ADAS
& AUTONOMOUS VEHICLE
TECHNOLOGY EXPO | EUROPE
CONFERENCE

MAY 20, 21 & 22, 2025
MESSE STUTTGART, **GERMANY**

CONFERENCE
PROGRAM

EARLY BIRD ENDS SOON!
BOOK BY APRIL 10 TO SAVE UP TO €390

**CLICK
HERE**

www.adas-avtexpo.com/stuttgart

DAY 1 TUESDAY, MAY 20

09:00 - 12:25 - Challenges, innovations and outlook surrounding the development and safe deployment of ADAS and AV technologies

EU regulations for assisted and automated driving

Mohamed Brahmi, policy officer on regulations for autonomous driving and connected vehicles, European Commission, Belgium

This presentation provides an overview of the ongoing activities of the European Commission in the field of assisted and automated driving. It will explain the regulatory framework, describe the current status and highlight current challenges and future work.

Understanding self-driving vehicle safety

Prof Philip Koopman, associate professor, Carnegie Mellon University , USA

Removing the human driver fundamentally changes what we actually mean by acceptable safety. A simplistic 'safer than human driver' positive risk balance approach must be augmented with additional considerations regarding risk transfer, negligent driving behavior, standards conformance, absence of unreasonable fine-grain risk, ethics and equity concerns. Current standards frameworks and accompanying definitions are likely to be inadequate to ensure safety due to implicit assumptions that are violated when the human driver is removed. A framework relates risk to acceptable safety in a way that is applicable to all autonomous systems.

Deploying a safe and trustworthy AV in different markets

Vivetha Natterjee, autonomous vehicle safety specialist, Zeekr Technology Europe, Sweden

Waymo's safety readiness determination and evidence

Dr Trent Victor, director of safety research and best practices, Waymo, USA

Market entry barriers in future mobility software for autonomous vehicles

Umar Zakir Abdul Hamid, head of global product and international business strategy, Proton (Part of Geely), Malaysia

The hype surrounding autonomous vehicle development has seen a decline in recent years, as the industry has come to realize that mass production of full self-driving technology remains distant. However, productization of autonomous vehicle components, like ADAS Level 2, is advancing steadily within the latest multirange electric vehicles. This presentation brings a business strategy perspective to a tech audience, fostering interdisciplinary discussions on current market entry barriers in productizing autonomous vehicle technology and exploring strategies to accelerate the technology's commercialization.

From an idea to an implemented standard: making ODD come true

Dr Andreas Richter , engineering program manager - Operational Design Domains, Volkswagen Commercial Vehicles, Germany

The concept of Operational Design Domain is generally accepted to be an essential part of development, testing and approval of Autonomous Driving Systems but still a new concept without real best practice. We show how the idea comes true by contributing to standardizing a human- and machine-readable technical description format, building a proper taxonomy taking requirements of relevant stakeholders into account as well as implementing software to develop and manage complex ODD definitions.

14:00 - 17:00 - Regulations, standards, homologation and certification

### Enhancing automotive interoperability with standards: ASAM OpenMATERIAL and 3D model

Diego Sanchez, technology manager, ASAM eV, Germany

A global team of 52 participants from 21 companies is developing ASAM OpenMATERIAL, a standard for 3D model and material properties to ensure simulation consistency. Releasing in March 2025, it defines physical properties (refraction, roughness) and structural hierarchy, supporting dynamic elements like wheels. Integrated with ASAM's OpenX ecosystem, it promotes interoperability for movement, positioning and layouts, enabling reusable assets and enhancing sensor-specific simulations (e.g. lidar). The scope includes virtual traffic models but excludes environmental conditions, targeting robust, consistent simulations across automotive applications.

The impact of PTI on ADAS and autonomous vehicles

Dr Samer Galal, vice president and head of ADAS and autonomous driving , Dekra , Germany

This presentation explores the indispensable role of periodical technical inspections (PTIs) in maintaining the safety, reliability and compliance of vehicles equipped with advanced driver assistance systems (ADAS) and autonomous technologies. As these systems revolutionize transportation, regular inspections are essential to ensure their continued effectiveness and public trust.
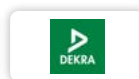
Digital safety certification – how to manage approval complexity through digitalization and AI-enabled automation

Jan Reich, head of safety, Fraunhofer, Germany

Many companies in the ADS landscape see the complexity of regulations and standards as a major hurdle to efficiently create value in B2C and B2B contexts. While the ADS systems themselves are becoming more and more intelligent, the safety certification staff's toolset does not leverage the power of connected information graphs and AI-enabled automation for creation and processing. This talk will introduce the major building blocks required to achieve digital continuous ADS safety certification and will give insights from many years of applied research to explain what the digital ADS safety certification ecosystem of the future could look like. Specifically, the relationship between approval and liability context, risk-based safety cases, the safety engineering work products as well as post-deployment safety monitoring will be analyzed in the context of digitalization needs and potential.

