



**AWARE**

Bavarian Center for Applied Research  
and Technology with Latin America



Technische Hochschule  
Ingolstadt

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November 3rd – 5th, 2020

# Automated Flying or Driving? How Do We Move in the Future?

Current Trends in Germany and Latin America

Online Sessions (à 90 min):

▶ Session 1

**Driving or Flying – Rethinking Mobility of the Future**

November 3rd, 6 p.m. (CET)

▶ Session 2

**Electric Mobility – The Battle for Electric Car Supremacy**

November 4th, 4 p.m. (CET)

▶ Session 3

**Automated Driving – Still an Utopian Dream?**

November 4th, 6 p.m. (CET)

▶ Session 4

**IoT & Agility – Hype or Chance?**

November 5th, 4.30 p.m. (CET)

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▶ Session 1

# Driving or Flying – Rethinking Mobility of the Future

November 3rd, 6 – 7.30 p.m. (CET)

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### Future Mobility – What’s Next?



**Prof. Dr. Thomas Becker**  
Professor for Digital Automotive Management at Technische Hochschule Ingolstadt

What mattered in the automotive and mobility markets in 2019, and what will dominate the space in 2020? Let’s have a closer look at the autonomous, connected, electrified, and shared trends that matter and discuss how the underlying technologies and business models will change the way people get around. Becker is an expert on automotive and mobility management with several years of consulting and industry experience in this sector. He will introduce into the topic of future mobility and give an outlook on prospects in urban areas, their opportunities and challenges. His presentation also focuses on the integration of urban air mobility and answers the question whether it is just a hype or new reality.

### Urban Air Mobility – A Brief Overview on Airbus’ Strategy



**José Carlos Ramos Fernández**  
Project Manager for Programs & Strategy at Airbus Urban Mobility

By 2030, 60% of the world’s population will be urban. This significant population growth is expected to create a real need for innovative mobility options as ground infrastructure becomes increasingly congested. Providing people with a safe, sustainable and convenient solution that leverages the airspace above cities could be a solution. Since 2014, Airbus has been exploring how recent technology advancements – from battery capacity and autonomy to electric propulsion – can help drive the development of new kinds of aerial vehicles. In May 2018, Airbus Urban Mobility was founded to take the exploration into cutting-edge commercial urban air mobility solutions and services to the next level.

### Creating the Urban Air Mobility Ecosystem in Brazil 🇧🇷



**Daniel Moczydlower**  
President & CEO EmbraerX, Embraer’s market accelerator

EmbraerX is engaged in a variety of collaborative and complementary solutions to create a new and disruptive mobility ecosystem. With focus on the Urban Air Mobility market, they are developing the eVTOL –electric vertical take-off and land aircraft– that will disrupt Urban Mobility as well as a proposed very practical, simple and robust Urban Air traffic Management solution to allow more aircrafts to fly in urban environments (UATM). As an organization, EmbraerX is uniquely positioned to lead the world at the intersection of disruptive innovation, autonomy, and urban mobility because the values that drive their work are deeply human, cross-culturally resonant and leveraging on EMBRAER’s 50 years of engineering excellence and aerospace.

Moderator



**Prof. Dr. Alessandro Zimmer**  
Guest Researcher at CARISSMA Institute of Safety in Future Mobility (C-ISAFE) at Technische Hochschule Ingolstadt & Professor at Federal University of Paraná

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▶ Session 2

# Electric Mobility – The Battle for Electric Car Supremacy

November 4th, 4 – 5.30 p.m. (CET)

## Safety of Lithium Ion Battery Systems



**Prof. Dr. Hans-Georg Schweiger**

Head of CARISSMA Institute of Electric, Connected and Secure Mobility (C-ECOS) & Professor for Electric Mobility at Technische Hochschule Ingolstadt

Lithium ion battery systems in hybrid and electric vehicles imply increased hazards and risks for the vehicle: fire or chemical hazards, and the risk of an electric shock. In all high voltage traction batteries, battery management systems (BMS) in combination with electromechanical components are the answer to ensure safe application. In this session, one of Germany's experts in lithium ion batteries and safety aspects addresses basic functions of the BMS, current challenges and possible solutions for hazards, such as internal shorts, arcing, or water condensation and fire from outside the vehicle as well as hazards caused by malfunction of the BMS.

## Batteries. A Central Problem to Electric Car Supremacy



**Prof. Dr. Patricio Rodolfo Impinnisi**

Professor for Electrical Engineering at Federal University of Paraná and Battery Researcher at Lactec (Institute of Technology for Development)

The move from conventional mobility to electric mobility with motors and batteries is revolutionising vehicles and, with them, the entire automotive industry. As a result, we need completely new ideas and technologies if we are to make electric mobility an attractive prospect. The battery expert of the Research Institute Lactec will give an overview of the battery situation worldwide and discuss recent developments in electric mobility across the globe. What is the current, what will be the next generation of electric vehicle battery technologies? What are current challenges and next steps car manufacturers will have to face?

