



# innovations@IZB

Empowering Partnerships

22<sup>nd</sup> to 24<sup>th</sup> October 2024

Wolfsburg | Allerpark | Germany

Including  
16 World  
Premieres!



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## innovations@IZB

Dear readers,

Innovations are the driving force behind the future of the automotive industry. They facilitate the development of more efficient and more environmentally friendly vehicles, the optimisation of production processes and the advancement of the digital transformation. That said, innovations are rarely something that can be achieved alone. Instead, they are usually the result of strong partnerships and successful interaction between manufacturers, suppliers and technology providers. This fact is also underlined by the key topic of this year's IZB: "Empowering Partnerships".

As a showcase for innovations, the International Suppliers Fair (IZB) will provide a meeting place for leading companies from the automotive supplier industry for the impressive twelfth time from 22nd to 24th October 2024, offering them all the opportunity to showcase their latest products and services for the automotive value chain. Our innovation report, innovations@IZB, presents examples of such exhibits by profiling 64 of these new product and process highlights, including 16 world premieres that will be presented to the public for the first time at the IZB 2024.

This year, the range of innovations announced by the exhibitors includes both software and hardware solutions, running the gamut from components and products to devices and machines and right through to materials and systems. As you can see, there is certainly plenty to look forward to at the IZB!

Other highlights this year include the "Products to watch by Automobilwoche". For the first time, our long-term main media partner, the trade newspaper Automobilwoche, has selected the 25 most innovative products from all the innovations submitted. These promising selections have been specially marked in this innovation report and will also be highlighted at the trade fair.

I am delighted to invite you to be inspired by the innovations at this year's IZB and to embrace new ideas and impetus for your own work.

**I hope that you will enjoy reading about these exciting innovations and have a fantastic time at the IZB 2024!**



*Josef Schulze Sutthoff, Head of the IZB at Wolfsburg AG*

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This symbol marks an IZB world premiere.

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**Automobilwoche**



This logo marks one of our "Products to watch". Our main media partner Automobilwoche has selected the 25 most outstanding innovations of the 12th IZB from all the entries.

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*P3, 2-speed architecture in a drive axle*

**First volume production application of a P3, 2-speed architecture in a drive axle**

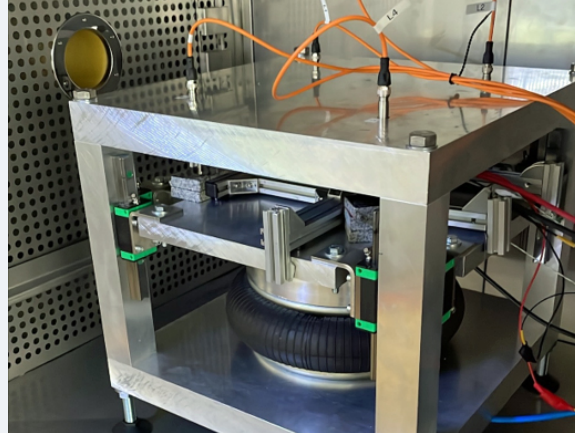
**AAM – American Axle & Manufacturing  
Hall 5 | Stand 5108**

American Axle & Manufacturing's (AAM) technology is the first volume production application of a P3, 2-speed architecture in a drive axle (see image) - featured among others on AMG's first plug-in hybrid electric vehicle, the Mercedes-AMG GT 4 Door 63 S E Performance. Named a winner of the 2022 Automotive News PACE Award, the rear drive unit provides superior vehicle performance in a compact, power-dense design. Other innovative design features include an electromechanically actuated two-speed gearbox as well as an electromechanically controlled limited slip differential (eLSD) - another industry first for an electric drive unit. Powered by AAM, the performance car generates 620kW/843hp at peak levels and clocks a 0-62 mph time of 2.9s. AAM's e-Drive provides power/torque output of 150 kW/204 hp, adds performance in hybrid drive and helps enable zero emissions.



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*Accenture swelling setup*

**Longer battery life and more cost-effective development -  
Swell test bench**

**Accenture GmbH**  
**Hall 3 | Stand 3303**

In battery development, the lifespan of the cells plays an important role. It is influenced, among other factors, by the initial clamping pressure and the reversible and over the lifespan irreversible swelling pressure of the cells themselves, as well as the module stiffness. To find the best module design, it is necessary to investigate the swelling behavior in lifetime tests – ideally without having to build various real modules. The Accenture swelling setup (see image) can not only provide a very precise constant compression with consistent pressure but can also use force and cell thickness as control parameters, allowing for the simulation of real module behavior in terms of its stiffness. The data can be monitored in real-time, enabling interim evaluations and parameter adjustments at any time during long-term tests.

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*Aptiv Parking Cube*

**Camera and radar technology in a compact parking sensor  
for the first time integrated**

**Aptiv Services Deutschland GmbH**  
**Hall 3 | Stand 3100**

**Premium-Partner innovations@IZB**

The Aptiv Parking Cube (see image) integrates a camera and radar in one compact parking sensor for the first time. This revolutionary approach combines the advantages of both technologies in a single component and enables reliable 360 degree short-range detection around the vehicle.

Due to the increased performance of the Aptiv Parking Cube, OEMs can realize completely new use cases. These range from the extension of the Operational Design Domain (ODD) for Level 2 and 3 at low speeds to the reliable classification of drive-over surfaces and practical benefits such as the active prevention of rim damage caused by curbs. With this innovation, Aptiv heralds the end of cost-intensive and weather-prone ultrasonic sensors and opens up unprecedented design freedom.

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*First drivable ADAS demonstrator*

**First drivable ADAS demonstrator based on a SDV architecture**

**Aptiv Services Deutschland GmbH**  
**Hall 3 | Stand 3100**



Aptiv presents the first drivable ADAS demonstrator based on the architecture of a software-defined vehicle. Smart Vehicle Architecture™ (SVA) consists of all critical components: Power Data Center (PDC), Central Vehicle Controller (CVC) and the Open Server Platform (OSP) supported by Wind River Edge, the cloud-native software architecture from Aptiv. The demonstration uses containerized software natively supported by SVA and Wind River Studio, an edge-to-cloud DevSecOps platform.

The open, modular and broadly scalable ADAS platform enables industry-leading AI-supported performance at significantly reduced system costs. Thanks to a flexible collaboration model, the market-proven system solution is ideally suited for the joint further development of the VW ADAS system.

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*Edge-to-cloud DevSecOps platform  
Wind River Studio*

**All from one interface**

**Aptiv Services Deutschland GmbH**  
**Hall 3 | Stand 3100**

Aptiv's Wind River Studio (see image) is an edge-to-cloud DevSecOps platform for embedded software with tools and capabilities to support the complete automotive software lifecycle in new ways for the industry. With Studio, OEMs can develop automotive software, test it, deploy it onto vehicles and then operate it in the field – all from one interface.

Studio improves software development efficiency and accelerates time to market by standardizing and automatizing development tooling and processes, collaboration and reuse. It eliminates key bottlenecks in the testing phase, boosting the efficiency, quality and scale of testing. It provides holistic security for vehicles, enabling end-to-end authentication and traceability.

Studio is an environment-agnostic and tool-agnostic platform that allows OEMs to integrate their existing investments and to obtain real-time insights and analytics from the edge.

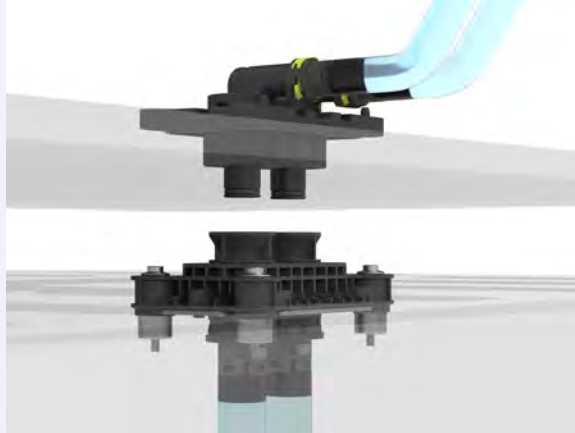
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*Swapping QC solution from ARaymond*

**Elevated EV thermal management thanks cutting-edge battery Swapping QC solutions**

**ARaymond GmbH & Co. KG**  
**Hall 1 | Stand 1218**

ARaymond thermal management solutions tackle the many challenges faced by EV makers: safe integration of thermal lines for optimal battery performance and longevity, enhanced functionality to maintain ideal battery temperature, space-efficient design to fit seamlessly into any vehicle architecture as well as customization and comprehensive fluid handling expertise from a single trusted partner. Committed to creating environmentally sound solutions, ARaymond offers a choice of sustainable materials and eco-designs.

