LEADVENT

2ⁿᵈ Annual
Automotive
Functional Safety
Forum

29ᵗʰ – 30ᵗʰ October 2024
Berlin, Germany

Who Should Attend

Presidents, Vice Presidents, Directors, Management Leads, Engineers of

- Functional safety
- ASPICE
- ISO 26262
- ASIL
- FUSA
- SOTIF
- Cybersecurity
- Vehicle Safety
- System Safety
- Embedded Electronic
- Connected and automated Vehicles
- Autonomous Vehicles
- ADAS
- Verification & validation
- Homologation

In the Chair

Riccardo Vincelli
Director
Functional Safety
Competence Center
Renesas Electronics
Europe GmbH

Confirmed Speakers

LEADVENT

Sergey Razmakhnin
Head of Cybersecurity
NavInfo Europe

Alexander Mattausch
Chief Expert
Software Architecture
Elektrobit

Avinash Visagan Varadarajan
Functional Safety Specialist
BRACE Automotive

Francesco De Rosa
Site Manager
and Functional
Safety Manager
Art SpA

Kholoud Hatem
Technical Specialist
/ Functional Safety
Manager
Dana Incorporated

Sebastian Lange
Director Business
Management
& Development EMEA
BigRep GmbH

Guido Werner
Director Safety
& Security
ESE Engineering
und Softwareentwicklung
GmbH

Juan Pimentel
Consultant
Omnex

Alexey Vinel
Professor
Karlsruhe Institute
of Technology (KIT)

Andres Barrilado
Functional
Safety Specialist
NXP Semiconductors

Björn Zelder
Functional Safety
Competence Center
Renesas Electronics Europe

Florian Reichle
Head of Engineering
Excellence, Americas
HELLA

Dr. Marzana Khatun
Functional
Safety Manager
Robert Bosch Engineering

Qadeer Ahmed
Associate Professor
of Research
The Ohio State University

Oscar Slotosch
CEO and founder
Validas

Mohammed Al-Sayed
Functional Safety
Expert - Contract
2Go Solutions

Hans Böhme
Functional
Safety Professional
FEV etamax GmbH

Andres Barrilado
Functional
Safety Assessor

Massimo Carignano
Functional Safety
Governance Manager
IVECO

Claudio D'Eramo
co-author
of OEM-level
company procedures
IVECO

Phil Koopman
Professor
Carnegie Mellon
University

Abhash Das
Safety Expert
ZF Group

2nd Annual Automotive Functional Safety Forum

29th – 30th October 2024
Berlin, Germany

Tuesday 29th October 2024

08:30 Chairman's Opening Remarks and Address

Riccardo Vincelli / Director Functional Safety Competence Center / Renesas Electronics Europe

NAVIGATING AUTOMOTIVE FUNCTIONAL SAFETY REGULATIONS: CURRENT TRENDS AND FUTURE UPDATES
08:40 Opening Keynote
Automotive Functional Safety - Updates on Major Safety Events and Standards
- Updates on new technologies and methodologies for providing FuSA
- Advances in the field of sensor technologies, software verification

ARTIFICIAL INTELLIGENCE: ENHANCING FUNCTIONAL SAFETY IN AUTOMOTIVE SYSTEMS
09:05 Case Study
Usage of AI for tests and FuSA development
- cases how and when it was done
- what risks should be taken into account

09:30 Case Study
AI Algorithms and Reliability of AI-powered systems
- how to ensure the reliability of AI-powered systems in unpredictable environments
- Implementation of the redundancy and fault tolerance in AI algorithms

09:55 Case Study
Automated safety focused neural network training
- Challenges in applying AI in safety-critical applications
- Guideline for AI in safety-critical applications
- Hazard analysis and risk assessment for AI applications and determination of safety requirements
- Process to automatically train neural networks regarding safety requirements

Hans Böhme / Functional Safety Professional / FEV etamax

10:20 Case Study
Challenges in implementing AI in Automotive Functional Safety
- Safety of systems the include ML based functionality
- Methodologies to produce safe AI systems in automotive
- Interplay between AI safety related and non-AI safety related subsystems to ensure automotive safety

