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Weekly Newsletter

DVN-I
Automotive Interior

NEWSLETTER #146

Editorial

Digitalization And New Sustainable Materials

AFEELA (SONY IMAGE)

This week's newsletter homes in on two major trends in today's automotive and mobility world: digitalization and new sustainable materials.

The in-depth article this week looks at how the traditional automotive world is merging with the digital world, with increasing numbers of collaborations as companies strive (and sometimes struggle) to stay on top of the latest tech trends. Many of these new combinations involve companies from outside the automotive world; they bring new skills and often a different approach to business as the traditional auto industry establishment recognizes its lack of digital skills. Sony and Honda creating Afeela, for example.

And as for sustainable materials, there's a nonstop roll of developments and innovations—Grupo Antolin's bamboo and recycled wood; Forvia's Auroloop to replace PU foam with PET fibers in seat cushioning; new Covestro polycarbonates; numerous new leather alternatives…the list is growing at a galloping pace.

These topics are at the top of the DVN Interior Workshop happening this April in Köln. Exhibition booths and lecture slot priorities are given to DVN Interior members, so please **confirm your participation** before 16 February.

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

Cockpit is Crossroads of Automotive, Digital Worlds

MBUX (MERCEDES IMAGE)

The in-car experience is a reimagined one in new vehicles—built around a digital cockpit and an automotive OS. The digital cockpit is a software-defined dashboard system to provide controls and displays of numerous types, integrating the likes of comfort controls, infotainment, navigation, and more—all using multi-modal interfaces. Its user interface presents vehicle occupants with these controls, in a manner which optimally balances a safe and consistent way of working with the freedom to customize.

Digital cockpits are the junction of the automotive and the electronic-digital worlds. Traditional automakers and tier-1s are investing heavily to facilitate and accelerate these developments, and we're seeing a large amount of strategic partnership, of various types, throughout the industry. These new ties are the focus of this present reportage.

TESLA IMAGE

Many digital companies are heavily investing in developing digital cockpit platforms—whether as a simple supplier or integrator of major components; or as a complete system provider. Alibaba; Baidu; Google, and Tencent are bringing their OS and its extensive application ecosystem and content assets into the cockpit; long-term automotive infotainment software suppliers BlackBerry QNX, Harman, and TomTom are leveraging their

automaker customer base and partnerships. Huawei, Nvidia and Qualcomm are heavily involved in automotive supply, bringing a multitude of technologies.

Smartphone companies are also mixing in—such as Google; Apple; Samsung; Xiaomi; Oppo, and Honor. Android Auto and Apple CarPlay are being built into more and more vehicles. Samsung acquired Harman, and now drivers can control Samsung smart-home devices from their car. Xiaomi has announced plans to launch EVs in 2024. Oppo demonstrated in-car connectivity technologies in 2021. And Honor is partnering with Li Auto. The smartphone can already be used as a digital key or for remote vehicle parking. From a smartphone app, drivers can manage the vehicle's HVAC controls; check the EV's battery status, and more. In-vehicle flash charging and wireless charging is increasingly available.

And because users can, users *have* turned to their phones as car controls—it's easy and it works. Embedded systems can increase such usage by increasingly extending and integrating with the familiar, comfortable phone interface and safely bringing users' digital lives and regular updates into the car.

A growing list of car models now include a digital cockpit, or will at their next major refresh. Automakers have partnered with cloud providers including AWS; Ericsson; and Microsoft, to build automotive cloud platforms to manage these data centers on wheels. New revenue streams will be sought, and new business models tried. automakers have already started with subscription-based replacement of ownership by subscriptions—often free for a period—for connectivity; remote diagnostics; streaming, and concierge services. With so much in new vehicles being software-defined, many more features will be available on a subscription basis, on-demand or long after vehicle manufacture as an upgrade when the feature is launched.

This year's CES reflected this emphasis, especially with EV manufacturers working with tech brands to produce cars with gadgets to go along with TVs, smartphones, and home appliances.

Sony and Honda

Sony and Honda have teamed up on a new EV brand they're calling Afeela—DVN-I coverage **here**—which will leverage Sony's innovations in entertainment; virtual reality; artificial intelligence, and augmented reality and will be manufactured at one of Honda's U.S. plants.

AFEELA (SONY IMAGE)

Harman Automotive and Ferrari

HARMAN IMAGE

Harman has joined with with Ferrari in a multi-year, multifaceted partnership to commercialize Harman's in-cabin innovations. Ferrari will use Harman's Ready Upgrade hardware and software to provide fully upgradeable consumer electronics-level experiences within the interiors of their vehicles. The partnership marks the latest

milestone in Harman strategy to become a leading automotive electronics supplier delivering driving experiences. This transformation was recently accelerated with the unveiling of six new road-ready products to deliver specific benefits in vehicle safety; occupant wellbeing; entertainment, and connectivity. Ready Upgrade is a suite of products that significantly reduces automaker cost and time-to-market for new features, and empowers consumers to easily enhance their own vehicle experiences. Ready Upgrade transforms the car into an electronic device that can be updated and personalized with new features and services at any time, very much like a smartphone.

