Thu, 28 September 2023
Weekly Newsletter

DVN-I
Automotive Interior

NEWSLETTER #180

Editorial

Interior-Supplier Tech, Innovation At IAA Mobility

DVN IMAGE

IAA became kind of a small-scale mashup of a traditional auto show with CES, where the intersection reflected the power of suppliers to deliver new technologies. Automobile was displayed not just as a product, but rather as an entity of a greater mobility system thus, automakers change their perception of the core business and, so must suppliers: ‘making the necessary changes to grow as vital links in the auto industry’s value chain, rather than managing their current portfolio.’

Going from a part supplier mindset to a service provider, that’s what we highlight this week with an in-depth piece dedicated to innovations from vehicle-interior tier-1s and tech companies.

The interior is presented as the third place, or cocoon. Immersive technologies support human-centric design: curved enveloping displays, better balance between touchscreens and real buttons, more haptic feedback, augmented reality and broader HUDs, driver monitoring, scalable electronic and software solutions, and of course renewable materials and other sustainability measures.

That’s just a snippet of the technologies you find in this edition, and you’ll continue to get from this weekly newsletter. If you’re not member yet, there's never been a better time to **join in**! We're glad you're here with us in the DVN-Interior community.

Sincerely yours,

Philippe Aumont
DVN-Interior General Editor

In Depth Interior Technology

IAA Highlight: Interior Supplier Innovations and Tech

IAA this year was maybe not the most exciting auto show as such, but it was heavy on innovations from suppliers—tier-1s and technology providers alike. Here we present some of our favorites, chosen from tons of inspired and clever ideas on display at the show.

Continental

DVN IMAGES IN THIS ARTICLE EXCEPT AS NOTED

Continental gave a glimpse into the interior space of autonomous mobility with their SPACE D design concept. The D stands for the high **d**esign standards of the concept. Their Smart Cockpit HPC was on display in the car—a preconfigured system combining the instrument cluster, infotainment and ADAS.

Continental's booth included a pillar-to-pillar display application, with a one single screen, with proprietary back lighting technology; haptic feedback is part of touch buttons, working only when pressed for a couple of seconds, to avoid touch by mistake

HMI with HUD was also on display, with a pillar-to-pillar scenic view HUD, projected on the windshield with up to 5 projections; it needs a dark black lower section of the windshield. 360° projection around the vehicle, for safety and comfort with near field light projection with microLEDs (front, back, two mirrors), with a reduced package of 5 × 5 × 5.

For surface materials: Benova Eco Protect, certified with the PETA label for vegan products; Acella, with bio-based raw materials and recycled content, as well as Xpreshn Hylite Concept, a translucent surface material that allows for new designs and functions.

Valeo

Part of Valeo's booth was about interior experience for a safe and enjoyable journey, with software at its core, with innovations in four main domains: immersive experience, interactive surfaces, interior cocoon, and connectivity.
The Valeo key fob is contained in the smartphone. The digital key can easily be shared with family or friends, for fleet management or car sharing services, It is also possible to give temporary access to a service provider, opening the trunk of the car for a delivery, for example.

Valeo's windshield HUD gives crystal-clear visuals and sharp graphics, enhancing situational awareness while minimizing distractions, thanks to the wide image. It seamlessly integrates navigation instructions, vehicle speed, and safety alerts into the driver's line of sight, with superior image quality, high brightness, and efficient thermal management.

VALEO IMAGES

Valeo's immersive fascia is a decorative, crystal-like system which integrates HMI, dynamic lighting, and backlight. When the system is activated, the metallic-effect decoration goes translucent and the interactive interface appears. Lighting is used for ambiance with animation and warning signals. The system looks like metal (it is plastic) when off, and shimmers with a sparkling diamond aspect when the system is activated. Dynamic lighting will alert the driver in emergency situations. These extended lighting features offer multiple ways for customers to get creative and personalize their space. Valeo also presented low energy cabin heating.

Forvia

FORVIA IMAGES

The centerpiece of Forvia's booth is the Lumières concept, presented at CES 2023. It reflects innovation from both Hella and Faurecia in one joint demonstrator: from innovative interior concepts, interior and exterior lighting to electronics. The Lumières offers automakers design freedom while ensuring the vehicle's longevity and maximum recyclability. It offers drivers and passengers a completely new way to use a car.

The cockpit is conceived as a third living space in addition to people's own living room and office. In the exhibit, visitors can experience the versatility of various usage scenarios: from individual work to relaxation surrounded by a personal bubble of light (dynamic and customizable) and sound, to shared cinematic

experiences, conference calls or sitting around a table in a setting reminiscent of a living room or lounge. The special feature: these spectacular interior changes comply with UN (ECE) requirements.

Forvia modular components—the center console and seats, for example—can be redesigned, replaced, and expanded for upgrades or repairs, where before the whole console or seat had to be replaced. New materials developed by Forvia Materi'act, made from natural and recycled fibers, create a new high-end æsthetic focused on sustainability, including materials such as woven hemp.

FORVIA INNOVATION MANAGER CHRISTIAN NEYRINCK (DVN IMAGE)

The Forvia sustainable modular seat reduces the number of components from around 120 to 10 modules which can be assembled in a wide variety of configurations close to the automaker. It can be adapted to any car and seating frame platform, covering multiple vehicles with significantly reduced upfront costs. It is also easy to exchange or replace parts such as covers and cushions, or upgrade with innovative new features like massage, lumbar support, sensing, immersive sound experience and other comfort modules over the seat’s lifetime.

