FISITA WORLD CONGRESS

12 – 14 September 2023
Barcelona International Convention Centre
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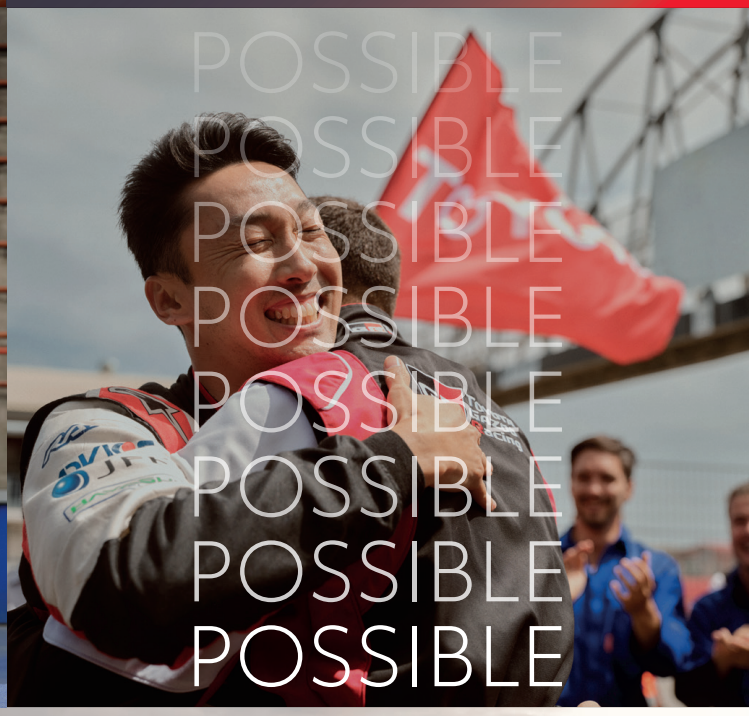
EVERY
STEP
ADDS UP
TO TAKE US
BEYOND


WHAT WE EVER
THOUGHT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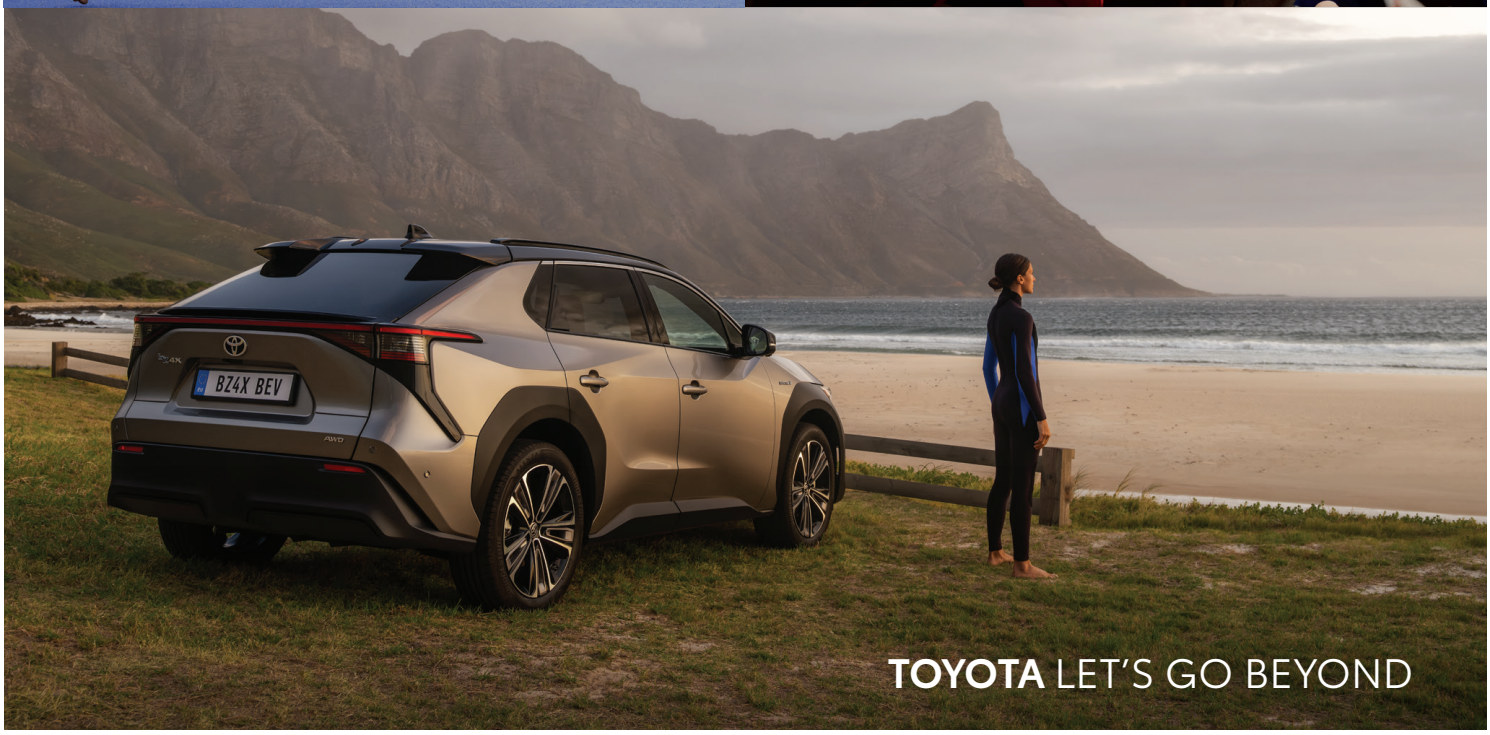
BZ4X BEV
TOYOTA LET'S GO BEYOND

Contents

FISITA World Congress 2023 is organised by FISITA and STA (Sociedad de Técnicos de Automoción)

FISITA President
Nadine Leclair

FISITA Chief Executive
Chris Mason

STA President
José Manuel Barrios

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Introducing FISITA and STA

FISITA is the international membership organisation and voice of the automotive and mobility systems engineering community. At FISITA, we bring the technology of mobility community together to progress priority challenges and opportunities via working groups, events and platforms for high level networking within expert peer groups.

For more information on FISITA membership and benefits please contact:
sales@fisita.com

SOCIEDAD DE TÉCNICOS DE AUTOMOCIÓN

The Sociedad de Técnicos de Automoción (STA) is a co-founding member of FISITA and has more than 800 individual and corporate members. Our mission is to promote the progress of the technological advances within the Spanish automotive industry and to provide a neutral platform to share experiences and opinions among peers.

To achieve our goals, the STA works as a local and global platform for knowledge exchange between industry and academia, with particular emphasis on being a leading advocate for the education of young engineers. We also are a significant local and global events organiser, including technical sessions at the Automobile Barcelona, international congresses, and the Formula Student Spain competition, among many others.

For more information on STA membership and benefits please contact STA's administration manager via
sta@stauto.org

Welcome to
FISITA World Congress 2023

We are delighted to welcome you to the FISITA World Congress at the Barcelona International Convention Centre (CCIB) in Catalonia, Spain.

Catalonia is a hub for innovation and technology, with many companies and research centres working on cutting-edge mobility solutions and with a highly skilled workforce and a strong academic community; also, it has a rich cultural heritage and a vibrant arts scene. All together making its capital city the ideal environment for discussing and showcasing the latest developments in the technology of mobility field with like-minded individuals from around the world.

FISITA's mission remains the same as it was when our organisation was founded seventy-three years ago - to promote knowledge sharing among stakeholders in a way that positively contributes to the development of safe, sustainable and affordable mobility solutions. By supporting engineers from different nations to work together, FISITA helps guide the future direction of the global automotive and mobility systems engineering profession.

The themes of this year's Congress are Design, Manufacture and Use. The technical sessions will cover the significant research and discoveries being made in these areas and the Congress will continue to serve as the powerful motivator for the continued growth of the automotive mobility industry and its contributors. In addition to our technical sessions, we have lined up keynote addresses from many of the leading figures within the mobility industry.

This year's Congress includes a number of programmes and initiatives specially designed for students and young engineers via the Student Opportunities Programme. Engaging through these initiatives, students will have the opportunity to connect with OEMs, suppliers and technology companies, to demonstrate their abilities and for industry to support them to develop a future career within the international automotive and mobility system sector.

Alongside all the learning opportunities and the international exhibition, there will be Climate Change Sessions and the latest work of the FISITA Member Working Groups being discussed within the Knowledge Lounge. Naturally, Congress offers delegates the opportunity to make contacts and build relationships with colleagues from all over the world and social highlight of Congress will be the spectacular Gala Dinner, which will provide an evening of fabulous food and musical entertainment from a local jazz band, all courtesy of the Gala Dinner sponsor, Brembo.

We would also like to express our sincere thanks and appreciation to this year's Prime Partners and Congress sponsors for their continued support: Applus+, CATL, Hyundai Motor Company, Ansys, AVL List GmbH, Bosch Mobility, Brembo, DENSO, Elektrobit, FEV, Gestamp, IRP Systems, Nitrex and Shell.

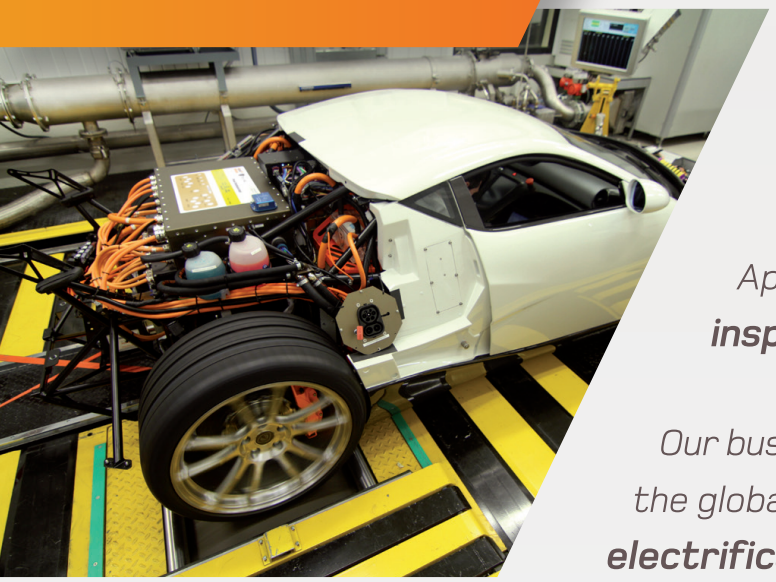
José Manuel Barrios
President
STA

Nadine Leclair
President
FISITA

Chris Mason
Chief Executive
FISITA

Applus+

Together beyond standards



*Applus+ is a worldwide leader in **testing, inspection** and **certification services.***

*Our business strategy adapts constantly to the global trends of **energy transition, electrification** and **connectivity.***

*Our **automotive engineering** services contribute to the development of **safer** and more **sustainable** vehicles.*

*Applus+ is strongly committed to **innovation, digitalisation** and **sustainability**, striving for a better world.*

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FISITA

Promoting excellence in mobility engineering

Your opinion matters
Complete the FISITA survey

FISITA is the international membership organisation and voice of the automotive and mobility systems engineering community.

Please complete the FISITA Future Mobility Readiness Index survey and contribute with your feedback to questions regarding the most important challenges and opportunities facing our industry.

Visit the FISITA stand no. 157 and speak with our team!

Enquiries: **info@fisita.com**

www.fisita.com

@FISITAhq

/company/FISITA




FISITA World Congress 2023 programme overview

Tuesday 12th September	09:00	**Technical session**
	10:30	**Break**
	10:45	**FISITA World Congress Opening Ceremony**
	11:25	**Hyundai Motor Company keynote on Electrification in mobility: ultimate engineering solutions for carbon neutrality** Chang Hwan Kim, Senior Vice President
	11:55	**CATL keynote on Augmented intelligence-enabled lithium-ion battery extreme manufacturing** Wenjing Jin, Data Scientist
	12:25	**Artificial Intelligence panel discussion**
	13:25	**Lunch**
	14:25	**ETAS GmbH keynote on Software defined mobility enablement** Mariella Minutolo, Board of Management and Executive Vice President Sales
	14:50	**Shell keynote on Fuels and energy carriers for decarbonisation of transport** Karsten Wilbrand, Senior Principal Scientist
	15:15	**KBA keynote on Current status and future regulations for connected and automated vehicles** Richard Damm, President
	15:40	**Software defined vehicle panel discussion**
	16:40	**Break**
	17:00	**Technical session**
	18:30	**Close**

Wednesday 13th September	08:00	**Technical session**
	09:30	**Break**
	10:00	**Bosch Mobility keynote on Reinventing mobility systems from inside out- how to afford it** Matthias Klauda, Executive Vice President Engineering Cross-Domain Computing Solutions
	10:25	**Applus+ keynote on Innovation as a tool for an uncertain future** Joan Amigó, CEO
	10:55	**AVL keynote on Carbon neutral passenger car vehicles developed with attribute engineering** Uwe Dieter Grebe, Global Business Development, Sales & International Operations, Powertrain Systems
	11:20	**EUCAR keynote on R&I for the mobility transformation** Stefan Deix, Director, European Council for Automotive R&D
	11:45	**EDI panel discussion**
	12:55	**Lunch**
	14:00	**IRP keynote on Making the open winding topology a commercial reality** Paul Price, CTO and Co-Founder
	14:25	**EuroNCAP keynote on EURO NCAP, now for safer trucks too...** Matthew Avery, Director of Strategic Development
	14:50	**Start-ups panel discussion**
	15:50	**Break**
	16:10	**Technical session**
	17:40	**Close**
	19:00	**Gala Dinner** Sponsored by brembo

Thursday 14th September		
	08:00	**Technical session**
	09:30	**Break**
	10:00	**NIO keynote on NIO, a user company** Hui Zhang, NIO Group Vice President
	10:25	**General Motors keynote on Putting the customer at the center of the EV transformation** Jaclyn McQuaid, President and Managing Director, GM Europe
	10:50	**CITA keynote on Modern periodic emission test for diesel vehicles** Gerhard Müller, President
	11:15	**Qualcomm keynote on The software-defined future of automotive** Salah Hadi, Vice President of Engineering
	11:40	**Fraunhofer IKS keynote on AutoDevSafeOps - integrated development and operation of safe automotive systems** Núria Mata, Department Head Cognitive Software Systems Engineering
	12:05	**Propulsion systems panel discussion**
	13:05	**Lunch**
	14:20	**Technical session**
	15:50	**Break**
	16:10	**Climate Change panel discussion**
	17:10	**SEAT CUPRA keynote** Werner Tietz, Executive Vice-President for Research and Development
	17:45	**FISITA World Congress closing ceremony**
	18:15	**Farewell drinks reception**
	19:00	**Close**

FISITA Society Members

Argentina

Asociación de Ingenieros y Técnicos del Automotor (AITA)
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www.aita.org.ar

Australasia

Society of Automotive Engineers – Australasia (SAE-A)
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Austria

Österreichischer Verein für Kraftfahrzeugtechnik (ÖVK)
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Belgium

Union Belge des Ingénieurs de l'Automobile (UBIA)
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Brazil

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www.aea.org.br

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www.vdi.de

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www.laia.lv

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Societatea Inginerilor de Automobile din Romania (SIAR)
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www.siar.ro

Serbia

Jugoslovensko Drustvo za Motore i Vozila (JUMV)
Email: cduboka@gmail.com

Slovak Republic

Spolok Automobilových Inžinierov a Technikov Slovenska (SAITS)
Email: saits@saits.bts.sk
www.saits.bts.sk

Slovenia

Association of Mechanical Engineers and Technicians of Slovenia - Automotive Group (AMETS-AG)
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www.stauto.org

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www.sae-switzerland.ch

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www.tsae.or.th

The Netherlands

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Email: info@kivi.nl
www.kivi.nl

United States of America

Society of Automotive Engineers International (SAE International)
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www.sae.org

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Email: hello@istvs.org
www.istvs.org

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Applus+ is a Spanish corporation and a worldwide leader in the testing, inspection and certification (TIC). It is a trusted partner, enhancing the quality and safety of its client's assets and infrastructures while safeguarding their operations. Its innovative approach, technical capabilities and highly-skilled and motivated workforce assure operational excellence across multiple sectors in more than 70 countries. The Group, which has over 25,000 employees, is committed to sustainability.