For Ferrari, Ready Upgrade adapts to their vehicle networks and optimizes interior performance without having to invest in software development, thus accelerating the deployment of their unique driving experience.

Harman and Ferrari will also collaborate for motorsport, with Harman becoming the exclusive in-cabin experience team partner of Scuderia Ferrari for the 2023 Formula 1 season.

LG and Magna

LG-MAGNA IMAGE

LG Electronics and Magna have signed an agreement to develop a proof of concept for an automated driving infotainment solution to provide futureproofed, differentiated customer experiences.

The companies will investigate the technical feasibility of integrating LG's infotainment capabilities with Magna's ADAS and automated driving technologies. Additionally, to prepare for vehicles of the future, LG Vehicle Component Solutions has been analyzing their portfolio of future products and technologies.

The partners say that the proof of concept will focus on creating executable IVI-ADAS solutions to meet the requirements of automakers' vehicle programs.

Dirac and BlackBerry

DIRAC IMAGE

A partnership between BlackBerry QNX and Sweden-based digital audio company Dirac will see Dirac's Opteo Professional solution integrated into the QNX Acoustics Management Platform to make it easier and more affordable for automakers to digitally upgrade sound systems within their high-end vehicle models. The companies have already started work on implementing the solution into a premium European EV program.

Based on software-defined vehicles with subscription-based upgrades via over-the-air (OTA) software updates, the collaboration will enable automakers to optimize sound experiences across entire vehicle ranges.

Dirac Opteo Professional will be accessible on all QNX supported chipsets through the QNX audio framework, preventing automakers to install costly audio software in head unit SoCs or in separate digital signal processors.

Starting with Dirac Opteo Professional, the duo will expand their offering to include Dirac Opteo Premium and Dirac Opteo Performance for mid- and entry-level vehicle sound systems. The expansion will also include the Dirac Virtuo solution which swaddles drivers and passengers in high-quality immersive sound.

Dirac audio solutions will be a standard feature for automakers, in addition to being offered as a potential upgrade for consumers at the point of purchase or at a later date via OTA update-based purchases.

Porsche and Google

PORSCHE IMAGE

According to a report in Manager Magazin, Porsche is talking to Google about collaborating on vehicle software. Porsche and Volkswagen CEO Oliver Blume met with Google's Chief Business Officer, Philipp Schindler, during a visit to Silicon Valley. Blume wants to let Google's apps—mainly Google Maps—into Porsche cockpits.

Apps such as Google Maps or paid offers would then be integrated into Porsche's own infotainment and would not have to be imported via the smartphone. There are still differences about the price and about how deeply Google would be allowed to investigate Porsche data. A looming question is how such an effort would integrate or interact with Cariad's own software projects.

In a second step, the other VW Group brands could also use Google apps, the report says. Blume had restructured the Cariad software division and is again relying more heavily on partnerships than his predecessor.

Last fall, Porsche CFO Lutz Meschke had stated that Porsche was in close exchange with Google, Apple, Baidu, Tencent and Alibaba about automated driving and infotainment technology.

TomTom and All

Automakers want to create personalized, protected in-vehicle experiences across brands, car models and trim levels, without recreating the wheel every time, while upgrading user experience, seamlessly integrated into their digital lives.

TomTom Digital Cockpit is a flexible platform, enabling collaboration with any brand, which seamlessly unites automotive features, vehicle interfaces and apps—bringing drivers' digital lives into the vehicle, without letting their data out.

It is an open, modular in-vehicle infotainment platform. It is the foundation to create immersive, branded experiences that will continue to delight drivers, all at less development risk, will cut costs by up to 80 per cent, and with faster time-to-market. Scaling up or down, this approach helps create immersive in-vehicle experiences for all drivers.

Digital companies like Spotify; Amazon; Microsoft; Cerence, and iHeartRadio are part of the TomTom Digital Cockpit platform ecosystem.

Garmin and Atari

GARMIN IMAGE

Swiss automotive equipment company Garmin has partnered with Atari to bring gaming into the cabin as showcased at CES this year.

Garmin is focused on technologies that unify multiple domains, touchscreens, and wireless devices on a single SoC (system on chip). The demo-cabin features four infotainment touchscreens, an instrument cluster, a cabin monitoring system, wireless headphones, wireless gaming controllers, smartphones and numerous entertainment options—all powered by a single Garmin multi-domain computing module. The demo is meant to addresses several key technical and user experience challenges for next-generation multi-screen systems running on the Android Automotive operating system.

The system is customizable for each passenger and easy to operate, utilizing UWB (Ultra-Wideband communications) positioning technology to automatically connect wireless devices to the appropriate display. A cabin monitoring camera identifies and unlocks each passenger's personal user interface profile.

For the in-cabin sensing capabilities, Garmin relied on Xperi's DTS AutoSense platform, which uses advanced machine learning and a single camera to enable safety and experience features such as seat occupancy (including body pose), hands-on-wheel, activity and seatbelt detection, driver attention zones, driver distraction or occupant recognition.