The Swapping QC solutions (see image) of the company are specifically engineered for optimal battery exchange technology with their: integrated double shut-off systems for safe, leak-tight disconnection during the swapping process, tolerance compensation technology offers XYZ flexibility in installation, optimized design for low-pressure drops and high endurance (>10,000 cycles) as well as unique lightweight plastic design.

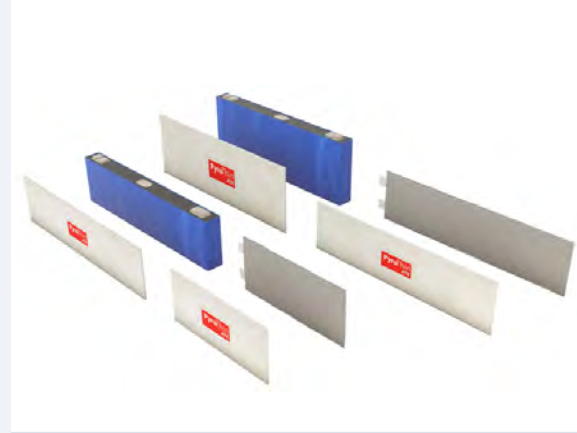
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*PyroThin cell-to-cell barriers*

**PyroThin stops thermal propagation at the cell-to-cell level**

**Aspen Aerogels, Inc.**  
**Hall 5 | Stand 5407**

As a Tier 1 supplier for global automotive OEMs, Aspen Aerogels is proud that its PyroThin® thermal barriers (see image) have recently been honored with Automotive News' PACE Award and Innovation Partnership Award. Cell pads are the first line of defense during a thermal runaway event, so choose a solution that performs under pressure. PyroThin combines unparalleled thermal propagation protection with mechanical resiliency through end-of-life (EOL). Third-party testing has shown that PyroThin stops thermal propagation at the cell-to-cell level. The proprietary aerogel technology has tackled complex engineering challenges for over 20 years. OEM feedback confirms that their long-cycle mechanical testing aligns with the predictive models from Aspen Aerogels, validating PyroThin's exceptional performance.

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Software-as-a-service solution ALICE

**ALICE legal database as a software-as-a-service solution**

**ATEEL**

**Hall 4 | Stand 4109**

ALICE (Automotive Legislation Information Center, Bild) is a software-as-a-service solution that provides relevant digitised and consolidated legislation. It is starting point and anchor for the day-to-day business to ensure product conformity and acts as an international compliance platform with global legal content. ALICE offers a high-quality collection of laws in digital form, specifically for the automotive sector, compiled by the certification and homologation experts of ATEEL Consulting. The platform enables simple and user-friendly law research and review, supported by innovative features. ALICE includes homologation-relevant legislation from the UN, the EU, the USA and the UK. Other legislators, markets and standards will follow. International OEMs, suppliers and authorities are already working with ALICE.

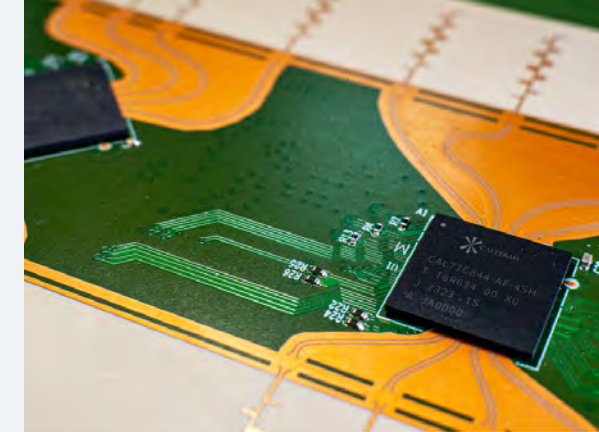
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Andes Imaging Radar System-on-a-Chip



**Andes – Powerful System-on-a-Chip for Imaging Radar**

**Calterah Semiconductor**

**Hall 3 | Stand 3407**

PRODUCTS TO WATCH BY

**Automobilwoche**



**Premium-Partner innovations@IZB**

Based on the 22 nm CMOS process technology, the Andes SoC (see image) integrates an RF module with a continuous sweep range from 76 GHz to 81 GHz, a typical maximum output power of 14 dBm, and a phase noise of -95 dBc/Hz (@ 1 MHz). It also has a 7-bit phase shifter and high-performance ADC based on a transmission line, allowing flexible waveform generation and various functions like precise digital compensation. Boasting the unique architecture of a quad-core CPU with a digital signal processor (DSP) and a dedicated Radar Signal Processor (RSP), an Andes SoC can offer more than 2500 DMIPS computing power and exceptional signal processing performance.

Owing to the distinctive feature of Andes-Flex-Cascading®, customers can cascade two Andes SoCs through Chip-to-Chip interfaces to readily realize an imaging radar system. This approach not only scales up SoC resources but also simplifies the hardware architecture, optimizes the BOM, and allows software reuse.

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Mixed reality Gen AI demo ELLEM

**Immersive AI companion offers glimpse into the future of multimodal human-machine interaction**

**Capgemini**  
**Hall 3 | Stand 3318**

At the IZB 2024, Capgemini showcases AI[wo]man ELLEM (see image), representing the future of automotive innovation. Visitors can experience seamless end-to-end delivery firsthand. ELLEM is your immersive AI companion, offering a glimpse into the future of multimodal human-machine interaction.

This cutting-edge mixed reality Gen AI demo showcases high-performing AI models, safely and securely on-premise. Powered by curated data, Retrieval Augmented Generation (RAG) technology, and the Gen AI Guardrails from Capgemini, ELLEM avoids hallucinations and provides context-specific answers. ELLEM embodies enhanced productivity, improved quality, and accelerated processes.

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CUBOS SolarLink

★ **CUBOS SolarLink: Bidirectional charging directly with your PV system**

**CUBOS Technologies GmbH**  
**Hall 3 | Stand 3205**



In the future, electric cars will be more than just vehicles. With EVs, we will be able to store, transport, and reuse electricity. The key to this is bidirectional charging. With the “CUBOS SolarLink” (image), the exhibitor is presenting an innovative concept in the field of charging technology.

The CUBOS SolarLink can be effortlessly integrated into existing PV systems. It enables bidirectional charging of electric vehicles – without the need for a separate wallbox. This significantly reduces acquisition costs and makes it easy to enter the world of bidirectional charging.

The system also offers a smart grid charging function, surplus charging, and an emergency power supply, where the vehicle supplies the building in the event of a power failure. CUBOS SolarLink is the perfect introduction to the future of intelligent energy management.

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*Nu-Sleeve SG-200 EV fire protection sleeve*

**High fire resistance even with thermal runaway**

**DELFINGEN DE Aschheim GmbH**  
**Hall 1 | Stand 1305**



**Premium-Partner innovations@IZB**

Busbars are metal conductors designed for high voltage applications. Their broad use in electric vehicles make it a key element to protect, with safety stakes for the user such as electric-hazard, fire, explosion and burns.

The brand new Nu-Sleeve SG-200 EV (see image) from DELFINGEN is a textile sleeve made of coated fiberglass which is adapted to busbar protection. Its silicon coating gives it a high fire resistance, even in case of thermal runaway, preventing the flames from spreading in the vehicles, while retaining a high dielectric resistance.

Its flexible and expandable construction design allows an easy installation that fits perfectly to its application, even on irregular shapes.

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**Inspiring Solutions for the Transformation of Mobility**

**DRÄXLMAIER Group**  
**Hall 3 | Stand 3305**

Inspiring the Transformation – under this motto, the DRÄXLMAIER Group presents innovations in the fields of connectivity, electronics, high-voltage, and battery systems. The system partner of premium automobile manufacturers works on tailor-made solutions for future vehicle generations – always with the aim of optimally supporting OEMs in achieving their technological goals. Among other things, the DRÄXLMAIER Group presents its concept for the architecture and fusing of the on-board network for future semi-autonomous driving. In doing so, DRÄXLMAIER relies on a holistic system architecture approach that intelligently combines conventional and electronic fuses at various protection levels – for optimal, uninterrupted power supply and thus ensuring functional safety.

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*Protection against corrosive infiltration – after 6 weeks of PV 1209 in the open component, left before and right after removal of the permanently plastic sealant*

★ **Permanently plastic sealant with great potential for simplification and savings**

**Drei Bond GmbH Chemische Verbindungstechnik**  
Hall 4 | Stand 4201

PRODUCTS TO WATCH BY  
**Automobilwoche**



According to the new EU battery regulation, batteries (including those in electric vehicles) must be replaceable and repairable in the future. The use of common sealants (e.g. solid seals) confronts OEMs and suppliers with major challenges. For example, it is often difficult to seal securely during operation and reopen when required in practice. The use of permanently plastic sealants therefore offers great potential for simplification and savings, as they enable maximum ease of processing, allow the components to be opened easily when required, and still ensure tightness and protection. In addition, the significantly lower material requirements (e.g. compared to hot butylene) have a significantly positive effect on the cost structure. With the product Drei Bond 1109, the exhibitor offers such an innovative permanently plastic sealant (see image).