Juan Pimentel / Pincipal Consultant / Omnex

10:45 Case Study
AI and how to handle it safely
- Impact of AI in automotive
- Moving beyond the buzz words: how is AI currently used in the automotive
- AI and its role in active safety
- AI risk assessment - An industry example
- ISO/IEC 5469 and gaps with ISO 26262 and ISO 21448

Avinash Visagan Varadarajan / Functional Safety Specialist / BRACE Automotive

11:10 One-to -One Meetings & Networking Break

ADVANCEMENTS IN ADAS AND AUTOMATED DRIVING SYSTEMS (AS)
11:40 Case Study
Ethical V2X: Pre-crash Cooperation in Autonomous Driving
- Vehicular communications (V2X) and the capability of explicit inter-vehicular information exchange
- Cooperative manoeuvring empowered by the ethical V2X
- Methodology of an ethical cooperative driving interaction protocol design

Alexey Vinel / Professor / Karlsruhe Institute of Technology (KIT)

12:05 Case Study
Automated Vehicle Safety Cases: Scope and Structure
Phil Koopman / Professor / Carnegie Mellon University

12:30 Case Study
Operational Safety of Highly Autonomous Vehicle a real-world ZF case study
- Know-how of homologation of world 1st L4 transport system without safety driver in real world operation.
- Challenges of Operational safety and other safety aspects.
- Relation of Operational safety with Functional Safety and SOTIF
- Rivium SL project – Real world example

Abhash Das / Safety Expert / ZF Group

12:55 Lunch Time Break

13:55 One-to -One Meetings & Networking Break

INNOVATIONS IN NEW VEHICLE FUNCTIONAL SAFETY
14:05 Case Study
Innovative Determination of ASIL
Björn Zelder / Functional Safety Competence Center / Renesas Electronics Europe

14:30 Case Study
Safety in the software-defined vehicle
- how to implement safety in an SDV-enabled E/E architecture?
- breakdown into the individual HPC and real-time systems

Alexander Mattausch / Chief Expert Software Architecture / Elektrobit

14:55 Case Study
Using Digital Twins for Functional Safety
- The use of new technologies to predict failures will enable higher availability of extended mission profiles.
- Digital twins might technically capable to be used as safety mechanisms in safety-critical applications
- During the presentation we will explore NXP's view and provide some examples

Andres Barrilado / Functional Safety Specialist / NXP Semiconductors

OVERCOMING COMPLIANCE CHALLENGES IN AUTOMOTIVE FUNCTIONAL SAFETY
15:20 Case Study
Qualification of Tool & Libraries for Safety & Security
- Software Uses Tools & Libraries
- Tool & Libraries need to be safe & secure too
- ISO 26262: Tool Confidence Level
- Examples of critical tool errors

Oscar Slotosch / CEO and founder / Validas

15:45 One-to -One Meetings & Networking Break

16:15 Case Study
Building a safety case for autonomous vehicles
- The elements of a safety case
- Claim formulation
- Arguments for safe enough
- How to go about proving evidence.

Mohammed Al-Sayed / Functional Safety Engineer, CEO / 2Go Solutions UG

16:40 Case Study
Optimised, Efficient Models For Iso 26262 A Risk Based Model For Monitoring Fusa Faults & Failure
Jointly presented by
Massimo Carignano / Functional Safety Governance Manager / IVECO
Claudio D'Eramo / Co-author of OEM-level company procedures / IVECO

17:05 Panel Discussion
Manage the Hazards for safety critical systems during the product lifecycle
Panelists
Kholoud Hatem / Technical Specialist, Functional Safety Manager / Dana Incorporated

17:45 Chairman's Closing Remarks and End of Day One

Wednesday 30th October 2024

08:30 Chairman's Opening Remarks and Address

Riccardo Vincelli / Director Functional Safety Competence Center / Renesas Electronics Europe

INTEGRATING FUNCTIONAL SAFETY WITH SUSTAINABILITY INITIATIVES

08:40 Case Study
Eco friendly design and safety in electric vehicles
- Balancing eco-friendly design principles with safety requirements and regulatory standards
- Strategies for optimizingl safety standards in electric vehicles to minimize environmental impact
- Ensuring compliance with safety regulations while implementing sustainable design practices

09:05 Case Study
The evolution of functional safety as vehicles become greener
- Identification of unique challenges posed by green vehicle technologies in terms of functional safety
- Evolution of safety standards and regulations to accommodate the specific needs of green vehicle technologies