For audio streaming, Garmin tapped Xperi's DTS AutoStage hybrid radio solution, which provides an immersive radio listening experience. This feature automatically switches between a station's over-the-air radio signal to its IP stream when traveling in and out of range, as well as providing station metadata, album art and more.

Google's Android Auto Has New Design

OPEL IMAGE

Google has now adapted their Android Auto infotainment software to larger and larger screens. Thanks to a revised design, Android Auto is now said to work better with the different display sizes and formats in the vehicle. Among other things, a widescreen function has been integrated. Route planning is now always

displayed on the driver's side in split-screen mode, and other freely selectable apps can be seen in the neighboring field. The infotainment service for the cockpit has been given a clearer look and new functions—the system now makes context-related suggestions and automatically offers a callback for missed calls. For text messages, there are preformulated short replies as known from smartphones.

Google HD Maps for Automated Driving

VOLVO IMAGE

Google has announced a mapping solution called HD Maps. This is forwarded to the vehicle's L^{2+} or L^{3} driving assistance systems via Google Automotive Services and provides additional information superimposed on the Google Maps data. So, it's not Google Maps in a higher-resolution, but a complementary service for compatible vehicles.

Via Google HD Maps, precise lane markings and the localization of objects including road signs are provided so that vehicles with assistance systems can better orient themselves on the road. Combined with other vehicle sensors such as lidar, cameras and radar, the system is expected to lay the foundation for better assistance systems.

Google's HD Map is available to automakers using Google Automotive Services. Volvo and Polestar announced the HD Card will soon be available in the Volvo EX90 and Polestar 3.

Conclusion

That's not the end of it—not by a long shot! BMW has expanded Alexa ties for their next voice assistant; Stellantis and Foxconn are teaming up on connectivity; Bose is reaching beyond music for sound management, Forvia has developed a MyDisplay platform that mimics how the human eye works to enhance the display's color and brightness based on a driver's age and needs…more and more and more. This has been a quick spot-check to get an idea of the kinds of collaborations and partnerships popping up like mushrooms after a rainstorm. Expect a constant stream of innovation and news from this direction.

Interior News

Antolin Vivar Concept Poses New Interior Experience

INTERIOR NEWS

GRUPO ANTOLIN IMAGES

Grupo Antolin has **presented** their new virtual concept car, the Antolin Vivar—the supplier's latest design exercise to strike the balance between current and future mobility. This concept respects the roots of the company, while pushing forward their vision of the future.

The Vivar offers a more sustainable, polyvalent, and comfortable space for users to enjoy their time while travelling…or for them to work; relax; talk; create, or escape. The concept car offers ready-to-market solutions as well as farther-out ideas.

The concept is said to be inspired by a local-hero figure from Burgos, where Grupo Antolin is headquartered—Rodrigo Diaz de Vivar ("El Cid"), one the best-known medieval knights in Europe—and the colors and materials of the landscape of the same region. To present and package the warm and welcoming interior experience, a robust and sophisticated exterior has been also designed, with an illuminated grilleboard where a radiator grille would be on a combustion car; it enables communication with other traffic participants.

Facial recognition allows users to enter the vehicle without a key. When the sliding doors open, the roomy interior is revealed, which can adjust to cater for both autonomous and manual driving. There are swivelling front seats to face rear passengers; a sliding floor console with pivoting infotainment surface; a mobile and adjustable display on the instrument panel that can serve the driver or the front passenger depending on the driving mode, and removable and portable spotlights from the headliner to the door panel to provide a closer direct light when required.

Along with its user-centered design, the Vivar bristles with innovative in-car technologies include an 'AI' voice assistant; wireless charging stations and device syncing on the door panels and floor console, and contour 3D decoration with dynamic light to access the infotainment system from the door panels and to control the windows.

It offers user-friendly conveniences including a telescopic work table on the door panels, and integration of switches on the fabric. A high degree of thermal and acoustic comfort has been achieved thanks to clever techniques like dimmable glass; noise cancellation, and visual temperature by using different-color lights to influence thermal sensation. The rear pillars contain speakers to create personal sound bubbles.

Along with natural fibers which can be backlighted, the instrument panel also features a natural air purification and odor system which promises a 'customizable urban garden'. The door armrests are covered in bamboo fabric over a natural-fiber carrier, and recycled wood has been used for decorative trim parts.

The overhead system has a panoramic roof with dimmable glass, and an innovative closed version has been created, too, with structural real cork.

LG's 57" Display Has Multilayer OLED Technology

INTERIOR NEWS

LD IMAGE

LG Display has installed the latest display technology across the entire dashboard of a concept car also equipped with an LG lightweight sound system.

LG showed with a concept car a display with P-OLED, a double-layer OLED with two organic light-emitting layers. The technology is said to have greater brightness and durability than single-layer OLED displays. Compared to the first generation, LG has reduced power consumption by about 40 per cent. With a combination of tandem OLED and plastic substrate, the P-OLED reduces energy requirements and weight. Also developed for vehicle interiors is the Advanced Thin OLED (ATO). It has a slim design and is 20 per cent narrower than conventional OLED displays.