Toward AI-driven automated driving systems: homologation perspective

Carlos Luján, Head of connected and automated vehicle homologation, Applus Idiada, Spain

AI-driven systems introduce dynamic learning, adaptability and continuous updates, posing significant challenges to traditional homologation methods. The objective of this paper is to analyze the existing homologation methodologies, such as the New Assessment/Test Methodology (NATM), and examine how various institutions, including UNECE, JRC and SAE, address AI's incorporation into ADS certification. The discussion focuses on identifying gaps in current frameworks, evaluating the harmonization of principles like transparency, robustness and ethical accountability, and proposing a roadmap for future integration. Ultimately, the paper aims to highlight how harmonized approaches can ensure both innovation and safety in AI-enabled ADS.

Panel discussion - future regulatory and standards issues & requirements – AI, level 4 and more

Mohamed Brahmi, policy officer on regulations for autonomous driving and connected vehicles, European Commission, Belgium

Ben Loewenstein, senior manager, European policy and government affairs, Waymo, UK

Gil Amid, chief regulatory affairs officer, Foretellix, Israel

09:00 - 17:00 - AI, software, architecture and data. ADAS/AD and the SDV

Enabling SDV transformation in the ADAS world

Ananthakrishna Bhat, senior architect, Elektrobit Automotive, Germany

The synergy between the evolving automotive landscape and advances in cloud computing, virtualization and AI has not only improved current technologies but also sparked transformative shifts. A solution is sought to tackle current challenges, including enabling testing in complex development environments, managing multiple variants/releases and addressing hardware bottlenecks. Elektrobit's Test Grid platform solution is designed to meet the growing demand for seamless, platform-agnostic scalability in real and virtual test environments. It unifies all test assets, supports homogeneous invocations, enables effortless integration during early development stages and ensures hot-pluggability with existing CI/CD ecosystems.

SDV – connecting the dots between research and current development

Khaled Alomari, manager - software defined vehicle, MHP - A Porsche Company, Germany

The journey from groundbreaking research to scalable development in advanced driver assistance systems (ADAS) is a complex yet crucial endeavor. It involves transforming innovative ideas and findings into practical, real-world solutions that enhance road safety and efficiency. Achieving this requires synergistic collaboration between academia, industry stakeholders and regulatory authorities. By fostering a culture of shared knowledge, aligning objectives across sectors and investing in comprehensive testing and validation processes, we can ensure that cutting-edge ADAS technologies are seamlessly integrated into vehicles. This approach not only accelerates the adoption of advanced ADAS features but also sets the stage

Future mobility: software-defined vehicles – some use cases

Prof Rajalakshmi Pachamuthu, professor and director, IIT Hyderabad and TiHAN, India

We will discuss a suite of cutting-edge technologies that demonstrate our commitment to advancing autonomous and connected vehicle ecosystems, specifically tailored for the Indian and global markets. The software-defined autonomous vehicle provides a flexible and scalable foundation for integrating various vehicle functionalities. This software-centric approach allows for continuous SOTA and FOTA upgrades, enabling vehicles to adapt to new technologies and regulations without requiring hardware changes. Autonomous driving stacks are optimized for diverse road conditions and include advanced sensor fusion, real-time data processing and machine learning algorithms that enhance vehicle safety and performance.
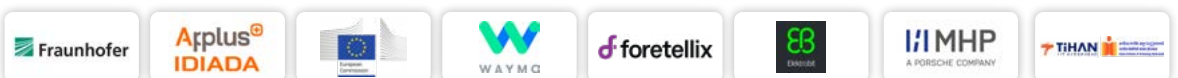
Driving towards software defined vehicles
Dan Cauchy, executive director, Automotive Grade Linux, USA

The concept of a software-defined vehicle (SDV) has become a hot topic across the automotive industry as automakers look for ways to address the complex software needs for functions like ADAS and autonomous driving. Many automakers and industry organizations have turned to open source software for SDV development, which has also led to an increase in contributions back to open source projects and the need for Open Source Program Offices to streamline and organize open source activities. Dan Cauchy, Executive Director of AGL, will discuss the current state of SDVs and the work being done by automakers and Tier 1s as part of the AGL SDV Expert Group. He'll also provide insight into the driving trends behind SDVs and enabling technologies including virtualization, containers, and the cloud. Additionally, he'll share updates from the recently launched AGL Open Source Program Office (OSPO) Expert Group, led by Toyota to help other automakers set up OSPOs, exchange information, and develop best practices

Hardware-aware neural network optimization for lidar dense point cloud
Dr Sergio Fernandez Navarro, technical lead, Valeo, Germany

In the current work we propose a method to apply generative AI GAN methodology on a hardware-aware NN for lidar data. In order to improve the network semantic segmentation performance, we introduce a GAN network into the segmentation. The adversarial training encourages the model to generalize better by simulating a diverse range of conditions, improving its robustness in real-world applications. This increases the performance with regard to classical real and simulated data based training approaches. Once the NN is trained, we also apply several compression techniques to optimally reduce the latency of the NN for real-time processing of dense point clouds.