Magna

Magna presented their seat of the future with FreeForm™ trim, a Central ECU, and Real Time Pressure Sensing. FreeForm removes constraints of traditional cut & sew seat trim covers. It makes cleaning the seat a breeze by eliminating crevices and trenches found in ordinary seats. The Central ECU provides a scalable solution with the capability to incorporate features for all rows of seating and other vehicle controls. Real Time Pressure Sensing technology can measure occupant pressures and adjust bolsters automatically based on pre-determined preferred positions.

Magna also presented their DMS, with the camera within the interior mirror to provide unobstructed view to the driver and to offer additional occupant monitoring features. The system is scalable to include features such as child presence detection, seat belt detection, video conferencing, and facial recognition.

Hyundai Mobis

MOBIS IMAGES

Mobis presented their strategic expansion of Mobility Move, with a focus around electrification, x-by-wire, and connectivity technology.

Among many innovations, they showed the world's first rollable display. It takes up minimal space, which, in turn, is expected to significantly improve the automotive interior design, and can be unfurled up to over 30 inches, featuring four driving modes with different screen sizes in QHD resolution.

The lightweight structure enables it to be displayed anywhere in automotive interior.

Samsung

Samsung showed rollable flex and stretchable displays. OLED emerges as the solution, thanks to its light emission property, which enables true black, visible under low-light conditions. Slidable, rollable, and bendable OLED technologies provide additional freedom to integrate displays into car interior of. Due to their lighter and thinner profile compared to LCDs, OLEDs offer greater scalability in design. Visitors could explore OLED displays in various form factors, including Flex S, Rollable Flex, Seamless Display, and S-Curved displays.

Renault and Solarbay

RENAULT IMAGE

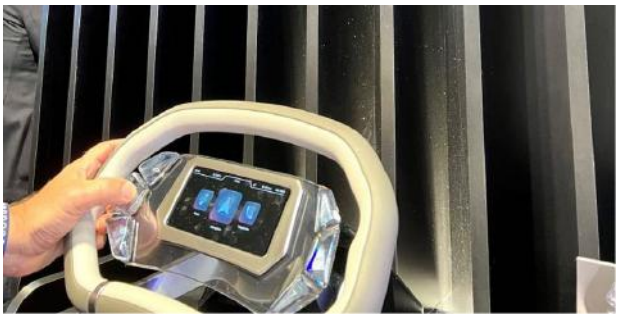
The new Renault Scenic E-Tech demonstrated its Solarbay panoramic glass roof, which can opacify and clarify the glass one segment at a time. The driver and passengers can choose any of four roof settings: all light, all opaque, light at the front and opaque at the back, and the reverse. It usefully frees up 30 cm of headroom.

Rear passengers also benefit from the Scenic's ingenious rear armrest. It brings 3.6 liters of storage space, two drink holders, fold-out stands to be able to watch screens more comfortably, and two USB-C outlets.

Preh

With its patented 360° rotary-push-knob, Preh demonstrated how the frequently-criticized distraction from road traffic during function selection via touchscreen can be decisively reduced with just one additional control element. The 'Placeable Knob' can be used on different operating surfaces. It can also be ordered several times and the individual rotary dials can remain at their respective operating locations—as if they were permanently installed. Personalization options included gold-plated, studded with rhinestones, or classically plain.

Kurz



Kurz demonstrator's experiences how æsthetic design and functionality are merging to shape vehicle interiors: the Smart Crystal Steering Wheel concept, equipped with backlit Swarovski crystals and with touch functionality enabled by ultra-thin, highly transparent PolyTC® sensor technology—haptics from Grewus.

Emotion 3D

Emotion3D's booth featured a live demo as well as multiple embedded demos showcasing their latest innovations, including interactive wide field of view DOMS (driver and occupancy monitoring). It was the first showcase of Emotion3D's partnership with Chuhang Tech and SAT, where the mm-wave radar of Chuhang estimated vital signs that were used by SAT's sleep onset prediction algorithms to enhance drowsiness detection.

For Robotaxi and fleet applications, Emotion3D's Cabin Eye automation stack focuses on enabling safe, secure and efficient autonomous operation by analyzing the interior of the vehicle.

Dirac and Trèves

sonified

Dirac highlighted the latest in audio software algorithms and acoustic material technology for automotive environments, with Dirac Virtuo immersive audio solution alongside Dolby Atmos multichannel content in the Volvo XC60 and a Tesla Model Y tuned with the Dirac OPTEO solution.

The Tesla included acoustic treatment from Trèves, specializing in interiors and acoustic treatments. For the first time, the Model Y demonstration vehicle featured an integrated Dirac OPTEO and Trèves 'Sonified' technology system that enables moving the speakers out of doors and into less common locations, such as inside seats or under floor carpeting, which delivers significant weight and space savings.

Arkamys

Arkamys specializes in audio software and sound enhancement algorithms. In collaboration with STMicroelectronics and other Software République members, Arkamys has contributed to the development of the Human 1st Vision concept car shown here.

The H1st Vision vehicle is a symphony on wheels. Packed with advanced audio algorithms, it offers personalized sound profiles that adapt to everyone's preference.

Arkamys showcased their continued work with Qualcomm, using Arkamys' SoundStage technology and featuring the latest generation Snapdragon® cockpit platforms.

