Thu, 3 November 2022
Weekly Newsletter

DVN-I
Automotive Interior

NEWSLETTER #134

Editorial

IZB Shines; Glass Shimmers

TOYOTA BOSHOKU BOOTH AT IZB (TOYOTA BOSHOKU IMAGE)

IZB happened three weeks ago. It was originally a VW supplier event, and has grown to become one of the top supplier shows in Europe, especially for car interior technologies. In this week's DVN-I Newsletter you'll find an extended in-depth report on the event, with reporting on interior lighting; seat HVAC and comfort; in-cabin radar; DMS-OMS and face recognition; HMI; displays; stretchable electronics; touch and haptics; premium surfaces; acoustics, and of course safety—and more! This compendium reflects the diversity and the complexity of today's automotive interiors.

And the Design Lounge this week highlights the opportunities that glass can create for interiors, including combination with displays. Smooth to the touch; compatible with touch-sensitive controls, and beautiful, glass enhances the full environment. This new HMI perspective is exactly what we will talking about during the upcoming DVN Interior Think Tank seminar in Köln at the end of the month. We're looking forward to meeting you there! In the meantime, enjoy the Newsletter.

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

IZB Technology Festival in VW's Living Room

IMAGE: DVN

The International Suppliers Fair (IZB) is aimed at automotive industry suppliers and has a prominent reputation in international professional circles. The 11th IZB took place place from 11th to 13th October. It's unique among supplier events due to its location at the headquarters of Volkswagen AG. It is not dedicated to VW, but this proximity has anyway a strong influence.

In addition to Germany, companies from countries such as Great Britain; France; Singapore; Spain; Switzerland, and the USA are all represented here. In total, 940 exhibitors from 37 countries and around 50,000 visitors were on the doorsteps of VW.

They showcased a wide variety of new solutions and innovative products in the key areas of e-mobility; production 4.0; electrification; autonomous driving, and software. The aim of the IZB to represent the entire value chain of the vehicle as a product developing into a networked user device. A major theme is that quality in all individual parts, and reliable cooperation of the hardware and software suppliers, are guarantors of innovation; safety, and sustainability of the end product.

Here we highlight a selection of innovations and products shown at IZB:

Arkamys

Arkamys, based in Paris, France, creates innovative automotive software solutions and is recognized for their expertise in 3D sound and audio rendering. Their solutions equip 1 in 2 vehicles of the volume carmakers in Europe, and deliver innovative solutions to optimize audio quality and spatialization in car cabins.

ARKAMYS IMAGE

Arkamys and Qualcomm Technologies demonstrated their solution through the sound of the new Peugeot 308, which is equipped with the 10-speaker, 12-channel Focal Premium HiFi System. They worked together to maximize the combination of the SoundStage modular and scalable software solution with Snapdragon® Cockpit Platforms to help achieve the precision and sound quality required by auto manufacturers.

SoundStage software solution is engineered to offer the efficient management of complexities around premium audio systems to enhance acoustics in vehicles, create sound envelopment and improve immersivity with a subtle, balanced, wide and more precise surround image and a sound scene.

Leggett & Platt

LEGGETT & PLATT IMAGE

Leggett & Platt (L&P) gave a snapshot of how they bring automotive seating comfort to a new level, with fully adaptive body support, personalized and wellness solutions, and smart motors and actuators to complement driving styles of the future.

L&P, based in Carthage, Missouri, USA, is a diversified manufacturer with around 20,000 employees. They design and produce engineered components and products that can be found in homes and automobiles.

L&P's Mid-Class Luxury Massage System has generated plenty of attention. It is powered by a unique valve module innovation; this system provides similar functionality to high-end luxury massage systems with significantly reduced complexity and electronics. **See video.**

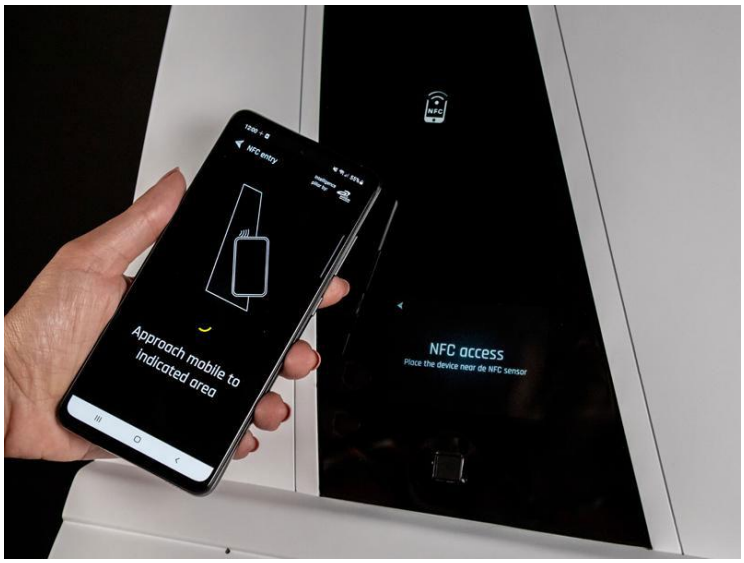
They also presented an advanced massage system which offers a holistic, full-body massage while adding new comfort functions to the seat for improved wellbeing; a smart latch actuator which safely automates three middle and back-row seating features using one intelligent component system; a compact power liftgate actuator which allows the entire package to be smaller, lighter, and more efficient, and a sunroof actuator—designed for all sunroof types, this lightweight, flexible design offers low noise levels during operation while meeting the highest EMC requirements.