AutoSeg Vision Foundation Model with OpenADKit – scalable, deployable AI
Muhammad Zain Khawaja, senior tech lead, Autoware Foundation, Turkey

The AutoSeg Vision Foundation model is an artificial intelligence framework powering camera-based scene understanding for autonomous driving, developed by the Autoware Foundation. AutoSeg's custom neural network architecture processes images and computes multiple perception outputs including semantic segmentation, 3D scene estimation, end-to-end path prediction and lane detection – forming the building blocks of autonomous driving. Combining AutoSeg with Autoware's OpenADKit -offers a modular, scalable and cross-platform AI system which can be trained in the cloud, deployed on the edge and updated over-the-air as part of a holistic data pipeline, enabling autonomous cars to learn as they drive.

Evaluating end-to-end AD for the real world
Dr Ralph Grewe, release train architect, Continental, Germany

Building a fully trainable AD stack is a promising approach to efficiently build and scale an AD system. Transformer neural networks using tokenization of diverse information into a common representation and attention mechanisms to efficiently combine data in time and space foster understandable and flexible end-to-end architectures. An enabler to follow the fast-evolving research in end-to-end is a toolchain allowing quick

application of such architectures from training over simulation into closed-loop real-world vehicles. The presentation gives an overview of the toolchain and presents insights gained from tests in simulation and closed-loop applications in the real world.

The role of AI security testing
Saritha Auti, VP and group CISO, CARIAD, Germany

AI tools are increasingly being used in cyberattacks and defense mechanisms. This is shifting the paradigm of cyber defense by training the LLMs to simulate attack scenarios based on the industry and organization context. This includes the use of business data from the OEMs and Tier 1 suppliers to train the AI modules. Application testers can use generative AI to simulate sophisticated cyber attacks; emulate the exploitation of code configuration issues for preventative security; impersonate the system user by querying mechanisms for human interaction; or simply add context to threat technique identifiers within the Mitre Att&ck framework.

AI for ADAS/AD needs a solid data platform
Frank Kraemer, IBM systems architect, IBM , Germany

From ChatGPT to generative world models for autonomous driving (AD), data for AI model training must be high performance, flexible and scalable. Data helps AI models identify and extract meaningful features from input data. The quality and depth of training data significantly affects the success of AI models. Training data provides examples and relevant information for AI models to learn from. This presentation will discuss AI-powered computing for AV development, data-driven development, and ways to accelerate AV development.

Advances in machine learning techniques for enablement of autonomous motion
Anant Vikram, lead architect - automotive, Google, Germany

The presentation will focus primarily on the evolution of AD stack from RL algos to diffusion models, and its impacts on robotics and, if data collection is not a challenge, then into autonomous driving.

Plus's SOTIF strategy for building safe autonomous trucks
Antonello De Galizia, staff system safety engineer, Plus, Germany

This presentation will explore the role of SOTIF (Safety of the Intended Functionality) in ensuring continuous safety in autonomous trucking. Plus will share its strategy for ensuring the safe deployment of autonomous trucks across different scenarios and environments.

Developing safe and scalable automated driving systems with end-to-end AI
Andrew English, principal roboticist, Wayve, UK

End-to-end AI (e2e AI) is drawing attention in the automotive industry, yet questions remain about its safety and practical application in Level 2+ to Level 3/4 driving systems. In this presentation, hear directly from Wayve, the pioneer of e2e AI, on how it is putting this transformative approach into practice. Learn how Wayve is addressing safety concerns without relying on traditional rules-based methods and why e2e AI excels at solving edge-case scenarios. Discover how this innovative approach is unlocking the path to safer, scalable and adaptable autonomous driving systems.

The autonomous driving paradigm shift: empowered by end-to-end model

Xuan Liu, chief ecological officer, partner, vice president, DeepRoute.ai, China

Unlike traditional modularized autonomous driving based on high-definition maps, the end-to-end model DeepRoute IO introduced by DeepRoute.ai doesn't need high-definition maps and has been

rapidly adopted by auto makers for series production. It's more human-like, and can handle complex scenarios while ensuring safety. In just four months, over 30,000 vehicles integrated with IO have been released for consumers to enjoy the convenience of smart driving. The presentation will share the paradigm shift brought by the end-to-end model and technology evolution behind it.

DAY 2 WEDNESDAY, MAY 21

09:00 - 12:25 - Safety requirements and demonstration: validation and tooling with a L2+ L3 focus

Moderator and program consultant
Marc Pajon, consultant, TAKTECH SAS, France

Vehicle automation and system ergonomics challenges

Xavier Chalandon, HMI expert leader, Renault, France

The presentation will cover vehicle automation and system ergonomics screening, automation of driving and co-action issues, and situation awareness and back-in-the loop issues.

FVA: the French National AD program

Dr Emmanuel Arnoux, Automated Driving Safety & Validation Working Group co-leader, PFA, France

Ensuring safety in L3 AD systems with Porsche Engineering's Guardian

Dr Hagen Stübing, senior manager for ADAS software development, Porsche Engineering, Germany

Dr Clara Marina Martínez, project leader in ADAS function development, Porsche Engineering, Germany

The distinction between L2++ and L3 advanced driving systems is often blurred and overlooked. However, L3 systems introduce additional requirements for system safety, robustness and software architecture, posing significant challenges for many OEMs. Porsche Engineering's Guardian leverages years of experience in L3 safety and systems validation. This software component is designed to facilitate the transition from L2++ to L3, providing a robust, safe and standards-compliant solution. The Guardian's modularity allows for seamless integration into your existing system and serves as a high-level component that guarantees the safety of L3 trajectory planning.

