

# **ivT** Industrial Vehicle **CAB DESIGN & TECHNOLOGY** **C O N F E R E N C E**

**FEBRUARY 13-14, 2019**  
**KÖLN MESSE, COLOGNE, GERMANY**

**THE FUTURE OF INDUSTRIAL, COMMERCIAL AND OFF-HIGHWAY VEHICLE  
CAB DESIGN AND TECHNOLOGIES**



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## **PRELIMINARY PROGRAM**

Taking place at

**ivT EXPO**  
INDUSTRIAL VEHICLE TECHNOLOGY

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## The Future of Industrial, Commercial and Off-Highway Vehicle Cab Design and Technologies

A brand-new conference for 2019 entirely dedicated to next-generation cabin design and future technologies for industrial, commercial and off-highway vehicles.

**Hear from leading industry experts, network with over 350 delegates across four conferences. PLUS: Discover the next generation of industrial vehicle components, materials, concepts and manufacturing technologies at iVT EXPO – Entry included with your delegate pass!**

Industry speakers will discuss highly innovative design concepts for increased operator comfort, improved functionality and productivity, vehicle safety, and reduced costs and development cycles through modular design and manufacturing approaches.



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\* Book by December 31, 2018 [www.ivtexpo.com](http://www.ivtexpo.com)

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Association partners:



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## DAY 1 WEDNESDAY FEBRUARY 13

### The future digital workspace in agriculture

Prof Jens Krzywinski, head of industrial design engineering, Technische Universität Dresden, Germany

Smart CAB is the next step in the development of integrative cabins by the Cab Concept Cluster, a platform founded in 2014 by experienced OEM suppliers, TU Dresden University of Technology, and various project partners. The focus of the cluster is to bundle innovations close-to-production in joint projects to showcase the potential of efficient systems integration. At Agritechnica 2017, the cluster presented its latest project, the Smart CAB. The Smart CAB is not merely an adaptation of the Genius Cab but integrates the cross-component approach into the overall process. The previously tested applications of the Genius Cab are of equal relevance in agricultural engineering but some of the requirements are different – such as, for instance, regarding a complex manufacturing process in a harvester. The implementation of assisted systems and digitization in the entire process chain is already much more advanced in the agricultural sector than in the construction industry. Thus, the balance between operating tasks and monitoring tasks is increasingly shifting toward process management. The cabin of the future is going to require a workspace that supports working with interconnected machines and locations with app-based planning applications.



### Success built on cooperation: cab trends – leading a multi-partner innovation cab project

Alexandra Herrmann, marketing and communications, Fritzmeier CABS, Germany

Alexandra Herrmann talks about innovation in agricultural and construction environments and what this means for cabs. As project manager of the CAB Concept Cluster that brought award-winning projects CCC Genius CAB and CCC Smart CAB to market, she has unique insider knowledge of the highly innovative work that was done in conjunction with universities and OEM suppliers in a multi-partner project with high complexity. In particular she will describe the Fritzmeier part, considering the functional integration of components that led to the evolution from a concept of safety, comfort and system integration to smart and digital farming readiness and complete x2x usability.



### Innovation by cooperation – strategies for success with a heuristic but focused design and development process

Wanja Steinmaier, managing director, Lumod GmbH, Germany

This presentation will discuss ways to empower company leaders to master a heterogeneous multi-partner project of

high complexity, leading to extraordinary innovation by cross-company or cross-discipline collaboration. This will result in better performance of all participants with a soft-skill-driven push-and-pull strategy (motivating and challenging) handling partners individually with intuitive empathic fine feeling. All of the participants will be equally committed to achieving the objectively best output for the benefit of all stakeholders. This includes networked thinking, cluster building, motivation by vision, and design at the center of the innovation process.



### Innovative lighting and electronic solutions for the agricultural industry

Robert Laschober, global sales agricultural, turf and utility machinery, Hella Group, Austria

This presentation will discuss how a unique and distinctive design plays an increasingly important role inside agricultural machinery, and customized LED lighting solutions are an optimal way of achieving this. In addition, the number and complexity of the electronic components used in vehicles has increased over the past few years. Although Hella first started out in lighting electronics, it has now become an expert supplier of all kinds of vehicle electronics solutions and is now systematically applying its many years of experience in original automotive equipment to agricultural vehicles, and continues to advance lighting and electronic technology from the idea to the finished product. This makes it possible to optimally implement manufacturers' and designers' requirements.