Grupo Antolin

GRUPO ANTOLIN IMAGES

Antolin showed their Vivar concept car, a more sustainable and comfortable vehicle interior. When the vehicle doors open, they reveal a more spacious interior which perfectly adapts to enable this electric car to be used for both

autonomous and manual driving. Grupo Antolin also combines their expertise in developing and manufacturing instrument panels with a smart-integration strategy to achieve seamless integration of displays in instrument panels

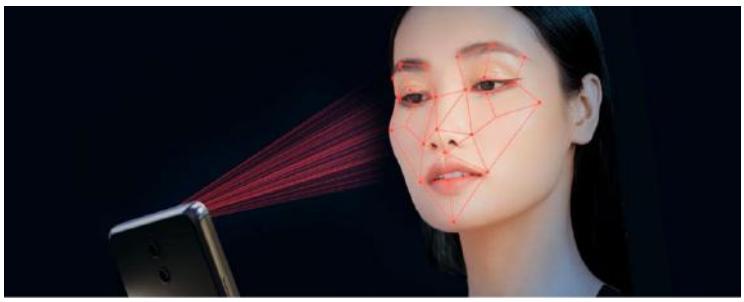


Antolin also presented their new combined hardware-software solution for integration into the driver's door or another exterior area of the vehicle. It offers multi-factor authentication for vehicle access by means of biometrics—facial recognition, voice recognition and fingerprint—digital keys (mobile APP or NFC card) and/or PIN code.

Grupo Antolin was joined at the show by their partners Walter Pack, AED Vantage, and Trinamix.

Trinamix

Trinamix develops and integrates 3D sensing and IR-based technologies. Based in Ludwigshafen, Germany, the company was founded in 2015 as a wholly-owned subsidiary of chemicals giant BASF.



TRINAMIX IMAGE

Their face authentication system can be integrated into the driver's door, or any other exterior area of the car. It allows for convenient and secure locking and unlocking. Thanks to the high biometric security of the solution, the system protects vehicles against unauthorized access and theft, while granting authorized drivers a frictionless experience.

Ascorium

ASCORIUM IMAGE VIA VOLVO

Ascorium is based in Königswinter, Germany. They specialize in polyurethane (PU) surfaces for the likes of instrument panels and door trims, and offer a broad spectrum of high-quality and highly functional applications.

One example for vehicle interiors is their translucent PU surfaces for surface backlighting of components and the integration of backlit switch or sensor foils. The materials' high touch quality guarantees perfect reproduction of fine graining and the surface feel of textile fabrics, while the ultimate highlight is the company's multicolored components. This new PU surfaces bring together all of these benefits. With an innovative direct backmolding technique, Ascorium can foam PU skins in one process step with an injection-molded carrier. This saves resources and eliminates complex process steps; there's no back-foaming; punching, or milling required. And 20 per cent of the raw materials used in the method are either renewable or recycled, thus making it sustainable and resource-conserving.

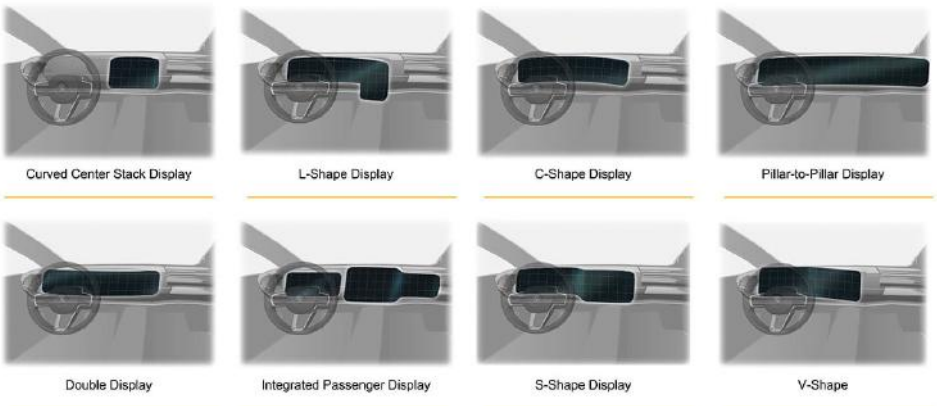
Autoneum

INNER DASH HYBRID-ACOUSTICS (AUTONEUM IMAGE)

Autoneum, headquartered in Winterthur, Switzerland, is a leading manufacturer of vehicle acoustic and thermal insulation for most of the world's automobile manufacturers. Autoneum was founded in 2011.

Hybrid-Acoustics is an acoustic concept from Autoneum for improving the NVH performance of interior components). With its lightweight and porous material construction, the technology offers both acoustic insulation and absorption, thus providing optimum protection against rolling and powertrain noise. The ECO+ version of this hybrid technology is based on thermoplastic felt with up to 70 per cent recycled content and is fully recyclable.