Regulatory updates for L2+ and more

Fabrice Herveleu, automotive safety expertise department manager, UTAC, France

The purpose of this presentation is to highlight the current regulatory context for assisted and automated systems with regard to the driving task. The aim is to explain how the various regulatory bodies work together, and to present the principles of validation, throught the different pillars : safety audit, testing or simulation.

Lost cargo detection on highways – the ultimate challenge for L3 autonomous driving systems?

Florent Meurville, R&I team leader for product safety / senior expert, automated driving, Valeo, France

Detecting lost cargo on highways poses a critical and stringent challenge for Level 3 Autonomous Driving Systems (ADS), especially considering UN 157 (ALKS) requirements. This presentation will examine how functional safety and SOTIF considerations further complicate this task. We'll explore how to derive realistic acceptance criteria based on real-world accident data and translate them into concrete perception validation targets. The analysis will then map various collision avoidance maneuvers to their corresponding perception needs. Finally, we will evaluate the suitability of different sensor technologies to effectively meet these identified perception requirements for robust lost cargo detection.

L2+ ADAS as an intermediate step to AD mass production

Dr Duong-Van Nguyen, global deputy CEO, in charge of ADAS/AD, VinFast, Germany

After the hype of autonomous driving, the automotive industry has understood that higher-level autonomy increasingly requires the involvement of AI-based solutions. Nevertheless, current brute-force AI solutions need a tremendous amount of data and are computationally expensive, which leads to the long-tail problem in self-driving and thus the questionable reliability and profitability of AV business. On the other hand, automotive mass-production needs to enhance driver safety and its own sustainability, and to have new products with new technology to attract end users. Younger generations are obsessed with high-tech and want to see more increased autonomy in their vehicles, so many Tier 1s and OEMs are paying great attention to autonomous parking, smart summon, auto-reverse and highway pilot. With the recent technological advancements in automotive SoC, computer vision and robotics, realizing these advanced functions at a great scale is feasible, and thus L2+ is considered a very good intermediate step to leverage the autonomy level.

TBC

Vincent Abadie, senior fellow ADAS and Autonomous Driving, Stellantis, France

13:30 - 16:30 - Real-world and integrated virtual testing

Software needs for the autonomous public transportation revolution

Tino Müller, expert for system integration and processes, Hamburger Hochbahn, Germany

Shared autonomous services are transforming urban mobility, offering solutions to urbanization and climate challenges. For software and vehicle providers, addressing the specific needs of public transportation operators is key to creating impactful products. This presentation outlines the essential elements for developing autonomous public transportation services, drawing from the ALIKE project in Hamburg. Topics include designing accessible vehicles, navigating regulatory approval, creating user-centered digital booking experiences, increasing public acceptance and building efficient operational and software processes. Gain insights into the unique challenges and opportunities in integrating autonomous technology into public transportation systems to meet operator and passenger needs.

Pioneering project KIRA: the first Level 4 deployment in German public transportation

Thorsten Möginger, head of new mobility, Rhein-Main-Verkehrsverbund Servicegesellschaft mbH, Germany

Autonomous driving will be key for the future of public transportation services. This session will highlight the potential of autonomous vehicles, focusing on the pioneering project KIRA (German for 'AI-based regular operation of autonomous on-demand transport'), Germany's first Level 4 autonomous public transportation pilot. The project aims to integrate self-driving vehicles into the public transportation network in the Rhine-Main area. Currently, six vehicles operate autonomously in Darmstadt and the district of Offenbach, addressing driver shortages and contributing to the mobility transition. Based on KIRA, the presentation will provide valuable insights into technological and regulatory challenges while enhancing public transportation services.

Testing AD highway on-ramping with V2V support in the HiDrive project

Markus Kremer, senior system architect ADAS/AD, FEV.io GmbH, Germany

FEV.io GmbH participates in the HiDrive project and has developed and tested AD highway driving function with V2V support for on-ramping areas. The setup of the toolchain, the development process and the engineering framework will be introduced within the presentation. During the preparation of this function, a simulation environment and a systems engineering approach were used to improve the development with automated test case derivation and vehicle tests on the proving ground. All of these elements helped to improve the development time and helped to make the results of this part of the project a success.

U-Shift: modern challenges of a Level 4 self-driving modular vehicle

Eric Pohl, research associate, Deutsches Zentrum für Luft- und Raumfahrt eV German Aerospace Center, Germany

The DLR eV German Aerospace Center's Institute of Vehicle Concepts presents the architecture and challenges of the automated vehicle concept U-Shift. The presentation will provide an insight into the fully equipped sensor setup, autonomous stack architecture and safety concepts. Further, it will dive into the key challenges and the center's solutions for developing a modular vehicle with an automatic capsule changing system that does not feature any driver seat. This includes topics about sensor layouts for lidar, radar and camera, collective perception built on V2X, special driving cases like capsule docking and how to get a permit for BuGa23.