The largest LC display presented by LG measures 57" and spreads pillar-to-pillar across the entire dashboard. The 12.3" 3D LCD cluster would provide the driver with real-time information from the road with 3D images by tracking the driver's eye movements.

Also installed in the concept car is a technology developed by LG Display called Switchable Privacy Mode. By controlling the viewing angle, the driver is supposed to concentrate on the front view and not be distracted by the side view of the passenger display.

With the Thin Actuator Sound Solution, LG brings a 22.2-channel sound system to the concept vehicle. The speakers are the size of a passport: 150 × 90 mm with a thickness of 2.5 mm. The weight is 40 g, just 30 per cent of a conventional car speaker's mass.

Faurecia Auraloop to Replace Car Seat Foam

INTERIOR NEWS

FAURECIA IMAGES

Auraloop is a new range of cushioning solutions for automotive seating, made from an innovative structure of 100-per-cet recyclable polyester-based fibers. One of the objectives of Auraloop is a halving of the carbon footprint of car seat pads, currently made from polyurethane foam. Auraloop also offers an increased level of performance in terms of thermal comfort and durability.

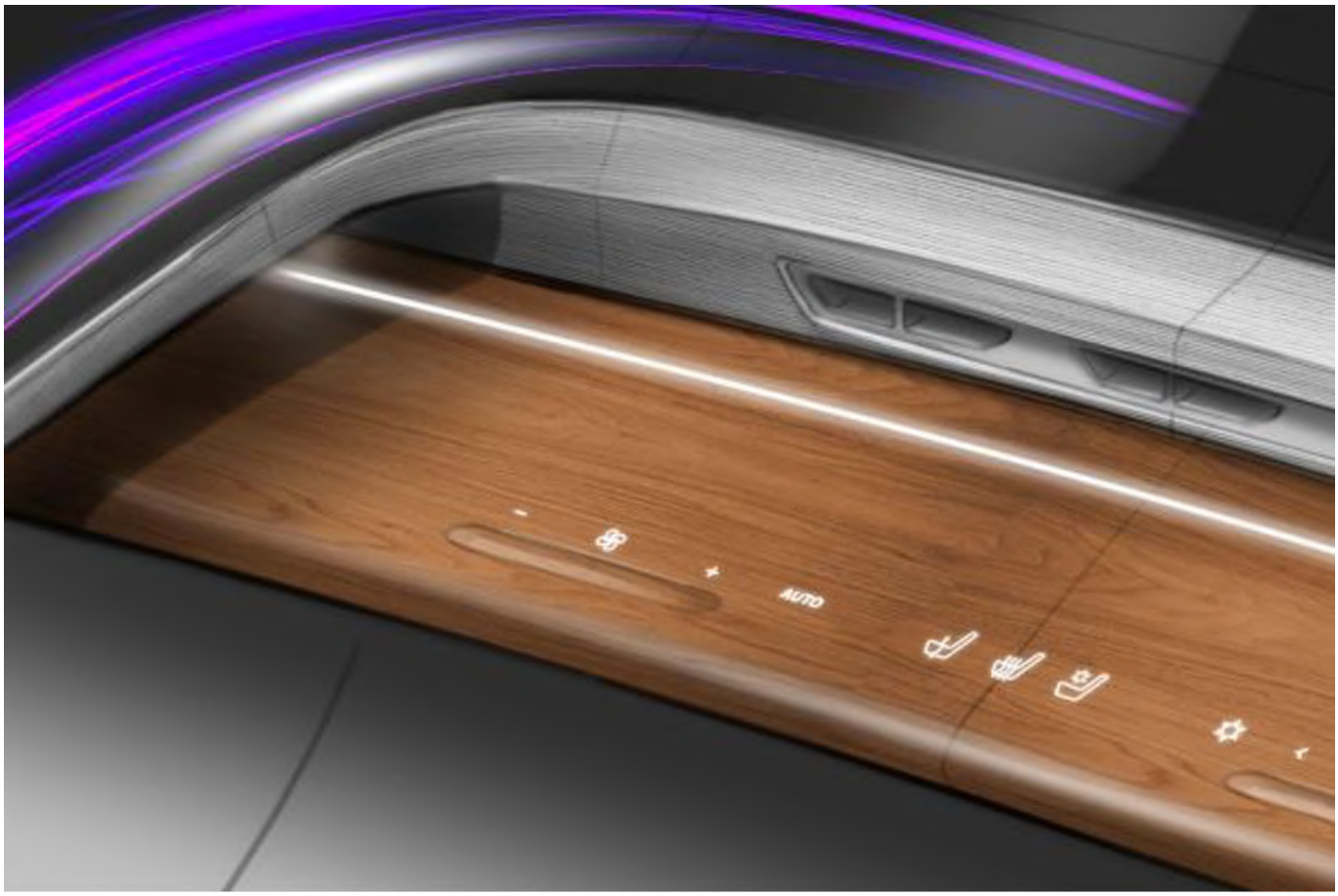
Faurecia seating R&D recently signed an exclusive development agreement with Indorama Ventures, one of the global leaders in PET (polyethylene terephthalate) production and recycling, and already a market leader in yarns and fabrics for tires and airbags.