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*Tecnipack V3 container*

★ **Heavy Duty ultra-fast folding carton returnable packaging - TECNIPACK V3**

**DS Smith Tecnicarton**  
Hall 2 | Stand 2302

PRODUCTS TO WATCH BY  
**Automobilwoche**



DS Smith Tecnicarton is an expert in customised industrial packaging for the automotive sector. The company offers solutions in both single-use corrugated board and returnable packaging in a variety of materials, such as its innovative Tecnipack V3 container (see image).

The Tecnipack V3 packaging system, with front folding, allows a single operator to fold the container in less than 3 s with three simple movements. It is ideal for demanding production lines where time optimisation is crucial.

This packaging is fully customisable, from flexible to rigid packaging, guaranteeing maximum protection and capacity. In addition, it incorporates a customised pallet that does not require moulds, providing greater flexibility in design. Tecnipack V3 the solution that increases efficiency and reduces costs in the supply chain.

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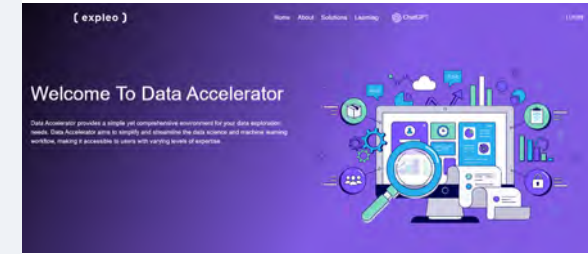
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System for compounding at Ecobat

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Data and AI Platform Quasar

★ **Certified flame-retardant secondary plastics to substitute primary polyamide**

**Ecobat Resources Germany GmbH**  
**Hall 1 | Stand 1422**



Ecobat is the first and so far only player in the market who has certified a recycled polypropylene according to UL 94. The highest possible level was achieved in accordance with the UL 94 V0 standard. The certificate, called Yellow Card, authorizes Ecobat to sell the PP compound with the trade name PPN 1020 GF 20 V0 as a flame retardant material to the electrical/automotive industry.

As an additive, Ecobat uses a solution of the BUDIT 6 series from the specialty chemicals company Budenheim. The special thing about it is that it is a halogen-free, intumescent flame retardant that fulfils the highest technical requirements of the compound. In the event of a fire, these form a foamed, charred layer on the surface. This prevents the flow of air to the combustible material and the emission of combustion gases. The fire is therefore no longer supplied with fuel and cannot spread any further.

**Quasar - A centralised Data and AI Platform from Expleo**

**Expleo Germany GmbH**  
**Hall 3 | Stand 3210**

In today's data-driven landscape, organisations rely on robust solutions to harness the power of their data and streamline their AI and analytics efforts. Expleo's Quasar (see image) is an advanced platform designed to address these needs by providing a centralised environment for data analysis and AI model management. This versatile platform empowers enterprises to integrate, analyse, and optimise their data through state-of-the-art generative AI and machine learning technologies.

Quasar enables users to choose, plug, and play with various foundational machine learning (ML) models and pre-trained large language models (LLMs). Moreover, it allows these models to be further trained using enterprise-specific and operational data, ensuring they are finely tuned to the unique requirements of the business.



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*FS@-R locking nut*

**Alternative to the traditional caulking nut**

**Flaig + Hommel GmbH Verbindungselemente**  
**Hall 6 | Stand 6216**

The innovation from Flaig and Hommel presents a groundbreaking alternative to the traditional caulking nut. Historically, securing components onto a grooved shaft necessitated the use of standard fastening methods, such as a caulking nut or a castle nut. The exhibitor has disrupted this norm by introducing the new FS@-R locking nut (see image, [www.youtube.com/watch?v=-XcHEpmEDfQ](https://www.youtube.com/watch?v=-XcHEpmEDfQ)), which serves as a superior substitute for conventional screw fasteners. The FS@-R lock nut incorporates an advanced gearing mechanism that significantly outperforms traditional screw connections in terms of security and reliability. The ingenious integration of the locking element within the FS@-R lock nut eliminates the need for additional labor-intensive steps, such as caulking the nut or inserting a cotter pin. This innovation streamlines the assembly and disassembly process, yielding a reduction in time and cost without compromising on safety.

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*Gentex Full Display Mirror@*

**Full Display Mirror@ - The Technology for Digital Vision**

**Gentex GmbH**  
**Hall 3 | Stand 3306**



The Gentex Full Display Mirror (FDM@, see image) captures video from a rearview camera and streams it to a mirror-integrated LCD that provides an unobstructed, panoramic view behind the vehicle. It can operate as either a standard auto-dimming rearview mirror or as a rear video display.

Since its inception, Gentex has used the FDM as a strategic electronic module - a cross-platform location for introducing advanced electronic features into the vehicle. Over the years, we've integrated numerous functions in and around the mirror, including glare suppression, cameras, microphones, displays, transaction modules, car-to-home automation, safety and ADAS functions, and driver monitoring systems.

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*Dimmable sun visors*

**Unobstructed, glare-free forward view thanks to dimmable sun visors**

**Gentex GmbH**  
**Hall 3 | Stand 3306**

Gentex's transparent, dimmable sun visors (see image), which can be darkened automatically or manually, protect drivers from blinding sunlight during the day and glare from headlights at night. The innovative Gentex sun visors can be folded down like a conventional sun visor. However, the transparent, dimmable element offers more than just visual benefits. Unlike conventional sun visors, they offer unobstructed forward vision even when dimmed, allowing drivers to see traffic lights, obstacles and other road users.

The latest generation of Gentex dimmable sun visors can be transformed into a vanity mirror at the touch of a button. Besides sun visors, dimmable glass technology can be used in panoramic roofs or vehicle windows.

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*Innovations that Gestamp is presenting at the IZB 2024*

**Circularity and decarbonization in the center**

**Gestamp Servicios SA.**  
**Hall 6 | Stand 6217**

Gestamp's technologies and products are created with the focus on improving safety, reducing CO2 emissions and being cost-efficient. Under this strategy, Gestamp globally leads in hot stamping, by innovating with materials and processes - with circularity and decarbonization in the center, such as Multistep 2.0, to improve strength and hardness in new products. Innovative product designs such as the Giga Stamping family, the highest protection safety solution that reduces assembly time, like the Lower Rear Frame. Modular Chassis concepts with forward looking applications, such as high strength tube material in subframe designs, which is key in crash performance, and a Power Sliding Door of Edscha Gestamp with a smart sensor technology with an automated & servo mode, are also examples of what Gestamp works for. Beyond the horizon. Creating our future.

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Communication platform Safety Cloud

**Real-time alerts to drivers, connected vehicles, and smart city infrastructure**

**HAAS Alert**

**Hall 4 | Stand 4211**

Founded in 2015, the U.S.-based technology company HAAS Alert has developed an innovative vehicle-to-everything (V2X) communication platform called Safety Cloud®. This platform enhances road safety by delivering real-time alerts to drivers, connected vehicles, and smart city infrastructure, informing them of nearby emergency vehicles, work zones, and other roadway hazards.

Safety Cloud® integrates with a variety of emergency response vehicles, construction fleets, and municipal equipment to broadcast digital alerts to surrounding motorists through in-dash (multimedia) systems, navigation apps, and other connected devices.

The goal is to provide drivers with timely and actionable information to prevent collisions and improve overall traffic safety. In Europe, this specific safety feature will become a part of Euro NCAP 2026.

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Plastic connector HC.fluid F and port HENN Hybrid (bottom)

**Breakthrough in Connection Technology –  
Lightweight, Flexible, Secure, and CO<sub>2</sub>-Reduced**

**HENN GmbH & Co. KG**

**Hall 5 | Stand 5219**

HENN has developed a completely new and innovative plastic connector - the HC.fluid F (top image) - and a port - the HENN Hybrid (bottom image) - designed for "New Mobility" applications. These products boast numerous features that have the potential to revolutionize the market. These include the modular design, which can be flexibly adapted to optimize tooling costs, the world's lowest insertion forces, enabling smooth and joint-friendly assembly, an innovative 360-degree locking detection that ensures everything is correctly assembled, 100% traceability of the product for the highest quality standards, and the environmentally friendly plastic that currently has the lowest CO<sub>2</sub> footprint (70% reduction) while maintaining the same quality. These features provide advantages over turned parts in terms of weight and price (concerning the port) and prevent material softening due to reduced temperature impact during laser welding (port).