Continental

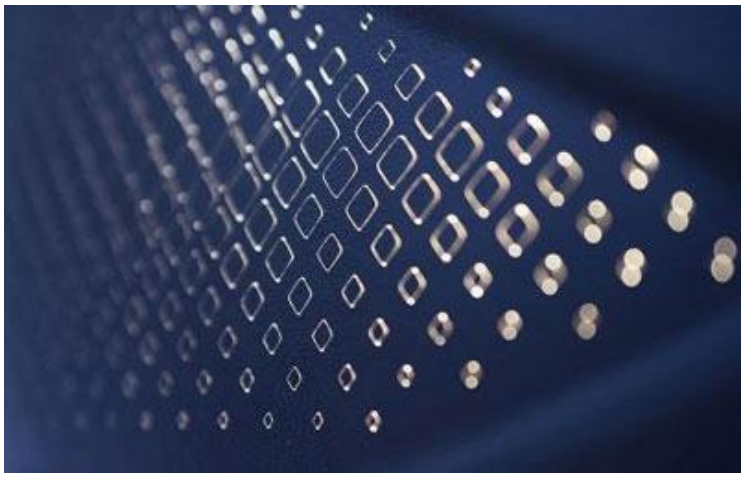


CONTINENTAL IMAGE

Continental's C-shaped display (image: top row, second from right) is a driver- centric display design. The curved shape means information can be perceived more intuitively, and functions can be operated more easily. The immersive design enables harmonious integration into elegant, curved dashboard shapes. The display solution thus creates a holistic experience that not only ensures extreme user-friendliness, but can also further enhance driving safety.

Eissmann Group Automotive

EISSMANN IMAGES



Eissmann Group Automotive, headquartered in Bad Urach, Germany, is a company of experts in trim; seat covers; interior modules, and kinematics (like movable consoles and driver airbag covers). Their innovative lighting solution enables extremely sharp illumination of hard and soft coated textiles with patterns; symbols, and logos. For a perfect design both during the day and at night, the masking required for the lighting is completely invisible when switched off. The solution is therefore particularly suitable as a shy-tech alternative to a black panel. With the corresponding control electronics from Eissmann, it enables welcome animations, mood-light applications, and ambient lighting to all be integrated into textile surfaces.

Gentex

The Gentex system for driver and vehicle interior monitoring (see image) not only provides information on the driver's attentiveness and availability but also displays precise details about passengers and items in the vehicle interior. With a combination of video image recognition and 3D mapping, the Gentex system records the precise position, posture, and even physical features of the passengers. This in turn enables comfort functions to be optimized and safety functions such as airbags and seat- belt tighteners to be perfectly controlled for each individual passenger.

The system additionally records even the smallest movements (microvibrations) of objects. Its unique technology is even sensitive enough to recognize the breathing of a sleeping child. With the addition of Gentex vehicle interior sensors, which detect smoke, vapors and even volatile organic compounds in the vehicle, the exhibitor offers a comprehensive system for monitoring vehicle interiors.

Toyota Boshoku

TOYOTA BOSHOKU IMAGES

Toyota Boshoku's display centered around their future mobility concept luxury seat called MX Prime. It includes a mist and aroma generator; "cloud swing", and an intelligent individual audio system to create a personalized, safe driving experience. This concept was born to shape the future mobility of urban cities. Let's start with a smart seat with comprehensive features available directly via smartphone and add an exclusive interior space that fosters wellbeing to achieve a driving experience on a completely new level. The MX Prime system caters for comfort; health, and safety. You can sanitize your phone. You have comfort pneumatic functions. The gentle swing-motion seats helps you to relax, overall to create a cozy interior space. **See video.**

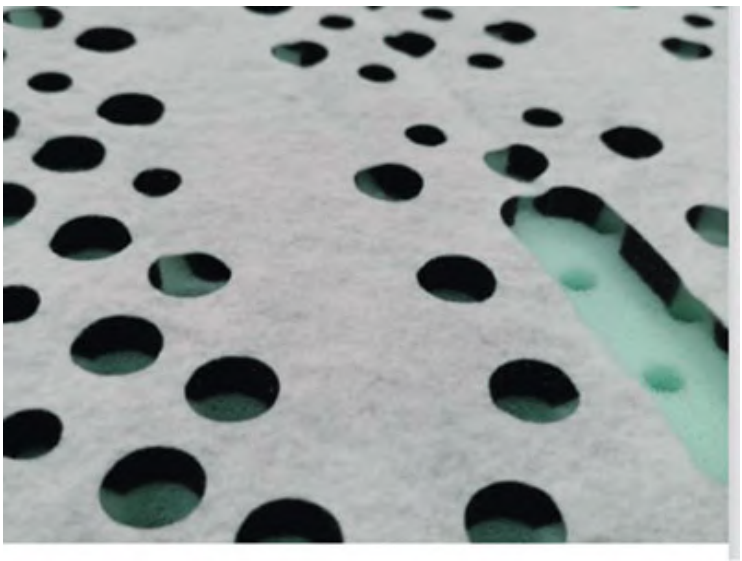
Grewus

GREWUS IMAGE

Grewus' display at IZB showcased their new HEBO (Haptic Evaluation Board), to offer a simple and comprehensive solution to meet automotive requirements. Users can connect many types of electromagnetic actuators to HEBO and easily customize the haptic feedback. A simple UI can be used to select the haptic feedback signal for the actuators and the trigger. With MarFi (Manual Artificial Finger), Grewus has developed a measurement system for the uncomplicated mobile quantification of haptics, a world first. The significant advantage of this device is that it doesn't