Development of this product, which paves the way towards wider commercial release in two or three years, falls within the Forvia Group strategy of going carbon neutral by 2045. For this, the group is seeking to root its commercial offer fully in the circular economy, with the development and production of sustainable cutting-edge materials under the banner of **Materi'act**.

Auraloop also offers a range of new perspectives in terms of seating comfort thanks to a more open fiber structure and permeability for air than current seating pad solutions, the breathability of seating is improved, enabling a better passive thermal regulation of occupants. The durability of seating is also increased by limited subsidence of the seat over its lifetime. The market for comfort aboard vehicles is constantly growing. The development of Auraloop falls within this dynamic, with a product offering significantly improved performances in terms of static, dynamic and welcoming comfort.

Covestro's Multi-Material Smart Surfaces

INTERIOR NEWS



COVESTRO IMAGE

New materials bring polyvalence to in-car surfaces, unleashing whole new kinds of design concepts. Automakers are introducing new patterns to car surfaces: natural materials and surfaces with an authentic look and feel are trending—wood grains, fabric-like woven textures and textiles, cork, and stone.

Covestro has developed a dedicated material that can balance the stiffness of glass and the ductility of polycarbonate while keeping the transparency: Makroblend® OM 845G. This material can be backlighted, and it fits with complex designs with curved 3D shapes and 3D relief-type designs. It is also more likely to see metal-like surfaces and geometric patterns incorporated.

Back-lit touch, hidden-until-lit surfaces, and haptic HMI features are now mainstays of dashboard design and interior door trims. Engineers must integrate decorative surfaces with ambient lighting features, edge lighting and functional electronic displays that permit drivers and passengers to adjust switches and sensors for everything from seats and windows to stereo systems and temperatures.

Important design considerations include weight, transparency, and heat resistance. Makrolon® Ai is a highly transparent and consistently pure material ready-made for aesthetically demanding parts. Not only does it offer homogeneous coloration, numerous colors and degrees of transparency and translucency, but its optimized thickness reduces weight, improves cycle time, minimizes material consumption, and contributes to lower system costs.

'Smart' HVAC for Volkswagen ID.7

INTERIOR NEWS

VW IMAGE

For the new ID.7 teased at CES this year, Volkswagen is introducing an air-conditioning system that cools or heats the vehicle's interior faster, even before occupants enter.

The new feature is made possible by electronically controlled air vents that move air throughout the vehicle interior when the driver approaches with the key. Voice commands can also be used to control the automated system, which can consider the position of the sun for interior cooling, in addition to storing individual user preferences.

The system can sense the exterior temperature when the door is opened, enabling smart air vents in the cabin to distribute hot or cold air quickly over a large area by using dynamic horizontal movements. If passengers are inside the vehicle, airflow can be redirected straight at the body or used for indirect ventilation of the interior space, depending on personal preference.

The climate control functions are located on the top section of the vehicle's 15" infotainment display, enabling ease of use with a tap of a finger. Via the touchscreen, all smart air vents can be digitally controlled at the outlets. Additionally, the strength and direction of air movements can be adjusted and saved individually. Temperature is controlled using backlit touch sliders.

The ID.7's digitally controlled air-conditioning system can also be activated using voice control, with such phrases as "Hello Volkswagen, my hands are cold" resulting in warm air being directed at the hands on the steering wheel for around five minutes.

If the automatic function is activated, then the ID.7's smart system reacts to the outside temperature. The system can detect the position of the sun in conditions with high outside temperatures and high solar intensity. If the sun is shining on one side of the vehicle, the ID.7 adapts its air-conditioning to be stronger in these warmer zones—starting with the vehicle interior, and then in the direction of vehicle occupants.

Mercedes-Benz CLA: Latest Cabin Features

INTERIOR NEWS

MERCEDES-BENZ IMAGES

The latest CLA Coupe and CLA Shooting Brake from Mercedes-Benz feature upgraded standard equipment in the vehicle cabin.

The comfort seats, which feature in both the CLA Coupe and CLA Shooting Brake as standard feature a combination of Artico man-made leather (substitute for real leather, a form of vinyl material), and 3D-embossed, black fabric. The Progressive equipment trim offers the three interior colors black, macchiato beige and sage grey.

Mercedes-Benz uses 100-per-cent recycled materials to produce the fabric cover of the comfort seats. For the Artico/Microcut Microfiber seat cover, 65-per-cent recycled materials are used in the seat A-surface, and 85-per-cent in the bottom fabric.

Delivering driver information and infotainment for passengers is a free-standing double screen, made up of a 7" screen and a 10.25" display as standard. Two 10.25" displays are available as an optional extra. The CLA Coupe and CLA Shooting Brake feature the latest generation of MBUX, with three styles to the display system: Classic, Sporty and Discreet, all delivering differing levels of information.