We have the accreditations and recognition of the main control bodies of the countries in which we operate, which certify our operational excellence and independence. Our services and business strategy are aligned with the significant global megatrends of energy transition, electrification, and connectivity. We are strongly committed to innovation and digitalisation, which has resulted in 151 current patents from 34 different families and more than 210 research projects, some of which were developed under the umbrella of Applus+ Ventures, our corporate venturing programme. Our digital transformation processes have received prestigious international awards, such as the AVA Digital Awards, Globee Awards and SAP Quality Awards. We have renowned talent development programmes, including the Global Management Development Programme (GMDP), designed exclusively for Applus+ by the Instituto de Empresa (IE Business School). Health and safety in the workplace is the main focus of Safety Day, our biggest annual corporate event.

Applus+ helps clients reduce their environmental impact, improving the safety and sustainability of their products and assets. The company sets ESG (Environmental, Social and Governance) targets every year and monitors their fulfilment. These actions have attracted external recognition: above-average scores by S&P Global (54, 81% percentile), Sustainalytics (15.6, "Low risk"), MSCI ESG Ratings (AA), from the CDP (B), from Gaïa (71/100), from Standard Ethics (EE+, "Very Strong"), and the inclusion of Applus+ within the FTSE4Good Index Series of Ibex. We are also part of the Ibex Gender Equality Index, and we have joined the UN Global Compact and the international Science Based Targets initiative (SBTi) to reduce global warming and fight climate change.

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Contemporary Amperex Technology Co., Limited (CATL)

Contemporary Amperex Technology Co., Limited (CATL) is a global leader in new energy innovative technologies, committed to providing premier solutions and services for new energy applications worldwide. In June 2018, the company went public on the Shenzhen Stock Exchange with the stock code 300750.

Headquartered in Ningde, China, CATL has established thirteen battery manufacturing bases worldwide, namely in Ningde, Fujian Province; Liyang, Jiangsu Province; Xining, Qinghai Province; Yibin, Sichuan Province; Zhaoqing, Guangdong Province; Lingang Special Area of China (Shanghai) Pilot Free Trade Zone, Shanghai; Xiamen, Fujian Province; Yichun, Jiangxi Province; Guiyang, Guizhou Province; Jining, Shandong Province; Luoyang, Henan Province and Erfurt, Germany; Debrecen, Hungary. At the same time, CATL has opened subsidiaries in Munich, Germany; Paris, France; Yokohama, Japan; Detroit, USA as well as other places.

To achieve the goal of fossil fuel replacement in stationary and mobile energy systems with highly efficient electrical power systems that are generated through advanced batteries and renewable energy and promote the integrated innovation of market applications through electrification and intelligentization, CATL maintains continuous innovation in four dimensions, namely material and electrochemistry system, structure system, extreme manufacturing and business model.

In H1 2022, the company's global sales revenue totalled 113 billion yuan (about 16.84 billion U.S. dollars), up 156% YoY, and its net profit reached 8.2 billion yuan (about 1.22 billion U.S. dollars), up 82% over the previous year. The sales revenue of EV battery systems and energy storage systems increased by 160% and 171% respectively YoY. Moreover, revenue in overseas market increased by 123% YoY. According to SNE Research, CATL's EV battery consumption volume ranked first in the world from 2017 to 2021 consecutively, and its market share in the global EV battery market reached 34.8 percent in H1 2022. CATL also enjoys wide recognition by global OEM partners. According to ICCSino, CATL ranks first in the market share of global

energy storage battery production in 2021.

CATL attaches great importance to R&D, and it has set up R&D centers in Ningde, Liyang, Shanghai, Xiamen and Munich. In the first half of 2022, CATL invested about 5.8 billion yuan (about 864.2 million U.S. dollars) in R&D, up 107% YoY. There are 12,132 CATL staff members engaged in R&D, with 2,233 of them holding master's degrees and 193 holding Ph.D. degrees. Its R&D system covers a wide range of fields including material research, product development, engineering design, testing and analysis, intelligent manufacturing, information systems, project management among others. The company boasts the National Engineering Research Center for Electrochemical Energy Storage Technology, the Key Laboratory of Lithium-ion Battery Enterprise of Fujian Province, as well as the Test and Validation Center certified by the China National Accreditation Service for Conformity Assessment. Moreover, CATL has set up the 21C Lab, which focuses on the frontier research of the fundamental matters in the field of energy storage and conversion, and established the Postdoctoral Research Workstation and the Fujian Academician Expert Workstation. CATL's issued and pending patents amount to 12,924 worldwide, and it has contributed to the drafting or amending of over 70 industry standards at home and abroad.

In 2021, CATL's Ningde facility was recognized by the World Economic Forum as a Lighthouse Factory, and its Yibin plant was certified as the world's first zero-carbon battery plant. CATL is now establishing a new energy industry ecosystem that integrates electrification and intelligence based on its technological leadership and supply chain integration capabilities. The company has launched innovative solutions such as intelligent BESS charging stations, electric vessels, electric smart unmanned mines and battery swapping heavy-duty trucks. EVOGO, its battery swap service brand featuring modular battery swapping, is launching services across the country. CATL aims to build a closed loop of full life battery service through new business models such as battery rental and purchasing, swapping and recycling based on the separation of vehicles and batteries. In the future, CATL will actively fulfil corporate social responsibilities and make outstanding contributions to the cause of global new energy development.

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Website: www.catl.com

Hyundai Motor Company / Booth: 126

Established in 1967, Hyundai Motor Company is present in over 200 countries with more than 120,000 employees dedicated to tackling real-world mobility challenges around the globe.

Based on the brand vision 'Progress for Humanity', Hyundai Motor is accelerating its transformation into a Smart Mobility Solution Provider. The company invests in advanced technologies such as robotics and Advanced Air Mobility (AAM) to bring about revolutionary mobility solutions, while pursuing open innovation to introduce future mobility services. In pursuit of sustainable future for the world, Hyundai will continue its efforts to introduce zero emission vehicles equipped with industry-leading hydrogen fuel cell and EV technologies.

Website:
https://www.hyundaimotorgroup.com/

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Brembo leads the world in the design and production of high-performance braking systems and components for top-flight manufacturers of cars, motorbikes and commercial vehicles.

Founded in 1961 in Italy, Brembo has a long-standing reputation for providing innovative solutions for OEMs and aftermarket. Brembo also competes in the most challenging motorsport championships in the world and has won over 600 titles.

Guided by its strategic vision – "Turning Energy into Inspiration" – Brembo's ambition is to help shape the future of mobility through cutting-edge, digital and sustainable solutions.

With about 15,000 people across 15 countries, 30 production and business sites, 8 R&D centers and with a turnover of € 3,629 million in 2022, Brembo is the trusted solution provider for everyone who demands the best driving experience.

Brembo is the owner of the Brembo, AP, AP Racing, Breco, Bybre, J.Juan, Marchesini and SBS Friction brands.

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Farewell Drinks Reception Sponsor / Booth: 86

NITREX is the only fully integrated global player in the surface treatment industry. With a presence in over 20 countries, our portfolio of innovative solutions and unrivalled expertise assists customers in achieving greater tolerances, meeting the highest standards, reaching sustainability goals and becoming more profitable along the way.

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Diamond Sponsor / Booth: 128

Bosch Mobility is the largest Bosch Group business sector. According to preliminary figures, it generated sales of 52.6 billion euros in 2022, and thus contributed almost 60 percent of total sales from operations. This makes the Bosch Group one of the leading automotive suppliers.

The Mobility Solutions business sector pursues a vision of mobility that is safe, sustainable, and exciting, and combines the group's expertise in the domains of personalization, automation, electrification, and connectivity. For its customers, the outcome is integrated mobility solutions.

The business sector's main areas of activity are injection technology and powertrain peripherals for internal-combustion engines, diverse solutions for powertrain electrification, vehicle safety systems, driver-assistance and automated functions, technology for user-friendly infotainment as well as vehicle-to-vehicle and vehicle-to-infrastructure communication, repair-shop concepts, and technology and services for the automotive aftermarket.

Bosch is synonymous with important automotive innovations, such as electronic engine management, the ESP anti-skid system, and common-rail diesel technology.

www.bosch-mobility.com/en/

AUTOMOTIVE INNOVATION

AN INTERNATIONAL ACADEMIC JOURNAL EXPLORING VEHICLE AND MOBILITY INNOVATIONS

Automotive Innovation is the leading peer-reviewed international journal and China SAE's flagship publication. The journal presents innovative findings and influential developments that meet the changing needs of the automotive industry. It provides a high-level platform for automotive scientists and engineers worldwide.

The journal emphasizes the research of principles, methodologies, and cutting-edge technologies in connection with the development of vehicles and mobility. The main topics cover emerging vehicle technologies including electrification, autonomous driving, and eco-driving.

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FEV has always pushed the limits.

FEV is a globally leading engineering provider in the automotive industry and internationally recognized leader of innovation across different sectors and industries. Professor Franz Pischinger laid the foundations by combining his background in academia and engineering with a great vision for continual progress. The company has supplied solutions and strategy consulting to the world's largest automotive OEMs and has supported customers through the entire transportation and mobility ecosystem.

As the world continues to evolve, so does FEV.

That's why FEV is unleashing its technological and strategic expertise into other areas. It applies its forward thinking to the energy sector. And its software and system know-how will enable the company to lead the way making intelligent solutions available to everyone. FEV brings together the brightest minds from different backgrounds and specialties to find new solutions for both current and future challenges.

But FEV won't stop there.

Looking ahead, FEV continues to push the limits of innovation. With its highly qualified 7200 employees at more than 40 locations globally, FEV imagines solutions that don't just meet today's needs but tomorrow's. Ultimately, FEV keeps evolving – to a better, cleaner future built on sustainable mobility, energy and software that drives everything. For the companies' partners, its people and the world.

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AVL List GmbH ("AVL") with its headquarters in Graz, is one of the world's leading mobility technology companies for development, simulation and testing in the automotive industry, and in other sectors. Drawing on its pioneering spirit, the company provides concepts, solutions and methodologies for a greener, safer and better world of mobility.

AVL constantly expands its portfolio of high-end methodologies and technologies in the areas of vehicle development and testing. With a holistic approach - from ideation phase to serial production - the company covers vehicle architectures and platform solutions including the impact of new propulsion systems and energy carriers.

To achieve the vision of climate-neutral mobility, AVL drives innovative and affordable solutions for all applications - from traditional to hybrid to battery and fuel cell electric technologies.

As a global technology provider, AVL's offerings range from simulation, virtualization and test automation for product development to ADAS/AD and vehicle software. The company combines state-of-the-art and highly scalable IT, software and technology solutions with its application know-how, thereby offering customers extensive tools in areas such as Big Data, Artificial Intelligence, Cybersecurity or Embedded Systems.

Furthermore, AVL is striving towards a safe and comfortable driving experience for everyone and brings a comprehensive understanding of assisted and automated driving functions in different vehicles and environments into play.

AVL's passion is innovation. Together with 11,200 employees at more than 90 locations and with 45 Tech and Engineering Centers worldwide, AVL is supporting customers in their mobility ambitions. In 2022, the company generated a turnover of 1.86 billion Euros, of which 11% are invested in R&D activities to ensure continuous innovation.

https://avl.com

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Elektrobit is an award-winning and visionary global vendor of embedded and connected software products and services for the automotive industry. A leader in automotive software with over 35 years serving the industry, Elektrobit's software powers over five billion devices in more than 600 million vehicles and offers flexible, innovative solutions for car infrastructure software, connectivity & security, automated driving and related tools, and user experience. Elektrobit is a wholly-owned, independently-operated subsidiary of Continental.

https://www.elektrobit.com/

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IRP Systems is an innovative electric powertrain solution provider, specializing in high-performance cost-effective electric powertrain systems for the automotive industry. Leveraging our proprietary technology in control algorithms and powertrain design, our systems reach an unprecedented level of efficiency and performance, in full compliance with automotive mass-production practices.

The company's R&D department is comprised of multidisciplinary teams in various engineering fields, that collaborate to develop and provide an end-to-end electric powertrain system, with strong emphasis on tight integration of SW and HW components, and high-level system optimization.

IRP collaborates closely with the automotive industry's leading OEMs to optimize their powertrain systems and to significantly improve their vehicles' performance while reducing the overall powertrain costs. We constantly look to innovate and develop the next generation of electric powertrain technology, focusing on new technologies, materials, and ways to reduce the environmental impact through the entire production life cycle of e-powertrains.

https://www.irpsystems.com/

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Shell is an international energy company with expertise in the exploration, production, refining and marketing of oil and natural gas, and the manufacturing and marketing of chemicals.

We use advanced technologies and take an innovative approach to help build a sustainable energy future. We invest in power, including from renewable sources such as wind and solar. We also invest in electric vehicle charging and low-carbon fuels for transport, such as advanced biofuels and hydrogen.

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When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality with Ansys simulation. For more than 50 years, Ansys software has enabled innovators across industries to push boundaries by using the predictive power of simulation.

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Crafting the Core

DENSO is a $44.6 billion global mobility supplier that develops advanced technology and components for nearly every vehicle make and model on the road today. With manufacturing at its core, DENSO invests in its 200 facilities to produce thermal, powertrain, mobility, electrification, & electronic systems, to create jobs that directly change how the world moves. The company's 168,000+ employees are paving the way to a mobility future that improves lives, eliminates traffic accidents, and preserves the environment.

A consistently high level of R&D investment has been central to creating DENSO's renowned technological expertise in numerous product categories. DENSO spent 10.0 percent of its global consolidated sales on research and development in the fiscal year ending March 31, 2021.

This drives technological innovation which, in turn, generates the next cycle of products.

DENSO's fundamental R&D structure is built on a number of organizations in Japan - the Advanced Research and Innovation Center, Corporate R&D Department, Production Engineering R&D Department, SOKEN, INC., DENSO IT Laboratory , and MIRISE TECHNOLOGIES. Each of DENSO's five key business groups also has independent R&D sections.

DENSO's slogan of Long-Term Policy 2030, 'Bringing hope for the future for our planet, society and all people' represents our ambition to contribute to the fields of "green" and "peace of mind" for the sake of customers.