need a complex setup; just connect MarFi to the software and get started. This ready-to-use measuring system impresses users with its precise measurement results, handy shape and uncomplicated application method

I.G. Bauerhin



CARRIER MATERIAL FOR SEAT SURFACE VENTILATION (I.G. AUTOMOTIVE IMAGE)

I.G. Automotive, a supplier in the electric seat heating and air conditioning market, unveiled their new approach to distributing and controlling the airflow in seating. This new solution, available now for series production, is based on a carrier material selected for the comfort requirements of the seat manufacturer, with the aim to achieve targeted adjustment of the air flows for optimal use of the cooling capacity. The solution uses a foam which, with the help of a newly developed manufacturing process, directs the airflow to where it is needed to cool passengers.

Merit Automotive Electronics Systems

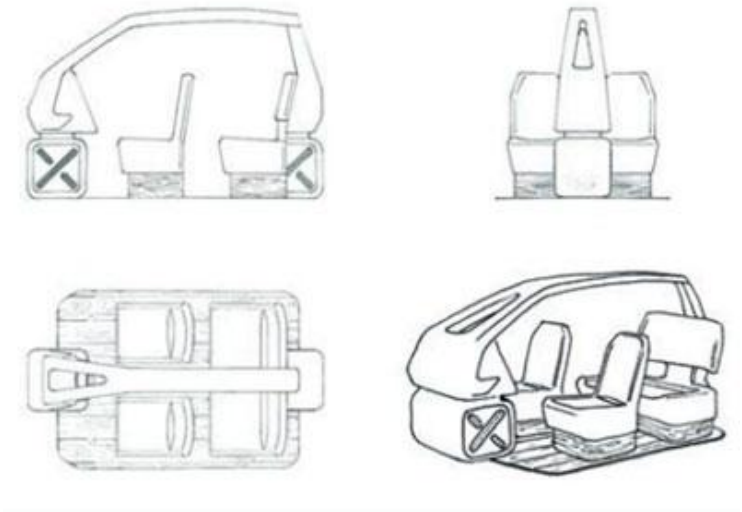
IHI: INTELLIGENT HUMAN INTERFACE (MERIT IMAGE)

Merit is since 2017 based in Barcelona, Spain after a new start following its history: First created in the 1940s in Germany to design and manufacture switches, in 1996 Merit was acquired by Delphi who combined it with another acquisition from Eaton to create a mechatronics product range. In 2016, Delphi sold this product line to Northeast Industries from China.

Merit's Intelligent Human Interface (IHI) is designed to make the driving experience smarter; safer, and more enjoyable. It features innovations such as a steering wheel that combines all functions within reach of the driver's fingertips, giving them the opportunity to personalize and embed their favorite items. By offering direct access to the most used commands, the steering wheel improves driving safety. Thanks to the reconfiguration approach, the functions of the lever are also implemented in the steering wheel. This simplified solution is style-oriented, lightweight, and convenient for electric and autonomous cars.

Merit presented as well their technology of textile lighting systems offers great advantages for the realization of innovative lighting solutions and creates possibilities for completely new lighting applications in a variety of vehicle areas. The lighting system can be formed into almost any shape and therefore offers particularly high flexibility in the use of installation space as well as fascinating possibilities for dynamic lighting scenarios in both textile and non-textile automotive applications.

Novelic



NOVELIC IMAGE

Novelic, from Belgrade, Serbia, is a worldwide independent provider of millimetr-wave radar sensors and perception solutions.

Infineon and Novelic staged the first live demonstration of their joint development, a radar product for automotive in-cabin monitoring (ACAM). ACAM meets the Euro NCAP requirements for child detection. Additional functions have been developed on the same hardware platform: detection of occupied seats in a vehicle, along with intrusion detection. The chipset for this module was developed by Infineon, experts in the field of vehicle radar. The sensor features low-power modes; offers excellent thermal management, and is fully FCC compliant. Novelic harnessed their patented technology and 10 years' experience with short-range radar systems to develop algorithms that maximize the performance of the radar sensors. ACAM has been validated in numerous car models under actual driving conditions.

Soplast

UNIC2 CAR INTERIOR CONCEPT (SOPLAST IMAGE)

Soplast presented their UNIC2 interior concept, which uses innovative and patented stretchable electronics for unlimited shapes on polymers or textiles without the need for sintering steps. Soplast, based Portugal, is focused on the injection molding of high precision plastic technical parts.