Navigation, Assistance and Service, and seven color choices increase the customization of the instrument cluster and central display to suit driver preference. The MBUX system is now also compatible with smartphones via Apple CarPlay or Android Auto Wireless. The Hey Mercedes voice assistant is enhanced and becomes more capable of dialog, voice commands and learning. An optional Burmester surround sound system features Dolby Atmos audio to deliver music with clarity and depth.

The Design Lounge

Dating

Special to DVN-Interior by Athanassios Tubidis

THE DESIGN LOUNGE

GARMIN IMAGE

Ever since the first internal combustion engine needed an electric spark to get going, electricity and mobility, two entirely different perceptions of the modern world and equally two different industry cultures, were married to eternity. In highly competitive enterprises such as the automotive one, alliances between different businesses are not just a form of coexistence but often a survival matter. Knowledge sharing and expertise between partners as well as the control of risk for the development of new products and technologies are vital to the industrial ecosystem as well as to each one individual entity. Coalitions between different industry sectors or mergers between automakers have always animated the automotive dance from the early days to the most recent. In the meantime, the ever-growing challenges are such that there is only one way up: imagination.

Several new alliances have been announced over the past month during what is the best technology trade show/event in the world (CES). Harman, a Samsung group company, through its new software/hardware module will soon be able to update aging Ferraris yearly, enabling both road and race cars to employ innovative assists. LG, one of the world's largest display companies and Magna, a leading automotive parts supplier, got together on the attempt to merge infotainment capabilities with automated driving technologies. Swedish digital audio pioneer Dirac partnered with operating systems provider BlackBerry QNX, to amp up the in-car audio experience. While Porsche is negotiating with Google on integrating new apps, Stelantis CEO C.Tavares announced that the car of the future could commercialize your data, safely. Sony's automotive ambitions are crystalized under the label Afeela, a Sony-Honda joint venture ambitioning to go where the apple car never did. Software revolutionized automobile steadily converting its perception from a hardware part assembly to a platform for applications, features and content.

But while our world is shifting from efficiency to effectiveness and from one-way consuming into social responsibility, equally all these, previously mentioned, are not exactly ordinary alliances. It is certainly difficult to create fellowship between a powerhouse mindset and the ingenuity of a startup, however, the will and the frequency of the upcoming deals indicate a new age. The traditional automotive merger is being replaced by a range of collaborations as companies struggle to stay on top of the latest tech trends. Many of these new combinations involve players from outside the automotive world, which bring new skills and often a different approach to business as the traditional auto industry establishment recognizes its lack of digital skills. Unlike an old-style automotive merger or acquisition here are no proven business models. A fail-faster culture is a very uncomfortable feature for automakers that test and develop new models for many years before they can really sell. In sectors like consumer electronics, where product cycles can be measured in months, this is just the norm. Companies have more flexibility to quit and leave if a certain technology or business model does not turn out; instead of a marriage, business models seem more like dating.

Garmin unveiled its unified cabin experience in partnership with Atari, transforming the entire vehicle into an arcade. We look forward to crossing streets like Frogger, outran ghosts as in Pac-Man and save the earth from Space invaders.

Times Are Changing for Eco-Friendly Interiors

THE DESIGN LOUNGE

LUCID IMAGE

Significant changes are evolving in the interior car space. With the global surge of electrification of vehicles from internal combustion engines, everything associated with cars is now experiencing a renaissance of change for using eco-friendly materials, efficiency, power savings, and aero designs.

For years, cloth and vinyl have been mainstream interior choices, with genuine leather used to create a luxury feeling in markets conditioned or predisposed to prize leather. But with leather, almost half of the hide that goes into auto upholstery becomes waste, if not reused for wallets and stuff.

EVs have slammed the brakes on the use of leather

Attractive, high-performance non-skin leatherlike materials are giving traditional leather real competition. Premium fabrics are also changing: becoming more robust, attractive, comfortable, and providing a look and feel of luxury in a different way than eco-friendly neoleather.

So what is so great about eco-leather or vegan leather? Well, for starters it's not made from animal skins—which means less CO2 and less animal suffering in the world, and less pollution from less use of notoriously toxic leather-production processes. Over the years, there has been so much advancement in the development of animal-free leather it's now an excellent competitive option for interiors. Another fact is that this material weighs less than the genuine leather and offers weight savings for each vehicle used.

Manufacturers have developed and introduced leather alternatives made from some prevalent materials like PVC (polyvinyl chloride) polyurethane (PU), microfiber, lorica ocean plastic, vegetan, cork, recycled rubber, flexible and slate stone, oranges, bananas and apples, paper, tree bark, coconut, cactus, corn, and more. Tesla provides only synthetic leather seats. Bentley has bestowed their name and participation to the Leather Working Group, an international nonprofit that certifies manufacturers to ensure solid global environmental and social standards in supply chains.

2022 BMW IX WITH DINAMICA UPHOLSTERY (BMW IMAGE)

BMW has also joined this group and now offers BMW SensaTec, an animal-free leather vinyl option that provides an added convenience layer thanks to its resistance to stains. The interior of the 2022 BMW iX. BMW also offers Dinamica, a microfiber made from 50-per-cent recycled material.