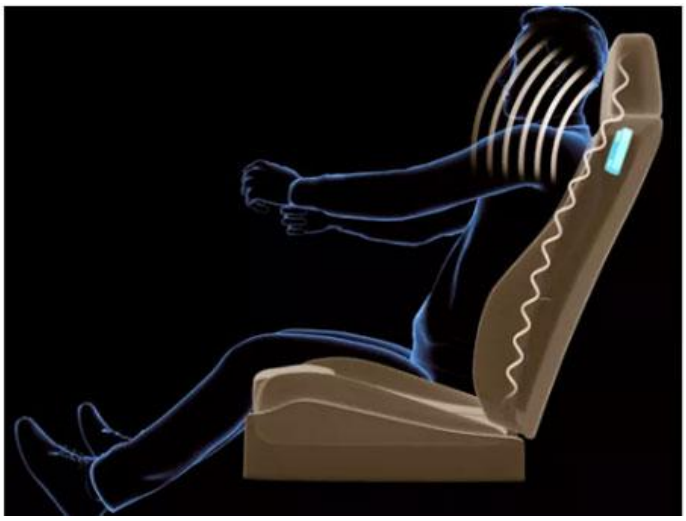
Forciot

Forciot provides integrated and connected sensor systems, and stretchable electronics.

These (**video**) are used for DMS-OMS, occupant classification, and object sensing on different surfaces in car interiors. Thin stretchable electronics for HMI panels give freedom for interior and UI designs. In addition to smart surfaces in central consoles or armrests any mechanical switches and buttons in the cockpit can be replaced with thin and light HMI controllers.

Hyundai and Forciot recently announced collaboration in developing advanced solutions for in-cabin sensing based on the Forciot technology. The in-cabin sensor data is collected from steering wheels and seats and analyzed to apply optimal materials and mechanical properties in car interiors for enhanced safety and comfort. The data will also be used for analyzing driver behavior in different conditions for developing further driving comfort and experiences.

Flexound



Flexound Augmented Audio is a Finland-based company with a design office in London. They developed a technology that adds the sensation of touch to any sound content. You can both hear full-range audio and feel its physical vibration on your skin and body. The Benefits are in clarity of sound by multi-sensory listening. Vibration improves speech and music perception and phone call quality. Full frequency range with only one element enables ANC (Active Noise Cancellation) solutions with both sound and vibration.

Rightware

RIGHTWARE IMAGE

Rightware's Kanzi One HMI software will be to create in-vehicle experiences for global models of the Toyota and Lexus brands.

A Rightware pop-up store downtown near Marienplatz demonstrated the latest Kanzi One HMI with seamless multi-screen Signature UI with Android Automotive for complete design freedom; Kanzi One demo showcasing rendering on real-word automotive hardware, and Kanzi Maps, a feature pack for creative map visualization, compatible with the TomTom Map Platform.

Nobo

Nobo, based in Heibei, China, supplies cockpit system solutions. They have more than 10,000 employees. At IAA, they showed their iNest3.0 smart cockpit and a series of automotive electronic products.

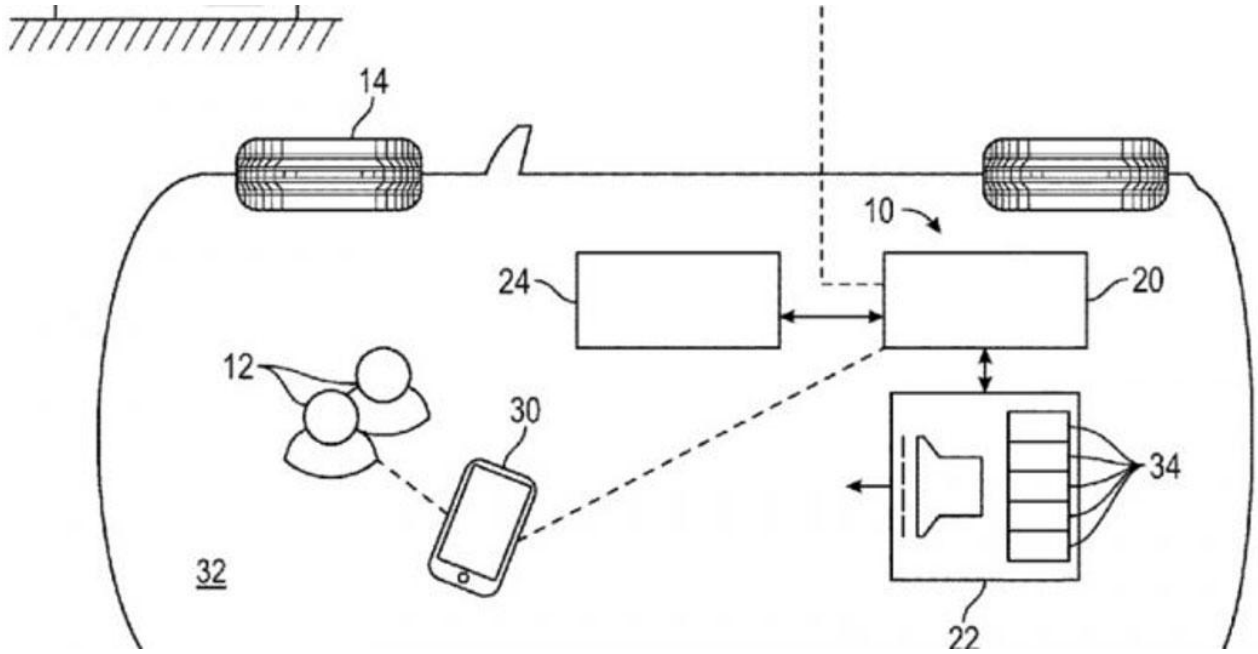
iNest 3.0 incorporates 32 innovative technologies and has obtained 13 patents. It integrates four major scenes: Welcoming, Driving, Resting, and Entertainment & Leisure.