For the first time, stretchable electronic circuits can be welded to SMD components with a unique 'self-healing' process at room temperature. Sensors and touch functions on systems such as the steering wheel, center console, seat adjustment or safety monitoring can now be made with a small footprint; 3D geometries, and ultrathin stretchable

circuits. In addition, the printed electronics are for the first time fully recyclable, for an eco-compatible circular economy.

Lear

LEAR BOOTH AT IZB (LEAR IMAGE)

Lear, a longtime leader in seating and E-systems headquartered in Southfield, Michigan, serves every major automaker in the world and ranks 186 on the Fortune 500. At IZB they demonstrated their engineering expertise and operational excellence to new and existing customers, including their ConfigurE+ with zonal safety technology, which was named an Automotive News PACEpilot Innovation to Watch.

The safety solution is the first wireless and electronics-based system that identifies seat location and seat status—key to the adoption of reconfigurable seating in vehicles. The smart technology automatically activates safety features in the second and third rows of a vehicle based on the detected location of the occupants.

Additionally, because the solution is wireless, it reduces the number of required circuits which decreases complexity and weight. The solution is compatible with Lear's PACE award-winning ConfigurE+ technology, which enables a flat load floor and offers reconfigurable seating positions that enhance the in-vehicle experience.

Dräxlmaier

DRÄXLMAIER IMAGE

Dräxlmaier presented innovations and concepts in wiring systems; interiors, and e-mobility. As a modern electronics architecture, the supplier has developed intelligent electronic and hybrid power distributors for the zonal on-board energy network.

For e-cars, Dräxlmaier offers several components from the charging socket to the wiring harness and battery electronics to the battery system. The company advertises trouble-free interaction between the individual components, and reduced power losses. This includes a high-voltage charging system that is designed to reduce complexity as well as the number of interfaces.

Dräxlmaier integrates functions such as heating and ventilation and their operation via touch into the surface of the interior. Their ambient lighting is intended to enable seamless communication between passenger and vehicle and provide atmospheric as well as individual interior lighting. An important component in the interior for Dräxlmaier is the "FIS Touch" technology (Functionally Integrated System). A touch control is implemented under a hard and a soft surface and, in the case of the soft surface, illuminated by a translucent textile.

Marelli

MARELLI STAND AT IZB (MARELLI IMAGE)

Marelli showed off their latest innovations in key technology areas under the theme 'Driving What's Next', with aesthetics meeting functionality in next-generation electronics, interiors and lighting

Marelli presented advanced solutions for electronics, including their Horizon head-up display. Based on segments/matrix LCD or Full RGB TFT, this technology projects the information for navigation; telltales, and indicators close to the windshield bottom edge, allowing objects in the driver's blind spot to be easily recognized. It ensures good visibility through high-contrast images, with a distinctive appearance and competitive cost.

To meet automakers' vehicle personalization needs, Marelli showcased integrated displays that allow custom shapes to be created by combining two or more standard TFT modules, providing a wide display effect in all operational modes, excellent optical performance and energy savings of up to 60 per cent compared to traditional solutions. The system shown at IZB is driven by an integrated Cockpit Domain Control Unit, which consolidates ECUs in a single controller for higher performance; lower cost, and a unified experience.

Marelli's smart-cabin technologies combine interior design styling options; innovative user experience, and cutting-edge electronics solutions. Their haptic dashboard is based on vibration feedback instead of physical buttons, and they also showed a broad collection of decorative materials which can be integrated to develop a variety of decorative, informative, and interactive solutions.

Dr Schneider

VW BOARD VISIT WITH DR SCHNEIDER (DR SCHNEIDER IMAGE)

With the PURlight demonstrator and the modular center console, the Dr. Schneider Unternehmensgruppe, family-owned company, from Kronach, Germany, underlined the innovative power with which they are currently developing concepts for the automotive interior of tomorrow.

Interior News

Gauzy-BOS Smart Sun Visor & Sunroof

INTERIOR NEWS

OPTICAL AND THERMAL SHADING SYSTEMS FOR TRANSPARENT GLASS SURFACES (BOS IMAGE)

Headquartered in Tel Aviv, Israel, Gauzy is a material science company focused on the research, development, manufacturing, and marketing of vision and light control technologies that support safe, sustainable, comfortable, and agile user experiences across various industries. And Stuttgart-based BOS designs and produces innovative automotive mechatronics, kinematics and plastic systems.

Gauzy is the only material science company to develop, manufacture, and market two of three active smart glass light control technologies: PDLC (polymer dispersed liquid crystal) and SPD (suspended particle device), allowing glass or other transparent substrates to switch between opaque and transparent in milliseconds to control UV, IR, and visible light for instant transparency or private, shaded, and thermal controlled spaces.

The company's newest products for glass professionals revealed for the first time ever at Glasstec—the leading glass fair in Germany—included a protype of the next generation of their patented ATE (automatic testing equipment), an automated testing system that validates the optical, electrical, and mechanical performance of PDLC and SPD films before and after lamination to reduce wasted materials. They also showcased their new interior-grade ExtraClear LCG® PDLC product line with high visible light transmittance for increased clarity in the on (transparent) state. Gauzy's technologies are used by leading brands like LG Display and BOS.