In 2022, market research firm Strategic Vision reported that 53 per cent of new car purchases in the surveyed market asked for leather. Opting for leather is up from 46 per cent a decade ago. What is even more striking is that only 30 per cent of buyers in North America wanted leather in their vehicles. Non-leather options are expected to grow in 2023 and beyond as EV car manufacturers incorporate these new materials inside their interiors. As mentioned earlier, a non-leather option generally weighs less, and every EV manufacturer focuses on weight savings and getting the most miles per charge.

Other notable brands making the switch or starting to utilize eco-friendly leather are expanding. Here are some of them:

Lexus

Some entry-level Lexus vehicles are available with a synthetic leather-like material called NuLuxe. This product is manufactured using a process that produces no Volatile Organic Compounds (VOCs). The best part is it during it making it reduces carbon emissions by as much as 65 percent. In addition, NuLuxe's weight is almost half that of leather, and it is much easier to clean—using a microfiber towel and leather cleaner.

2022 LUCID AIR (LUCID IMAGE)

Lucid

Lucid's Air electric car sources still offers full-grain Nappa leather and a new material called PurLuxe, claimed as a vegan leather. PurLuxe will be provided as the standard interior in the Lucid Air Pure and other future models when it becomes available later this year.

LUCID AIR (LUCID IMAGE)

Volvo

The C40 ReCharge is leather-free, like all new Volvo electric vehicles. Volvo is targeting 2025 to have 25 per cent material in its new cars be either recycled or bio-based. A new material soon to be seen in Volvos is Nordico. This is an in-house product from Sweden and Finland made from recycled forest waste, PET bottles, and used corks.

Rivian

The Rivian R1T pickup has a vegan leather interior as a standard offering. Their R1S SUV interior may follow the same path.

Mercedes-Benz

Vegan leather that is mushroomed based was used on the Mercedes Vision EQXX that was shown at CES 2022. The interior uses recycled materials to reduce the carbon footprint further. The list of materials is unique—vegan-certified silk woven to form the door pulls and pulverized cactus fibers blended with a bio-based polyurethane to create a neoleather, and carpeting made from bamboo.

Mazda

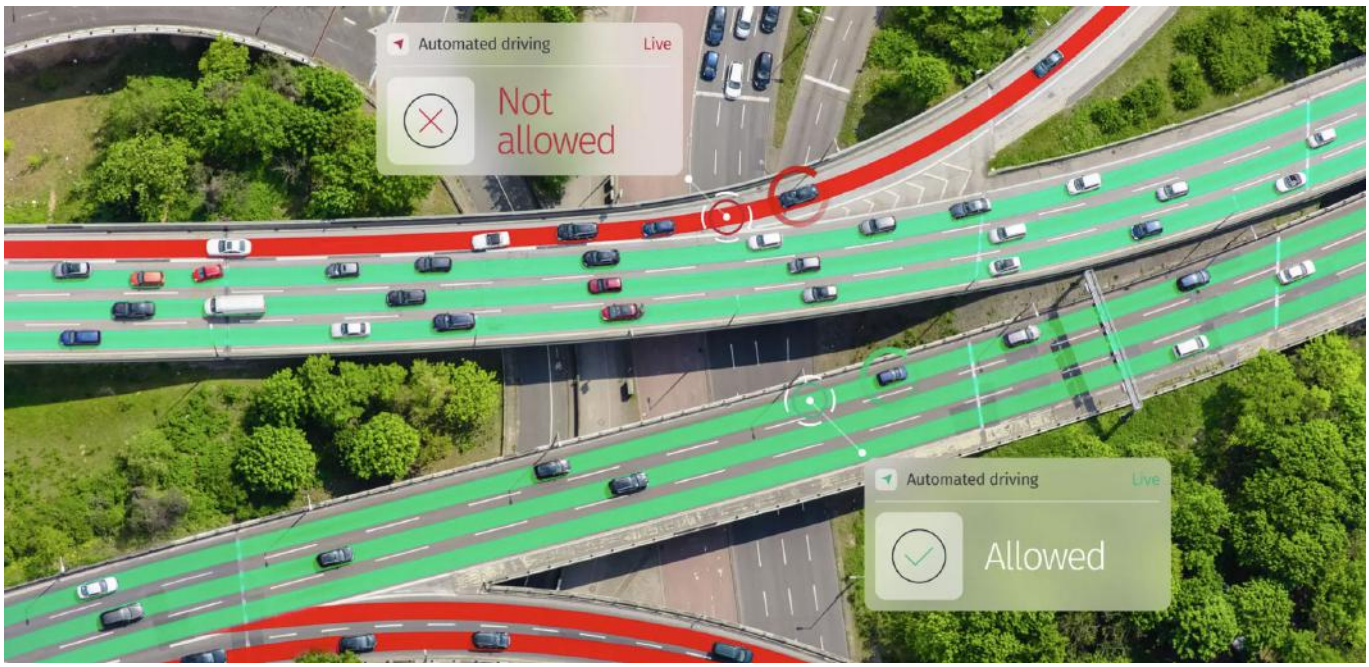
Buyers of the Mazda MX-30 EV, who want the premium plus package, will now have their choice of two types of vintage leatherette. Black with brown accents or gray with white. The material is a hybrid. The premium vintage leatherette uses top-quality vegan leather for the base of the material. It is printed with a classic vintage leather pattern and then finished with a special silicon coating that adds dimension, depth, texture, and a satisfying feel. As the leatherette material is not created from living things and almost no organic solvents are required in its production, the overall environmental impact of the process is significantly reduced.