When the cabin is activated, the seats automatically adjust their positions to welcome passengers as they approach. By recognizing passengers' physiological characteristics, it provides the optimal seating position and creates a ceremonial sense for the journey. Seats are transformable into a bed and zero-gravity function. The central control screen and secondary instrument panel provide functions and entertainment services according to the passengers' preferences, providing users with a versatile cabin experience.

Interior News

GM Files Patent For Smell-Based In-Car Alerts

INTERIOR NEWS



GM has filed a patent application for a new system designed to generate aroma-based notifications for vehicle passengers.

The GM patent filing has been assigned patent number US 11,738,685 B1 with the United States Patent and Trademark Office (USPTO), and was published on 29 August, 2023, having been originally filed on 27 June 2022. Two Michigan-based engineers are listed as the inventors, including Jacob Alan Bond and Joseph F. Szczerba.

The patent describes a system that emits an aroma in the interior of a vehicle to provide the occupants with a notification of some sort. The system includes one or more controllers which execute instructions to receive a message that a certain event is occurring. To indicate that the event is occurring to passengers, the controllers will emit a custom aroma inside the cabin, with the custom aroma tied to the specific event in question.

While custom notification systems have been made for several other senses, such as sight, sound, and touch, notifying passengers via a custom aroma is a novel new way to accomplish similar or parallel goals. An aroma-based notification system could also prove beneficial in ways where other systems may be lacking. For example, individuals who are hearing impaired and visually impaired may not receive notifications from sound or visual alerts. In addition, an aroma-based approach to notifications may be less annoying than continually buzzing sound alerts or flashing visual alerts, and potentially less distracting for drivers as well. It confirms that Human Centric design has to take all human senses into account.

Asahi Kasei: Connectivity, Lightweighting, Circularity

INTERIOR NEWS

AKXY CONCEPT 2019 (ASAHI KASEI IMAGE)

Asahi Kasei will put a special focus on their materials for lightweight, compact, and safe EV solutions, to be presented for the first time at the European trade show Fakuma, from 17 - 21 October 2023 in Friedrichshafen, Germany.

They'll show solutions for improved HMI and glass replacement, with their AZP™ transparent polymer that overcomes the disadvantages of conventional optical plastic materials. Featuring a glass-equivalent birefringence value of nearly zero—that's the *optical property of having a refractive index that depends on the* polarization and propagation direction of light, and above-zero values can cause double-imaging—as well as a superior designability, this material allows high transmittance and low color distortion at all viewing angles. Clear images without luminance variations, color distortion and blurring can be achieved in polarized optical equipment such as AR/VR headsets and head-up-displays (HUDs). The high-quality appearance is also maintained when looking at the display through polarized sunglasses.

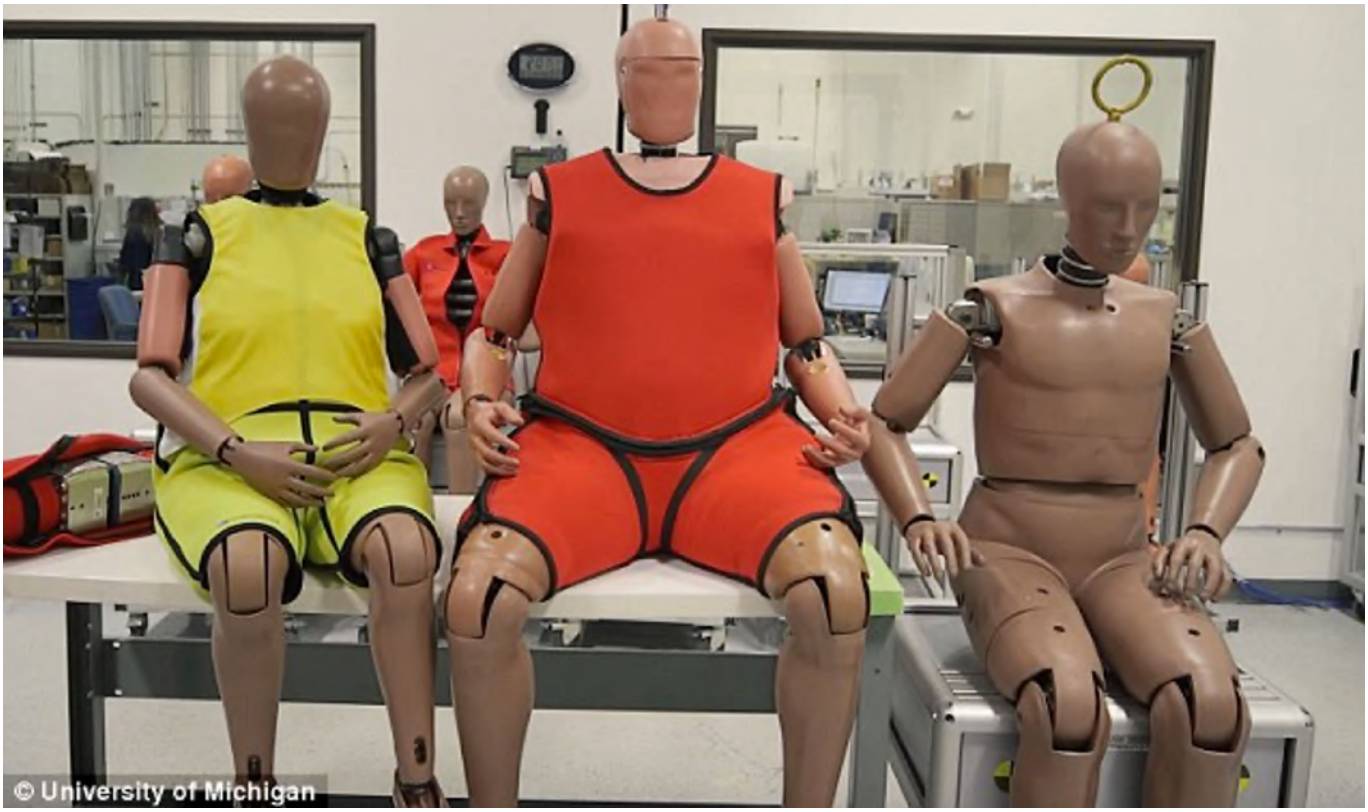
Asahi Kasei will also display a bio-based and biodegradable cellulose nano fiber (CNF). This material is made from cotton linter and features a high heat resistance and network-forming ability. CNF-reinforced polyamide shows a thixotropic behavior, making it highly suitable for 3D printing applications in terms of easy printing, dimensional accuracy, smooth appearance, and mechanical performance.