The first co-developments and partnership revealed by Gauzy BOS included the world's first mixed-material PDLC laminated fabric sun visor which aims to replace traditional solid, view-blocking sun visors with a semi-transparent material providing a wider field of vision while blocking glare from headlamps and the sun for a safer, more comfortable driving experience. The first-of-its-kind, fully segmented mechatronic sunroof with Gauzy SPD allows dimmable shading with up to 99-per-cent light blocking in zoned areas, increasing headspace for more spacious interiors by up to 45mm. Never before has there been a fully mechanic smart glass sunroof that opens and closes! **See video.**

Tactotek IMSE days and Mesa Controller

INTERIOR NEWS

IMSE Days 2022 has just concluded at Tactotek Headquarter in Oulu, Finland. In-Mold Structural Electronics (IMSE) is an intelligent printed electronics manufacturing technique pioneered by TactoTek. It enables the addition of electronic components into plastics and molding them into free-form shapes, providing design freedom and bringing sustainable benefits—supply chain optimization; variant management, and more—to the entire electronics and smart surfaces manufacturing process.

IMSE Days is a smart surface event first held in 2018, focused on market trends and adopting IMSE technology under the themes 'Innovation with Design', 'Sustainability as a business driver', and 'Delivering cutting edge products with IMSE Ecosystem. There were talks from at least 15 external companies.

Maturity and applicability of the technology were highlighted by the external speakers. Key messages include:

- The IMSE Material Stack has been validated by a premium European automaker, opening the door for applications to be developed;
- Automotive grade LEDs (RGB and smart) are packaged separately for IMSE, enabling a wider selection of components;
- Lifecycle analysis of IMSE-based application indicates that the technology can provide up to 62 per cent reduction in greenhouse gases, per an independent analysis conducted by LCA-2.0 Consultants;
- Partners provided a vision of integration, including smarter components like modems, and displays enhancing the application space for IMSE

Among many innovations, they presented innovative HMI concept showcasing 'digitized interfaces' in plastics. With a digital interface, the HMI design can be adapted to automotive HMI with haptics, and advanced UI control.

Tactotek also presented their Mesa IMSE Controller, an elegant, user-intuitive HMI controller acting as a versatile platform for multiple applications such as automotive; smart home, and industrial control. Featuring configurable single- and multi-touch controls, the Mesa IMSE Controller provides efficient and easy-to-adopt use of case-driven interaction support. The ultra-thin, lightweight structure with encapsulated electronics liberate design and save space. Its seamless forms enable genuine 3D design and allow complete design freedom for intuitive HMI, UX, and UI designs.

Potential applications of the Mesa controller in cars are various: it could represent center console and dashboard controls, or a multi-function rear seat console/controller, for instance.

Grewus at Smart Haptics Conference

INTERIOR NEWS

Smart Haptics is a technical conference focused on the commercialization of haptic technology. This year's event will explore how haptic technologies are changing the ways in which we interpret and interact with our world and with each other. This year's Smart Haptics is happening on 7-8 December in Seattle, Washington.

Since 2017, Smart Haptics has provided this growing industry with a forum dedicated to exploring the future of haptic technology. This conference encourages important conversations about emerging applications, innovative ideas, and opportunities for collaboration across the supply chain. Presentations are designed to engage and inform the haptics industry through case studies and panel discussions that provide the opportunity for attendees to both experience and explore the latest technologies and emerging applications.

Grewus, an acoustics and haptics expert out of Hamburg, Germany, will describe their vision of the cockpit of the future: the evolution of connected and autonomous driving cars continues fast. But user interfaces need to be intuitive. They must be multi-modal. Reconciling safety with connectivity is a crucial challenge driving the development of next-generation vehicle HMIs. Improve the HMI experience for the driver and more possibilities to configure the car according to the requirements. Furthermore, in-car entertainment (e.g., while charging) will create a better travel experience. They'll talk about how we can achieve faster results through partnerships across multiple disciplines.

Grewus is part of the IZB In-Depth, and will be present in the upcoming Automotive Interior Expo in Stuttgart mid-November that DVN Interior will report on toward the end of this month.

Continental's Full-Spread Displays Getting Popular

INTERIOR NEWS

CONTINENTAL IMAGE

Continental's pillar-to-pillar and OLED displays have won major orders from global automakers worth more than €2bn.

Introduced in 2021, Continental’s pillar-to-pillar display is five times larger than traditionally used digital instrument clusters. It provides intuitive operations for drivers and passengers, and is supported by the manufacturer’s matrix backlight, which enables local dimming or brightening of each LED. As a result, the display benefits from high contrast and an excellent level of optical image quality.

Continental has also been working with an automaker to bring a multi-display solution to market with the company’s OLED display. The visual interface features self-illuminating capabilities which negate the need for backlighting, resulting in lightweight, slim units that enable greater design freedom within a vehicle’s cabin.

Continental's head of user experience Philipp von Hirschheydt says “The user experience adds value. We are providing proof of this with the new orders for our display solutions. They are among the new driving forces for the mobility of the future. Customers are looking for experiences that are user friendly and offer them positive entertainment. We already supply some 30 million user experience products such as displays each year and are responsible for equipping more than one in three cars worldwide”.