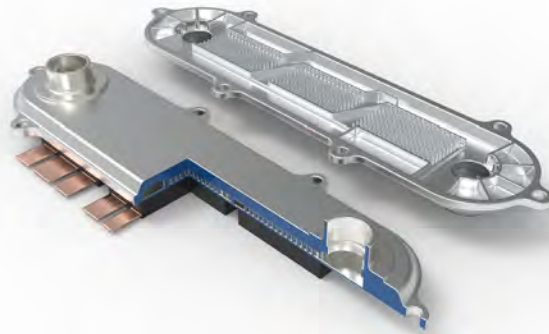
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*“Flex Cooling Power Module” concept design*

**Thermal Management by Hirschvogel –  
the “Flex Cooling Power Module” Concept**

**Hirschvogel Holding GmbH**  
**Hall 5 | Stand 5206**

PRODUCTS TO WATCH BY

**Automobilwoche**



Thermal management in battery electric vehicles (BEVs) is a decisive factor in terms of their performance and efficiency. It has an impact on the range, charging times, and service life of the battery and the power module.

Forged pin fin heat sinks made of aluminum and copper represent an innovative solution for cooling power modules in traction inverters. They demonstrate outstanding thermal conductivity and improve heat dissipation thanks to the increased surface area of the pin fin structure.

A **concept design** from Hirschvogel (see image) includes a system with parallel flow cooling fields. Here, the coolant flows through several channels to ensure uniform and efficient cooling of the individual module fields. This improves the thermal performance and reduces flow resistance.

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*Contriptor - dual relay with tripping functionality*

**Vehicle can continue to be moved even after current breaking**

**Hongfa Europe GmbH**  
**Hall 4 | Stand 4207**

Hongfa presents the Contriptor - a dual relay with tripping functionality (see image). In the field of E-mobility, conventional solutions use a switch and a pyro fuse. The Contriptor (contactor and tripping unit) combines these functionalities by utilising physical effects - making it a compact solution from a single source (total cost of ownership). Requirements for low, long-term stable contact resistances are met. Integrated functions such as current measurement, temperature measurement, diagnostics and auxiliary contacts ensure ASIL C.

The current is actively interrupted up to a defined current threshold value. Above this value, the contriptor opens automatically. Short-circuit currents of 20kA and more are safely and quickly disconnected and allow the device to be switched on again. This is a major advantage, as the vehicle can continue to be moved even after such a current breaking.

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*Fabric shrink tubing innoSHRINK\_4L@\_SLC*

**For a wide range of difficult applications suitable**

**iprotex GmbH & Co. KG**

**Hall 1 | Stand 1321**

The innoSHRINK\_4L@\_SLC (see image) has been added to the patented family of 2L and 4L products from iprotex to provide another clever user solution. The L-family optionally combines all known functions such as hot shrinking, cold shrinking and now also subsequent assembly. In particular, the snug, wrinkle-free flexibility of the 4L\_SLC makes it suitable for a wide range of difficult applications, such as modern thermal management systems. The product contributes significantly to the efficient operation, increased performance and safety of these systems. A special weaving process is used to achieve an optimum blend of insulation and abrasion resistance in a high performance weave. The stable, overlapping tube shape is characterised by very good restoring forces and ensures an optimum fit to the application, whether rubber, plastic, cable or aluminium tubing.

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*Automated Gluing Locator*

**Automated Gluing Locator:**

**Efficient Automation for Wire Harness Manufacturing**

**ITW Fastener Products GmbH**

**Hall 1 | Stand 1214**

The automotive industry is encountering new challenges in wire harness manufacturing. ITW Automotive's "Automated Gluing Locator" (see image) presents an innovative solution that simplifies production complexities while adhering to DIN 72036 standards. This system enables the adhesive application of fasteners to the harness using a fully validated process, providing both standardization and flexibility. The modular, compact automation facilitates space-saving integration into production lines, ensuring efficient and reliable assembly. This automation solution from ITW Automotive significantly reduces production costs and enhances process security, making it a key innovation for modern automotive manufacturing.

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*B-pillar made of Silicon-boron steel grade "SIBORA"*

**CO<sub>2</sub> reduction – material and forming technology are crucial**

**KIRCHHOFF Automotive**  
**Hall 6 | Stand 6102**

Hot forming is a forward-looking, effective technology that can significantly reduce the CO<sub>2</sub> footprint of a component. The use of materials plays a decisive role here. Together with VW, KIRCHHOFF Automotive has therefore been working on the material and process development of a silicon-boron steel grade "SIBORA" for a modified hot forming process, the so-called BQP process. SIBORA is a new steel grade that has a high strength in the press-hardened state and also a higher residual formability due to its content of bainite and metastable retained austenite. Tests of a hot-formed B-pillar (see image) made of SIBORA material under series production conditions show that an improvement in crash safety can be achieved as a result of higher energy absorption with a simultaneous reduction in body mass.

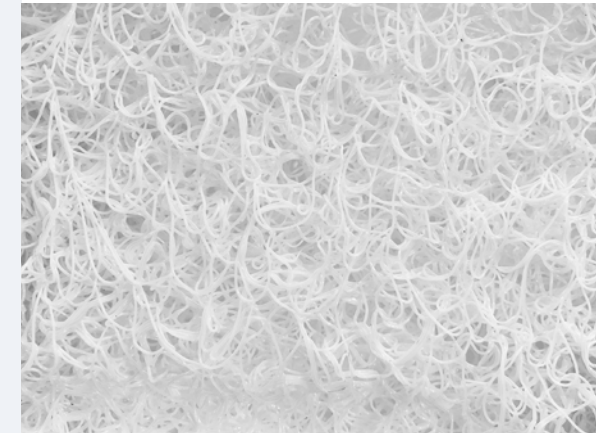
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*FlexAir™*

**FlexAir™**

**Lear Corporation GmbH**  
**Hall 3 | Stand 3211**

FlexAir™ (see image) is a 100 % recyclable and 100 % breathable alternative solution to traditional Polyurethane foam. This new technology reduces CO<sub>2</sub> emissions up to 50 % and weight up to 20 % over a PU equivalent. FlexAir™ is now in production with a major automaker and under development with 15 global OEMs. Lear has developed FlexAir™ for the automotive market with 190 Patents with automotive exclusivity.

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*Sueded surface material ReNewKnit™*

**ReNewKnit™**

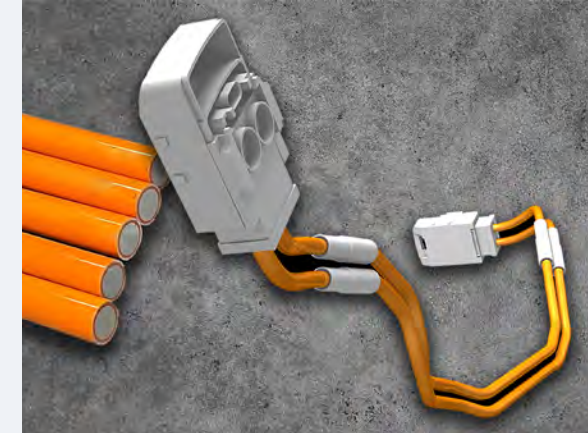
**Lear Corporation GmbH**  
**Hall 3 | Stand 3211**

**Premium-Partner innovations@IZB**

Lear's ReNewKnit™ sueded surface material (see image) is made from 100 % recycled plastic bottles and is 100 % recyclable. Produced with low-water and low-energy methods at a facility powered with 100 % renewable energy. This premium material with a wide range of surface haptics suitable for various Seating & Interior applications is changing minds about recycled textiles and is part of a global circular economy.

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**Solid Aluminum Harness**

**Lear Corporation GmbH**  
**Hall 3 | Stand 3211**



Lear's Solid Aluminum Harness concept provides a lighter weight alternative conductor through most of the harness length. It can be connected to traditional wire through CU/AL flexibility via existing connection systems. This solution provides up to 35 % weight reduction across a harness family, with high manufacturing automation possibilities in both harness assembly and OEM plants.