Together with Japanese partner company Microwave Chemical, AK is working on a new technology for chemical recycling of PA66. The process utilizes microwaves to depolymerize airbags and other PA66 parts and directly obtain the monomers hexamethylenediamine (HMD) and adipic acid (ADA), which is expected to be accomplished at high yield with low energy consumption. The monomers obtained can then be used to manufacture new PA66.

They'll also present a bunch of EV battery compartment materials.

First Crash Test Dummy Modelled for Female Body

INTERIOR NEWS



It's called SET 50F, and it is the world's first *female* crash test dummy. Designed by a Swedish engineer based on a typical woman, it will help design car seats and whole cars that better protect women.

Crash test dummies for cars are typically based on average male bodies, which could explain why women are 73 per cent more likely to be injured in frontal road collisions—believe it or not, well into the third decade of the twenty-first century, we've not stopped pretending half the human race doesn't exist or matter.

Astrid Linder, director of traffic safety at the Swedish National Road and Transport Research Institute, says, "In the minimum standard that is required for a car to be sold in the regulation, it says you have to use the model of an average male for all the testing…full stop. Both males and females should be equally represented when we assess the protection of the occupants or the users in the crash. By that, we will have an inclusive assessment, whereas today, it's exclusive".

Of the five models Euro NCAP uses to represent adult car users, only one of them, the Hybrid III dummy, is intended to represent a small female occupant. But unlike the SET50F, the model is largely based on the male dummy that has been in use since the 1970s, albeit slightly smaller in size.

Why are women more likely to be injured in car crashes? The muscles in the neck are weaker normally in a woman, so if you compare it with a male dummy, this neck is more flexible and has more movements if you

perform exactly the same crash test at the same speed and acceleration, says research engineer Tommy Pettersson.

Another study in 2021, by the U.S. Insurance Institute for Highway Safety, indicated that women are more likely to drive smaller, lighter cars and more likely than men to be driving the struck vehicle in side-impact and front-into-rear crashes.

162 cm tall and weighing 62 kg, the newly-developed dummy has the same dimensions as an average woman today, which should give more accurate crash test data and help improve vehicle safety for women.

Incampus: Audi's New Safety Center

INTERIOR NEWS

AUDI IMAGES

The Incampus technology park was created by the joint venture In-Campus, which consists of the city of Ingolstadt (where Audi is headquartered) and the associated companies IFG AöR and Audi. The center is already being used by the VW software company Cariad and the Ingolstadt University of Applied Sciences.

The new vehicle safety center can handle a greater number and variety of vehicle crash tests than the crash hall previously used on the Ingolstadt plant site. The facility is also much more extensive, with a core area of 130 by 110 m and a height of 20 m. The integrated crash arena consists of a support-free area measuring 50 by 50 m, while the opposing run-up tracks have a total length of 250 m, enabling tests at speeds exceeding today's usual requirements. An additional lane also allows right-angle car-to-car crashes involving two vehicles.

A fixed crash block and a mobile crash block with four impact sides allow for efficient operation. This makes it possible for significantly more complete vehicle crash tests to be carried out every year than in the previously used crash hall on Audi's plant premises in Ingolstadt.

Belt systems, airbags, and even seats are being developed even more efficiently thanks to a novel coasting slide with a delay unit. State-of-the-art high-speed cameras and energy-efficient LED lighting systems facilitate the team's work. A dummy lab, component test stands, workshops, and offices complete the building.

New Widescreen Cockpit in Peugeot E-3008

INTERIOR NEWS

PEUGEOT IMAGES

Peugeot's electric 3008 is the first model built on Stellantis' STLA platform. The car has just been presented to the public.

Inside, the 3008 uses a new version of the brand’s panoramic i-Cockpit dashboard arrangement, with a small steering wheel set below to provide an unobstructed view of the instrument panel. 'Piano key' switches control key functions. It has a single, horizontal screen that 'floats' in front of the driver and includes infotainment, rather than a separate, large central screen. A small screen set midway in the dashboard includes vital functions such as climate and telephone controls. That feature debuted on the DS 4 compact hatchback.

The interior will have broad, sculpted fabric-covered surfaces on the door panels and ahead of the instrument panel, with an asymmetric center console, also covered in the same material. Driving functions on the console are on the driver’s side, while cupholders and an induction phone charger are on the passenger’s side.

Effort has been made to use high-quality and sustainable materials. Much of the interior looks modern and bright, almost avant-garde like a show car.