In the field of "green (Manufacturing, Mobility Products, and Energy Use)", we have set our target of achieving a carbon neutrality by 2035. Additionally, in the field of "peace of mind", we will remain fully committed to be a leading company providing safety-related technologies, contributing to zero accidents.

https://www.denso.com/global

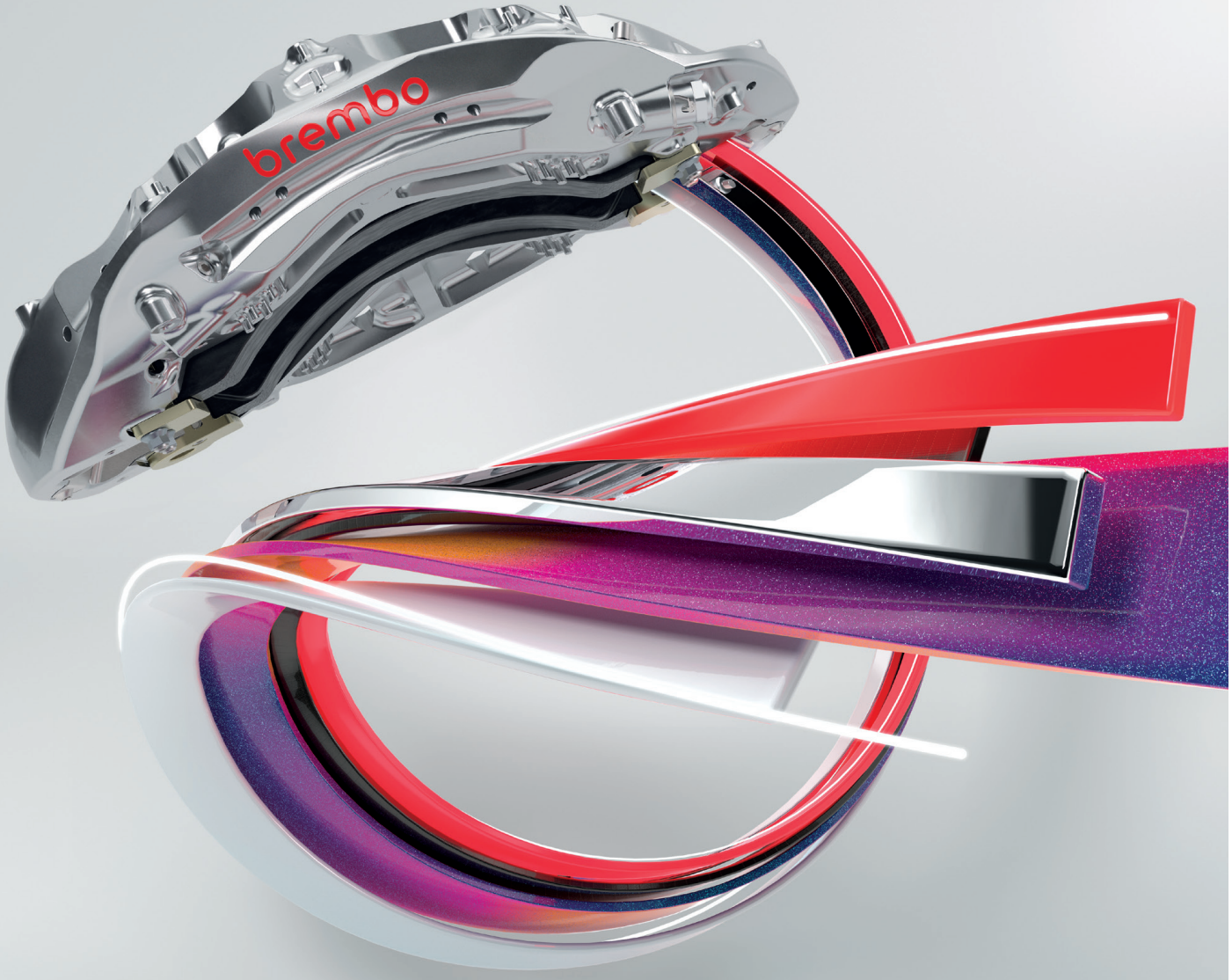
Bronze sponsor

Gestamp

Gestamp is a leading multinational company specializing in the design, development and manufacture of highly engineered metal components for the world's largest vehicle manufacturers. It's among the TOP 10 component suppliers based in Europe according to the latest Automotive News US ranking. With more than 25 years of experience in the sector, the Spanish company develops products with an innovative design to produce safer and lighter vehicles, offering lower energy consumption and lower environmental impact. Its products cover the areas of body in white, chassis and mechanisms. With a strong international presence, the company is present in 24 countries with 115 production plants (5 under construction), 13 R&D centers and a global workforce of close to 43,000 employees, expanding its market footprint every day. Gestamp's growth has been driven by its commitment to innovation in technologies and new products, a close relationship with its customers and a clear investment in attracting talent to continue facing the challenges that the components sector faces in the coming years.

https://gestamp.com

TURNING PASSION INTO PERFORMANCE



Motorsport is in our DNA. That's why we put all our passion into researching and developing the most advanced braking systems so we can help those who rely on us be successful too. The same passion and dedication run through everything we do, because innovation is always a race. There is no finish line.

TURNING ENERGY
INTO INSPIRATION

brembo

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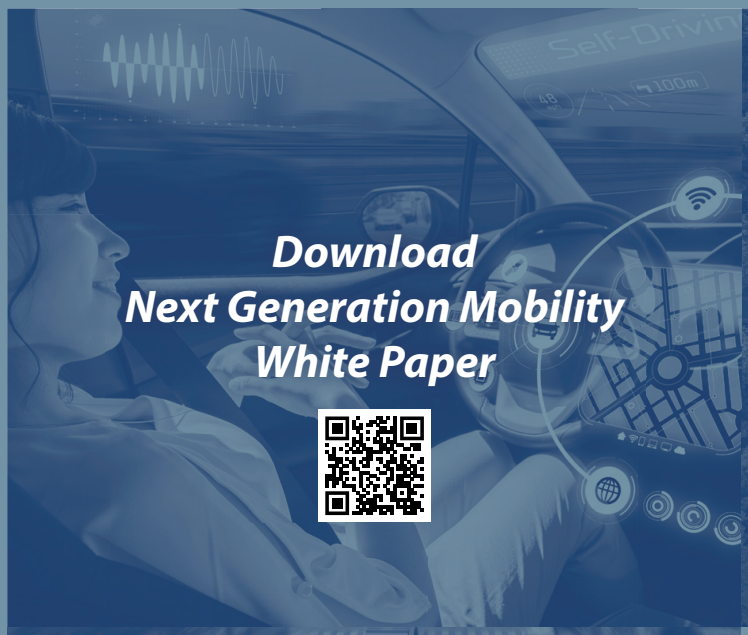
Promoting excellence in mobility engineering

FISITA is the international membership organisation and voice of the automotive and mobility systems engineering community.



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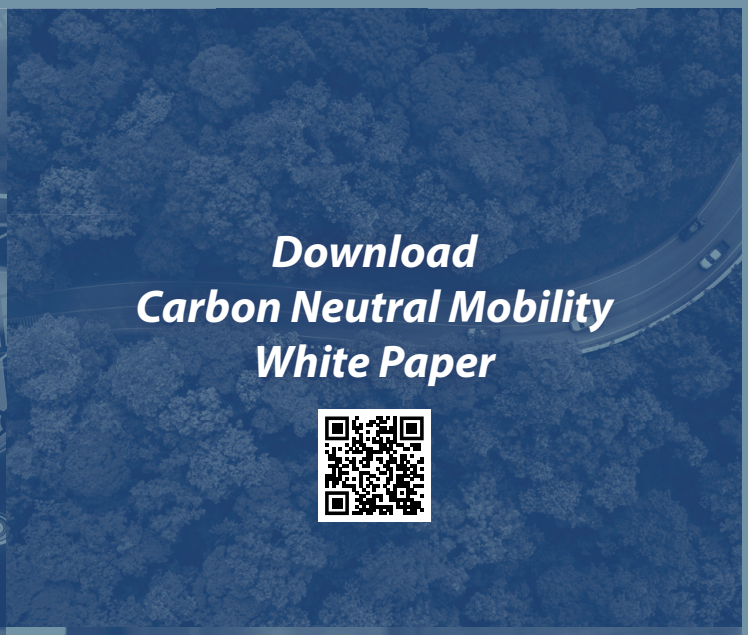

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FISITA World Congress Student Opportunities Programme

The FISITA World Congress 2023 Student Opportunities Programme (SOP) is offering international students the chance to attend and take part in the world's largest conference and exhibition dedicated to braking technology.

This year's Congress SOP students have been asked to prepare a poster, which will be available to view in the dedicated Student Poster area within the exhibition hall. The students will be available during the lunch breaks to answer any of your questions about their poster. We will also be announcing the winner of the best student poster during the closing ceremony.

The Congress Student posters for 2023 are:

Design of an HMI to facilitate safe merging of vehicles from side streets with poor visibility onto highways by Hikaru Kawada, Shibaura Institute of Technology

Developing a framework for integrating project management for process excellence in wind energy generation by Mevin Jacob, University of Strathclyde

Design of an electric motorcycle powertrain and it's connection to charging stations by Hector Aniello Hernandez Sansone, Ramon Llull University

Automated control strategy for the transient response of a turbocharged spark ignition engine using deep reinforcement learning by Ludovica Luciano, RWTH Aachen University

Investigation of engine performance and emissions of a CNG retrofitted spark ignition direct injection engine by Abdulazeez Oni, Obafemi Awolowo University

Vehicle dynamics toolbox for objective ride analysis by Francesco De Astis, Politecnico of Bari – UPC

Ride analysis tools for high-performance passenger cars objective and subjective evaluation techniques and correlation process: a review by Giuseppe Guastadisegni, University of Surrey

LogiSmile – designing and piloting a transportation management system enabling autonomous last mile logistics operations by Clément Lemardelé, Universitat Politècnica de Catalunya

Characterisation of the driving pattern of users with EVs by Marc Sánchez Pérez, Universitat Politècnica de Catalunya

Bibliometric analysis of the additive manufacturing in the automotive industry by Víctor Calatrava Segura, Universitat Politècnica de Catalunya

Micromechanical characterization of the cut edge damage of complex phase steels for automotive applications by Laia Ortiz Membrado, Universitat Politècnica de Catalunya

A multi-criteria evaluation for analysing urban access restriction schemes: a case study in Barcelona by Aina Ricou Boza, Universitat Politècnica de Catalunya

Transformation of transportation sector: implications for present and future society by Miguel Campino, Instituto Superior Técnico

TBD by Hemraj Chaudhary, Friedrich Alexander Universität

Identification of specific system parameter space. Initial stage of investigating sequential hybrid off-road vehicle by Andrius Macutkevičius, Vilnius Gediminas Technical University

Comparison of driving characteristics of electric vehicle according to low temperature environment by Gwangryeol Lee, Konkuk University

In addition, students will:

- Meet with top experts from industry and academia
- Network with peers and professionals
- Attend a graduate surgery

49 years in the making.

Back in the 70s, an ambitious designer sketched out the most mesmerizing car you've never seen. It was sleek. It was powerful. It was a work of art on wheels — an icon that inspired icons, such as a time-traveling car from a famous sci-fi movie and even our N Vision 74. This machine paved the way for progress, influencing our own vision of the future. But not a single ad was ever made for this car. It didn't even see the production light.

So, we are honoring this jaw-dropping machine — with the ad that should have been. Finally here, in all its glory. Anyway, if you've read up to this point, you're officially part of a select crowd that reads long copy ads in 2023. The point: the car that got away 49 years ago has arrived today. The Pony Coupe concept. Restored, revitalized, and ready to blow everyone away. Again.

HYUNDAI

This ad shows the Hyundai Pony Coupe concept. The image is 3D rendered.
The vehicle is not available for purchase.

Programme

Please note that the programme detailed is correct at the time of print (30th August).

Please note in addition to the papers listed in this programme, the following technical papers will be available to view on-demand post event.

- FWC2023-CFT-003: Sound character of electric (EV) and Internal Combustion Engine (ICE) buses by Pradeep Jawale, ARAI
- FWC2023-CYB-006 - A simple winding-based DC-bus capacitor discharge strategy for PMSM drive in electric vehicles by Zekun Xia, NIO
- FWC2023-DGT-012 - Range polygon for battery electric vehicle by Manish Kondhare, Tata Motors
- FWC2023-LVP-001 - Level next approach towards competitive benchmarking for BIW in automotive industry by Jagdish Jadhav, Tata Motors
- FWC2023-PCM-012: Optimum matching design of the hybrid system for hydrogen fuel cell forklifts by Yu Li, Hong Kong Productivity Council
- FWC2023-PPE-003 - Smart alternator control on truck for fuel efficiency improvement by Chaitanya Tiwari, Tata Motors
- FWC2023-PPE-023 - Integrated boost-charger for 400-800v charging compatibility, Chang Liu, NIO
- FWC2023-SCA-020 - ISO 26262 Functional safety – an approach for compliance readiness by Isha Pathak, Tata Motors
- FWC2023-SDV-008: Plug and play concept for safe and secure design by Sinu Isac, APTIV Technical Center India
- FWC2023-SEL-005: Micro mobility battery carbon footprint calculation with cradle to gate LCA approach by Hatice Kübra Guney, Ford Otosan
- FWC2023-SEL-011: Techno-economic analysis of Diesel-hybrid electric trucks for urban application in Europe by Hugo Maugere, IFP School

Tuesday 12th September

09:00 – 10:30	Technical session
Digitalisation **Chair: TBD** ***Room: 118***	FWC2023-DGT-018: Machine learning based reduced order models for real time application *Mr Roberto Bossio, Toyota, Belgium* FWC2023-DGT-005: Result and implications of virtual prototype development and process application *Mr Yongchul Cho, Hyundai Motor Company, Republic of Korea* FWC2023-DGT-009: Development of an integrated Closed loop Virtual Test environment (i-CVT) for electric vehicles *Mrs Bhakti Kalghatgi, Tata Motors, India*
Integrated safety, connected & automated driving **Chair: Ondrej Vaculin, Technische Hochschule Ingolstadt** ***Room: 130***	FWC2023-SCA-054: Criticality estimation for connected, cooperative collision avoidance *Dr Andreas Kuhn, ANDATA, Austria* FWC2023-SCA-012: Head injury risk assessment considering real statistical distribution of sheet metal thickness and material properties *Prof Dr Andres-Amador Garcia-Granada, IQS-URL, Spain* FWC2023-SCA-004: Design of a facial and ocular recognition system for pedestrian identification to optimize an AEB system *Ing. Ángel Losada Arias, INSIA-Universidad Politécnica de Madrid, Spain* FWC2023-SCA-046: Characterisation of drowsy driver behaviour and drowsiness baseline data set in a dynamic driving simulator *Ms Cristina Periago, Applus+ IDIADA, Spain*