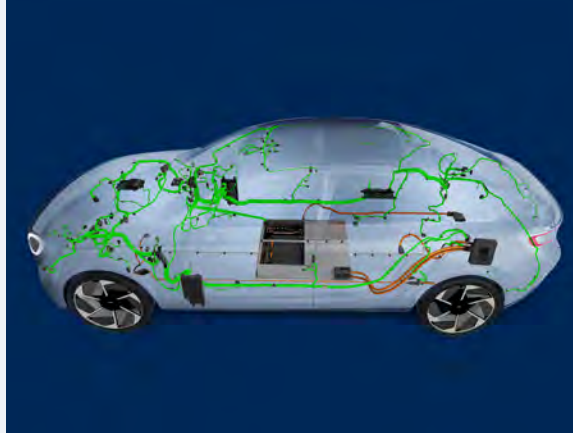
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*LIMEVERSE® covers the entire cable portfolio in the Leoni universe.*

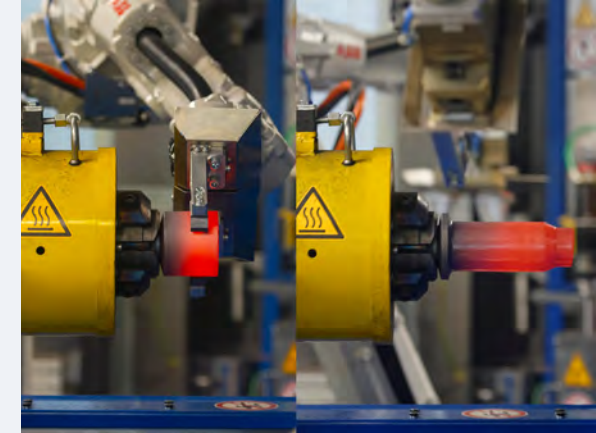
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*Radial forging: LinamaRadial*



**LEONI LIMEVERSE® – innovative and green**

**LEONI Kabel GmbH**

**Hall 3 | Stand 3218**

PRODUCTS TO WATCH BY

**Automobilwoche**



**Premium-Partner innovations@IZB**

New cables for a new time: With LIMEVERSE (see image), Leoni has achieved a milestone towards increasingly sustainable mobility. The automotive cables of the green product line are 100 % recyclable and reduce the CO<sub>2</sub> footprint immensely.

The highlight of LIMEVERSE is the special insulation material. This uses bio-based materials based on sustainable and/or renewable raw materials and mass-balanced plastics. The result is a lower CO<sub>2</sub> footprint of around 50 % compared to conventional cables. From single and multi-core cables to coaxial and data cables to charging cables: LIMEVERSE covers all applications and includes not only PVC insulation material but also PP and TPE-U. Temperatures up to 125 degrees Celsius are no problem. LIMEVERSE cables still meet the high electrical, mechanical and thermal requirements of the automotive industry.

**Maximum Performance in Rotor Shaft Production with LinamaRadial**

**Linamar Plettenberg GmbH**

**Hall 6 | Stand 6220**

LinamaRadial is our new internally developed innovation of high-precision, manufacturing process optimizing rotor shafts production - thanks to a number of technological details.

Linamar's specific manufacturing expertise that includes the use of high-quality bar material, the optimized production of near-net-shape Hatedur blanks, partial heating for radial forging (see image), as well as additional machining are details which collectively set a new standard for integrated production processes. The one-piece product design also enables significant cost savings compared to multi-piece rotor shafts, involving a cost reduction of around 4% compared to a two-piece shaft and as much as 8% compared to the three-piece version.



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HP Booster

★ **Heat Pump Booster by Litens revolutionizes heat pumps in BEVs**

**Litens Automotive GmbH & Co. KG**  
Hall 4 | Stand 4209



For the first time, the HP Booster (see image) combines the functions of three components. This innovation allows for the optimization of heat pumps and overcomes common system weaknesses. The result is a significant overall improvement in the system efficiency of battery-electric vehicles. In addition to more sustainable use of high-quality heat pump systems, the thermal management system reduces pressure losses, optimizes space requirements, and eliminates the need for currently used auxiliary heaters.

With the HP Booster, Litens enables the use of the heat pump system even at significantly lower temperatures. The conventional chiller is replaced by the HP Booster, which includes a heat exchanger that can quickly regulate the temperature of the vehicle battery as needed, ensuring optimal vehicle performance and longevity.

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NovaCards Battery Cell Emulation Board (top left),  
NovaCards CMC Simulator (bottom left) and  
NovaCards Battery HiL system (image right)

★ **Innovative validation solutions for BMS**

**MicroNova AG**  
Hall 3 | Stand 3114

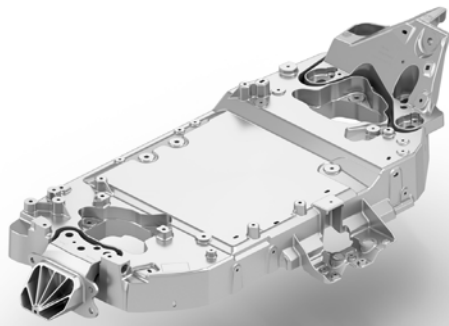


The NovaCards Battery HiL system (see image right) enables complete BMS testing of all lithium-based batteries and thus offers one of the most powerful cell simulations on the market. The safe operation of Li-ion batteries requires continuous monitoring of the cell voltage and temperature of the individual battery cells. This task is performed by cell module controllers (CMC). The NovaCards CMC Simulator (see image bottom left) therefore represents an ideal extension: it enables the simulation of several of these modules and can be used both on the test bench and as a desktop application.

The NovaCards Battery Cell Emulation Board (see image top left) is an IZB world premiere and completes the solution: it is the only board worldwide that simulates the condition of a battery at every stage - with  $\mu$ s resolution for electrical simulations that even enable electrochemical impedance spectroscopy (EIS) for control units.

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*E-Bracket from Nemak*

**Improving Cast Solutions by Using Dedicated Material Card**

**Nemak Europe GmbH**  
Hall 6 | Stand 6317



Electrification and the desire for sustainable solutions present challenges, but also new opportunities for cast components. Nemak has developed a material model to describe cast alloy in more detail – including the behavior after failure, which is important for crash requirements. This material model was successfully applied and validated for a cast structural component (see image) in serial production.

The accurate material data enabled a precise prediction of component behavior and an approximation of the limits of wall thickness and material usage. The result is a weight reduction of approx. 30 % compared to the aluminum base design.

Thanks to the close development collaboration with the customer, Nemak realized a recycling rate up to 80 % for this lightweight solution. Along with the weight savings, this results in a sustainable, high performance chassis component for BEV application.

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**Nidec Immersion Cooling Pump:  
High efficiency, compact design and low noise level**

**NIDEC GPM GmbH**  
Hall 2 | Stand 2201



What is immersion cooling? Immersion cooling is a method of cooling electrical components in which the hardware is completely immersed in a non-conductive, thermally efficient liquid. How the Nidec Immersion Cooling Pump works: The Nidec Immersion Cooling Pump plays a central role in the cooling system. It ensures that the cooling liquid circulates continuously and thus effectively dissipates the heat generated. The key advantages of the Nidec Immersion Cooling Pump include its high efficiency, compact design, low noise level, hardware durability and performance optimization. Areas of application: The Nidec Immersion Cooling Pump is designed for use in electric vehicles and commercial vehicles with immersion-cooled batteries as well as for servers that are cooled by immersion.

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*NIMMSTA Smart Watch*

**High performance picking with the Industrial Smart Watch**

**NIMMSTA GmbH**  
**Hall 2 | Stand 2410**



NIMMSTA enables high performance picking with the Industrial Smart Watch, fundamentally revolutionising intralogistics. The optimised work steps are displayed on the innovative Smart Watch (see image) with integrated industrial scanner. The bidirectional interaction between the worker and the system means that the (picking) processes run up to 50 % faster. The worker is controlled intuitively and can make entries and confirmations via the touch display. Every action triggers haptic, acoustic and visual feedback, resulting in a zero error rate. The Smart Watch is ergonomically positioned on the soft and comfortable cuff using a Velcro fastening. This ensures a high level of wearing comfort and delights users. The display on the touch screen can be customised.

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*NORMA Group's cutting-edge thermal management system*

**Bye-bye pressure drops:  
NORMA Group's cutting-edge thermal management system**

**NORMA Group Holding GmbH**  
**Hall 1 | Stand 1219**

Pressure drops in EV thermal management systems can severely affect system performance, ultimately reducing the range of the EV. The innovative solution by NORMA Group addresses this issue by combining various components optimized to minimize pressure drop.

Leveraging advanced simulation techniques, the company designs flow-optimized thermal management systems tailored to any application. NORMA Group fine-tunes the geometry and diameter of all components, achieving a low pressure drop and enhancing system efficiency. As an example, the company uses flexible smooth tubes, which have a significantly lower impact on pressure levels compared to corrugated tubes, and unique flow-optimized Quick Connectors. By integrating sensors, users can even monitor the pressure level in real-time. OEMs that choose NORMA Group's advanced thermal management (see image) system can reduce pressure drops effectively.