### The future of human-centric design

Gustavo Guerra, design director, Volvo Construction Equipment, Sweden

Volvo is well known in the construction industry for its human-centric design approach, continuously delivering unique and iconic high-quality design, always focused on the user. Such designs are usually best manifested in the cabs, but how will future cab designs be influenced by an increased level of connectivity and automation? This session will present some reflections and possible directions for the industry in this field.



### Enhanced productivity and driver comfort in operator cabins

Dr Rafal Sornek, SVP technology, Fortaco Group, Poland

Transient conditions such as entry or re-entry into the cabin in hot or dusty conditions pose serious risks to operator health and comfort. They may also negatively affect productivity, as operators delay their actions waiting for conditions to settle. Fortaco researched two areas: thermal comfort of the operator and removal of dust after dust ingress following opening of the door. Two aspects of operator comfort will be discussed: experimental results of using solar energy generated by panels mounted on the machine for cabin air-conditioning; simulation of dust removal using the Lattice-Boltzmann method (LBM).



### VSS: overcome autonomous vehicle cabin challenges with virtual prototypes

Jérôme Regnault, product marketing engineer, ESI Group, France

This presentation will give examples of innovative approaches for applying interior thermal management and safety initiatives. With autonomous vehicles, the interior layout must be completely rethought compared with standard vehicles. For example, the fact that passengers can change the orientation of their seats could make the usual static

climate systems and some safety equipment inefficient. The required innovation to address these kinds of issues cannot rely on a classical trial-and-error approach during testing on real prototypes, as this could take too long and be too expensive. An alternative approach is to iterate during the conception phase with virtual prototypes.



### Modular control rooms – new requirements in automated agriculture

Sebastian Lorenz, research associate, Technische Universität Dresden, Germany

Intelligent machines enable high-resolution definition of production processes and the adaptation of machine parameters to individual plants in the field. On the other hand, it will soon be possible to monitor swarms of machines. The need for a cabin on every machine is beginning to dissipate, and the question of how centralized mobile control rooms will safely and efficiently map the high density of information is gaining importance. This presentation discusses a mobile control station for monitoring a highly automated swarm of machines and outlines necessary developments for the next generation of cabins.



**Panel Discussion – Designing cabs for today’s real operators. How can adaptive technologies and ergonomics help to make machines more usable for a wider range of heights, weights and ages? Solutions ahead!**



## DAY 2 THURSDAY FEBRUARY 14

### The Smart Cab – technological concepts and human-machine cooperation

Sebastian Lorenz, research associate, Technische Universität Dresden, Germany

The cabin of the future will have to focus on working with connected machines and app-based planning applications. The Smart Cab serial tested cabin concept shows how solutions in the field of professional applications benefit from cross-component potential, as well as from assistive operation functionalities, deeply considering the production and work processes. This paper describes the application-oriented technological concepts of the Smart Cab in the context of supporting a strong human-machine cooperation and the potential of multimodal and adaptive operating systems in digitized applications of the future.



### Off-highway vehicle HMI – advanced technology and the next level

Michael Jendis, executive director - mechanical engineering, electronics and project management, Preh GmbH, Germany

Next-generation operator interfaces have to do more with less. More visible and touchable quality, more functions controlled, more connections integrated and more diagnostics inside – but with less complex structures and intuitive understanding. Flexibility, multi-modality and configurability must be transformed into competitive products. Preh’s 2017 prototype console shows some advanced technologies to do more with less. However, some requirements will stay over time: robustness and cost efficiency. Here is the challenge – how to bring the next level of HMIs into the cabs? Preh proposes some solutions.



### Interaction design is the differentiator in vehicle operator experiences

Markus Wallmyr, global UX leader, CrossControl, Sweden

The vehicle cabin is becoming a digital workplace. In a world where an increasing amount of functionality is realized through data, advanced processing and connectivity, it is key to have well-designed user interaction to keep the competitive edge. In this talk, Markus Wallmyr, global UX leader at CrossControl and researcher at Ubiquitous Computing, Mälardalen University, will present current and coming interaction trends and what is needed for a fluid user experience. He will also discuss the open solution strategy from CrossControl that supports OEMs in making great cabin user interaction, utilizing the constant advancement in technology, communication and visualization.