Integrated safety, connected & automated driving **Chair: Ouafae El Ganaoui-Mourlan, IFP School** ***Room: 131***	FWC2023-SCA-033: Radome functional & aesthetical contributions to the ADAS vehicle radar sensor *Dr August Mayer Pujadas, ZANINI AUTO GROUP S.A., Spain* FWC2023-SCA-013: Validation method for autonomous vehicles *Prof Byoung Joon Moon, Jeonnam State University, Republic of Korea* FWC2023-SCA-048: THOR-reclined sled testing in non-conventional seating positions for safe-up *Mr Carles Vidal Aguado, Applus+ IDIADA, Spain* FWC2023-SCA-009: Real-time collaborative localization of multiple robots based on remote interaction *Mr Chang Liu, Guizhou University, China*
Intelligent transport systems **Chair: Hadj Hamma Tadjine, IAV GmbH** ***Room: 119***	FWC2023-ITS-004: Contour extraction from lidar point clouds for autonomous vehicles *Ms Mirim Noh, Hyundai Motor Company, Republic of Korea* FWC2023-ITS-002: Cooperative, connected and automated vehicles into a roundabout *Prof Dr-Ing Gianpiero Mastinu, Politecnico di Milano, Italy* FWC2023-ITS-005: C-ITS enabled dynamic traffic management as a service *Mrs Areti Kotsi, deeptraffic, Greece* FWC2023-ITS-003: Organizing connected and autonomous vehicles using a distributed decision scheme *Prof Dr-Ing Felipe Jimenez Alonso, Technical University of Madrid, Spain*
Lightweight & advanced vehicle platforms **Chair: Andreas Garcia, IQS** ***Room: 120***	FWC2023-LVP-010: A state-of-the-art structural design for electric microcars: improving crashworthiness and repairability via novel and replaceable crash absorbers *Mr Milad Abbasi, Bronze Industrial Group, Iran* FWC2023-LVP-018: Vehicle features as cornerstone of platform development *DI Johannes Linderl, AVL List GmbH, Austria* FWC2023-LVP-011: Improved wear resistance of PTFE/GE reinforced PPS polymer gear for actuator *Mr Seonku Kang, KATECH (Korea Automotive Technology Institute), Republic of Korea*
Propulsion, power & energy efficiency **Chair: Roel Verhoog, Valeo** ***Room: 121***	FWC2023-PPE-005: Implementation of a full-scale digital wind-tunnel and its validation against wind-tunnel tests and real-driving aerodynamic measurements *Mr Paul Martson, IDIADA Automotive Technology, Spain* FWC2023-PPE-034: CORAM ECH2 project: optimized controls for fuel-cell electrical vehicles *Mr Chouaib Afri, Vitesco Technologies, France* FWC2023-PPE-011: Advanced control for energy management system of fuel cell electric vehicles *Dr Giulio Binetti, PUNCH Hydrocells, Italy* FWC2023-PPE-017: Development of durability CAE method of EV differential system *Mr Sangwoo Cha, Hyundai Motor Company, Republic of Korea*
Propulsion, power & energy efficiency **Chair: Xavier Llamas, Applus+ IDIADA** ***Room: 122***	FWC2023-PPE-032: Predictive control optimization of a holistic thermal management system for a battery electric vehicle using dynamic programming *Mr Charles Gaylard, University of Bath, United Kingdom* FWC2023-PPE-050: Machine learning drivetrain model for battery electric trucks (BET) *Mr Martin Gobernatz, TU Berlin, Germany*
Regulatory environment **Chair: T. Russell Shields** ***Room: 133***	FWC2023-RGE-007: The path to global regulatory harmonization and global product *Mr David Ramon Rubinat, Applus+ IDIADA, Spain* FWC2023-RGE-004: New tyre abrasion test method *Mr Ricard Anadon, Applus+ IDIADA, Spain* FWC2023-RGE-006: Real-world evaluation of light-duty vehicle emission technologies: a comparison with Euro standards *Dr Roberto Varella, AVL List GmbH, Spain*
Road & energy infrastructure **Chair: Benedikt Heuser, FEV** ***Room: 132***	FWC2023-REI-003: Are 800v architectures game changers for high power charging? *Mr David Ramon Rubinat, Applus+ IDIADA, Spain* FWC2023-REI-004: Optimal swapping battery strategies for urban charging stations *Dr Pau Bares, Universitat Politècnica de València, Spain* FWC2023-REI-005: Cities as frontrunners towards zero-emission urban mobility *Mr Niklas Schmalholz, POLIS Network, Belgium* FWC2023-REI-007: Synthetic fuels as part of a Co2 neutral energy infrastructure *Mr Martin Rothbart, AVL List GmbH, Austria*

Sustainability, circular economy & LCA **Chair: Mario Hirz, TU Graz** ***Room: 134***	FWC2023-SEL-004: Circular design and battery recycling: the multi-billion Euro opportunity *Mr Markus Volkening, FEV Consulting, Germany* FWC2023-SEL-003: Extra Co2 emitted when in-service life not optimized for minimum Co2 – comparison of ICEs, BEVs and H2 (FCEV and ICE) *Prof Harry Watson, University of Melbourne, Australia*
10:30 – 10:45	Break
10:45 – 11:25 ***Room: 111+112***	**Opening ceremony** **Welcome** • Nadine Leclair, President, FISITA • José Manuel Barrios, President, STA • Joan Amigo i Casas, CEO, Applus+ • Chang Hwan Kim, Hyundai Motor Company • Albert Castellanos, Secretary for Enterprise and Competitiveness of the Department of Business and Labour, Government of Catalonia
11:25 – 11:55 ***Room: 111+112***	Hyundai Motor Company keynote **Electrification in mobility: ultimate engineering solutions for carbon neutrality** **Chang Hwan Kim, Senior Vice President**  Dr. Chang Hwan Kim is a Senior Vice President of Hyundai Motor Company, the head of battery development and hydrogen fuel cell development. He received his Ph. D in Chemical Engineering from the University of Michigan in 2005. He started his career in the automotive industry in 2008 and worked for General Motors Global R&D until 2014 in the area of automotive catalyst development. In 2014, he moved from to Korea to join the Hyundai Motor Company as a Fellow and Director of the Advanced Catalysts and Emission-control Research Lab. After 4 years working in Powertrain division, he became the head of Energy and Environmental Chemistry Systems Research as a Vice President and started developing advanced battery and fuel cell technologies. From 2022, he has been in charge of the battery system development for battery electric (BEV) and hybrid (HEV) vehicles for the Hyundai, Kia, and Genesis brands. Recently, he expanded his responsibility to the hydrogen fuel cell system development for Hyundai's fuel cell electric vehicles (FCEV) from 2023.
11:55 – 12:25 ***Room: 111+112***	CATL keynote **Augmented intelligence-enabled lithium-ion battery extreme manufacturing** **Wenjing Jin, Data Scientist**  Dr. Wenjing Jin, is a data scientist of Intelligent Manufacturing from CATL. She received her PhD of Mechanical Engineering from the Intelligent Maintenance Systems Center (now is Industrial AI Center) at University of Cincinnati. She was selected as 30 under 30 honorees that were leading the manufacturing industry into the future in 2015 by ASME, and Forbes Women-in-Tech in 2020. Dr. Jin's expertise is in the field of industrial AI for smart manufacturing. Her research interests include industrial big data, smart sensing, PHM, LLM, etc. Dr. Jin had conducted many success industrial AI applications with GE, Alstom, Woodward, Parc, HIWIN, etc., and was co-founder of CyberInsight. She is now leading the industrial big data applications in CATL for lithium-ion battery extreme manufacturing.

Artificial intelligence panel discussion

Moderator: Margriet van Schijndel-de Nooij, Program Manager Responsible Mobility, EAISI (Eindhoven AI Systems Institute), Eindhoven University of Technology

Speakers:
- Sofie Haesaert, Assistant Professor, TU Eindhoven
- Pierre Millette, Chief Technical Officer, ACEA
- Gerhard Schagerl, Product Line Manager – Data Intelligence, AVL List GmbH
- Andreas Weinlich, Head of Laboratory for Artificial Intelligence, Continental

Margriet van Schijndel-de Nooij
Leading the Program Responsible Mobility. Within this Program, Eindhoven University of Technology combines expertise in e.g. automotive technology, logistics, intelligent transport systems, AI and embedded systems, user behaviour, systems' optimisation, urban planning, MaaS, digital twins, for solving societal challenges on sustainable, safe and efficient transport.
Within Responsible Mobility, we focus on the following themes:
- Safe, clean and energy efficient mobility; solutions on vehicle level as well as on system level
- Efficient logistics, incorporating new vehicle concepts
- Human behaviour, acceptance, uptake of new solutions
- Accelerating the energy and mobility transition through integral, multidisciplinary research

Margriet holds various Board positions including:
- Advisory Board Smart Cities and Communities at Halmstad University, Sweden
- CCAM Partnership, leading Cluster 5 on Key enabling Technologies
- A member of the Delegation to the Partnership Board, EGVIA2Zero Partnership

Between 2013-2020, Margriet was EARPA Secretary General, during which a Strategic Partnership agreement with FISITA was established. Margriet was educated as a mechanical engineer at the Eindhoven University of Technology, M.Sc.

12:25 – 13:25

Room: 111+112

Sofie Haesaert
Sofie Haesaert is an Assistant Professor in the Control Systems group of the Department of Electrical Engineering at Eindhoven University of Technology. Her research interests lie in the development of verification and control synthesis methods for cyber-physical systems. She does research on how "Intelligent systems learn to function safely via sensor data" (VENI, Dutch Talent program) and how artificial intelligence and situational awareness can be developed and used in mixed autonomy (LINK).

She leads the formal methods for control of cyber-physical systems research group and the lab on autonomous motion control. Sofie Haesaert holds a bachelor's degree in Mechanical Engineering and a master's degree in Systems and Control from Delft University of Technology, both cum laude. Haesaert obtained her PhD from Eindhoven University of Technology (TU/e) in 2017 and then went to Caltech (USA) to do a postdoc. Since 2018 Haesaert is Assistant Professor in the Control Systems group

Pierre Millette
Pierre Millette is Chief Technical Officer, the European Automobile Manufacturers' Association.

Trained in mechanical engineering and in business administration, his two decades of experience in the automotive industry have been spent working in North America, in Asia, and in Europe.

His areas of expertise include passenger car safety, vehicle dynamics, automated driving, and regulatory policy.

Gerhard Schagerl
Gerhard Schagerl (male): received his MSc in 2003 in computer science at the Johannes Kepler University Linz, Austria. Gerhard is employed at AVL List GmbH since 2000. From 2018 Gerhard joined AVL's Big Data efforts in the role as Product Manager for Big Data and AI services. In this position he defines strategy and product portfolios, but also develops new data-driven business models. In 2020 AVL's service portfolio was extended to the Product Line for Data Intelligence which is now in Gerhard's responsibility.

12:25 – 13:25 ***Room: 111+112***	 **Andreas Weinlich** Dr. Andreas Weinlich is currently leading Continental's Laboratory for Artificial Intelligence in Berlin, Germany. After his studies of Information and Multimedia Technology in Erlangen, in 2009 he started his Ph.D. at the Institute of Multimedia Communication and Signal Processing. In 2015, he took over the role of a software project manager in Continental (Villingen-Schwenningen), finally for series development of a smart front-camera system for highly automated driving. Last year, he moved to Berlin in order to build up a competence center for artificial intelligence. Until now, the lab consists of 24 employees, most of them doing their Ph.D. in topics related to research and pre-development of future Continental products and software tools.
13:25 – 14:25	Lunch
14:25 – 14:50 ***Room: 111+112***	ETAS GmbH keynote **Software defined mobility enablements** **Mariella Minutolo, Board of Management and Executive Vice President Sales**  Mariella Minutolo has been a member of the ETAS Board of Management as Executive Vice President Sales since October 2022. She began her career at Daimler and then joined the publishers house Hubert Burda Media as a trainee and later as lead for digitization projects in the special interest area, building up communities and cross-media solutions for B2B customers. In 2008 she joined Robert Bosch GmbH and held various positions in the Diesel Systems division in Sales, Strategy, and Office of the Executive President. From 2016 until 2022, Mariella has actively shaped transformation topics in mobility sales to new customer groups like EV OEM Startups, Mobility Service, and Logistics Service Providers in different roles. As Executive Vice President Sales at ETAS GmbH, Mariella is responsible for leading all Sales, Marketing, and Communication activities for ETAS world-wide. Born in Stuttgart, Germany, in 1979, Mariella is married and has two children. In 2006, she completed her studies in Media Engineering and Management at HdM Stuttgart, Germany.
14:50 – 15:15 ***Room: 111+112***	Shell keynote **Fuels and energy carriers for decarbonization of transport** **Karsten Wilbrand, Senior Principal Scientist**  Dr. Karsten Wilbrand holds a master's degree in mechanical engineering from Technical University of Aachen and did his PhD in energy systems at Hamburg University of Technology. From 1996 to 2003 Karsten worked with international engineering and consulting firm, as director of the department of energy systems and member of the management board. He joined Shell in 2003 and assumed various technical and managerial roles. As Regional Manager he was responsible for Shell's Fuels R&D in Germany. As Innovation Manager he looked at alternative and strategic fuels R&D programs from 2013-2017, before he established the e-mobility application team in Shell in 2018. Since 2020 he looks after alternative fuels and future mobility as Shell's Senior Principal Scientist.

15:15 – 15:40

Room: 111+112

KBA keynote

Current status and future regulations for connected and automated vehicles
Richard Damm, President, Kraftfahrt-Bundesamt

Graduate engineer Richard Damm has been President of the Kraftfahrt-Bundesamt since 1 February 2020. He is also chairman of the international expert panel for auto-mated and networked driving of the UN Economic Commission for Europe in Geneva.

Before being appointed President of the Kraftfahrt-Bundesamt, Richard Damm worked at the Federal Ministry for Digital and Transport in Berlin. There he was responsible, among other things, for the introduction of Market Surveillance of motor vehicles in Germany. Under his leadership, the use of miniature electric vehicles in Germany was also made possible.

Richard Damm is an internationally recognised expert in the field of the worldwide har-monisation of regulations for the approval and monitoring of motor vehicles. Under his leadership, the globally applicable regulations on vehicle regulations were further devel-oped to reduce trade barriers. Richard Damm was also a member of the Board of Direc-tors of the European New Car Assessment Programme, a consumer information pro-gramme on the safety level (Euro NCAP) and environmental behaviour (Green NCAP) of new vehicles. His area of expertise also included automation, networking and digitisa-tion issues at EU and UNECE level.

Before joining the Federal Ministry for Digital and Transport, Richard Damm spent five years working on national and European research projects on passive safety and bio-mechanics of vehicles at the Federal Highway Research Institute.

After a technical education Richard Damm studied mechanical engineering - automotive engineering and product development at the Technical University of Munich.

15:40 – 16:40

Room: 111+112

Software defined vehicle panel discussion

Moderator: Christophe Aufrère, Senior Vice President and Group Chief Technical Officer, Forvia

Speakers:
- Cyril Laury, Senior Group Technology Manager, Forvia
- Katrin Matthes, CTO Renault Software & Systems, Director Upstream & Technology, Renault Group
- Martin Schleicher, Head of Software Strategy, Continental
- Detlef Zerfowski, Vice President, Engineering Excellence, ETAS GmbH

Christophe Aufrère

Christophe Aufrère is Group Chief Technical Officer and Senior Vice President since 2019. He was previously Group Technology Strategy Vice President since 2011. He is in charge of anticipating the evolutions of the automotive/mobility industry, assessing and defining the key technologies which Forvia will address in the future and follow their implementation at the corporate level. He is also responsible for managing and developing the expertise network throughout the entire Faurecia R&D organization and outside. In addition, he is in charge of the Intellectual Property and corporate academic partnerships.

Prior to his Group positions, he spent 20 years within Faurecia Automotive Seating successively occupying different management positions in the R&D department until Vice President R&D Structures and Mechanisms and becoming Chief Technical Officer for Complete Seats and Metal.

Prior to Faurecia, Christophe spent three years at Rockwell Automotive Body Systems in Advanced Engineering working on electric motors and door systems.