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www.open-hybrid-labfactory.de



*Bonding Competence Center*

**Research and testing of new automotive adhesive technologies and associated separation processes**

**Open Hybrid LabFactory e.V.**

The Bonding Competence Center (see image) at the Open Hybrid LabFactory (OHLF) brings together the adhesive technology activities in vehicle construction and recycling (debond on demand) in a central location and coordinates them based on a roadmap. This includes not only the generation of research results, but also their regular discussion and critical evaluation in order to derive new directions for action. In addition to 50 m<sup>2</sup> of laboratory space, the Bonding Competence Center also has a robot cell in the technical center and a modern workshop room. In conjunction with the analysis technology located in the OHLF, the adhesive production and evaluation of a wide range of sample scales can be covered (coupon samples, demonstrator, 1:1 component). These capacities are open to any institution that would like to work on adhesive technology issues in collaboration with the OHLF.

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*Dismantling cell*

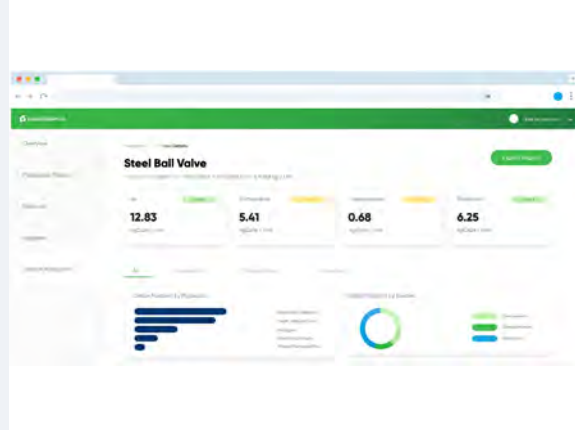
**Automated dismantling and disassembly of battery systems and traction batteries**

**Open Hybrid LabFactory e.V.**

Automated disassembly of battery systems without high-voltage hazards and for closed material cycles. Construction of a fully automated disassembly system. - The ZIRKEL project at the Open Hybrid LabFactory (OHLF) is researching innovative recycling and dismantling processes (see image) for electric motors and traction batteries in order to drive forward the circular economy. Automated, resource-saving processes are being developed with the help of artificial intelligence and machine learning. The aim is to close material cycles in order to realize both ecological and economic benefits through the recycling of components. Funded by the Federal Ministry of Education and Research, an interdisciplinary team is working on the implementation of these sustainable solutions. Further information can be found on the project landing page at “www.open-hybrid-labfactory.de”.

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*AI-powered, cloud-based PCI solution from pacemaker.ai*

**Product Carbon Intelligence (PCI) – the efficient way to a CO<sub>2</sub> footprint**

[pacemaker.ai](https://www.pacemaker.ai)  
Hall 2 | Stand 2104

With investors, regulators and customers increasingly demanding lower CO<sub>2</sub> emissions, it is becoming more and more important to precisely determine the CO<sub>2</sub> footprint of products. The AI-powered, cloud-based PCI solution (Fig.) from pacemaker.ai greatly simplifies this process. PCI captures and analyzes emissions across the entire value chain, delivers ISO 14067-compliant results, and provides users with clear, traceable reports. This also enables customers to proactively respond to regulatory requirements, such as ESG and CSRD guidelines. Thanks to seamless integration into customers' existing systems and a user-friendly dashboard, they can efficiently achieve their sustainability goals and transparently communicate their successes. Users can transform their sustainability strategy with PCI, the tool for innovative solutions.

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*Plasma coating of a battery housing*

**Reproducible, selective and inline**

[Plasmamatreat GmbH](https://www.plasmamatreat.de)  
Hall 6 | Stand 6108

Plasmamatreat's AntiCorr® coating offers manufacturers reliable protection against creep corrosion, ensuring high-quality, durable products. This anti-corrosion coating is applied to metals such as the aluminum die cast alloy AlSi12 (Fe) using atmospheric pressure plasma.

A key advantage of AntiCorr® is the selective treatment, as only the relevant parts of the component are coated. Compared to other methods, such as waxing or electroplating, AntiCorr® coating is an environmentally friendly, dry, automated and reproducible process that can be used in-line for solid and liquid seals. The process has already passed all standard climatic and salt spray tests, such as PV 1209 or the MeKo-S test.

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*Cobotic solution CoboSense Aesthetix*

**Visual quality inspection workflows in a safe and collaborative manner automated**

**Rhopoint Instruments GmbH |  
Konica Minolta Business Solutions Europe GmbH  
Hall 2 | Stand 2315**

Surface perception has been of central importance in quality control for decades. The new Rhopoint Aesthetix, equipped with two state-of-the-art camera sensors and innovative lighting technologies, produces HDR surface images with exceptional resolution for evaluating optical properties such as gloss, haze, orange peel, and texture, as well as effects like sparkle and graininess. Additionally, the device can be used for the objective evaluation of tests such as crosscut adhesion or stone chipping.

In combination with Konica Minolta's automated surface inspection solution, CoboSense, Aesthetix sets new standards in material analysis while simultaneously reducing labor and maintenance costs. CoboSense-Aesthetix (see image) is a groundbreaking Cobot solution that safely and collaboratively automates visual quality inspections, including checks for scratch, mar, and abrasion resistance, allowing inspectors to focus on more value-added tasks.

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*Nonwoven fabric finexus®*

★ **finexus® – nonwovens for sustainable components**

**Sandler AG  
Hall 1 | Stand 1219A**

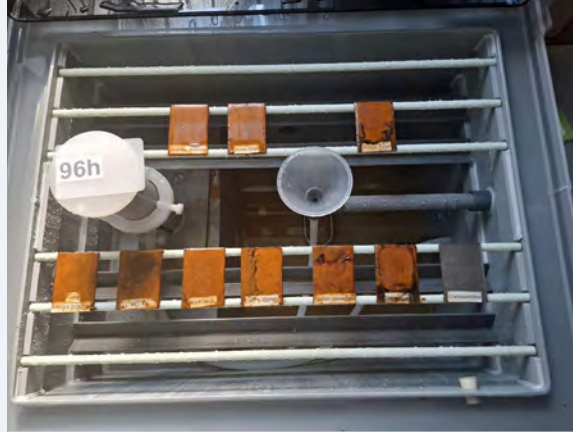


**Premium-Partner innovations@IZB**

Sandler Group strengthens the presence of textile molded parts and presents finexus® (see image) – a nonwoven fabric developed for exterior and interior applications. With the patented material made from 100 % polyester fibers, the company offers a solution to raw material shortages and the avoidance of multi-material constructions. Sandler does not use glass, binders, or additional layers, and can manufacture self-supporting, acoustically effective molded parts only through the alignment of polyester fibers and the hot-molding process of the nonwoven fabric. The nonwoven fabric demonstrates excellent surface bonding, moldability, and stiffness, and can withstand the demanding climate change conditions inside vehicles. Already today, 80 % recycled fibers are incorporated, and offcuts are reused. This reduces the CO<sub>2</sub> footprint and closes the raw material cycle.

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Salt spray test

**No solvents – better environmental protection, more performance**

**Scandex AG**  
**Hall 2 | Stand 2205**

Scandex is dedicated to research and has thus risen to become the global technological leader in multifunctional and corrosion protection oils and greases (in direct comparative testing EN ISO 9227:2006 with all known manufacturers). The company's innovation lies in the area of product performance as well as environmental and occupational safety.

Conventional multi-oils/greases last less than 90 hours in the salt spray test (see image), whereas the exhibitor's products exceed 336 hours or even 2,000 hours. Conventional products contain large amounts of solvents and other harmful substances. Scandex products are virtually solvent-free and made from 99.9% pure base oils, which are not classified under SDS as H304, H350, etc. No solvents also mean better environmental protection.

During the shipping and storage of components, packaging materials such as VCI films can be reduced. Less waste, less weight, and less material transport mean lower costs and reduced CO<sub>2</sub> emissions.

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4in1 e-axle

**Modular design saves space, weight and provides more comfort**

**Schaeffler Technologies AG & Co. KG**  
**Hall 3 | Stand 3411**



Electrified powertrains are part of Schaeffler's core business. The company develops everything from individual components to highly complex systems. Through the merger with Vitesco, Schaeffler is further expanding its expertise in electric mobility. Electric axle drives have big market potential and Schaeffler is constantly developing the system further. In addition to the electric motor, power electronics and transmission, the 4in1 e-axle also integrates thermal management into the axle drive (see image). This modular design saves space, weight and provides more comfort. Particularly efficient thermal management increases the range per battery charge and accelerates the charging speed. The 4in1 e-axle is currently Schaeffler's most comprehensive e-drive system. It eliminates the need for costly new developments of the entire drive system. Thus, Schaeffler minimizes development time and costs.