Switzerland's first Level 4 project

Matthias Rödter, president of the board, Swiss Transit Lab, Switzerland

The presentation will outline the project's history and experiences from Level 2 until Level 3: how to innovate and align with restrictions; creation of an ecosystem; setting up a L4 project and go live.

09:00 - 10:40 - Developments in scenarios, simulation, validation and in-the-loop testing

Leveraging LLMs for advanced applications in ADAS and AVs

Prof Andry Rakotonirainy, professor in ITS, Queensland University of Technology (CARRS-Q), Australia

This presentation explores the transformative potential of large language models (LLMs) in shaping the next generation of advanced driver assistance systems and automated vehicle technologies. It will provide an overview of research conducted at the Centre for Accident Research and Road Safety – Queensland (CARRS-Q), focusing on the innovative integration of LLMs across diverse domains. These include applications in cooperative intelligent transportation systems (C-ITS), augmented reality interfaces, digital twin technology and tailored solutions for rural and remote environments. The presentation will highlight how these advancements can enhance road safety and inform future developments in ITS.

Homologation test setup in the lab
Chandra Babu Kummara, HIL engineer, Volvo Car Corporation, Sweden

Testing car safety functions is a challenging job. The lab setup is an efficient way to test different safety functions: we can perform repeated tests with the same scenario and road. The cost of testing is economical and reduces the test time. Car safety functions like AEB (autonomous emergency braking) and PI (pilot assist) can be tested in the lab. This presentation explains how we have performed in-lab safety function tests. This speeds up the homologation process for car safety functions.

Validating perception and sensor fusion using reliable hardware-based data reprocessing
Gregor Hordys, product manager, dSPACE, Germany

A comprehensive test strategy using sensor data is required to ensure the proper operation of computer vision-based perception and sensor fusion algorithms. This presentation highlights hardware-based data reprocessing as an essential method for validating perception. Major adaptation of recorded sensor data is needed during reprocessing to meet frequent

software and hardware updates, board network changes and requirements like E2E security protection along the development process. The presentation also explains how to validate the proper function of replay systems, which can have a tremendous impact on test quality and development costs. Finally, a brief outlook on AI-supported testing is presented.

Innovating automotive testing: a closed-loop simulation framework for embedded systems
Karoly Livius Bakos, system engineer, Robert Bosch , Hungary

Our presentation introduces a state-of-the-art closed-loop hardware-in-the-loop (HIL) simulation framework designed specifically for testing automotive embedded systems with real hardware. The focus of our project is the front video camera system from Bosch GmbH's advanced driver assistance systems product line. We present design, tools, architecture, methods and proof of concept, while highlighting the management challenges encountered. Our research with the project no. 2019-1.1.1-PIACI-KFI-2019-00129 has been implemented with the support of the Ministry of Culture and Innovation of Hungary from the National Research, Development and Innovation Fund.

11:10 - 12:50 - Regulations, standards, homologation and certification (continued)

ROOM 2

Meeting NHTSA FMVSS 127 at a reasonable price tag
Sharon Fiss, director of sales engineering, Adasky, Israel

NHTSA FMVSS 127 will become mandatory for SOP 2029 vehicles. This means RFQs need to appear in 2025. The industry is considering thermal cameras with reduced performance to meet the golden number price tag (US$100). Focusing on lowering the imager resolution is one thing, but many other elements must be considered. The presentation will elaborate on these elements.

11:10 - From DCAS to ADS: the new paradigm for type approval
Jamie McFadden, head of Automated Vehicle Technologies Group, Vehicle Certification Agency, UK

The new UNECE Regulation No. 171 on driver control assistance systems (DCAS) established new minimum safety requirements for vehicle systems that assist drivers in longitudinal and lateral vehicle motion control. This presentation will analyze key elements of the DCAS regulation, in particular highlighting the innovative multi-pillar assessment approach to system design, physical testing and virtual testing. It will use this to discuss the anticipated evolution of the certification process and explain the future approach for type approval of automated driving systems (ADS).

11:35 - Panel Discussion - Driver Control Assistance Systems (DCAS): Are we going far enough?
Prof Siddartha Khastgir, head of verification & validation, Intelligent Vehicles, WMG, University of Warwick, UK

Dr Sarah Gates, director of public policy, Wayve, UK

The United Nations Economic Commission for Europe (UNECE) World Forum for the Harmonization of Vehicle Regulations (WP.29) in March 2024 adopted the Driver Control Assistance Systems (DCAS) regulation – R171. It entered into force at the end of September 2024. This Regulation ensures improved safety and performance for driver assistance systems. Within the regulation, there has been extensive discussion around the concept of System-Initiated Manouevres (SIM), especially for a driver hands-off situation, which has been kept out of the regulation due to safety concerns. This panel session will bring diverse viewpoints from industry, academia and regulation who would discuss and debate the accuracy and applicability of evidence for both preventing and going ahead of the hands-off SIM concept in the DCAS regulation.