He is a member of the CTA (French Technical Automotive Committee), Board member of the Hydrogen Council (worldwide Hydrogen Consortium), member of the CAIT (Consortium for Automotive Industry and Technology in China), Leader of the FORCE consortium which develops a low cost carbon fiber from bio materials, board member of the SIA (French Society of Automotive Engineers) and VP of the Technical Committee of the FISITA (International Organization for Automotive Engineers).

Christophe Aufrère is a graduate of the Ecole Supérieure des Techniques Aéronautiques et de Construction Automobile (ESTACA), one of France's leading engineering schools.

15:40 – 16:40 ***Room: 111+112***	 **Katrin Matthes** Katrin Matthes is Chief Technical Officer of Renault Software & System organization and Director of Upstream & Technology. In these roles she is responsible of SDV (SW Defined Vehicle) technology roadmaps and innovation. She also represents Renault in external forums. Prior to joining Renault, Katrin hold a Platform SW Lead Architect position at Intel for Android based smartphone, tablet and automotive infotainment platforms covering overall SW architecture and integration of different technology domains (video, graphics, camera, display, audio, sensors, security, power management, etc.). Before Intel, Katrin worked 17 years at Texas Instruments where she served in different roles (SW development, management, architecture, …).  **Martin Schleicher** Martin Schleicher is Head of Software Strategy at Continental, aligning activities related to the Software-Defined Vehicle. Martin has more than 25 years of experience in automotive software business. He is contributing to industry consortia and initiatives such as Eclipse SDV, SOAFEE, and AUTOSAR. Martin is regularly speaking at conferences and a member of program advisory boards of automotive electronics and software conferences.  **Detlef Zerfowski** Detlef Zerfowski has a Dr.-Ing. in Computer Science (University of Karlsruhe, Germany) in the domain of medical signal processing. Afterwards he changed to the automotive sector. Since 1998 he is with the Robert Bosch Group and had been in different positions in the automotive section of Bosch. During his 25 years in the area of automotive SW development and security he worked for more than six years in the Bosch SW development hub at India. During that time, he had been the General Manager of the subsidiary ETAS India Prv. Ltd. After his return to Germany, he was responsible for strategic software topics in a Bosch corporate department. 2018 Mr. Zerfowski changed to the subsidiary ETAS GmbH and is responsible for Engineering Excellence driving the transformation in the context of the SW defined vehicle.
16:40 – 17:00	Break
17:00 – 18:30	Technical session
Advanced & sustainable materials **Chair: Egoitz Luis Monasterio, Cidetec** ***Room: 118***	FWC2023-ASM-003: Continuous fiber thermoplastic composites with high recycled content and low carbon footprint *Dr-Ing Thierry, Faurecia Lightweight Solutions, France* FWC2023-ASM-006: Hygroscopic behaviour of polypropylene nanocomposites with graphene-based nanofiller *Dr Pyoung-Chan Lee, Korea Automotive Technology Institute, Republic of Korea* FWC2023-ASM-001: A development of low-friction coating for weather strip & study to reducing slip noise *Mr Hodong Kim, Hyundai Motor Company, Republic of Korea*
Comfort technologies **Chair: Samuel Badau, Forvia** ***Room: 134***	FWC2023-CFT-011: Offering a safe position for relaxing in a car *Mr Samuel Baudu, Forvia, France* FWC2023-CFT-013: Back pain prevention while sitting, thanks to seating monitoring *Mr Nour Besbes, Forvia, France* FWC2023-CFT-001: The establishment of development guideline for cockpit mood lamp brightness & uniformity *Mr. Yonggon Moon, Hyundai Mobis, Republic of Korea* FWC2023-CFT-014: Implementing visual and tactile perception of wooden surface decor parts *Mr Sung Sik Choi, Hyundai Motor Company, Republic of Korea*

Integrated safety, connected & automated driving **Chair: Ondrej Vaculin, Technische Hochschule Ingolstadt** ***Room: 131***	FWC2023-SCA-047: In-vehicle life presence detection system based on millimetre wave radar technology *Mr Chuliang Shan, Hong Kong Productivity Council China, Hong Kong* FWC2023-CYB-007: Emergency braking test *Mr Cristian Klement, Transylvania University, Romania* FWC2023-SCA-045: Driver engagement *Ms Cristina Periago, Applus+ IDIADA, Spain* FWC2023-CYB-011: Complete design development of control strategy and rapid prototyping platform for Acoustic Vehicle Alerting System (AVAS) *Mr. Ravindra Shah, The Automotive Research Association of India, India*
Integrated safety, connected & automated driving **Chair: Alain Gonzalez, FEV** ***Room: 132***	FWC2023-CYB-004: Functional safety and cybersecurity analysis of fuel cell system for GCK race car *Mr Alain Gonzalez, FEV Iberia, Spain* FWC2023-CYB-002: Time series regression network for crash test data and its deep research for chest deflection advanced forecasting *Mr Unchin Park, Hyundai Motor Company, Republic of Korea* FWC2023-SCA-017: Deriving system requirements for automated lane changes from GIDAS and highD data *Mr Harald Feifel, Continental Automomous Mobility, Germany*
Integrated safety, connected & automated driving **Chair: Andrés Aparicio, Applus+ IDIADA** ***Room: 133***	FWC2023-SCA-003: A baseline definition and result weighting method for prospective effectiveness assessment of ADAS for VRU protection *Dr Harald Kolk, Virtual Vehicle Research GmbH, Austria* FWC2023-SCA-028: Road pothole detection based on rack force estimation of electric power steering system *Prof Gi Woo Kim, Inha University, Republic of Korea* FWC2023-SCA-007: Design of an HMI to facilitate safe merging of vehicles from side streets with poor visibility onto highways – promoting safe and secure merging using road-to-vehicle and vehicle-to-vehicle communications *Mr Hikaru Kawada, Shibaura Institute of Technology, Japan* FWC2023-CYB-013: Functional safety concept design of vehicle brake-by-wire system *Prof Dr Hongyu Zheng, Jilin University, China*
New manufacturing technology & methodology **Chair: Friedrich Wolf-Monheim, Ford** ***Room: 120***	FWC2023-MTM-006: Surrogate modelling of CFD simulation for heat damage evaluation using supervised and unsupervised learning *Ms Haruna Kawai, Toyota, Japan* FWC2023-MTM-009: Automatic final control inspection system for automotive displays *Dipl Ing João Queirós, Controlar Innovating Industry, Portugal* FWC2023-MTM-004: Automatic inspection vision system for defect detection on piston rings *Dipl Ing Joao Queiros, Controlar Innovating Industry, Portugaln* FWC2023-MTM-005: A study on leakage current management technology for prevention of human electric shock and equipment protection in production facilities *Mr Juheon Hwang, Hyundai Motor Company, Republic of Korea*

Personal, commercial & multimodal mobility **Chair: T. Russell Shields** ***Room: 121***	FWC2023-PCM-013: Material compatibility assessment and enhanced safety standards for liquid hydrogen storage and transportation *Dr Myung-Sung Kim, Korea Institute of Machinery and Materials, Republic of Korea* FWC2023-PCM-010: Exploring body design similarities and differences: a comparative analysis of REFLECTIVE L7 and URBANIZED N1 categories *Ms Emilia Romero, Applus+ IDIADA, Spain* FWC2023-PCM-003: Fuel cell Hilux proto-type development, contributing to Toyota's carbon neutral strategy *Mr Timothy Dherde, Toyota Motor Europe, Belgium* FWC2023-PCM-014: Best practices for engineering electric mobility projects in Europe: a case study of successful charging station implementation *Ing Francisco Manuel Vallecillos Olivera, Evectra Mobility Services SERVICES SL, Spain*
Propulsion, power & energy efficiency **Chair: Roel Verhoog, Valeo** ***Room: 122***	FWC2023-PPE-029: AI ML tool for enhancing RDE trip validity *Mr Sathya Narayanan Govindarajan, Tata Motors, India* FWC2023-PPE-033: Virtual development of a thermal management system of a high-performance battery for electric vehicles *Mr Joaquim Guitart Corominas, Applus+ IDIADA, Spain* FWC2023-PPE-022: Virtual turbo speed control of SI engine using model predictive control *Mr Minkyu Han, Hyundai Motor Company, Republic of Korea* FWC2023-PPE-048: Inverter design optimization method focusing on electric powertrain package integration *Dr Martin Hofstetter, TU Graz, Austria*
Propulsion, power & energy efficiency **Chair: Klaus Kersting, Applus+ IDIADA** ***Room: 130***	FWC2023-PPE-045: A novel 2-stage motor-driven topology for EV using dual-inverter to achieve high power and high efficiency simultaneously *Mr Kangho Jeong, Hyundai Motor Company, Republic of Korea* FWC2023-PPE-010: Overcharging of high-voltage batteries due to low cell balance current and accelerated aging of battery cells *Mr Sang Sun Yun, Chungbuk National University, Republic of Korea* FWC2023-PPE-016: Energy efficient regenerative braking torque distribution for autonomous vehicle with 4 in-wheel motors *Mr Gwichul Kim, Hyundai Motor Company, Republic of Korea* FWC2023-PPE-021: A study on methodology of concept design based on architecture and effect of application on heavy duty xEV *Mr Kwang Chan Ko, Hyundai Motor Company, Republic of Korea*
User experience, aftermarket & lifestyle **Chair: TBD** ***Room: 119***	FWC2023-ELA-007: Demonstrating the importance of user experience in the adoption of innovative micro-mobility solutions: the RideSafeUM initiative *Ing Elena Cristóbal, CARNET Barcelona, Spain* FWC2023-ELA-001: Evaluation of co-pilot display engagement: driver distraction potential and experience *Mr Jiateng Li, Tongji University, China* FWC2023-ELA-006: Transforming road safety in Africa *Mr Victor Garcia, IDIADA Automotive Technology, Spain*
18:30	Close

Wednesday 13th September

08:00 – 09:30	Technical session
Automotive disruption **Chair: Adria Ferrer, Applus+ IDIADA** ***Room: 118***	FWC2023-AVD-003: MAXIMA: modular axial flux motor for automotive *Mrs Stéphane Clenet, ENSAM-Arts et Métiers-Institute of Technology, France* FWC2023-AVD-004: Proposal of a reference-based development of corporate strategies based on the model of SGE – System Generation Engineering *Mr Florian Stammnitz, IPEK - Institute of Product Engineering (KIT), Germany* FWC2023-AVD-005: Exploring immersion cooling as a viable thermal management solution for electric vehicles: an investigative study *Mr Rodrigo Amorim Dias, Motul, France* FWC2023-AVD-007: Powertrain electrification: Renault road towards carbon neutral target *Mr Philippe Shulz, Renault, France*
Digitalisation **Chair: TBD** ***Room: 120***	FWC2023-DGT-019: Battery SOH estimation and forecasting using transfer learning techniques based on cell tests *Dipl. Ing Gerhard Schagerl, AVL List GmbH, Austria* FWC2023-DGT-010: ECU virtualization *Mrs Bhakti Kalghatgi, Tata Motors, India* FWC2023-DGT-016: A tire performance evaluation methodology based on the combined use of vehicle data and of thermodynamic and wear physical models *Dr Eng Flavio Farroni, University of Naples Federico II, Italy* FWC2023-DGT-013: Electric vehicle battery SoH and RUL prediction using digital twin hybrid ML model considering effect of driving behaviour *Mr Saharsh Dongaonkar, Tata Motors, India*
Integrated safety, connected & automated driving **Chair: Ondrej Vaculin, Technische Hochschule Ingolstadt** ***Room: 131***	FWC2023-SCA-051: Trajectory tracking control of trailer trucks with rear wheel steering capabilities *Prof Dr Hongyu Zheng, Jilin University, China* FWC2023-SCA-021: Fail-operational motor system configuration for functional safety of autonomous driving *Ms HyunKyung Roh, Infineon Technologies, Republic of Korea* FWC2023-SCA-022: Smart infrastructure for the safety assurance of connected automated vehicles *Mr. Thiago de Borba, TU Ingolstadt, Germany*
Integrated safety, connected & automated driving **Chair: Joachim Schlosser, Elektrobit** ***Room: 132***	FWC2023-SCA-029: Light-duty vehicle hydrogen refuelling station connectivity *Mr Johan Bruyninx, Applus+ IDIADA, Spain* FWC2023-SCA-027: Predictive haptic driver support near vehicle's handling limits *Mr Kazimierz Dokurno, Delft University of Technology, Netherlands* FWC2023-SCA-014: A study on dual motor-based fault tolerant control performance for steer-by-wire system failure *Dr Eng Kicheol Jeong, Korea Automotive Technology Institute, Republic of Korea*

New mobility transport models, smart communities & cities **Chair: Yannick Raynaud, Plastic Omnium** ***Room: 121***	FWC2023-MCC-007: A real time object detection and speed estimation using YOLO V8 *Mr Karthikeya Soma, S.R.M, India* FWC2023-MCC-004: Type-approval requirements for ADS in Europe *Mr Carlos Lujan, Applus+ IDIADA, Spain* FWC2023-MCC-002: A study on generating hydrogen refuelling station operational information using deep learning-based multi-vehicle tracking technique *Ms Eunjung Roh, HL Mando, Republic of Korea* FWC2023-MCC-005: International Cycling Community of Practice (ICCoP) *Mr Pascal van den Noort, Velo Mondial, Netherlands*
Propulsion, power & energy efficiency **Chair: Cristobal Rodriguez, McLaren Automotive** ***Room: 122***	FWC2023-PPE-013: Component structure study of mechanical Atkinson cycle engine for enhanced reliability *Mr Yasukazu Kuriyama, Honda R&D, Japan* FWC2023-PPE-052: Comparison of driving characteristics of electric vehicle under low temperature environment *Mr Gwangryeol Lee, Konkuk University, Republic of Korea* FWC2023-PPE-046: Self reconfigurable battery for automotive application: simulation and testing *Mr Nicolas Leto & Mr Sylvain Bacquet, Vitesco Technologies, France*
Propulsion, power & energy efficiency **Chair: Roel Verhoog, Valeo** ***Room: 130***	FWC2023-PPE-023: Integrated boost-charger for 400-800v charging compatibility *Mr Chang Liu, Nio, China* FWC2023-PPE-039: Comparative analysis of powertrain architectures for fuel cell light commercial vehicles in terms of performance, durability, and environmental impact *Dr.-Ing Marcos López Juárez, Universitat Politècnica de Valencia, Spain* FWC2023-PPE-026: Assessment of advanced long haul truck powertrains: comparative study of consumption, emissions, and cost with diesel trucks *Dr Eng Charbel Mansour, Argonne National Laboratory, United States*
Safety & Cybersecurity **Chair: Nuria Parera, Applus+ IDIADA** ***Room: 119***	FWC2023-CYB-010: New challenges in testing connected and cooperative transport systems *Dr. Ing Árpád Török, Budapest Universitiy of Technology and Economics, Hungary* FWC2023-CYB-015: UN Regulation N. 155 on vehicle cybersecurity - technical service perspective *Mr Carlos Lujan, Applus+ IDIADA, Spain* FWC2023-CYB-016: Cybersecurity standard alignment with SAE on hardware protected security environments *Mrs. Francesca Forestieri, GlobalPlatform, United States* FWC2023-CYB-003: V4SAFETY, a harmonized predictive assessment framework for road safety *Dr Olaf Op den Camp, TNO Integrated Vehicle Safety, Netherlands*
Software defined vehicle **Chair: Cyril Laury, Forvia** ***Room: 134***	FWC2023-SDV-005: Demystifying the complexity of software-defined vehicle *Mr Guillaume Cordon, Elektrobit, France* FWC2023-SDV-011: Software-defined vehicle and thermal management system - how the developing process gets influenced by that matter, to ensure high efficiency and comfort for the passengers *Mr Michael Bires, AVL List GmbH, Austria*