The highlight of the I-cockpit is the 21” panoramic screen (53.3 cm), standard on the GT. Slightly curved toward the driver, it is illuminated from below by LED light and thus appears to float on the dashboard. In the basic Allure version, two 10” screens combine to form a single display. There are plenty of assistants on board, plus a 690 W premium HiFi system from Focal on request.

Mercedes-Benz A Class and GLA HMI

INTERIOR NEWS

MERCEDES-BENZ IMAGES

Mercedes-Benz is giving the petrol-powered compact A-Class and CLA models a facelift. Mercedes families from the A-Class to the S-Class now have the same valances, where all functions can be operated via touch-sensitive controls on the left and right.

By contrast, the use of the latest infotainment generation represents a significant improvement. Here, too, the compact models are now on a par with the rest of the portfolio. The two screens, each up to 10.25” in size, now run the latest generation of Mercedes MBUX along with a new display look. For example, if the driving dynamics control is set to "Sport," a dynamic tachometer with a red needle is displayed.

Apple Carplay or Android Auto can finally be used wirelessly. The phone connects easily, and a small icon on the touchscreen lets you quickly switch back and forth between the onboard system and smartphone apps.

In the future, voice control will also be able to learn in the small models. However, only if the driver activates the online services in the Mercedes me app. In any case, the system tries to remember preferences and driving styles.

The Mercedes navigation system guides you around traffic jams. However, if you do end up in it, you can pass the time with information about the surroundings. Just say "Hey Mercedes, start tour guide" and MBUX will read out facts about sights along the route. That's because the system responds to the approximately 3,400 brown information signs along the highways.

The Design Lounge

Margin & Opportunity

THE DESIGN LOUNGE

COFFEE CORNER
DVN
Interior

By Athanassios Tubidis

DVN IMAGE

The IAA 2023 show in Munich was, without a doubt, a depiction of a new approach to mobility. EVs occupied most of the floor, referring to new energy distribution channels, as well as state of the art applications, that enable a high degree of connectivity for shared and autonomous vehicles. The show floor was equally populated by endorsed demonstrations, conferences, presentations and of course, ongoing corridor talk. We all felt that the Automobile was not represented only as an independent product, but also as a complex composition of features, that are at the same time components of a greater mobility system. In the attempt to re-orchestrate the complex act of mobility for the new millennium, automakers transform and so must suppliers.

Besides any definition of brand heritage, automakers who want to enter the electric-autonomous-connected-shared mobility industry, as vehicle providers, will need to develop purpose-built vehicles with best-in-class durability, low maintenance costs and high uptime availability. That alone constitutes a major cultural change and perception of the final product. If they want to become new mobility players, themselves

they need to prepare for major changes and it might even be that the term OEM (Original Equipment Manufacturer) itself, be subject to new interpretations. Given the industry's intense focus on operational excellence, in order to become market leaders, they may need to focus on new practices such as mobility infrastructure, i.e. vehicle control centers, mobility hubs, charging stations and invest in smart algorithms that optimize their novel business models. Alternatively becoming mobility service provider, an OEM, could create an integrated (EV/AV + in-house support) offer by pursuing alliances in order to coordinate a full stack solution.

As the auto industry continues its path to electric, connected, shared and autonomous future, suppliers find themselves equaly and inevitably, at a pivotal point. While demonstrated a robust presence at the show, no one can tell if they are prepared for what comes next, stategicaly or operationaly. Will they make the necessary changes to stay and grow as vital links in the auto industry's value chain, or rather manage their current portfolio to maximize value if the business is viable? Often their good underestanding on allocating their R&D spending towards improvements in EVs, AVs and energy demand, placed them close to the trendsetters of the show. Their vast network offers certainly a great array of bussines choices however decisions in the upcoming years might be crucial. Changing business models, shifting from parts vendors, to AV maintenance providers or vehicle control center operators, for instance, is certainly a very different strategy than seeking partnerships across the automotive network to link up with other specialists such as aftermarket experts. Both choices are equally valid for the time being, however competitive advantage goes to the first movers.

From a part supplier mindset to a service provider may seem a big gap to bridge yet smart business models are already able to equalize the two. After all, as Jeff Bezos several times sited, at a cross industry-sector mode: *'your margin will be someone else's opportunity'*.

Alfa Romeo Unveils 33 Stradale Supercar

THE DESIGN LOUNGE

ALFA ROMEO IMAGES

Alfa Romeo has revealed the 33 Stradale, at an event at the Alfa museum in the Milan suburb of Arese, a limited-edition 'halo' sports car with a price tag of more than €1.5m and inspired by the racecar-derived 1967 33 Stradale.

The cars will be assembled by the coachbuilder Touring Superleggera, whose shop is close to the Alfa Romeo museum. The first car will be delivered on 17 December 2024, the 57th anniversary of the original 33 Stradale.

About two or three units will be built each month.

A battery-electric version also will be built, starting with deliveries in 2025, with an output of more than 750 hp and a range of more than 450 km.

The 33 Stradale is built on an aluminum H-frame and carbon fiber monocoque structure, the roof structure has been engineered in carbon fiber and aluminum, with front-hinged doors that open upward. The window frames are also made of carbon fiber, while the rear window is polycarbonate.

The 33 Stradale is the first all-new Alfa Romeo model revealed under design chief Alejandro Mesonero-Romanos, a former head of design at Seat and Dacia who joined the automaker in June 2021.

Alfa Romeo says the 33 Stradale's styling is the epitome of the brand's 'Necessary Beauty' philosophy, which combines technology and aesthetics.

