13th November 2023 at the price of EUR 65,- (regular price EUR 74,-). We will send the **promotion code** one week prior to the conference by email. Payment by Creditcard or Paypal. There will be **no** disposal during the conference.

**Only online!**



### Electrical Agricultural Machines (Room 1A)

**Moderation:** **Dipl.-Ing. Heinrich Prankl**, Head of Research and Innovation/deputy director, HBLFA Francisco Josephinum, BLT Wieselburg, Austria



### Communication Systems (Room 1B)

**Moderation:** **Hans Jürgen Nissen**, Manager Solution Controls Strategy, John Deere GmbH & Co. KG, Kaiserslautern, Germany

14:00 **Electric Powertrain Solutions for Tractors**

**Samuel Willems M. Sc.**, Development Engineer, Dipl.-Ing. Raphael Himmelsbach ZF Friedrichshafen AG, Friedrichshafen, Germany

**Adapting and enhancing V2X communication to agricultural machinery to address road safety via C-ITS**

**Johann Witte M. Sc.**, Head of Advanced Development Electronics at Business Unit Grain of CLAAS, CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany, **Dipl.-Ing. Benjamin Striller**, Research Assistant, Chair of Agricultural Systems and Technology, Technische Universität Dresden, Germany

14:30 **Methodical redesign of drivetrains of agricultural machinery**

**Prof. Dr.-Ing. Dipl.-Wirt. Ing. Roland Schmetz**, Professor of Drivetrain Engineering, Rhine-Waal University of Applied Science, Cleves, Germany

**AEF Wireless In-Field communication – Ad hoc V2V Video Communications**

**Dipl. Eng. Heikki Keränen M. Sc. (Tech.)**, Head of Technology, Satel Oy, Salo, Finland

15:00 **Development and demonstration of modular battery swap system used in an autonomous electric tractor and an electric forestry machine**

**Jonas Engström M. Sc.**, Head of Testbed Digitalised Agriculture, RISE – Research Institutes of Sweden AB, Uppsala, Sweden

**AEF – Agricultural Interoperability Network**

**Dipl.-Ing. Slawi Stesny M. Sc.**, Sr. Produkt Manager – Connectivity and Data Management, AGCO GmbH, Marktoberdorf, Germany

15:30 **Break**



### Plenary Session (Room 1A and 1B)

15:50 **10 Billion by 2050 – The Challenge of our Lifetime**

**Jahmy Hindman**, Senior Vice President & Chief Technology Officer, John Deere, & Company, Moline, Illinois, United States

16:20 **Closing Remarks**

**Prof. Dr. Henning Meyer**, Scientific Chairman of the Conference, Chair Machinery System Design, Technische Universität Berlin, Germany

16:30 **End of the conference**

## Program Committee

- Dr. Thomas Anken**, Agroscoop, Ettenhausen, Switzerland  
**Dr.-Ing. Heinz Böhler**, AGCO GmbH, Marktoberdorf, Germany  
**Prof. Dr.-Ing. Stefan Böttinger**, Universität Hohenheim, Stuttgart, Germany  
**Dipl.-Ing. Herbert Coenen**, Uniparts India Ltd., Noida, India  
**Dr. Markus Demmel**, Bayerische Landesanstalt für Landwirtschaft, Freising, Germany  
**Dr.-Ing. Thomas Göres**, CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany  
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## Technical Chair



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).  
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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)



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### Automation (Room 2)

**Moderation: Dr. Thomas Anken**, Head Digital Production, Sustainability assessment and agricultural management, Agroscope, Ettenhausen, Switzerland

#### 14:00 Deploying Autonomy at Scale

**Rhett Schildroth B.S.M.E, M.B.A.**, Chief Technology Officer, Mach Inc, Ely, USA, **Jim Hollinger M. Sc. EE**, Mach Inc, Finksburg USA

#### 14:30 Self-supervised learning for an agriculture driving assistant system

**Dipl.-Ing. Tobias Blume**, Project Engineer, Lasse Neumann M. Sc., AGCO GmbH, Wolfenbüttel, Germany

#### 15:00 Evaluating the work quality of in-row hoeing systems using computer vision methods

**Elias Eder B. Sc.**, Researcher, Josephinum Research, Wieselburg, Austria

#### 15:30 Break



### Plenary Session (Room 1A and 1B)

#### 15:50 10 Billion by 2050 – The Challenge of our Lifetime

**Jahmy Hindman**, Senior Vice President & Chief Technology Officer, John Deere, & Company, Moline, Illinois, United States