## Electric Mobility in Argentina: Ways to Introduce New Automotive Trends to the Market 🇲🇪



**Mariano Jimena**

President of AAVEA (Argentinean Association of Electric Vehicles) & Director of ALAMOS (Latin American Sustainable Mobility Association)

This presentation will deal with the current situation of electric mobility in Argentina and focus on market differences and similarities between Latin America and the leading industrial nations of the United States, China and Europe: How advanced is electric mobility in Latin America and how do public policies as well as economic, infrastructural and geographical circumstances affect the technological development? The presenter will prove by means of exemplary success stories that it is currently a matter of finding good strategies to overcome regional barriers and challenges in order to introduce electric mobility into the region.

Moderator



**Ricardo Bovo**

Board Member at ARAVEI (Brazilian Association of Electric Vehicles) & Brazilian Representative at ALAMOS (Latin American Sustainable Mobility Association)

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▶ Session 3

# Automated Driving – Still an Utopian Dream?

November 4th, 6 – 7.30 p.m. (CET)

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### Automated Driving: Vision versus Reality



**Prof. Dr. Werner Huber**  
Research Professor and Head of CARISSMA  
Institute of Automated Driving (C-IAD) at  
Technische Hochschule Ingolstadt

Today, driver assistance systems are standard equipment in vehicles and contribute to more comfort and safety when driving. However, they require the driver's constant attention. In the last decade, great hopes have been placed in the full automation of driving. Driving functions with higher degrees of automation should enable the driver to turn away completely from the driving action. In this case, however, the vehicle or the manufacturer is responsible for the correct execution of the driving task. Legal and technical challenges are to be solved urgently before introducing this new technology into the market.

### Autonomous Driving Supported by Cognitive Agents



**Prof. Dr. Marcio Netto**  
Professor for Electrical Engineering of  
University of São Paulo

Driving is a hard task. Autonomous driving requires complex combinations of actions to be effective in a wide sense. Some results date from the 90's. Current driver assistance systems handle well many cases, but still lack a final solution. In this quest, cognitive agents could be supportive, considering their ability to learn from observations, to improve their own skills, and to act as humans in similar driving conditions.

### Automated Driving in Chile: The Chilean Smart City Revolution 🇨🇱



**Pablo Pérez Leiva**  
Founder of Innspatial

In recent years, Chile has experienced a technological revolution of "smart cities" – after China, it is the second country in the world with the most electric buses circulating in the public transport, and interesting autonomous vehicle pilots have been carried out. Will these advances allow us to see autonomous vehicles on the streets of Chile in a short time?

Moderator



**Wilson Bricio**  
Honorary Chairman of VDI-Brazil & Head of  
Applied Research Institute of Facens

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▶ Session 4

# IoT & Agility – Hype or Chance?

November 5th, 4.30 – 5.30 p.m. (CET)

### Business Model: Mobility Insurance in the Digital Era



**Dr. Matthias Herz**  
Product Manager at PI Labs GmbH

As telematics technology has reached market maturity, mobility insurers must gather experience to give answers to challenges such as the effective use of data, sustainable pricing models and value-added services. Technology providers and insurers can take on this challenge together and develop solutions which are digital, end-to-end and customer-centered in relation to the automotive ecosystem.

### Application: Improved Public Transportation Realized Through the IoT



**Markus Jungermann**  
Managing Director of PI Labs GmbH

The pressure to address public transport service enhancements has never been as intense as of today. The digital transformation and its influence on every process will address the industry issues by adopting data-driven methods. IoT, telematics solutions, connected sensor technology, and data science entail the topics that public transport stakeholders should keep in mind for the upcoming years.

### Methodology: How Agile Methods Are Working in the Rigid Environment of Truck Development



**Dr. Andrea Nobbe**  
Business Unit Manager Project Management at Pixida GmbH

One of Pixida's costumers had the plan to realize a completely new truck generation within 20 months with the goal to present three prototypes at an international fair. Pixida supported the customer to reach this for a company with rigid automotive product development processes rather unrealistic goal by introducing agile working methods. With success.

### IoT in Brazil: IoT Opportunities at Electrical Vehicle Charging Stations



**Manuel Steidle**  
Engineer at Certi Research Foundation

As key component for the success of electrical mobility, the charging stations need high performance and intelligent functionalities to enable fast charging, good energy management, and high service quality. Driving forces like 5G and V2X communication bring new opportunities for IoT solutions, for sensing, monitoring, and control of the charging station and grid.



Moderators



**Anne-Sophie Kopytynski**  
Managing Director of the AWARE Center at Technische Hochschule Ingolstadt



**Prof. Dr. Harald Göllinger**  
Scientific Director of the AWARE Center and Professor at Technische Hochschule Ingolstadt

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