09:30 Case Study
The role of software in sustainable automotive safety
- Overview of the increasing role of software in advancing both sustainability and safety in the automotive industry
- Discussion on how software innovations contribute to the development of greener and safer vehicles

Guido Werner / Director Safety & Security / ESE Engineering und Softwareentwicklung

09:55 One-to-One Meetings & Networking Break

FUSA IN THE AUTOMOTIVE INDUSTRY: BUSINESS PERSPECTIVES AND STRATEGIES

12:25 Case Study
Case of a Medium-Sized Company: Comparison of Medium-Sized Businesses In The Auto Sector and Fusa Over Large Ones / Development Prospects
- Identification of functional safety challenges faced by medium-sized businesses in the automotive sector and opportunities for medium-sized businesses to differentiate themselves through innovative approaches to functional safety
- Strategies for optimizing resource allocation and maximizing the impact of safety investments

12:50 Case Study
Safety driven innovation by intelligent additive manufacturing
- How a printer can save millions by Using risk Management to Identify critical components and set up a strategy to print own parts

Sebastian Lange / Director Business Management & Development EMEA / BigRep

13:15 Lunch Time Break

14:15 One-to-One Meetings & Networking Break

14:25 Case Study
Ensuring Fusa Standards In Developing Countries
- Discussion on factors such as limited resources, infrastructure, and technical expertise that contribute to the unique challenges faced in implementing functional safety standards in 3rd world countries
- Strategies for engaging with government agencies to promote awareness, education, and compliance with safety regulations
- Considerations for mitigating the effects of sanctions and fostering international cooperation despite geopolitical tensions
- Examples of initiatives aimed at providing training, education, and technical support to local stakeholders

14:50 Panel Discussion
Analysis of How to Provide Safety Cheaper and Faster
- Overview of the importance of cost and time efficiency in safety provision within the automotive industry
- Discussion on the challenges associated with traditional approaches to safety provision and the need for innovative solutions

CYBER SECURITY AND FUNCTIONAL SAFETY MEASURES

15:30 Case Study
Supply chain collaboration, innovation in FuSa and the relationship between FuSA, SOTIF and Cyber Security
- Interconnection between standards
- Safety and Cybersecurity analyses
- Interaction between activities
- Failure modes and effects

Marzana Khatun / Functional Safety Manager / Robert Bosch Engineering

15:55 One-to-One Meetings & Networking Break

16:25 Case Study
Cybersecurity threats and integration of auto FuSA measures
- Strategies and tools for addressing cybersecurity threats and vulnerabilities, including special approaches to integration of auto FuSA measures to ensure the reliability and safety of automotive systems
- Discussion on the potential impact of cyber attacks on vehicle safety and reliability

Florian Reichle / Head of Engineering Excellence / HELLA

16:50 Case Study
Automotive cybersecurity testing in the era of AI
- (more is coming)

Sergey Razmakhnin / Head of Cybersecurity / NavInfo Europe

17:15 Case Study
Will be updated (by Francesco De Rosa)
Francesco De Rosa / Site Manager and Functional Safety Manager / Art SpA

IMPROVEMENTS IN FUSA

17:40 Case Study
State-of-the-art industry solutions, weaknesses of standards like ISO 26262
- Identification of weaknesses and limitations in existing functional safety standards such as ISO 26262.
- Discussion on challenges related to standard interpretation, implementation complexity, and adaptability to emerging technologies

18:05 Case Study
Challenges in integration with other normative and safety standards
- Complexity of integrating functional safety standards like ISO 26262 with other emerging standards such as SOTIF, ISO PAS 8800 (AI), ISO/TR 9839, ISO/TR 9968, ISO/PAS 8926, ISO/TS 5083, UL4600, etc.
- Application of SOTIF to Hardware Components

18:30 Chairman's Closing Remarks and End of Conference

Conference Speakers

Riccardo Vincelli / **Director Functional Safety Competence Center** / **Renesas Electronics Europe GmbH**