#### 16:20 Closing Remarks

**Prof. Dr. Henning Meyer**, Scientific Chairman of the Conference, Chair Machinery System Design, Technische Universität Berlin, Germany

#### 16:30 End of the conference



### Test Concepts (Room 3)

**Moderation: Dr. rer. agr. Dipl.-Ing. Thomas Hoffmann**, Head of System Process Engineering, Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Potsdam, Germany

#### AgrifoodTEF – The European Test and Experimentation Facilities for AI and Robotics in the Agrifood sector

**DI Dr. Peter Riegler-Nurscher**, Area Manager, Josephinum Research, Wieselburg, Austria

#### AI-TEST-FIELD – A Test Environment for the Automated Evaluation of Robust and Reliable Perception Systems

**Dr.-Ing. Sebastian Röttgermann**, Advance Development Engineer, LEMKEN GmbH & Co. KG, Alpen, Germany, **Jan Christoph Krause M. Sc.**, Researcher, Plan-based Robot Control, DFKI GmbH, Osnabrück, Germany

#### Field Tests with the Modular and Scalable Tillage Systems Feldschwarm

**Dipl.-Ing. Martin Hengst**, Research Assistant, Faculty of Mechanical Engineering and Science, Institute for Natural Materials Technology, Technische Universität Dresden, Germany

## SYSTEMS & COMPONENTS



### SYSTEMS & COMPONENTS

Is a specialized B2B marketplace for Systems, modules, components and accessories for agricultural machinery and related industries within AGRITECHNICA. It is highlighting the latest developments in the sectors of transmissions, engines, hydraulics and electronics, spare and replacement parts. SYSTEM & COMPONENTS welcomes professional visitors from management, R&D, procurement, research, and academia.

#### Guiding theme 'Green Productivity'

How can growing demand for high-quality foods and feeds be met while striving to achieve climate neutrality? Under the guiding theme of 'Green Productivity', AGRITECHNICA and SYSTEMS & COMPONENTS will be extending an invitation to discuss the opportunities and challenges presented by new technologies that are triggering a sustainable transformation in agriculture. Above all, increasing productivity and efficiency in agriculture can be accomplished through the sustainable use of machines and arable land. Confronted with a range of challenges in implementing these two ambitious goals, farmers will be looking for solutions from exhibitors in Hanover, such as innovative powertrains in various output categories, digital services such as driver assistance and machine optimisation systems and precision farming technologies as well as environmentally- and security-relevant topics such as the use of renewable raw materials.

The discussions will take place on the 'SYSTEMS & COMPONENTS Expert Stage' in hall 17, where manufacturers, engineers, and international experts will share insights on current topics in the supplier industry.

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ZIP Code, City, Country _____	
Phone _____	Email _____
Deviating bill address _____	Fax _____

Participants with an invoice address outside of Austria, Germany and Switzerland are kindly requested to pay by credit card. Please don't send your credit card details via email, fax or post. Please book your ticket at [www.vdi-international.com/ageng](http://www.vdi-international.com/ageng). Transferring your credit card details via our website ensures your details are encrypted and security of your data is guaranteed.

General terms and conditions of VDI Wissensforum can be found online at:  
[www.vdi-wissensforum.de/en/terms-and-conditions/](http://www.vdi-wissensforum.de/en/terms-and-conditions/)

**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 (0)151-14259017

The price includes the conference proceedings (VDI report), coffee-break beverages, lunch and the evening event.

**Room reservation:**

List of hotels with VDI preferential rate for the conference participants, please see the [Hotelbuchungsplattform Accommodation \(www.visit-hannover.com\)](http://www.visit-hannover.com)

For further individual hotel reservation for AGRITECHNICA visitors please contact **Hotelmittlermittlung Accommodation Service,**

**Hannover Marketing & Tourismus GmbH, Phone: +49 511 168 49-792, 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).

**Service package:**

The price includes the electronic conference proceedings (digital VDI report 2361), coffee-break beverages, lunch and the evening event.

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