09:00 - 12:00 - Safety innovations and best practices for their development

Safety-Coach: a new safety function to address road safety issues
Thierry Hermitte, expert in road safety, Ampere Software Technology (Renault Group), France

Most studies in road safety show that more than 90% of fatal crashes are caused by human driver factors. The most common causes include risky driving behaviors, alertness and impaired driving. Based on data collected through existing vehicle sensors, the Safety-Coach identifies risks through four indicators directly related to the main human driver-related accident causation factors: speed, safety distance, vigilance and risky driving behavior. Each indicator is computed in real time, according to the risks identified by the vehicle's sensors, and displayed to the driver. To improve the driver's behavior, pertinent advice related to taken risks is proposed.

Scalable hardware integration in autonomous vehicle development
Gustavo Javorski, specialist geometrical architect, Volvo Autonomous Solutions AB, part of Volvo Group, Sweden

This presentation will explore the presenter's experience with hardware integration in autonomous vehicle development aiming for scalabilty, focusing on the Common Architecture and Shared Technology (CAST) framework. It will discuss the unique challenges posed by long lead times for brackets and wiring harnesses in a rapidly evolving development environment and share challenges experienced during the integration process, such as handling the lack of requirements due to new technology, ensuring seamless, scalable integration of hardware components, stable interfaces and particularities of sensor and computing components.

GAIA ENVITED-X Data Space
Carlo van Driesten, systems architect for virtual test and validation, BMW Group, Germany

Alexander F Walser, managing director, Automotive Solution Center for Simulation e.V. , Germany

EU V4Safety: using simulation for safety in a proper way
Sytze Kalisvaart, senior project manager StreetWise, TNO, Netherlands

If we want to estimate safety gains with simulation, how can we do this properly? There are choices in scoping, shaping and configuring a safety study with simulation. And how to model the current situation? V4Safety has set up a framework for prospective safety assessment using simulation. It provides instructions to make studies more transparent and comparable. Built on ISO 21934, it provides methods for baseline and an extensive overview of human models for simulation of human behavior in everyday and critical situations. The framework covers safety measures in policy, infrastructure and technology, demonstrated in nine vehicle-VRU use cases.

Safety assessment framework for autonomous vehicles using digital-twin-based testing
Dr Vimal Rau Aparow, assistant professor, University of Nottingham Malaysia, Malaysia

Safety assessment has become one of the major interests in most developing countries to reduce road accidents and minimize traffic congestion. This has increased the need for conducting safety testing for autonomous vehicles (AVs) before actual deployment in real-world environments. In Malaysia, a guideline has been established for public road trials of AVs. However, these documents do not focus on a testing framework to evaluate the safety and security of AVs based on Malaysian driving scenarios. Therefore, a safety assessment framework has been developed that consists of five stages to evaluate the overall performance of AVs before deployment in real-world environments.

DAY 3 THURSDAY, MAY 22

09:00 - 15:00 - Developments in scenarios, simulation, validation and in-the-loop testing (continued)

ROOM 1

Efficient mining of relevant scenarios from data collection to processing
Christian Gutenkunst Solution Manager ADAS/AD

High-quality data collection and selection are the cornerstones of ADAS and autonomous driving development. This presentation explores key prerequisites for successful test drives on public roads, focusing on ensuring data completeness, consistency and relevance. Topics include reference sensor calibration, field-of-view simulation and real-time diagnostics. Additionally, the presenter will discuss strategies for selecting relevant data during collection and after ingesting with pre-selection algorithms to

optimize storage and processing. Attendees will gain practical insights to overcome technical challenges and streamline the data pipeline for cost-sensitive system performance.

09:00 - AI-centric AVs – training, V&V and scenarios, all together
Gil Amid, chief regulatory affairs officer, Foretellix, Israel

Autonomous driving implementation continues its shift to use AI technologies. These technologies require new capabilities for the development and validation of the AV software. The presentation introduces key challenges and presents solutions for a data-driven

autonomy development toolchain. The solutions enable both training and V&V, using real-world data, synthetic scenarios and abstraction to enable large-scale, productive development and V&V.

The importance of quality and quantity analysis for ADAS/AD product development

Jura Ivanović, product director, logiRECORDER automotive HIL video logger, Xylon, Croatia

Jens Hedrich , engineering project manager and product manager , ZF Group, Germany

Future mobility solution development requires a high volume of data to be analyzed for both quality and quantity. ZF Group and Xylon are providing off-the-self solutions. Quantitative data analysis of ADAS/AD systems require precise and reliable annotations. ZF Annotate is a state-of-the-art AI-powered ADAS/ AD perception validation solution that saves time and costs. ZF Visual is an ADAS/AD data analysis software with a strong focus on visualizations. It provides engineers with deep data insights throughout the complete development cycle. The Xylon logiRECORDER can fulfill the challenging demand of collecting high bandwidth data while showing live data at the same time.

09:25 - Distibuted versus centralized architectures for AD data acquisition

Adrian Bertl, strategic product manager, b-plus technologies GmbH, Germany

The presentation gives current insights into efficient data acquisition for ADAS and autonomous driving ECUs and how this benefits from a modular approach, enabling these setups to be reused for the next generation. It focuses on hardware and software mechanisms to tap out data during a test drive or on HIL benches. It also covers the decoupling of ECU internals with breakout boards, PCI Express as an alternative to ethernet when transferring data, and the advantages of decentralized setups. An architecture with an interface to simplify the integration of chip vendor or – in general – specific libraries, for example, bus simulation for diverse test scenarios. These design principles support precise and efficient data collection in increasingly complex systems.