Riccardo Vincelli is the Director of the Functional Safety Competence Center at Renesas Electronics where he works for more than 20 years. He's heading the Functional Safety Competence Center responsible for the technical assessment of world-wide Renesas products (MCUs, SoCs, Analogue ASICs/ASSPs and SW components). He's been involved with Functional Safety for nearly 20 years dealing with many different products used today in mass production across several automotive applications spanning from chassis, airbags, body, ADAS, etc. As part of his contribution to functional safety he's been also actively involved with the creation of ISO26262 since 2005 as well as other safety standards as UL4600 or IEEE-P2851 or standardization bodies as SAE Functional Safety Committee, IEEE Functional Safety Standardization Committee and others

Avinash Visagan Varadarajan / **Functional Safety Specialist** / **BRACE Automotive**

Avinash Varadarajan is a ISO 26262 Functional Safety Specialist at BRACE Automotive, a leading engineering and R&D organization in Eindhoven, The Netherlands. With an automotive engineering background, he has 10 years of ISO 26262 experience working in various positions across the automotive supply chain. Apart from his role as a specialist, he is involved in state-of-art safety research with the academia in the Brainport region of The Netherlands. He is currently working as a safety management consultants for several automotive and off-highway equipment suppliers.

Kholoud Hatem / **Technical Specialist** / **Functional Safety Manager** / **Dana Incorporated**

For many years, Kholoud Hatem has been noteworthy expert in functional safety, currently, she works with Dana Incorporate as a Manager functional safety and subject matter expert, prior to that she worked with Hella as a systems engineer, functional safety and cybersecurity manager, then she joined Veoneer as a functional safety and cybersecurity lead, additional to her primary function, she was supporting the safety organization with creating templates and define the procedures for performing the safety analyses using many methodologies, moreover she was supporting the creation of the safety related processes.\

Guido Werner / **Director Safety & Security ESE Engineering** / **und Softwareentwicklung GmbH**

Has been working in the automotive sector for more than 17 years in various positions and specializations, primarily in E/E.
Before that, always worked in the telecommunications sector, starting with an apprenticeship as a telecommunications technician DBP, then continuing in a large state-owned company (German Armed Forces) in the telecommunications sector. Followed by a degree in telecommunications.

Qadeer Ahmed / **Associate Professor of Research** / **The Ohio State University**

I am an Assistant Professor with the Department of Mechanical and Aerospace Engineering, a core faculty affiliate of the Center for Automotive Research, at The Ohio State University, Columbus, OH, USA.
I received my Ph.D. degree in Control Systems from Mohammad Ali Jinnah University, Islamabad, Pakistan, in 2011. My research includes controls, optimization, and diagnostics of automotive systems with a focus on their efficiency, safety, and security.

Dr. Marzana Khatun / **Functional Safety Manager** / **Robert Bosch Engineering**

I am Marzana Khatun, Functional Safety Manager at Robert Bosch and I am involved in the development of Application Specific Integrated Circuits (ASIC). I recently completed my PhD at the University of Ulm, where my research focused on the development of safety concepts for higher levels of automation (level 3 and above). This project was a collaborative project involving nine industrial partners and two universities: Kempten University of Applied Sciences and the University of Ulm. With more than eight years of combined industry and research experience in the field of functional safety and cyber security, I continue to build a comprehensive knowledge base in my role.

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Juan Pimentel / Consultant / Omnex

Dr. Juan Pimentel was a Professor of Electrical and Computer Engineering at Kettering University. He is now the Omnex principal consultant in Automotive Functional Safety and Cybersecurity. His knowledge and experience includes applied research, product development, electric vehicles, autonomous vehicles, safety and cybersecurity assessment and assurance. Dr. Pimentel has extensive experience various automotive areas that includes electric powertrains, electric motors, electric batteries including battery management systems, in-vehicle networks such as the CAN bus, ROS, high speed in-vehicle communication networks, microcontrollers (MCUs) with high level of safety and security. He has performed a number of functional safety projects involving the standards ISO/SAE 21434, ISO 26262, ISO 21448, NIST 800, and others in areas ranging from oil & gas, automotive, electric vehicles, and automated vehicles. He has performed consulting and developed courses on systems engineering, functional safety and cybersecurity aspects of electric and autonomous vehicles.

Alexander Mattausch / Chief Expert Software Architecture / Elektrobit

Dr. Alexander Mattausch is Chief Expert Software Architecture at Elektrobit. He focuses on embedded operating systems, software integration and functional safety. After his PhD in theoretical solid state physics at the University of Erlangen-Nürnberg he joined Elektrobit and led the development of an ASIL-D certified AUTOSAR operating system and focused later on the operating system infrastructure of automotive HPC systems. He is the author of numerous publications in scientific and automotive journals and computer magazines such as c't.