Sustainability, circular economy & LCA **Chair: Mario Hirz, TU Graz** ***Room: 133***	FWC2023-SEL-007: Connected filling - a digital solution to make renewable fuels use easier to track *Mr Mats Hultman, Neste, Sweden* FWC2023-SEL-002: A study on hydrogen storage system refuelling performance simulation *Mr Wookhyun Han, Hyundai Motor Company, Republic of Korea* FWC2023-SEL-012: Research for green hydrogen storage in liquid carrier towards realisation of a hydrogen value-chain *Mrs Hannah Johnson, Toyota Motor Company, Belgium*
09:30 – 10:00	Break
10:00 – 10:25 ***Room: 111+112***	Bosch Mobility keynote **Reinventing mobility systems from inside out – how to afford it?** **Matthias Klauda, Executive Vice President Engineering Cross-Domain Computing Solutions**  Matthias Klauda received his PhD in Physics in 1993 from the University of Erlangen. In 1994 he joined Bosch, where he held responsibilities for Electronics Research & Predevelopment Department, North American Research & Technology Center, became CEO of ETAS GmbH (a tool solutions provider owned by Robert Bosch GmbH) in 2005, and Senior Vice President Corporate Automotive Systems Engineering in 2010. In 2015, he became head of development of Powertrain Control Units. In 2018, he additionally assumed overall responsibility for Bosch's Powertrain Control Units business.
10:25 – 10:55 ***Room: 111+112***	Applus+ keynote **Innovation as a tool for an uncertain future** **Joan Amigó, CEO**  Joan Amigó was appointed Chief Executive Officer of the Applus Group with effect from 28th June 2022, following the retirement of Fernando Basabe after eleven years at the Group. He was previously the Group's Chief Financial Officer since 2007, joining the Board of Directors in 2019. Mr. Amigo was a key architect of the Applus+ Strategic Plan 2022-2024 presented to the market in November 2021, has been instrumental in ensuring its execution since then and is committed to delivering it. Mr. Amigó holds a degree in Economics from the Autonomous University of Barcelona, a Management Development Programme from IESE (Barcelona) and an Advanced Management Programme from ESADE (Barcelona and Wharton-Pennsylvania). He has a solid career in managerial and financial positions with strong strategic and leadership roles. He started his career at PricewaterhouseCoopers in 1991 as an external auditor. In 1994, he joined Bimbo (Sara Lee), a consumer goods company based in Spain and Portugal, where he held various senior positions: Vice President and Chief Financial Officer, Financial Shared Services Director, Controller and Internal Audit Director. In 2006, he was appointed Vice President for Financial Planning and Control at Sara Lee Bakery's Europe Division. As Chief Financial Officer of Applus+, he led the Financial, Tax, IT, IR, and Purchasing functions. With his thorough financial background and deep knowledge of the company and the testing, inspection and certification industry, he is leading Applus+ successfully onto the next stage of its journey.

10:55 – 11:20 ***Room: 111+112***	AVL List GmbH keynote **Carbon neutral passenger car vehicles developed with attribute engineering** **Uwe Dieter Grebe, Global Business Development, Sales & International Operations, Powertrain Systems**  Prof. Dr. Grebe began his career at General Motors / Adam Opel AG in 1991 and until 2002 he held numerous engineering positions held with growing responsibilities including Manager Advanced Engine Engineering and Manager Base Engine Hardware for all gasoline and Diesel engines outside North America. In 2002 he then became Chief Engineer for Family I and Family II gasoline engines. In 2003 he took over as Functional Leader Spark Ignition Engines for FIAT-GM Powertrain. In 2004 Prof. Dr. Grebe became Executive Director of Global Advanced Engineering for GM Powertrain, USA where he had global responsibility for the advanced engineering of all engines, transmissions, and hybrid components as well as the powertrain control systems. In addition, he was responsible for propulsion systems of all GM race vehicles a position he held until 2011. After which he became GM Europe – Executive Director where he was responsible for the research and advanced engineering activities for vehicle, powertrain, and manufacturing systems as well as alternative propulsion systems, responsibility for CO2 fleet compliance of GM vehicles in Europe. In 2012 Prof. Dr. Grebe joined AVL List GmbH as their Executive Vice President and Global Business Development, Sales & International Operations. In addition, Prof. Dr. Grebe is involved in Technical University Vienna as Honorary Professor; is a member of the Scientific Board of the magazine "Motortechnische Zeitschrift"; a member of the Scientific Board of the magazine "Automobiltechnische Zeitschrift"; a member of the Shell Science Council, Shell Global Solutions International BV and a member of the SINTO Advisory Committee, Sintokogio Ltd.
11:20: 11:45 ***Room: 111+112***	EUCAR keynote **R&I for the mobility transformation** **Stefan Deix, Director, European Council for Automotive R&D**  Stefan Deix graduated as physicist at the University of Vienna. Since 2015 he has been Director of EUCAR, the European Council for Automotive R&D. EUCAR members are the major European passenger car and commercial vehicle manufacturers. The European automobile manufacturers are the largest private investors in R&D in Europe with over €60.9 billion investment per year. Stefan Deix was Director for Research & Innovation at CLEPA (European Association of Automotive Suppliers) facilitating the Research and Innovation Working Group activities. Before that he was working at AIT Austrian Institute of Technology in the Department Mobility. He was appointed research coordinator for Austria, research area leader for road safety and elected Chairman of the research coordinators at FEHRL (Forum of European Highway Research Laboratories).
11:45 – 12:55 ***Room: 111+112***	EDI panel discussion ***Moderator:*** Eva Argilés, General Counsel, Applus+ IDIADA
12:55 – 14:00	Lunch
14:00 – 14:25 ***Room: 111+112***	IRP Systems keynote **Making the open winding topology a commercial reality** **Paul Price, CTO & Co-Founder, IRP Systems**  As CTO and co-founder of IRP, Paul is solving the unsolvable problems of engineering and pushing the barriers of technology. Under his leadership, IRP's interdisciplinary R&D and innovation teams take a holistic view of next-gen electric powertrains, delivering unmatched performance. Paul's passion for cars was fueled by a childhood spent in racing go-karts and rebuilding vehicles with his father. Over the last 25 years Paul invented breakthrough solutions for ignition, injection, actuation, control and electric drives. Paul held leadership positions in Elbit UAV systems and is a global expert in powertrain and propulsion systems. Paul holds a BSc in Computer Software Engineering and a BSc in Mechanical Engineering from the Technion – Israel Institute of Technology.

14:25 – 14:50 ***Room: 111+112***	Euro NCAP keynote **Euro NCAP, now for Safer Trucks too…** **Matthew Avery, Director of Strategic Development, Euro NCAP**  As Euro NCAP continues to expand its reach in global consumer vehicle safety, Matthew's role focusses on defining many of these new areas, principally Assisted and Automated Driving and now Vans and Heavy Truck safety. Matthew spent 35 years with Thatcham Research, there he developed the company's safety program and lead the authored new test procedures around whiplash, ADAS and Assisted Driving as part of its work with Euro NCAP. Matthew has authored many technical papers and his influence in vehicle safety has been recognised through numerous awards including the NHTSA ESV Special Award in 2011 and the ACS Pathfinder Award in 2020. His new focus is to make heavy trucks safer in pursuit of Vison Zero.
14:50 – 15:50 ***Room: 111+112***	**Start-ups panel discussion** ***Moderator:*** Pedro de las Rivas Campo, Member of the Executive Committee, Plug and Play Iberia ***Speakers:*** • Håkan Lutz, CE0, Founder & Mobility Pioneer, Luvly AB • John Mills  **Pedro de las Rivas Campo** mission is focused on the consolidation and growth of Plug and Play in Spain and Portugal. With more than 16 years of experience in different multinational corporates, he has led the management of different innovation projects (e.g. a global leader in European engineering and quality with more than 8 pilots/year or a full acceleration program for a pharma world leader), participating in the innovation strategy of different companies in the pharmaceutical, industrial and energy sectors. Previously, Pedro led different teams in leading multinationals: • in the sustainable architecture/construction sector (as Country Manager for VEKA in Iberia and North Africa with more than 100 employees and a turnover of more than €30M); • as a member of the global team of corporate development and digital strategy in Hilti between Spain and Switzerland. • He also participated in international expansion and consolidation projects for EU (from Denmark to LATAM and Africa), corporate development in the external communication sector with the American leader Clear Channel (very focused on digital strategy and in close contact with City Councils and Regional Bodies) and as a Senior consultant in strategic consulting projects with PwC, working also with leading companies with several Administrations (central, regional and local). As for his education, he studied a double degree in Law and Business Administration at the University Carlos III in Madrid and Paris X Nanterre University (France), with a scholarship at Lehigh University (Pennsylvania-USA), a Master's Degree in Consulting at Escuela de Organización Industrial (Madrid), an executive postgraduate degree at IESE Business School (PDD) and he is a professor of Strategic Planning at the International MSMC at IE University.  **Håkan Lutz** A visionary in the field of technology and mobility, Håkan Lutz has been at the helm of the mini-mobility movement for nearly 20 years. As the CEO and Founder of Luvly, he is the creative force behind the company's patented technology, leading the way in sustainable urban transportation solutions. Holding an MSc in International Economics and Development Economics from the Stockholm School of Economics, Håkan's unique blend of economic insight and technological innovation has positioned Luvly as a trailblazer in the industry. His commitment to reimagining the way we move within our cities has not only shaped Luvly's success but continues to inspire a new era of mobility.
15:50 – 16:10	Break
16:10 – 17:40	Technical session
Digitalisation **Chair: TBD** ***Room: 118***	FWC2023-DGT-017: RENAULuTion virtual twin transformation *Mr Olivier Mougin, Renault, France* FWC2023-DGT-004: Integrating model-based automatic code generation and display design *Prof Dr Masatoshi Arai, Marelli Corporation/Saitama University, Japan* FWC2023-DGT-015: The era of the cognitive mobility *Prof. Dr. Máté Zöldy, BME, Hungary*

Industry 4.0 **Chair: TBD** ***Room: 119***	FWC2023-IND-003: A study on diagnosis for motor current load, micro-surge voltage and temperature with measuring instruments *Mr Taejun Park, Hyundai Motor Company, Republic of Korea* FWC2023-IND-004: Use of synthetic data for AI based vision quality control in the automotive industry *Mr Khalid Kouiss, Forvia, France* FWC2023-IND-002: A case study: maximizing value extracted from manufacturing data by combining data analytics with technical problem solving *Dr Jürgen Philipp Wagner, Bosch Industry Consulting, Spain* FWC2023-MTM-008: Test methods optimization for automotive infotainment systems *Dipl Ing João, Queirós Controlar, Portugal*
Integrated safety, connected & automated driving **Chair: Ondrej Vaculin, Technische Hochschule Ingolstadt** ***Room: 130***	FWC2023-SCA-032: Robust h-static output-feedback control for path tracking with sensor faults estimation *Ing Manuel Jiménez-Salas, Universidad Carlos III de Madrid, Spain* FWC2023-SCA-018: Sensor-agnostic multimodal fusion for multiple object tracking from camera, radar, lidar and V2X *Mr Marc Perez Quintana, Applus+ IDIADA, Spain* FWC2023-SCA-050: Transition steering feel of handover and takeover scenarios between human and automated steering *Mr Matthias Becker, MdynamiX AG, Germany* FWC2023-SCA-024: ETSI standard-compliant collective perception service for connected automated driving *Mr David Quiñones, Idneo Technologies SLU, Spain*
Integrated safety, connected & automated driving **Chair: Ouafae El Ganaoui-Mourlan, IFP School** ***Room: 131***	FWC2023-SCA-001: Critical finite element analysis of electric vehicle's front-end to predict the kinematics of tesla-like battery pack during high-speed full-frontal collision with rigid barrier *Mr Mohammad Al Hariri, David Goldman Informatics Centre, United Kingdom* FWC2023-SCA-036: Construction of 3D map and accuracy verification for self-localization for automated driving of mobile scooter *Mr Motoki Hatsuda, Shibaura Institute of Technology, Japan* FWC2023-SCA-044: Drowsiness prediction based on an iToF camera for iCM applications *Mrs Noelia Rodríguez Ibáñez, IDNEO Technologies, Spain* FWC2023-SCA-040: Development of a high-level system architecture for a cost-effective automated valet parking system *Mr Ömer Dönmez, TU Ingolstadt, Germany*
Integrated safety, connected & automated driving **Chair: Alain Gonzalez, FE**V ***Room: 132***	FWC2023-SCA-030: Simulative study of the influence of degraded twin-tube shock absorbers on the lateral forces of vehicle axles *Dipl. Ing Tobias Schramm, TU Dresden, Germany* FWC2023-SCA-056: A study of battery safety and design optimization for ground impact on electric vehicles *Mr Yong-Hwan Choi, Hyundai Motor Company / Seoul National University, Republic of Korea* FWC2023-PMG-001: artificial intelligence-driven optimization of resource management in automotive engineering *Mr Ahbaz Memon, Applus+ IDIADA, India*
Lightweight & advanced vehicle platforms **Chair: Andreas Garcia, IQS** ***Room: 120***	FWC2023-LVP-002: The study of battery case with topology and thickness optimization method *Mr GeonHee Cheon, Seojin Industrial, Republic of Korea* FWC2023-LVP-008: A study on EV load path using low pressure hollow casting technology *Mr Jiwoong Park, Hyundai Motor Company, Republic of Korea* FWC2023-LVP-004: A study on the shape and structure for coolant HUB *Mr Seong-Bin Jeong, Hyundai Motor Company, Republic of Korea* FWC2023-LVP-017 Design and development of a modular motor-gearbox-unit for an electric light vehicle *Mr Julius Kesten, Karlsruhe Institute of Technology (KIT), Germany*
Personal, commercial & multimodal mobility **Chair: T. Russell Shields** ***Room: 121***	FWC2023-MTM-001: Comparative study of bending loads on rear axles of heavy commercial vehicles for two different rear leaf spring configurations *Mr Rajesh Korrayi, Tata Motors, India* FWC2023-PCM-009: Design and control of an integrated dual-mode active rear wheel steering system *Mr Wang Junnian, Jilin University, China* FWC2023-PMG-002: Uptime optimization for off-road vehicles based on machine learning service date prediction *Dipl.Ing Gordana Jukic, AVL List GmbH, Austria*