The front end's sinuous shapes are typical of Alfa Romeo, as is the scudetto (shield) grill. Gullwing-style doors enhance accessibility and ergonomics, Alfa Romeo says. At the rear, the car's 'brutal' essence is defined by a truncated tail.

The interior is available in the Tributo configuration, a homage to the historic car with leather and aluminum accents, and in the sportier Alfa Corse, which uses carbon fiber and Alcantara.

The driver experience has been "totally purified of all the interactions required in a conventional car," Alfa Romeo says. The steering wheel has no buttons on it, just aluminum shift paddles.

A limited number of controls can be found on the center console; as in an airplane cockpit, more controls are located on a higher plane, in the central lining on the inside of the roof.

The 33 designation was first used by Alfa Romeo in the mid-1960s for a sports-racing model; later Alfa Romeo 33s won the world sports-car championship in 1975 and 1977.

A street-legal model, the T33 Stradale, was a rear-engine, rear-drive, two-seat coupe derived from Alfa's 33 racecar. Alfa built just 18 units of the 33 Stradale after its 1967 launch.

News Mobility

Fraunhofer Sensor Technology for the Hearing Car

NEWS MOBILITY

FRAUNHOFER IDMT IMAGE

At the Fraunhofer Institute for Digital Media Technology, research is being conducted into the sense of hearing in vehicles. For example, AI-supported system solutions for acoustic scene detection are being developed there.

"On behalf of car manufacturers and suppliers, we are developing and testing new sensor technologies and algorithms for acoustic environment detection, source localization, signal enhancement, and speech interaction on the test track and on the road," says Moritz Brandes, project manager of The Hearing Car at the Fraunhofer Institute for Digital Media Technology (IDMT) in Oldenburg / Germany.

Research is currently being conducted on an acoustic turn-off assistant, for example, which can supplement camera systems with acoustic scene analysis or the detection of important ambient sounds. Microphones would be integrated into mirrors and camera arms for this purpose. Algorithms for detecting and locating traffic-relevant sounds should help to integrate the vehicle of the future more safely into the traffic flow.

Acoustic signals can also be a great help when reversing into a parking space, hitching up trailers or generally maneuvering with the vehicle and increase safety. For example, with the help of intelligent software, the attached microphones can enable interaction with outsiders without having to open the windows. In addition, research is being conducted at Fraunhofer IDMT on the true-to-location recording and reproduction of ambient sounds and the associated microphone hardware. The function increases the driver's attention during various driving maneuvers and can thus actively protect against accidents.

Tele-Driving: Driving a Car Remotely

NEWS MOBILITY

MIRA IMAGE

Automated and autonomous driving still suffers from at least two issues: At Level 3, the transfer of responsibility from the driving system to the driver has not yet been resolved. At levels 4 and 5, the driving functions reach their limits in edge cases such as bad weather, unforeseen obstacles on the road, or emergency vehicles that suddenly appear and violate traffic regulations.

Experts therefore see tele-operated driving as a realistic intermediate step. In this case, a person remotely takes over vehicle control from a control station. Either as a regular application or when the automated driving system requests assistance in edge cases.

Mira, a startup subsidiary of Rheinmetall, sees these two use cases as exciting business models. First, they plan to control L^2 and L^3 fleet vehicles through a tele-operator (tele-driving). For example, drivers could be saved when vehicles are transferred to and from customers or directed by tele-operator in demarcated areas (for example, depots, factory premises or airports).

Secondly, Mira is developing L^4 and L^5 vans and trucks intended to drive autonomously in short-haul freight transport or as passenger shuttles. However, since the legislator is expected to demand proof of a technical control authority for such vehicles, 'tele-operation as a service' is seen as this fallback level and thus a business model—whether the teleoperator has to intervene or not. It could take over vehicle guidance in the event of disruptions or on the notorious 'last mile', and temporarily guide vehicles through traffic by remote control (tele-assist).