09:50 - Panel Discussion - Scenarios : the ultimate challenge for standardisation

Dr Benazouz Bradai, R&I director - master expert in ADAS/ Autonomous Driving, Valeo, France

Jordi Pont Rañé, principal project engineer, Applus Idiada, Spain

Eric Vaillant, expert leader testing & measurement technology, Renault, France

Hiroki Nakamura, researcher, Japan Automobile Research Institute, Japan

Nadège Faul, director, programs and projects, SystemX, France

10:40 - AI-powered tools for autonomy

Jake Lussier, lead, product management , Applied Intuition, Inc. , USA

This presentation will provide insights into how AI is transforming the landscape of AD/ADAS and autonomy development. It will discuss emerging industry trends, such as the rising complexity of L2+, L3, and L4 ADAS systems and the growth of E2E ML-based architectures that necessitate new tooling solutions. It will highlight key AI technologies, including LLMs, neural reconstruction, sensor diffusion and world models, and illustrate how these can be leveraged to create innovative AI-powered interfaces and simulators that promise to be both scalable and closed loop. The benefits that these AI-driven advancements can bring to OEMs and suppliers will also be discussed.

Integrating VR and CARLA for realistic vulnerable road user simulations

Dr. Elem Güzel, senior researcher, Virtual Vehicle Research, Austria

Driving simulators often struggle to accurately simulate vulnerable road users (VRUs) in safety-critical scenarios. We present a framework integrating immersive virtual reality and human motion capture with the CARLA driving simulator. This setup allows simulations where real human agents act as VRUs interacting with an AI-equipped ego car featuring advanced ADAS functions. It enables testing and validation of new ADAS features with real pedestrian behaviors, providing valuable data on VRU reactions in dynamic traffic environments. This approach enhances the realism of VRU simulations and supports the development and evaluation of safer, more effective ADAS technologies for real-world applications.

09:00 - 15:00 - Safety innovations and best practices for their development (continued)

ROOM 2

09:00 - Context-aware ADAS: unlocking safer driving with interior sensing

Amit Bhandare, product manager - interior sensing systems, Magna , Germany

Interior sensing is transforming ADAS by providing critical real-time insights into driver attention, occupant behavior and in-cabin environments. Traditionally, ADAS has relied on external sensors like lidar, radar and cameras to monitor road conditions. However, the integration of interior sensing – such as driver monitoring cameras (DMC), interior radars and sensor fusion – is enhancing decision-making for ADAS in several ways. Driver state monitoring (DSM) helps ADAS assess drowsiness, distraction and cognitive load, enabling adaptive interventions. Occupant monitoring detects seatbelt use, passenger presence and postures to optimize airbag deployment and crash response. Sensor fusion enables context awareness.

09:25 - Data visualization for automotive

Unmendu Senapati, product manager, Robert Bosch, Germany

Data visualization for an automotive presentation: the key is to abstract complex information into easily understandable graphics that convey insights quickly. The presentation offers a breakdown of how to approach data visualization in the context of the automotive industry, focusing on key areas such as production, sales, quality control and innovation.

09:50 - AI-enabled occupant safety, comfort and health

Kaustubh Ashok Gandhi, senior product manager, Ready Care, SBU intelligent cockpit, Harman International, Germany

This presentation will cover the recent progress in in-cabin sensing, which goes beyond traditional driver monitoring systems, showing how it enables advanced occupant safety, comfort and health. Considering EU-NCAP's recent introduction of safety rating parameters, we will showcase relevant features, including occupant detection, localization, type classification and seatbelt use, in conjunction with real-time contactless vitals and face recognition promoting holistic passenger well-being and personalization on the go. This presentation will cover in-cabin use cases that enhance the consumer experience, required sensors like camera and radar, software elements and deployment channels that allow car manufacturers additional monetization opportunities by leveraging the hardware used for regulatory compliance.

10:15 - vISP-in-the-loop: developing better perception stacks through cloud-to-car environmental parity

Guilherme Marshall, ADAS Go-to-Market Director, Arm, UK
Martin Kollenrott, worldwide tech lead for autonomous mobility, AWS, Germany

Increasing levels of driving automation in more complex ODDs demand effective ways to continuously develop and verify software across millions of virtual miles and thousands of driving scenarios. As a result, scalable MLOps and DevOps have become the engineering foundations underpinning those at the leading edge of AD technology. In this presentation, Arm and AWS join forces to discuss how cloud-to-car environmental parity can enable better testing coverage and faster time-to-market across the industry. Based on a practical SOAFEE-based case study, the presenters will explore the impact of adding the image signal processor (ISP) model into the virtual perception pipeline, and how a similar methodology can benefit OEMs, Tier 1 suppliers and AD software vendors.