Florian Reichle / Head of Engineering / Excellence, Americas HELLA

Florian Reichle has over 18 years of experience in automotive development and 12 years specializing in Functional Safety (ISO 26262) for OEM and Tier 1 suppliers in Europe and North America. He started his career as Test Engineer in 2006 and became a Functional Safety Manager in 2012, and since then, Functional Safety has become his great passion and dedication. Strongly influenced and driven by ISO 26262, he has contributed significantly to the entire automotive development process in various companies. Today, he leads the global organization for Functional Safety and Cybersecurity at BorgWarner. Florian is dedicated to enhancing safety culture within organizations by implementing practical and sustainable solutions. Known for his critical thinking and problem-solving skills, he influences decision- making to meet key objectives and exceed expectations while aiming for long-term growth. With his professional experience and a gift for articulating complex ideas in an accessible manner, Florian Reichle is a highly recognized and prominent speaker at industry conferences, where he shares his insights on functional safety and safety assessment strategies.

Mohammed Al-Sayed / Functional Safety Expert - Contract / 2Go Solutions

Mohammed Al-Sayed is a seasoned Functional Safety Engineer and CEO of 2Go Solutions UG with over 24 years of experience. Holding three master's degrees in Mechanical Engineering, Safety Engineering, and Business Administration, he specializes in autonomous vehicle technology, cyber security, and risk management. Mohammed has patented advancements in Level 5 autonomy and is a respected speaker at international conferences. A member of the Canadian Engineering Association and The IEEE, he is dedicated to advancing safety standards in the automotive industry. Outside work, Mohammed enjoys extensive reading and research on safety engineering and risk management.

Andres Barrilado / Functional Safety Assessor / cOMPANY

Andres works as a Functional Safety Assessor in the central NXP team. In the past Andres has acted as a Safety Architect for radar front-end devices, and also as an applications engineer for automotive sensors. He has cross-functional experience in the semiconductor industry, dealing with MEMS and millimetric wave ICs.

Massimo Carignano / Functional Safety Governance Manager / IVECO

Massimo Carignano, with over 8 years in automotive functional safety, is the Overall Functional Safety Manager at Iveco Group. Specialising in engine, powertrain systems, components, and commercial vehicles, he guides the Functional Safety Governance, ensuring guidelines for decision-making support in a complex product landscape with legal implications.

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Claudio D'Eramo / co-author of OEM-level company procedures / **IVECO**

Graduating cum laude in Mathematical Engineering from the Polytechnic of Turin, he joined 4S Group in 2022. He is the co-author of OEM-level company procedures related to field monitoring of E/E systems based on the proven in-use argument. Over the years, he has also contributed to the development of ADAS ECUs with a focus on Functional Safety, specifically by creating the necessary work products at the system level and supporting the realization of those at the hardware and software levels

Oscar Slotosch / CEO and founder / **Validas**

Sergey Razmakhnin / Head of Cybersecurity / **NavInfo Europe**

Chief information security officer and head of cybersecurity in the biggest international companies (Navinfo, VEON, MTS Group) for 14 years. Head of the largest European Security Operation Center for 5 years. Sergey is specialized in risk assessments, data protection, cloud and enterprise security, network security, threat intelligence, penetration testing, fraud prevention, international information security regulation and compliance.

Alexey Vinel / Professor / **Karlsruhe Institute of Technology (KIT)**

Alexey Vinel (Senior Member, IEEE) received the Ph.D. degree from the Tampere University of Technology, Finland, in 2013. He is currently a Professor with the Karlsruhe Institute of Technology (KIT), Germany. Previously, he was a Professor at the University of Passau, Germany. Since 2015, he has been a Professor with Halmstad University, Sweden (now part-time). His research interests include vehicular communications and networking, cooperative automated and autonomous driving, and future smart mobility solutions.
https://www.aifb.kit.edu/web/Alexey_Vinel/en