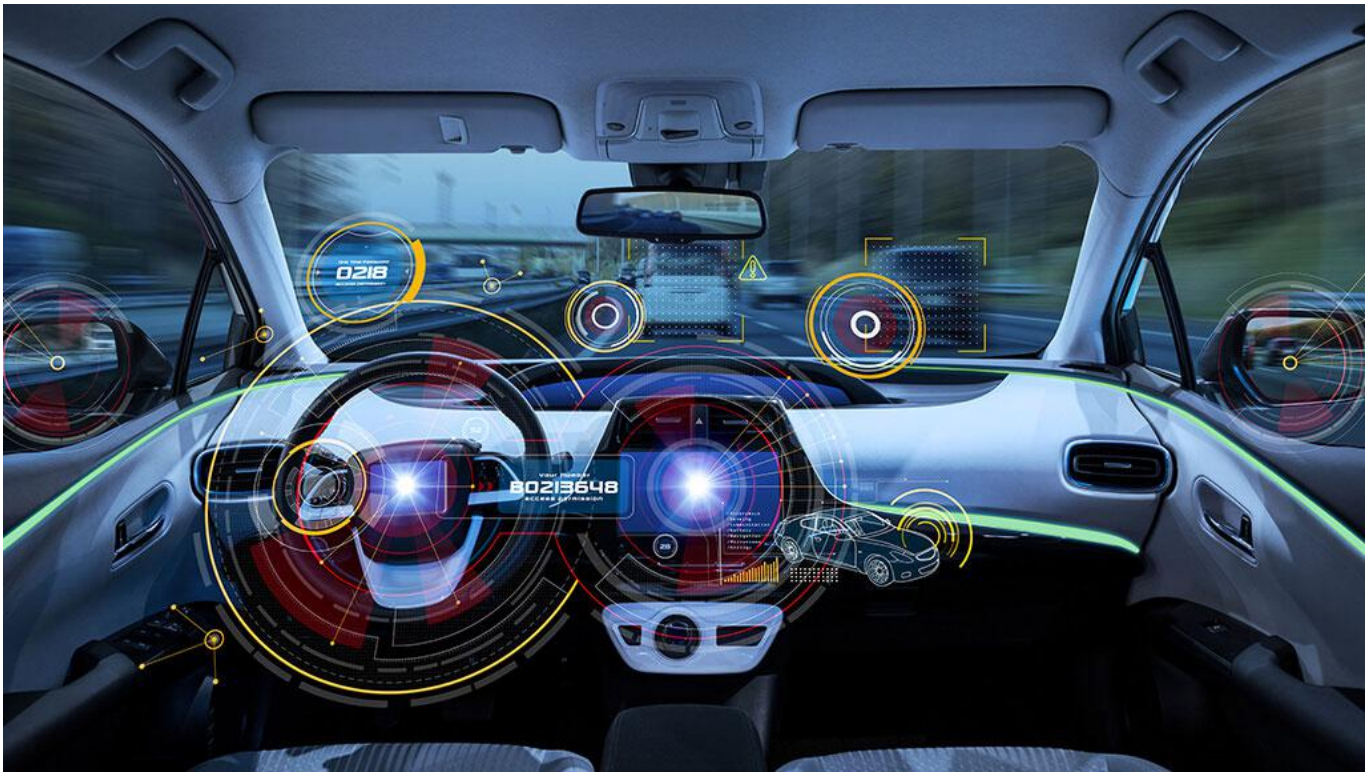
The technology portfolio for tele-operated driving is available and is already in trial operation at Mira, explains Mira CEO Heinrich Dismon: a comprehensive environment sensor system in automated or autonomous vehicles, a 5G mobile radio connection, and a control center with several teleoperator workstations, the 'control stations'. These include a realistic cockpit with driver's seat, steering wheel, accelerator and brake as well as large-area screens on which the teleoperator can view the road environment of a controlled vehicle.

Mira has already equipped several conventional electric vehicles with sensor technology and automated driving functions—passenger cars, vans for passengers and goods, and large trucks. They have brake- and steer-by-wire systems which Mira's proprietary Teleoperation Kit can access and relay commands from the teleoperator. In return, an additional Vehicle Control Unit provides the teleoperator with near-real-time video data.

General News

ZF, Fawsn in Safety-Comfort Pact

GENERAL NEWS



FAWSN IMAGE

In a strategic collaboration formed earlier this month, ZF Group and Fawsn Automotive Cockpit Group have joined forces to enhance passenger safety and comfort, with a particular focus on zero-gravity seating scenarios.

This partnership aims to innovate and introduce zero-gravity seat active and passive safety solutions. Leveraging their expertise in innovative modules, robust structural frameworks, well-established active and passive safety development modules, and extensive experience in comfort system development, the two companies are committed to offering passengers a uniquely delightful and secure travel experience.

Changchun Fawsn Group is located in Changchun, a city in the old industrial base of Northeast China. The company was established in 1979, formerly known as FAW Sihuan Enterprise Corporation. In 2012, it was officially restructured into Changchun Fawsn. They're a seat system integration supplier, serving traditional and new-energy vehicle clients. The company's core revolves around seat products, encompassing a holistic ecosystem platform that integrates production, learning, research, and sales to serve the intelligent cabin of the entire vehicle. It has already established ten production bases and five R&D centers nationwide, with overseas development departments in Europe.

Covering six business segments of interior, exterior, chassis system, electronic and electrical, new energy and intelligent networking, the company has developed six core competitiveness of product development, intelligent manufacturing and operation, customer service, cost control, company formation and talent introduction and cultivation. They have strategic cooperation with Bosch, Lear, Tenneco, Cooper Standard, Grammer, and TBK. They also develop and produce auxiliary dashboard (console), trim, trunk trim, seat A surfaces, among others.

EV Trends at Chengdu Motor Show

GENERAL NEWS

WAUTOM IMAGE

The recent Chengdu Motor Show confirmed Chinese e-car manufacturers going into niche markets. Hybrid SUVs, extremely expensive electric supercars, further e-cars for 'mother and baby', and electric luxury sports cars together send the message that the market for New Energy Vehicles (NEV) in China keeps growing—and that China's carmakers are responding to this with new models.
Analysts in China note about this trend that it is solely driven by Chinese brands such as BYD's Fang Cheng Bao, BAIC's Arcfox, and MG's new Cyberster by SAIC. Many foreign automakers, on the other hand, are not yet ready.

One of the stars of the ten-day auto show was BYD's new hybrid-powered SUV. The Bao 5 is an off-roader with hybrid drive that also looks good in the city. It is a typical example for the trend that China's e-car manufacturers are pushing further and further into the luxury segment of e-mobility and see a historic opportunity to take more and more market share from German brands.

An entirely new category of e-cars has emerged for the first time in Chengdu, that of all-electric parent-child models. This refers to the likes of the Arcfox Koala, which debuted at the Chengdu show. The compact MPV from SAIC is equipped with a number of exclusive features for mother and baby, such as a special baby monitoring camera. This allows the mother to keep an eye on her toddler, who is strapped into the baby seat in the left rear seat, as the driver via the central control screen.

BMW was the only European maker present, and brought five new e-cars and hybrids with them: the iX1, the i7 M70L, the M760Le, the XM Label Red Limited Edition and the XM 50e.