Other automakers are involved in incorporating new materials in their interiors; over the next year, many new offerings will emerge, and the Design Lounge will update you when they become available.

News Mobility

Here's Automated Driving Zones

NEWS MOBILITY



HERE IMAGE

Here Technologies, a location data and technology platform, has what they call Automated Driving Zones. With this new cloud-hosted software, automakers can transparently decide where, when and under which operating conditions it is safe to activate the automated driving functionalities of their cars.

An automated driving system must only be activated when the outside conditions allow for it. This requires the definition of what are called operational design domains (ODD). An ODD characterizes the operating conditions in which automated driving systems can operate properly, circumscribing the areas where it is safe for drivers to take their hands off the wheel or where driverless vehicles are allowed to drive.

With Automated Driving Zones, automakers can define such individual ODDs for their cars' automated driving functionalities. Here's Automated Driving Zones work in combination with the company's own map content. ADZ can integrate dynamic location services from Here for real-time traffic information and road hazards. Automakers can use the software to not only set the geographic environment where automated driving functionality can be activated, but also the conditions that must be present on the roadway.

An ODD can be unique to individual automakers, vehicle brands and types, as well as to each automated driving functionality across different levels of automation from L^2 to L^4. With ADZ, automakers can create, edit, and review an ODD manually or automatically. The software supports these capabilities both via a web app and an API.

ADZ augments Here's other automated driving offerings which global automakers have come to trust, including the Here HD Live Map, which Mercedes-Benz uses in their L^3 Drive Pilot automated driving system; the Here ADAS Map which powers the advanced driver assistance systems of more than 22 million vehicles on the road today, and the Here ISA Map, currently chosen by 38 brands from 16 major automakers to comply with the Intelligent Speed Assistance (ISA) mandate of the European Union.

General News

Lightyear Solar Car Launch Planned

GENERAL NEWS

LIGHTYEAR IMAGES

The first examples of the Lightyear One solar car are scheduled to roll out onto the streets this summer. According to the Dutch manufacturer, the first Production Intent Vehicles (PIV) will soon be on the road to carry out the final tests before the start of small-scale production. The Lightyear One is scheduled to start production at Finnish contract manufacturer Valmet, who has also worked with the likes of Mercedes-Benz; BMW, and Porsche.

The electric car will not only be able to get its power from the grid, but will also have a self-charging function thanks to integrated solar cells. The solar energy is charged by the five-square-meter solar modules integrated into the outer skin of the body.

Combined with an aerodynamic body and a particularly efficient drive system, range anxiety should be a thing of the past. The Lightyear One has fully disguised tires, closed wheel arches at the rear, cameras instead of mirrors and a slim basic shape. With a drag coefficient (cw) of 0.175, the vehicle is expected to outperform the Mercedes-Benz EQS, which to date is considered the most aerodynamic production vehicle.

Lightyear promises that, depending on the climate, owners of the vehicle can drive up to twenty thousand kilometers a year on the power of the sun.

Plastic Omnium Awarded at CES

GENERAL NEWS

PLASTIC OMNIUM IMAGE

Plastic Omnium won two CES Innovation Awards this year for their Dynamic Welcome Light Projection and their Intelligent Off-Road Mobility Lighting System.

The Dynamic Welcome Light Projection welcomes the driver and passengers as they approach or exit the vehicle. The dynamic images are projected on the ground through a Microlens Array (MLA) which can project four different graphics from a single unit, making it the world's first MLA based projection module. This flexible module can be installed all around the vehicle for partial or full surround projections.

This way, the technology enhances safety and allows a sophisticated light staging. In addition to illuminating the vehicle's entrance, the module can project warning symbols in front of the driver and passenger doors, such as a snowflake in case of ice on the road.

The Intelligent Off-Road Lighting System for a safe driving uses individually controlled LEDs, predicts illumination needs and creates a precise beam that diffuses the right light, in the right place, at the right time. This system integrates and processes vehicle data, such as the vehicle's acceleration, direction, and GPS information, to seamlessly adapt the light and illuminate the chosen path.

Plastic Omnium provides innovative solutions for a more connected and sustainable mobility. They develop and produce exterior systems; high-content lighting systems; clean energy systems, and customized complex modules. Plastic Omnium has 37,000 employees; €9bn pro forma economic revenue in 2021, and a global network of 150 plants and 43 R&D centers. The company is now going full speed for zero-carbon mobility through their investments in hydrogen and electrification solutions.