Roberto Peccapeli / RedHat

Dr. Roberto Paccapeli graduated in "Electronic Engineering" in 2006 from the University of Rome "Sapienza" and achieved Doctorates in "Mathematical Methods Applied to Science" (University of Rome Sapienza) and in "Mechanics" (University of Paris VI) in 2011. In the past, he worked as YOGITECH project leader for consultancy on FMEDA analysis and Process Safety Audit and, additionally, he was responsible for Quality Management (ISO 9001). Afterwards, he worked in Intel as Functional Safety Manager with the responsibility to establish, implement and maintain the FuSa Lifecycle in compliance with ISO26262 and IEC61508. Currently he is Functional Safety Manager and Community Leader in Red Hat, Italy. He is member of the Italy-task forces involved in ISO 26262 and IEC 61508 standards, where he covers the role of Italian Head of Delegation for ISO/TC 22/SC 32/WG 8 (Functional safety) and Project Leader for ISO 26262-8 and ISO PAS 8926.

Gabriele Paoloni / RedHat

Gabriele Paoloni is an Open Source Community Technical Leader at Red Hat where he defines best methodologies and requirements to qualify Linux for functional safety usage. He is a passionate technologist and has strong experience in both functional safety and Linux Kernel development, including previous roles leading FuSa software architecture for Intel platforms, CCIX vice chairman of the TDL working group and HiSilicon PCIe Linux maintainer. Gabriele received a master's degree with honors in electronic engineering from the University of Rome.

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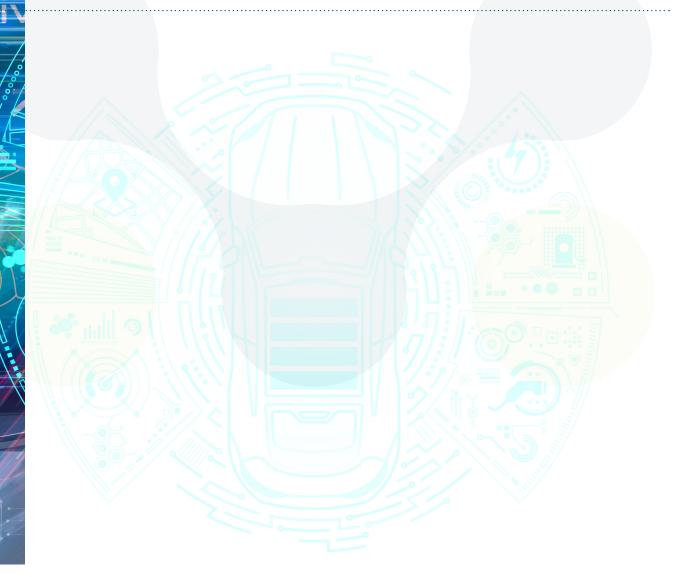**Phil Koopman** / *Professor* / **Carnegie Mellon University**

Philip Koopman is a professor at Carnegie Mellon University in Pittsburgh USA, who has been working on self-driving car safety for more than 25 years. He is actively involved with automated vehicle policy and standards as well as more general embedded system design and software quality. He is the author of the books How Safe is Safe Enough: measuring and predicting autonomous vehicle safety (2022), and The UL 4600 Guidebook (2022).

Hans Böhme / *Functional Safety Professional* / **FEV etamax GmbH**

Hans Böhme is a Functional Safety and Automotive Cybersecurity professional at FEV etamax GmbH, a member of the FEV Group. He specializes in Safety Management and the implementation of Artificial Intelligence in safety-critical applications. His experience spans multiple domains, including automotive, agriculture and marine. Hans Böhme holds a Master's Degree in Electrical Engineering and Information Technology from the Technical University of Munich and has worked for Siemens and the Max Planck Institute for Extraterrestrial Physics.

Abhash Das / *Safety Expert* / **ZF Group**

Experienced leader over 2 decades of track record of covering variety of areas within the automotive and semi-conductor industry. Authored several patents, trade secrets and a certified safety expert. Deep and broad knowledge of E/E, System and Software, to generate efficient solution to enable production ready safety critical system that are strategically positioned and translated into a product. Highly specialized in IEC 61508, ISO 26262, ISO 21448 and UL4600 safety engineering for various automotive safety critical systems in areas of Autonomous Driving, Hybrid powertrain, ADAS, Active & Passive safety System etc. Active working group committee member in SAE ORAD, BSI CAV, UNECE, and USTAG. Contributed during development of ISO 26262:2018, ISO 21448:2022 and SfAD. Abhash Das | LinkedIn

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