Propulsion, power & energy efficiency **Chair: Cristobal Rodriguez, McLaren Automotive Ltd** ***Room: 122***	FWC2023-PPE-024: Park lock for eDrive gearboxes, how to design and simulate? *Dipl. Ing Christophe Mollier, Valeo, France* FWC2023-PPE-031: Hydrofluoric acid emissions at cell level during thermal runaway in commercially available electric vehicles *Miquel Planells, Applus+ IDIADA, Spain* FWC2023-PPE-006: Co2 emission reduction by a new compact Atkinson cycle engine with a sliding mechanism *Mr Keitaro Nakanishi, Honda R&D, Japan* FWC2023-PPE-054: How immersive thermal management can improve performance of electric vehicles *Dr Volker Null, Shell, Germany*
Propulsion, power & energy efficiency **Chair: Roel Verhoog, Valeo** ***Room: 134***	FWC2023-PPE-020: Development of fail-safe driving strategies for a R-gear removal TMED hybrid electric vehicle *Ms Sunyoung Park, Hyundai Motor Company, Republic of Korea* FWC2023-PPE-041: Intake mixture strategies for suppressing abnormal combustion in hydrogen internal combustion engines *Dr Hyunwook Park, Korea Institute of Machinery and Materials, Republic of Korea* FWC2023-PPE-031: Hydrofluoric acid emissions at cell level during thermal runaway in commercially available electric vehicles – *Dr. Miquel Planells, Applus+ IDIADA* FWC2023-PPE-038: NVH of PMSM evaluation under different working conditions in the drive system configuration *Mr Carles Martrat, Universitat politècnica de Catalunya -Barcelona Tech, Spain*
Road & energy infrastructure **Chair: Benedikt Heuser, FEV** ***Room: 133***	FWX2023-REI-001: A study on the forecasting method of pressure of hydrogen tube trailer using deep-learning-based time series forecast model *Ms Yeonjoon Han, HL Mando, Republic of Korea* FWC2023-REI-002: Concept and realization of battery swapping system for electric heavy-duty long-haul road transport *Dr-Ing Jens-Olav Jerratsch, TU Berlin, Germany* FWC2023-REI-006: Economic feasibility study to compare battery swapping with other electric drivetrain technologies for emission free road bound long haul freight transport *Mr Oliver Kilian, TU Berlin, Germany*
17:40	**Close**
19:00 – 23:00	**Gala Dinner Sponsored** by brembo

Thursday 14th September

08:00 – 09:30	Technical session
Advanced & sustainable materials **Chair: Egoitz Luis Monasterio, Cidetec** ***Room: 118***	FWC2023-ASM-011: Design and construction of an experimental extrusion device to characterize aluminium alloy extrudability *Dr Sylvia Cruz Torres, EURECAT, Spain* FWC2023-ASM-012: Lifecycle assessment of lithium-based batteries and alternative technologies for electric vehicle application *Dr Jose Sodre, Aston University, United Kingdom* FWC2023-ASM-014: Research over the implementation of bio-composite materials in the automotive industry using the CAVE technology *Dipl-Ing Anca Alexandra Iordache Sabo, Renault Technologie Roumanie, Romania*
Comfort technologies **Chair: Samuel Badau, Forvia** ***Room: 119***	FWC2023-CFT-008: To reduce the passive (chassis) side engine vibrations using multi-body dynamics approach *Mr Mandar Shilimkar and Javier Gutierrez, Applus+ IDIADA, India* FWC2023-CFT-007: A study on the diversification structure of door closure methods *Mr Je Won Choi, Hyundai Motor Company, Republic of Korea* FWC2023-CFT-002: The development and application of the advanced acoustic cavity model for enhanced virtual vehicle simulations *Mr Seungchan Choi, Hyundai Motor Company, Republic of Korea*
Integrated safety, connected & automated driving **Chair: Ondrej Vaculin, Technische Hochschule Ingolstadt** ***Room: 131***	FWC2023-CYB-005: Monitoring of French intersection traffic – the application of enhanced AIMATS-systems *Mr Simon Schramm, Fraunhofer Institute for Transportation and Infrastructure Systems IVI, Germany* FWC2023-CYB-008: A software-level dynamic fault injection and diagnostic techniques *Mr Pyounghwa Lee, Hyundai Motor Company, Republic of Korea* FWC2023-CYB-009: Research on lightweight authentication and quantum key encryption communication for vehicle-cloud *Prof Teng Cheng, Hefei University of Technology, China* FWC2023-SCA-005: Super-twisting sliding mode control with neural network for autonomous driving *Mr Hakjoo Kim, Chungbuk National University, Republic of Korea*
Integrated safety, connected & automated driving **Chair: Andrés Aparicio, Applus+ IDIADA** ***Room: 132***	FWC2023-SCA-008: Optimal detection system for steering grip and improvement of its detection rate and reliability during ADAS operation *Mr Shotaro Odate, Honda Motor Co Ltd, Japan* FWC2023-SCA-037: Autonomous vehicle control system for minibus with artificial intelligence decision-making by reinforcement learning *Ms Shuk Ching Chan, Hong Kong Productivity Council, Hong Kong* FWC2023-SCA-015: Development of electrified power distribution controller corresponding to the fail-safety requirement for lv.4 AD system *Mr Soon Myung Kwon, Hyundai Motor Company, Republic of Korea* FWC2023-SCA-041: Research on construction of personalized driver models using LSTM in merging behaviour *Mr Sota Sakai, Shibaura Institute of Technology, Japan*
Personal, commercial & multimodal mobility **Chair: TBD** ***Room: 121***	FWC2023-PCM-015: A experimental approach for quantify the influencing factor responsible for generation of abuse loads in manual transmission for passenger car *Mr Manish Kumar, Maruti Suzuki, India* FWC2023-PCM-012: Optimum matching design of the hybrid system for hydrogen fuel cell forklifts *Mr Yu Li, Hong Kong Productivity Council, China - Hong Kong* FWC2023-PCM-007: System design considerations for 24 volt electronic control units for minimizing down time and ensuring functional robustness *Mr Vishwas Vaidya, Four Front Pvt. Ltd, India*

Propulsion, power & energy efficiency **Chair: Cristobal Rodriguez, McLaren Automotive Ltd** ***Room: 122***	FWC2023-PPE-047: A comprehensive study of the NH3 and N2O formation in TWC used by an MD-SI engine powered with LPG. *Dr.-Ing Enrique José Sanchis, CMT - Universitat Politècnica de València, Spain* FWC2023-PPE-001: Multi-objective optimal control strategy for ultra-low NOx compliance in heavy-duty diesel engines *Mr Pradyumna Saripalli, Politecnico di Torino, Italy* FWC2023-RGE-003: Journey of diesel nano-particles through the after-treatment system *Mr Kazutoshi Mori, Teikyo University, Japan* FWC2023-RGE-008: Development of e:PHEV power train management control system for 2023 new model CR-V *Mr Masatoshi Saito, Honda Motor Co Ltd, Japan*
Propulsion, power & energy efficiency **Chair: Roel Verhoog, Valeo** ***Room: 130***	FWC2023-PPE-037: Development of new 2.0l I4 gasoline direct injection engine for plug-in hybrid electric vehicle *Mr Nobuhiko Sasaki, Honda Motor Co Ltd, Japan* FWC2023-PPE-018: Development of multi-functional dog brake for dual-motor drive system *Dr Eng Isamu Shiotsu, Toyota Central R&D Labs Inc, Japan* FWC2023-PPE-055: Innovative e-machine and power electronics solutions for e-axle and e-corner vehicle powertrains *Mr Eric Armengaud, Armengaud Industries*
Regulatory environment **Chair: T. Russell Shields** ***Room: 133***	FWC2023-RGE-002: EAS (Exhaust Aftertreatment System) development for EU7 regulation by EAS models *Mr Sung Mu Choi, Hyundai Motor Company, Republic of Korea* FWC2023-RGE-001: Design of high performance coated GPF with informatics *Mr Atsushi Furukawa, Honda R&D, Japan* FWC2023-RGE-009: Complex and integrated field operational test for local validation of vehicles functionalities around the world *Mr Raul Saez, Applus+ IDIADA, Spain*
Software defined vehicle **Chair: Abel Carbonell, Applus+ IDIADA** ***Room: 134***	FWC2023-SDV-002: Maintaining open-source based software or what is the true cost of free? *Dr Joachim Schlosser, Elektrobit, Germany* FWC2023-SDV-001: Advanced reinforcement learning based thermal management strategy for battery electric vehicles *Mr Tomislav Bukić, AVL-AST d.o.o., Croatia* FWC2023-SDV-003: The concept process development for driving performance in architecture development stage *Mr Ilsoo Jeong, Hyundai Motor Company, Republic of Korea*
User experience, lifestyle & aftermarket **Chair: TBD** ***Room: 120***	FWC2023-ELA-005: Development of hidden pattern mood lamp garnish for GV70 *Mr Hyeon Cheol Cho, Hyundai Motor Company, Republic of Korea* FWC2023-ELA-002: Experience of vehicles used in parks contribute to social acceptance into society *Dr Ryosuke Ando, Toyota Transportation Research Institute, Japan* FWC2023-ELA-004: When shorter is better: understanding short utterances with enriched context in in-vehicle voice recognition system *Ms SongEun Lee, Hyundai Motor Group, Republic of Korea*
09:30 – 10:00	Break

10:00 – 10:25 ***Room: 111+112***	NIO keynote **A user company** **Hui Zhang, Group Vice President**  Mr. Hui Zhang is a highly accomplished professional with extensive experience in purchasing, supply chain management, and general management. With an MBA in Pforzheim University, Mr. Hui Zhang has held key positions at renowned companies such as Leoni, VOITH AG, KIEKERT AG, and Lotus. Currently serving as the NIO Group Vice President since January 2016, Mr. Hui Zhang has consistently demonstrated exceptional leadership skills and a results-oriented approach.
10:25 – 10:50 ***Room: 111+112***	General Motors keynote **Putting the customer at the centre of the EV transformation** **Jaclyn McQuaid, President and Managing Director**  Jaclyn McQuaid is the President and Managing Director at General Motors Europe. In this role, she is responsible for launching an EV start-up business in Europe, leveraging GM's global growth investments in the electric vehicle space, to disrupt traditional business models and transform the experience of our customers. Prior to this role, McQuaid was overseeing the development of GM's most successful vehicle programs and spent over 6 years in product development, most recently in the global leadership position of Executive Chief Engineer for Full Size Trucks. Her strong focus on the needs of the customer and the market helped GM achieve and retain the top position in the Full-Size Truck U.S. retail market. Jaclyn McQuaid began her career in 2000 as a test engineer at the General Motors Proving Grounds. She held positions of increasing responsibility within Engineering over a 12-year period, before transitioning to a cross-functional assignment in Global Purchasing and Supply Chain in 2012. Jaclyn McQuaid holds both a Bachelor of Science in Mechanical Engineering and a Master of Science in Mechanical Engineering from the University of Michigan.
10:50 – 11:15 ***Room: 111+112***	CITA keynote **Modern periodic emission test for diesel vehicles** **Gerhard Müller, President, CITA (International Motor Vehicle Inspection committee)**  After graduating in mechanical engineering (Dipl.-Ing.) from Munich's Technical University (TU München), Gerhard Müller started his professional career at TÜV SÜD in 1989, where he was authorized as motor vehicle inspector. Until now he held various management functions. With effect from 2011 he is Head of External Affairs and Public Policy at TÜV SÜD Mobility. Since 2012, Gerhard Müller supports CITA, the International Motor Vehicle Inspection Committee. He has held the office of CITA president since 2019. In his role he is dedicated to improve road safety and making traffic more environmentally friendly. Gerhard Müller is currently engaged in the political discussion about the future testing procedures for automated driving vehicles and the associated use of in-vehicle data as well as the modernization of periodic vehicle inspection and emission testing. The aim is to ensure that vehicles even with the latest technologies comply with safety and environmental requirements over their entire life cycle. This is a precondition to make road transport safer, cleaner and more sustainable.
11:15 – 11:40 ***Room: 111+112***	Qualcomm keynote **The software-defined future of automotive** **Salah Hadi, Vice President of Engineering**  Salah Hadi currently serves as Vice President of Engineering at Qualcomm where he leads perception development. Previously, he led the overall technology at Arriver. He graduated with a Master of Science in Applied Physics and Electronics Engineering at Linköping University in 2000 and joined Autoliv. Over the past years, he has held several positions in R&D developing Autoliv and further Veoneer global vision organization, technology and successfully launching safety systems, focusing on camera systems.

11:40 – 12:05 ***Room: 111+112***	Fraunhofer IKS keynote **AutoDevSafeOps - integrated development and operation of safe automotive systems** **Núria Mata, Department Head Cognitive Software Systems Engineering**  Núria Mata studied electrical engineering at the Universitat Politècnica de Catalunya (Barcelona) and has a PhD in computer science. After completing her PhD, she worked for 20 years at the automotive tool's supplier ETAS GmbH (Bosch Group) as a software developer, product engineer and senior consultant, among other positions. She participated in a number of customer and technology projects of vehicle manufacturers and ECU suppliers in the field of embedded software and safety. In October 2021, she joined Fraunhofer IKS as head of the new Cognitive Software Systems Engineering department, focusing on the design and engineering of software-based open systems, which are able to perceive the environment, predict relevant upcoming changes and adapt the functionality to the context, while ensuring safety.
12:05 – 13:05 ***Room: 111+112***	**Propulsion systems panel discussion**
13:05 – 14:20	Lunch
14:20 – 15:50	Technical session
Digitalisation **Chair: TBD** ***Room: 118***	FWC2023-CFT-012: 3D human modeling: a new tool for designing multi-use case seat *Mr. Claire Marchiori, Forvia, France*
Integrated safety, connected & automated driving **Chair: Ondrej Vaculin, Technische Hochschule Ingolstadt** ***Room: 131***	FWC2023-SCA-025: Holistic environment for development and testing of cooperative, connected and automated mobility functions *Prof Ondřej Vaculín, TU Ingolstadt, Germany* FWC2023-SCA-006: Online estimation of the parameters in electric motors for automotive components Dr. *José Manuel Rodríguez Fortún, ITAINNOVA, Spain* FWC2023-SCA-049: Utilization of real accident scenarios for simulative effectiveness assessment of driver assistance systems *Mr Roman Putter, Volkswagen AG, Germany* FWC2023-SCA-035: Advanced automated-driven vehicle model development and integration using cloud computing *Mrs. Xavi Sellart, Applus+ IDIADA, Spain*
Integrated safety, connected & automated driving **Chair: Alain Gonzalez, FEV** ***Room: 132***	FWC2023-SCA-038: Research on the evaluation of pedal misapplication prevention device based on driver's pedal work *Ryotaro Kai, Shibaura Institute of Technology, Japan* FWC2023-SCA-055: Cooperative adaptive cruise control and energy management system for HEVs using multi-agent deep reinforcement learning *Prof. Nicola Amati, Politecnico di Torino, Italy* FWC2023-SCA-023: SUNRISE: safety assurance framework for connected and automated mobility systems *Mr Stefan de Vries, Applus+ IDIADA, Spain* FWC2023-SCA-026: The technology to notification of following vehicle' approaching *Mr Takahiro Kohara, Toyota Motor Corporation, Japan*
Lightweight & advanced vehicle platforms **Chair: Andreas Garcia, IQS** ***Room: 119***	FWC2023-LVP-009: Advanced shape memory hybrid composites for enhancing crashworthiness *Mr. Mohab Elmarakbi, Northumbria University, United Kingdom* FWC2023-LVP-003: A study on the health monitoring approach for the motor system of electrified vehicle *Mr Hong Suk Chang, Hyundai Motor Company, Republic of Korea* FWC2023-LVP-005: An optimization development of A/C compressor E/E architecture using system engineering *Mr Jiwan Son, Hyundai Motor Company, Republic of Korea* FWC2023-LVP-006: A geometric study on the opening and closing behaviour of closure system *Mr Kyeongkuk cho, Hyundai Motor Company, Republic of Korea*