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SAEN Environmental Node

**All-in-one environmental sensor platform**

**SENSIRION AG**  
Hall 3 | Stand 3116



Sensirion Automotive Solutions introduces the SAEN Environmental Node (see image), the first automotive-grade all-in-one platform designed to streamline indoor air quality monitoring in vehicles. The modular platform uniquely combines multiple sensors in a never-before-seen form factor and can measure up to eight environmental parameters (PM1, PM2.5, RH, T, CO, CO 2, NOx, VOC). It simplifies integration, reduces costs, and allows for full customization. Directly integrated into the HVAC system it optimizes performance and saves energy. At its core is a miniaturized, MEMS-based particulate matter sensing component. Paired with a patented geometric arrangement, this component integrates the light source, detector, signal processing, and algorithm into a cost-effective and space-efficient solution.

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Electrical wiring harness e-STEALTH W/H

**Improving the automation rate to about 50 percent**

**Sumitomo Electric Group**  
Hall 3 | Stand 3212

The movement toward CASE vehicles has led to an increase in the number of automotive E/E systems. Meanwhile, the complex nature of wiring harness manufacturing makes it difficult to automate, resulting in manual-intensive processes requiring many workers globally. To address these challenges, Sumitomo Electric has developed e-STEALTH W/H™.

The benefits of the e-STEALTH W/H™ (see image) are: Improving the automation rate to about 50 %, increasing the interior space (height of the wiring harness reduced by about 50 % from the conventional product), minimizing the routing distance and reducing man-hours required for assembly.

Sumitomo Electric will open up new manufacturing possibilities by further improving the automation rate and promoting the automated installation of wiring harnesses. The successful adoption of the wiring harness by a major automaker underscores its effectiveness.



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The Battery Pass from T-Systems provides the right data for different users throughout the entire battery life cycle.



**New Battery Pass for seamless documentation**

**T-Systems International GmbH**  
Hall 3 | Stand 3317



**Premium-Partner innovations@IZB**

From February 2027, EU directives will require a product passport for batteries with a capacity of more than 2 kWh. For this so-called battery passport, manufacturers and “distributors” of batteries as well as their suppliers must fulfill a number of requirements: Integration of life cycle data from different systems and different stakeholders into a digital twin, exchange of passports and relevant data via the supply chain and establishing trust about the origin and accuracy of the data provided.

T-Systems has developed a solution to build product passports “as a service” or “on premise” for companies (see image). The challenge: mastering the multitude of semantics, protocols and formats and preparing the right data for the right stakeholders across the various battery lifecycle phases. Data is exchanged between companies via data spaces such as Catena-X. Based on GAIA-X principles, T-Systems also ensures that the origin of the data can be verified and the content of the passports can be digitally certified.

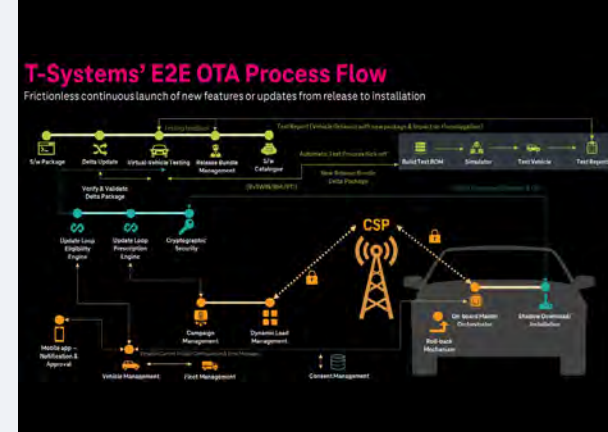
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End-to-End Process Flow: Frictionless continuous launch of new features or updates from release to installation

**Over-the-air updates with highest security standards**

**T-Systems International GmbH**  
Hall 3 | Stand 3317

Monitor millions of vehicles and perform updates at any time, from anywhere and on any device: T-Systems' OTA platform (see image) offers a comprehensive, secure and scalable solution for updating software and firmware. The key innovation of the platform is that it continuously monitors and collects configuration data from millions of vehicles and their electronic control units (ECUs), resulting in increased security.

The modular design supports a wide range of connected devices and ensures seamless deployment. Downtime is minimised and updates for device fleets can be performed in a user-friendly way with just a few clicks. The platform's scalable architecture adapts to millions of devices.

Flexible APIs (Application Programming Interface) enable seamless integration, while the platform is adapted to new standards in a future-proof manner. The actual and target configurations of each control unit are automatically compared, eliminating the need for manual selection criteria. Optimised vehicle clusters ensure that the right vehicles are updated with the right software at the right time.

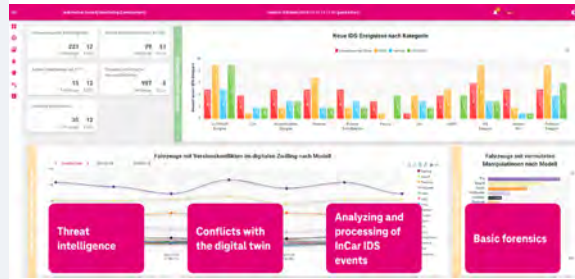
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One of the advantages of the T-Systems ASM Dashboard is that safety incidents are monitored throughout the entire vehicle life cycle.

**Seamless automotive security monitoring (ASM) in real time**

**T-Systems International GmbH**  
**Hall 3 | Stand 3317**

Software-defined vehicles require effective security management. New international standards (UNECE R155, ISO/SAE 21434) are setting the pace, as they require cyber security to be guaranteed in all phases of development and throughout the entire life cycle. Automotive Security Monitoring (ASM, see image), developed by T-Systems, covers a central part of these requirements.

ASM is an innovative cloud application that enables real-time monitoring of vehicle data. The data originates from one or more intrusion detection systems (IDS) and is transmitted directly from the vehicle backend to ASM. Advanced stream analytics algorithms continuously analyse the data stream for possible attack patterns. The integration of databases for publicly known security vulnerabilities, the vehicle-specific digital twin and other backend systems ensures comprehensive monitoring.

Security incidents are displayed directly in a comprehensive security event dashboard with detailed analysis options, and users are informed immediately.

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**CO<sub>2</sub> savings of up to 55 percent compared to virgin-grade materials**

**TechnoCompound GmbH**  
**Hall 1 | Stand 1110**



The PP LGF CDC (Concentrate Dilution Concept) includes the use of newly developed PCR-based PP diluters for long glass fibre-reinforced injection moulding versions which also enables the OEM requirements in terms of load-bearing capacity, emissions and odour to be satisfied. A PCR content of up to > 65% has been achieved in CDC 20. This also means that CO<sub>2</sub> savings of up to 55% compared to virgin-grade materials can be achieved and the statutory regulations relating to recyclate content expected in the near future can also be satisfied.

Recyclate content is currently at 70% over all product segments. Around 30% of the compounds currently contain between 20% and 100% of post consumer recyclates (PCR).

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*NextGen/NextGen+ MCON 1.2 Sealed Locking Lance Series by TE Connectivity*

★ **Ultra-robust, high-performance, sustainable 1.2mm low power connectivity**

**TE Connectivity Germany GmbH**  
**Hall 3 | Stand 3209**



TE has designed the next generation of ultra-robust, high-performance, sustainable 1.2mm low power connectivity for harsh automotive environments. Offering a superior and versatile product that is fully compatible with TE's MCON standard and Gen2 series, the NextGen and NextGen Plus MCON 1.2 locking lance series (see image) offers customers the largest portfolio of sealed automotive compact connectors that are LV214 and USCAR2 validated. In addition, it provides a sustainable design (reducing CO<sub>2</sub> footprint by approximately 20% and up to 40% with NextGen Plus), improved CPA, vibration performance, and ease of assembly.

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*Thermoplastic vulcanizate Sarlink® TPV*

**Optimizing thermal management in electric vehicles with Sarlink® TPV technology**

**Teknor Apex**  
**Hall 1 | Stand 1211**

Sarlink® TPVs (see image) challenge traditional material solutions for EV coolant hoses, with clear advantages in versatility, weight reduction, and environmental impact - from flexible hoses to stiff tubes, mono or multi-layer - including various types of reinforcement. This includes High Performance TPVs (65A to 50D): Fully cross-linked, exhibiting superior resistance to flex-fatigue, abrasion and chemicals. Broad hardness range for multiple hose designs. TPVs with up to 30% Post Consumer Recycled Content (80A to 90A): Reduce dependency on virgin plastic and contribute toward a circular economy without compromising performance. Specialty TPVs with Low Extraction Levels (70A to 50D): High-purity TPVs minimizing risk of coolant contamination, meeting OEM requirements for extractables. Adhesion-modified TPV (85A): Specialty TPV designed to adhere to PA for multi-layer hoses.

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*Trotec VIN Marker for vehicle identification number marking*



**Safetycone isolates the laser beam**

**Trotec Laser Automation GmbH**  
**Hall 2 | Stand 2110**

PRODUCTS TO WATCH BY

**Automobilwoche**



The VIN Marker from Trotec (see image) engraves the vehicle identification number using a laser in synchronised production lines. This increases the efficiency of production lines and reduces downtime (e.g. due to broken needles on needle embossers), manufacturing costs, set-up times and rework.