Volvo Gives Autonomous Driving a Color

INTERIOR NEWS

Volvo will use colors to signal the difference between driver-assisted mode and what it calls "unsupervised autonomous driving" mode in their full-electric EX90.

The driver-focused display screen, seen through the steering wheel, will use green to signal when the car is using assistance solutions such as lane keeping and adaptive cruise control.

The blue-green or aquamarine color appears as a thin horizontal line across the top of the screen; on the lane markings, and on the car directly ahead to signal that the car has taken control of the driving.

Volvo said their goal with the EX90 is to make the transition from manual to assisted driving modes (and in the future, autonomous driving) “effortless and intuitive".

The official launch of the automaker's Ride Pilot system is pending Volvo's internal verification that it is safe, as well as approvals for use from local authorities in the world's markets.

"It's all about providing you with the right information at the right time," said Thomas Stovicek, head of user experience at Volvo. "Since the car also understands its surroundings and you better than ever before, we can create an even safer situation by reducing mode confusion, distraction and information overload."

The EX90 will be revealed on 9 November in Stockholm.

VW Puts Buttons Back on the Steering Wheel

INTERIOR NEWS

VW IMAGE

The upcoming VW models are to be characterized by significantly improved usability. VW CEO Thomas Schäfer said this last month at the congress of the Institute of the Automotive Industry (IFA) in Nürtingen, Germany. He said the vehicle interface is currently being fundamentally revised and made more intuitive.

In concrete terms, for example, larger screens are to be installed in the future; the menus of the infotainment system are to be made more comprehensible, and the steering wheels are to be equipped with **real buttons again**. Poor usability is considered to be one of the main reasons why the current Golf is not popular with customers.

Next year VWwill launch the ID.Aero; the revised ID.3; the facelifted T-Cross, and new editions of the Tiguan and Passat—these latter two models are said to already feature the improved controls.

The Design Lounge

Glass as a Design Element in Automotive Interiors

THE DESIGN LOUNGE

ASG IMAGES

More than 58 suppliers were on-site at the Automotive Interiors Expo in Detroit on 24-26 October. Although a small show compared to the nearby Automotive Testing Expo, it was good to see the new tech offerings for interiors in one place after we all were shuttered from covid for the last two years.

There were many traditional tech offerings for interiors, like flock manufacturers for soft fuzzy surfaces; adhesives for holding critical elements inside the car, and commercial sewing machines for increased productivity and efficiency. Hidden among the big booths were companies with some unique offerings with technologies that have certainly matured over the last several years.

One of them was AGC Glass, whose 'Feel in Glass' product offered a different take on car interiors. The smooth, robust designs made showgoers stop and look when they realized what they were seeing. For example, AGC's innovative automotive door display had a gracefully sloping, illuminated armrest. What was different was thin; tempered; sturdy glass. The glass won't break under typical conditions in the vehicle, and it offers weight reduction; complex shaping; seamless integration, and the ability to house touch sensing and haptic feedback. What struck me was a simple beauty and the smooth surface that had me wanting to touch my fingers on it all the time. Over the years, I've seen many exciting door designs using touch, leather, and plastic but never with glass taking center stage.

Along with the door display, AGC had unique thin, robust glass samples with beautiful etchings and patterns in line with today's interior design trends. Some had laminated wood and specialty films in them, and others had transparent dichroic colors yet offered a unique visual look. Ranging from 0.5 to 2.1 mm, they can accommodate and enhance most designs that are now appearing. Moreover, Feel in Glass enables it to be curved, so it fits wherever it needs to be. These samples were terrific and furthered the ability to use Glass in interiors and offered up many new ideas that could influence design trends.

Feel in Glass is cut by advanced laser technology allowing straight to circular and free-flowing shapes. In addition, chemical strengthening treats the glass to high performance and makes it ideal for harsh environments and high-performance applications like those found in automotive interiors, buildings, or devices.

Returning to the display door, integrated above the armrest, was a small display for exterior side detection. The entire top piece was glass, revealing the integrated display. Smooth to touch, this display had full touch sensing built-in, but when the display was off, the beauty of the glass on the upper part of the door was evident.

Rob Miller, Designer, DVN Interior Contributor

Pedestrian catcher

THE DESIGN LOUNGE

PATHE IMAGE

Ever since the first pedestrian died in an automobile accident in 1896, triumphant mechanical solutions of the day, rushed to the rescue of any possible future casualty. Several safety devices were proposed and some made it to a prototype stage. The device pictured above, mounted at the front of the vehicle, is based on the principle of sweeping away the fallen pedestrian, rescuing him from falling under the wheels. The only thing that driver had to do was to promptly pull a lever and the mechanism would deploy to receive the dropping pedestrian in a kind of a soft cradle.