New mobility transport models, smart communities & cities **Chair: Yannick Raynaud, Plastic Omnium** ***Room: 134***	FWC2023-MCC-008: Utilising modal near miss data as part of the mobility management eco-system *Ms Itir Coskun, SWARCO, Germany* FWC2023-MCC-003: Optimizing crowding and service levels in a metro station using agent-based simulation *Mr Pietro De Vito, STAM, Italy* FWC2023-MCC-001: envisioning future mobility: disruptive modularity *Ms Wing Ting Law, Hong Kong Productivity Council, Hong Kong*
Propulsion, power & energy efficiency **Chair: Cristobal Rodriguez, McLaren Automotive Ltd** ***Room: 130***	FWC2023-PPE-009: Efficient disconnect for electric drivetrains *Mr Wang Junnian, Jilin University, China* FWC2023-PPE-019: Mitigating hydrogen internal combustion engine losses and the flow on benefits *Prof Harry Watson, University of Melbourne, Australia* FWC2023-PPE-051: A methodology to develop a sustainable, highly efficient hybrid propulsion system: the PHOENICE Project *Prof Luciano Rolando, Politecnico Di Torino, Italy*
Sustainability, circular economy & LCA **Chair: Mario Hirz, TU Graz** ***Room: 120***	FWC2023-SEL-008: Fuel cell powertrain adoption for heavy duty vehicles; Reducing cost and simplifying integration *Mr Daniel Lamb, Ballard Power Systems Europe, Denmark* FWC2023-SEL-001: Emission reduction paths of automotive companies under China's carbon neutrality target *Mr Fuquan Zhao, Tsinghua university, China* FWC2023-SEL-009: Upgradeable mechatronic systems – definition and model of upgrades in the context of the model of SGE - System Generation Engineering *Prof Dr-Ing Albert Albers, Institute of Product Engineering at Karlsruhe Institute for Technology (KIT), Germany*
15:50 – 16:10	Break

16:10 – 17:10

Room: 111+112

Climate Change panel discussion
Moderator: José Manuel Barrios, FISITA Society Vice President

Speakers:
- Alex Keen, Fellow, ISTVS
- Jean-Luc Maté, Administrator, SIA
- Carles Rúa, Head of Innovation, Port of Barcelona

José Manuel Barrios, Vice President FISITA Society
José works to enhance the engagement of the Member Societies of FISITA exploring, defining and setting up programs to improve the value, endorsement, and visibility of the FISITA services and activities, as well as establishing links and relationships with Strategic Partners. In the current scenario (a society in permanent change, new agents with the intention of defining new rules of the game, and a market/generation with different values and interests accustomed to permanent digitalisation and instantaneous connectivity) and suffering the acceleration caused by the COVID-19, it is necessary to prepare the individuals and entities of the Automotive Sector for major new technological challenges that they have never seen in the more than 100 years of Automobile history.

Alex Keen, ISTVS
Alex graduated in agricultural engineering from Newcastle University in 1973. As a student he developed an interest in environmental issues and in systems analysis and modelling. He completed an MPhil at Reading University in 1978, a systems analysis investigating nutrient recycling in an agricultural production system.

Alex organized the 2003 ISTVS European conference held in the UK. He completed a PhD in off-road vehicle dynamics at Cranfield in 2005. After retiring in 2010, as a senior lecturer in engineering at Harper Adams University, he took some short-term teaching contracts, including at the Asian Institute of Technology and at Kaziranga University in Assam. More recently HE have helped develop the digital services of the ISTVS and considered the issue of climate change and off-road vehicles

Jean-Luc Maté, SIA
Jean-Luc Maté graduated from the Polytechnic Engineering School of Grenoble in the subject of microelectronics and computer architecture, as well as receiving his MBBA from DUKE University.

He is considered as a European automotive electronics pioneer, thanks to his contribution to the buildup of the Renault Bendix Joint Venture in 1979 in Toulouse.

Jean-Luc has held many executive positions as VP R&D in powertrain, interior, chassis, ADAS, cockpit module, E/E vehicle architecture, ITS and Innovation for the western Europe area at Bendix electronics, Siemens VDO and Continental Automotive.

For 40 years Jean-Luc contributed to the creation of major European and worldwide initiatives that structure the automotive industry standards, such as: AUTOSAR , ERTRAC, ITS telematics and ITS 4 Climate & Eco driving.

Jean-Luc supports the continuous innovation in the development of clean, connected, autonomous vehicles and mobility services. He is the founder of the regional automotive and mobility cluster in Occitanie and the European Eureka cluster on Smart Electronic Systems EURIPIDES.

Today he is Administrator for the French Automotive Engineering Association (SIA) and oversees the engineering school partnership in the Occitanie region. He is also President of a consulting company promoting cooperation on innovative urban mobility services, electrical BEV & FCV eco system as well as ultra-light mobility for more efficient and affordable low CO^2 transport in the countryside.

Carles Rúa, Port of Barcelona
Carles Rúa Costa is an Industrial Engineer by Universitat Politècnica de Catalunya (BarcelonaTech). He is the Head of Innovation at the Port Authority of Barcelona (Port de Barcelona). He is also director of the Master Executive in Lean Supply Chain Management (BarcelonaTech), teacher of the Escola Europea of Intermodal Transport and co-editor of the port focused innovation blog PierNext. His professional activity has been developed in the fields of strategy logistics, quality and management information systems, where he has acted as a free-lance engineer and for consultancy companies. In the university field he has been professor at the Department of Business Organization at BarcelonaTech for more than 25 years. He also teaches logistics and port management in some masters in Spain and South America.

17:10 – 17:35 ***Room: 111+112***	SEAT CUPRA keynote **Werner Tietz, Executive Vice-President for Research and Development**  Dr. Werner Tietz has been SEAT S.A.'s Executive Vice-President for Research and Development since 1st July 2020. Tietz is a Doctor in Engineering from RWTH Aachen University (Germany), and he has almost 30 years of experience in the Volkswagen Group, which he joined in 1994. At Audi, he held several positions, and was long time responsible for the development of all Audi interiors. In 2011, he transferred to Porsche, where he was responsible for the development of body and interior of all models. Furthermore, he participated in the development of the Taycan concept and worked on the introduction of innovative materials in several of the models. Before joining SEAT, Tietz was member of the Bentley Executive Committee, and headed up Development, where he was in charge of creating the new development strategy and laying the foundations for the electrification of the brand.
17:35 – 18:15 ***Room: 111+112***	**Closing ceremony** Nadine Leclair, President, FISITA José Manuel Barrios, President, STA Chris Mason, Chief Executive, FISITA Mike Anderson, Vice President, Global Electrification and Battery Systems, General Motors
18:15 – 19:00	**Farewell drinks reception** Sponsored by NITREX
19:00	**Close**

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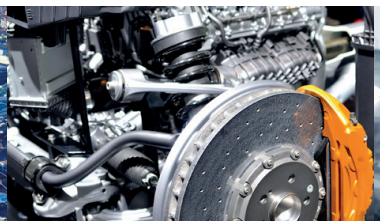

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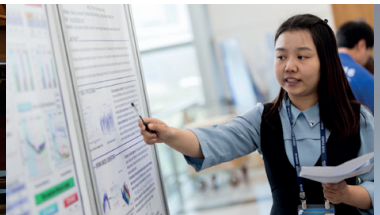


Social Programme

Gala Dinner

Sponsored by:

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Banquet room and terrace (P2)

Wednesday 13th September

19:00 – 23:00

A highlight of the FISITA World Congress is always the Gala Dinner. The dinner will give you the opportunity to catch up with colleagues, make new connections and enjoy the evening entertainment, whilst overlooking the Mediterranean Sea.

FISITA World Congress farewell drinks reception

Sponsored by:

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Networking Lounge (Exhibition hall)

Thursday 14th September

From 18:15 onwards

Wind down after a busy day's learning and take the opportunity to network at the farewell drinks reception courtesy of Nitrex. Free of charge to full FISITA World Congress participants.

(Expo-only passes do not include entry to the Drinks Reception or the Gala Dinner unless additionally purchased).

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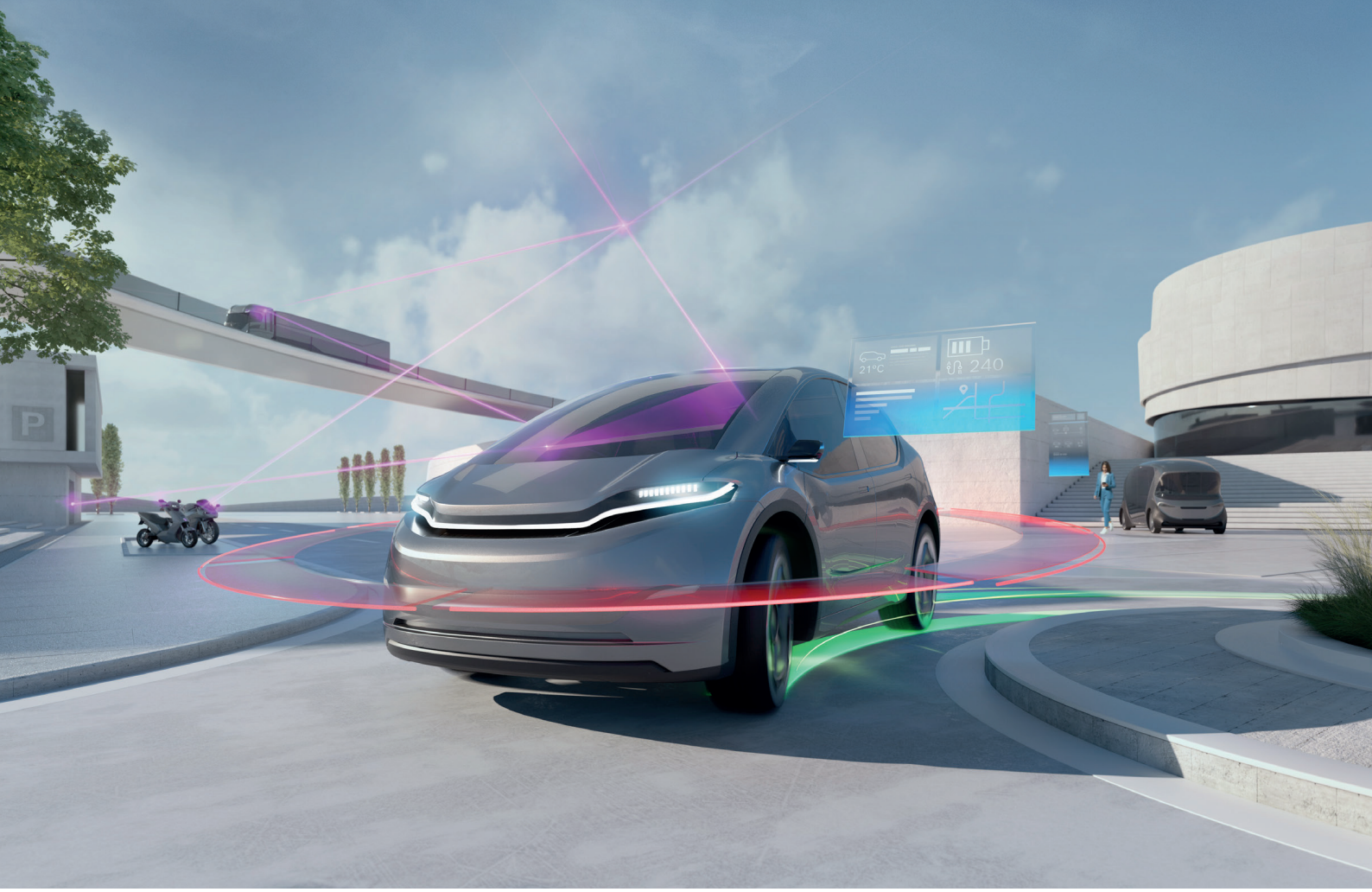

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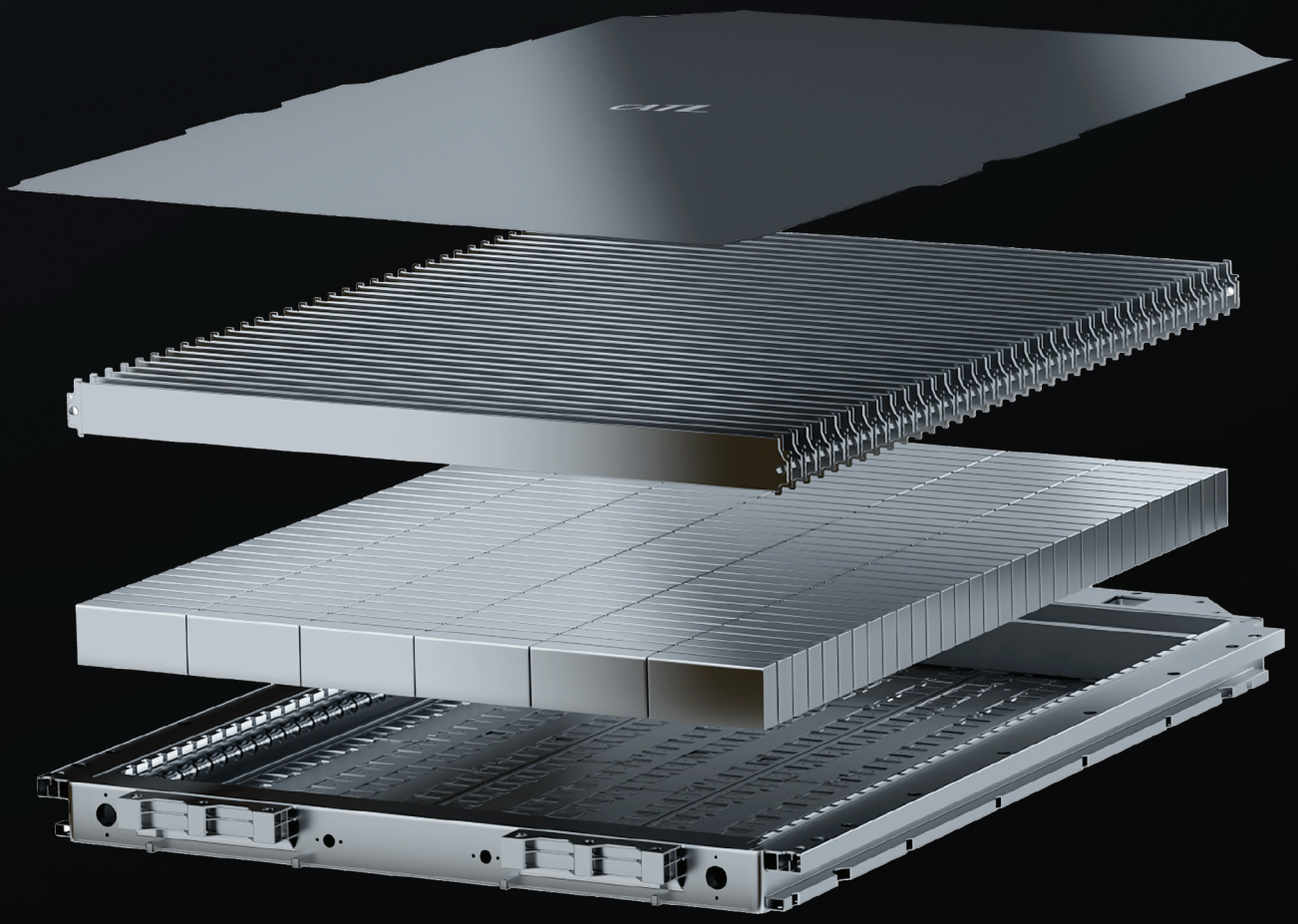

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