The special feature of the VIN Marker, in addition to the powerful fibre laser, is the Safetycone, which isolates the laser beam. This additional module provides the highest possible Class 1 laser protection and saves costs and effort for the housing and control cabinet.

Set up according to the production requirements, the laser is positioned with the Safetycone on the body or component without force-fit clamping. After several sensors on the safety cone have checked and approved the secure seal, engraving begins.

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OEM COMPOUND PLANT & YARD MARSHALLING 24/7



*Unikie Marshalling Solution*

**Automated driving of vehicles in gated areas**

**Unikie**  
**Hall 3 | Stand 3220**

Unikie Marshalling Solution (UMS, see image) automates vehicle driving within gated areas. It is well-suited for simultaneously managing and steering vehicle fleets within all logistics compounds. UMS offers rapid scalability and enhances operational efficiency, reliability and safety.

UMS is a smart infrastructure which, equipped with sensors and edge computing, digitalizes the compound in real-time. UMS achieves vehicle control equivalent to Level 4 autonomy without utilizing onboard vehicle computing. This simplicity extends accessibility to vehicles across all cost categories. The ISO Standard guarantees interoperability, enabling multi-OEM fleets.

UMS opens diverse applications, incl. manufacturing plants, logistics, depots and fleet yards. UMS presents novel business opportunities for operators to rethink their KPIs in response to this transformative technology without reliance to drivers.

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*Uniphy BeyondTouch*

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*Occupant detection in car with the infrared sensor VETL8800X00*

★ **Touch Sensing on 3-D physical surfaces**

**Uniphy Ltd.**  
**Hall 1 | Stand 1119**

PRODUCTS TO WATCH BY

**Automobilwoche**



Uniphy BeyondTouch™ enables design freedom to create free-form touch surfaces with superimposed 3-D physical controls. Dials, domes, buttons, sliders, etc. can be sensed by the fingers, while the nuanced pressure sensitivity prevents accidental activation. Coupled with haptics these features make possible to interact with the vehicle without the need to take eyes off the road.

The seamless plastic or glass touch surface is ingress protected, works with gloves and comes with inherent features like proximity sensing or in-air gesture recognition. Commodity materials and mainstream manufacturing processes make the solution economic and environmentally sustainable.

Uniphy merges the best of both worlds – the sensual perception of mechanical controls with the versatility of touch displays, resulting in intelligent & distraction free user interface for safe driving experience.

★ **VETL8800X00: Long wave Infrared Sensor for “Reliable” Occupant detection**

**Vishay**  
**Hall 3 | Stand 3104**

PRODUCTS TO WATCH BY

**Automobilwoche**



Vishay's VETL8800X00 is a monolithically built-in CMOS sensor array in a miniaturize SMD package. The device is assembled in a hermetically sealed SMD package and has a target wavelength range between 5 to 15  $\mu\text{m}$ . Its fully qualified according to AEC-Q100 and has a detectable object temperature range of -60 degrees Celsius to +300 degrees Celsius. One of the key applications is occupant detection in Automotive (see image). The sensor detects thermal radiation in the long infrared (LIR) range such as emitted by a human body, which makes it possible to detect the baby in a stationary position (sitting or sleeping). This cannot be done using standard technology such as Passive Infrared. Driven by regulations for child presence detection, anti-privacy concerns and the overall low system cost makes the sensor ideal for this application.

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*Line scan camera with special lighting technology on a 6-axis robot*

**Automated surface inspection**

**Visomax Coating GmbH**

**Hall 1 | Stand 1605**

Our system solution for the automated analysis of free-form surfaces includes a line scan camera equipped with special lighting technology and mounted on a 6-axis robot (see image). The surface structure to be inspected is captured and the detected defects are marked using an integrated marking tool. The modular design makes it possible to integrate further processing steps, such as grinding the defects. The mobile and compact design of the system results in space savings for the customer. A lower error rate of the automated detection increases the process stability. The main area of application is the automated detection of dust inclusions, scratches and other paint irritations on coated components of all kinds in pre- and post-processing.

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*AI-based wearable ClickID*

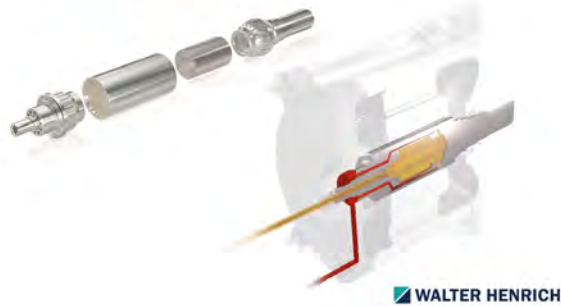
**An assembly revolution – More efficiency and fewer errors thanks to the wearable ClickID**

**VOSS Automotive GmbH**

**Hall 5 | Stand 5310**

The construction of electric cars is increasingly relying on plug connectors that have to be connected by hand. This leads to an increasing risk of errors during assembly, particularly when it comes to monotonous tasks in combination with increasing time pressure. We have responded to this trend by developing an AI-based wearable with state-of-the-art acoustic and motion sensors. ClickID (see image) recognizes and validates correct mating processes in real time. Haptic and visual feedback is reported to the user immediately after the manual assembly process has been completed, allowing assembly errors to be corrected straight away. The integrated AI technology analyzes complex motion and audio data to identify recurring patterns. With ClickID, the error rate and associated follow-up costs can be significantly reduced.

quick'nCOOL



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**quick'nCOOL® - The new dimension of rotor cooling**

**Walter Henrich GmbH**  
**Hall 5 | Stand 5308**

To achieve the highest overall efficiency of an E-motor, optimized thermal management is essential. Effective internal cooling of the rotor shaft is a crucial part of this solution.

By using rotor shafts equipped with our new quick'nCOOL® technology (see image), you benefit from an exceptional cooling effect and a significantly increased heat transfer coefficient (HTC), thanks to the intelligent routing of coolant within the rotor shaft. This allows heat to be dissipated quickly and efficiently, right at its source. As a result, the overall efficiency of the E-motor can be greatly enhanced, enabling either a significant performance boost or extended continuous power.

Thanks to its modular design, we can offer these rotor shafts in both small series and mass production, with the advantages like simple assembly, reducing complexity and time, nearly limitless scalability, Cost-effectiveness due to efficient manufacturing processes.

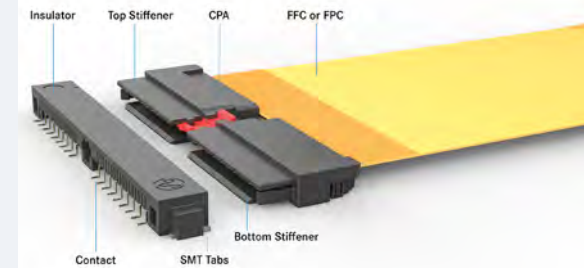
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Y-Lock V4 system

**Robust Low-Profile Board-to-Cable Connector for Battery Management and Cell Contacting Systems**

**YAMAICHI ELECTRONICS Deutschland GmbH**  
**Hall 3 | Stand 3401**

In order to meet the special requirements of cell contacting systems and battery management systems, Yamaichi Electronics has developed further the non-ZIF Y-Lock Pullforce series. In addition to a double locking mechanism (side/front), the new Y-Lock V4 system (see image) also has an optional CPA (Connector Position Assurance). The two-part stiffener design on the cable side ensures contact protection of the contact pads for the FFC or FPC as well as 'Koshiri' protection in the event of improper insertion. The Y-Lock V4 is available in different pitches to meet the various voltage requirements. The system is optionally available in gold or tin plating and therefore also offers a cost-saving option. The Y-Lock series is certified for the automotive sector on the basis of the LV214.

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*ZD-Datalogger3 series*

**Vehicle Data Acquisition with High-Performance Technology**

**ZD Automotive GmbH**

**Hall 4 | Stand 4201**

The **ZD-Datalogger3 series** (see image) sets new standards in vehicle data acquisition. With data bandwidth of up to 3 Gbps, 2x8T storage, and 24/7 recording capability, it offers top performance and precision, made possible by PTP synchronization with 4 ns timestamps.

The robust hardware is complemented by two powerful software tools. The TraceClient3 software optimizes data configuration and monitoring, while the Vehicle Bus Tool\_Trace Version provides detailed real-time analysis and extensive visualization options.

This series is ideal for test vehicles and real-time monitoring, especially in the development and verification of complex onboard network architectures and ADAS functions. The combination of hardware and software forms a comprehensive platform that redefines efficiency and data accuracy in vehicle data acquisition.



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