**crosscontrol**

### Perceived passenger safety in autonomous vehicles

Moritz von Grothuss, CEO, Gestigon - a Valeo brand, Germany

Enabling a safe drive and navigation is essential for any ADAS vehicle. But 'driving safe' and 'being perceived as safe' are different things and require different approaches/technologies. We have been working on passenger safety from a vehicle interior design perspective for several years. Enabling safety – 'real safety' as well as its perception – requires full body tracking as well as digital augmented reality indicators that provide new safety methods (beyond safety belts as well as today's airbags) and trust in the capabilities of the ADAS vehicle. The presentation will describe the status quo, visions and challenges in doing so.



**gestigon**

### Connecting scenarios for cab design

Jonas Stallmeister, senior visual designer, Centigrade GmbH, Germany

Use cases for industrial vehicles proliferate and diversify – with consequences for their user interfaces. Internal and external interfaces are mixing. Interfaces can be in the vehicle, nearby or thousands of miles away for autonomous vehicles. How can we ensure an effective, seamless interaction across those scenarios? As user experience designers, we meet this challenge with Design Systems. Visual Design is the key: it is adaptable, striking, emotional. This presentation will show you how visual design can shape great mobility interfaces in different real use cases.



**CENTIGRADE**

### Operational excellence/Industry 4.0 for bonded thermoformed body panels

Peter Lichtherte, CTO - sales director, Vitalo Industries, Belgium

As one of the global market leaders in thermoforming technology, for many years Vitalo has been selected as the partner of choice for its operational excellence. Vitalo is meeting the highest level of process control and consistency, not only for excellence in the thermoforming process but also in the post-forming operations compliant with the highest requirements. Operational excellence and Industry 4.0 is demonstrated for the bonding process of thermoformed body panels.



**vitalo** global thermoforming

\*This program may be subject to change

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A new conference dedicated to exploring the latest and next-generation designs and technology for reducing CO<sub>2</sub>, meeting future industry emission targets, improving performance, and increasing reliability and productivity.



Autonomous Industrial Vehicle Technology Conference is exclusively dedicated to the design and development of highly automated and unmanned construction, mining, agricultural, industrial and off-highway vehicles.



The world's only conference exclusively dedicated to the design and development of electric and hybrid vehicle technology for the construction, agricultural, industrial and off-highway vehicle industries.

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For more information about the Industrial Vehicle Cab Design & Technology Conference, please contact **Nick Moller, conference director: [nick.moller@ukimediaevents.com](mailto:nick.moller@ukimediaevents.com) | Tel: +44 1306 743744**

# ivT EXPO

INDUSTRIAL VEHICLE TECHNOLOGY

FEBRUARY  
13-14, 2019  
KÖLN MESSE, GERMANY

## Discover the next generation of industrial vehicle components, materials, concepts and manufacturing technologies

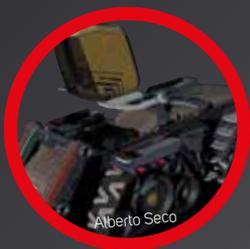
REDUCE EMISSIONS | INCREASE ELECTRIFICATION | IMPROVE OPERATOR SAFETY & COMFORT | BOOST VEHICLE AUTONOMY & EFFICIENCY

While you are in Cologne: From February 2019, the industrial vehicle industry will have an international exhibition that showcases nothing but the latest and next-generation components and technologies. The free-to-attend exhibition, which is closed to the public, will feature around 100 exhibitors, providing a compact, hassle-free environment tailor-made for serious discussion and business, without any of the logistics issues that go with very big events.

No full vehicles will be on show: **ivT Expo** will only showcase the components, services and technologies from Europe and all over the world that go into making the next generation of industrial vehicles, plus a range of manufacturing and assembly technologies.

**ivT Expo** will bring to life the pages of the market-leading Industrial Vehicle Technology International magazine. Visitors will discover new materials; new engine technologies, including electric motors and hybrid applications; new control systems that question the need for hydraulics; sensors; testing and validation services and technologies, from durability rigs to EMC and NDT technologies; cabin equipment; the technologies required for operatorless/driverless vehicles; and innovative ideas that will help manufacturers of industrial vehicles ultimately improve product design, efficiency and thus sales. The expo will also feature companies displaying the latest and next-generation manufacturing and assembly technologies for industrial vehicles.

Vehicle categories covered by **ivT Expo** are anything from off-road loaders, mining equipment and diggers, to tractors, cranes and lift-trucks. In short, technologies and services for every class of industrial vehicle will be on display.



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