10:40 - Revolutionizing automotive agility: building agile vehicles 'faster, smarter, and customer-centric'

Areeg Hassan, R&D operations manager, Valeo Detection systems GmbH, Germany

Agile methodologies are increasingly important in the automotive industry due to the market's evolving needs and challenges, such as the rise of software-driven innovation and shorter development cycles. Applying Agile methodologies to large-scale automotive projects requires tailoring practices to accommodate the complexities of automotive environments. OEMs can build an Agile approach by adopting a Scaled Agile framework for automotive, organizing teams around system architecture, aligning with automotive development cycles, handling compliance and safety standards, and integrating DevOps and continuous delivery. Agile methodologies enable OEMs to stay competitive and adapt to rapid technological advancements to meet ADAS market demands.

How to develop validated sensor models in adverse weather conditions?

Dr Armin Engstle, site manager, Roding, AVL, Germany

To guarantee the precise validation of sensor models in harsh weather conditions, AVL has developed a weather chamber (1.700 qm) where rain and fog combined with various light conditions can artificially be generated. The weather hall allows the execution of complex, dynamic scenarios like Euro NCAP, AEB and VRU at different rain intensities, fog visibility ranges and light conditions. These scenarios can be simulated one by one in the digital twin of the weather hall including the respective weather influence. Thus good alignment of the sensor model in the simulation with the results of the real measurements can be achieved.

13:20 - 15:00 - Connectivity, mapping and positioning

C-V2X / connected and automated mobility
Dr Maxime Flament, CTO, 5GAA, Belgium

'Navigation on autopilot', the ultimate Level 2 system
Matthias Schulze, global VP ADAS product, ECARX GmbH, Germany

China is currently leading in vehicle automation. Most of the Chinese OEMs have so-called Level 2++ systems on the market that largely automate driving but still require a driver supervising safe system operation. These 'navigation on autopilot' systems under normal driving conditions take over all driving tasks until a pre-set destination is reached. Drivers can enjoy hands-free driving and only need to keep their eyes on the road. Everything else is handled by the system. Using ECARX's navigation on Autopilot system as an example, this presentation describes the latest developments in the field.

Transforming HD maps into OpenDrive and 3D simulations for ADAS/AD
Dr Luca Gasbarro, CEO and co-founder, AnteMotion, Italy

AnteMotion revolutionizes ADAS and autonomous vehicle development with an automated toolchain that transforms HD maps into OpenDrive files and procedurally generates high-fidelity 3D simulation environments. These environments are optimized for real-time performance, supporting advanced simulation scenarios while reducing time and costs. Seamlessly compatible with industry standards like USD and Unreal Engine 5.3, AnteMotion ensures robust and immersive virtual testing for perception stack development and DIL. By addressing the scalability challenges of manual methods, AnteMotion accelerates innovation in automotive technologies. Discover how our solutions empower developers to meet the growing demands of ADAS and AV systems with unparalleled efficiency and precision.

Advancing automated driving with collaborative mapping solutions
Albi Wiedersberg, product and partnerships director, Overture Maps Foundation, Germany

The development of automated driving systems requires reliable, interoperable map data for navigation, ADAS and other safety features. Overture offers an open data platform that provides high-quality base map data for driver-facing and machine-readable applications. By establishing interoperability for automotive data layers such as traffic, hazards and parking information, Overture enables OEMs and suppliers to build unique map products that enhance user experiences and unlock new revenue streams. This presentation explores how Overture addresses challenges in mapmaking and standardization, empowering the automotive ecosystem to leverage vehicle-generated data, improve map quality and drive scalable solutions for advancing automated driving.

*This program may be subject to change

EARLY BIRD ENDS SOON!
BOOK BY APRIL 10 TO SAVE UP TO €390

Conference Rates

PASSES	FULL RATE	DISCOUNT RATE
3-day pass	€2,050 + VAT	€1,865 + VAT
2-day pass	€1,550 + VAT	€1,410 + VAT
1-day pass	€1,005 + VAT	€915 + VAT

PLEASE NOTE: Conference passes are valid for FREE ENTRY into the exhibition on ALL DAYS

BOOK NOW FOR DISCOUNTED RATES!

CLICK HERE

MAY 20, 21 & 22, 2025, MESSE STUTTGART, **GERMANY**

ADAS
& AUTONOMOUS VEHICLE
TECHNOLOGY EXPO | EUROPE

Co-located with
automotive **testingexpo** ★EUROPE★

EXHIBITING COMPANIES INCLUDE

AAi AUTOMOTIVE ARTIFICIAL INTELLIGENCE

ADASKY Driven to save lives

AEDVANTAGE

aiMotive™

ANYVERSE

Applied Intuition

Applus⁺ IDIADA

AVSIMULATION

b-plus

Brightskies

CATANA CORPORATION

CLAYTEX A TECHNIA COMPANY

cognata

deepen

DeepScenario

DEONTIC

digital werk

dSPACE

EXASCEND

foretellix

INFINIQ

InoNET A EUROTECH COMPANY

IPG

KOGNIC>

konrad ···technologies···

LOTUS ROBOTICS

mobias

MOR AI

ROHDE & SCHWARZ Make ideas real

Segments.ai

SEYOND

VAIVA Safe Mobility

WAYVE

XYLON®

ZC Automotive Focus on Technology · Shaping the Future

ADAS
& AUTONOMOUS VEHICLE
TECHNOLOGY EXPO | EUROPE
CONFERENCE

www.adas-avtexpo.com/stuttgart