The pedestrian catcher was developed in different versions and we suspect that none of them was as fail-safe as presented. There is a number of parameters that needed to be taken in consideration when the car was going too fast or too slow, or if the driver did not pull the lever at the right moment, or the pedestrian suddenly moved away from the predesigned position, just by pure survival instinct. We do not know how this exactly worked but undoubtedly, there is such an important amount of cognitive and reflex factors, for both pedestrian and driver that they needed to somehow work in agreement in order to perform the rescue act. The one had to react fast while driving the car straight ahead to the standing human and the other to stay still just so the driver could target well and not miss. Evidently, considering the mass and velocity of a truck, what would probably occur is that the pedestrian would be sliced and diced by the radiator or spread over the asphalt like jam on toast. In the scenario that the driver would not deploy the safety device on time, the outcome would be equally lethal.

The highly suspect inventions labeled pedestrian catchers, sweeps, traps or swivels were presented as rescue devices as early as 1924 and were meant to reduce an important number of casualties among pedestrians. Most likely though, the amount of volunteer pedestrians needed to develop such mechanism into a fail-proof level, would have exceeded the number of real casualties.

Traffic-safety pioneers in the early twentieth century were fiddling with many novel automobile applications but their presentations played maybe a secondary role. Alternatively, alleviated the most tedious routine of Great Depression by projecting something humorous on a black and white movie sequence.

News Mobility

Baidu Apollo RT6 Cabs as Robotaxis in 2023

NEWS MOBILITY

BAIDU IMAGES

Chinese tech giant Baidu has unveiled a fully automated robotic cab. The vehicle shown is at the level of a near-production prototype, but this Apollo RT6 will not go on sale; Baidu wants to build their own cab fleet with it. The first vehicles are scheduled to hit the streets next year, and the fleet is planned for 100,000 vehicles.

The Baidu cab stands out because of its price. Baidu states that it costs around €31,000 to manufacture. They have not released technical performance data, but it can be assumed that the car is optimized for cab service and things like high speeds and extreme ranges are unimportant for long-distance trips. Nevertheless, this is a fighting price, since the complete sensor technology and the AI for autonomous driving have to be paid for as well.

As befits a cab, the car has been trimmed for maximum interior space. Rear legroom is 105 centimeters, and entry is through electric sliding doors. Safety for autonomous operation is ensured by 38 sensors. There's great redundancy to increase safety; the RT6 uses cameras and lidar rangefinders ultrasonic radars. This should enable the car to achieve an all-round coverage of over 200 meters.

It's claimed to be an L^4 car, which means the vehicle can drive autonomously with zero input or attention from a driver, within a specially surveyed map of the area of operation. Baidu's ride service was launched in 2020 and is currently active in ten cities in China, with plans to expand to 65 cities by 2025 and 100 cities by 2030. Baidu claims rides in such a car will cost only half of a ride with a human driver—that is if the accompanying driver is eliminated.

General News

Chinese Suppliers Come to Europe, Thanks to Electrification

GENERAL NEWS

WUXI LEAD INTELLIGENT EQUIPMENT IMAGE

For Chinese suppliers to the automotive industry, a phase of globalization has begun in the wake of electrification. Many of them are expanding into Europe.

Wuxi Lead Intelligent Equipment, or "Lead" for short, is one of the world's leading manufacturers of machinery and equipment for the production of automotive batteries. In June of this year, Lead received a major order from Volkswagen. The Chinese company announced they will supply 65 per cent of all machinery and equipment for VW's new battery factory in Salzgitter, Germany. "This cooperation is a seal of approval for Lead to secure our leading role in the European market and marks a new era of global business," according to Lead.

Lead supplies high-tech equipment for the production of lithium batteries, including calendering, electrolyte filling, cell baking, formation and aging, as well as complete cell assembly lines, and the entire line logistics. "Lead has built a mature supply chain localized in Europe and has established strategic collaborations with many core suppliers such as Siemens, ABB and Festo," reads a press release from the Chinese regarding its megadeal with Volkswagen.

15 of the 20 major battery plants built worldwide in the first half of this year are owned by Chinese companies like CATL, Gotion High-Tech und Envision AESC, SNE Research Data reports. Lead also supplies BMW for their new battery pack production line.

The list of Chinese companies that have now opened plants abroad goes on and on. After long years of building their own supply chains, in many areas only Chinese companies have the expertise and scale to help German; European, and American automakers electrify at the pace they want.

China EV Boom: BYD, Tesla Set Records

GENERAL NEWS

BYD IMAGE

The car market in China continues to recover, thanks in part to a boom in electric vehicles. In September, the number of cars sold rose by 21 percent year-on-year to 1.95 million, according to the industry association PCA. The strongest growth was in the business with cars that are at least partially powered by an electric motor. Here, sales increased by 83 percent to 611,000 units.

The Chinese manufacturer BYD delivered more than 200,000 vehicles in one month for the first time. BYD is the market leader for electric cars in China. American electric pioneer Tesla also set a monthly sales record of just over 83,000 vehicles after ramping up production capacity at their Shanghai plant.

China is the world's largest car market, and as such also the most important single market for German manufacturers Volkswagen (including Audi and Porsche); BMW, and Mercedes-Benz. According to figures from the China Association of Automobile Manufacturers, automakers sold 2.33 million passenger cars to dealers in September, almost a third more than a year earlier. Alternative drive systems accounted for 708,000 of these vehicles, almost doubling their sales.