DVN-I
Automotive Interior

Thu, 13 January 2022 Weekly Newsletter NEWSLETTER #94

Editorial

EV, Mobility, Delivery Innovations At CES

TOGG EV CONCEPT (THELASTDRIVERLICENSEHOLDER.COM IMAGE)

CES 2022 actually happened—with enormous amounts of empty space in between those exhibitors who didn't stay home. The Consumer Technology Association, organizers of the show, struggled to put a positive spin on the situation, saying the number of participants ultimately rose as small and medium-sized businesses didn't have any other opportunity to meet prospective customers. Yes, well. At least physical distancing wasn't a challenge. And traffic was so much less congested than usual.

Thanks to remarkable hybrid/online organization, though, it was great visiting even without meeting all these face-masked visitors. Many exciting companies, technologies, and products, as usual.

New automakers like Turkey's Togg; in the mist of the EV tsunami; Sony speeding up in the race with Apple and Xiaomi to be the first electronics-entertainment company to launch an EV; Cockpit electronics and software; ADAS and driver monitoring, and interior air quality were highlights of the auto tech-centered parts of the show.

This newsletter edition is fully dedicated to information gathered during last week CES. We hope you enjoy it! Stay tuned all along the year as we keep tabs on whether, when, and how all these innovations and concepts turn into commercial reality; that one of the main reasons DVN Interior exists. Not a member yet? Come **join in**!

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

DVN-I on CES, Part II

FRENCH TECH (140 STARTUPS) CLOSING PARTY (LA FRENCH TECH IMAGE)

CTA president Gary Shapiro, the producer of CES, said in his introductory speech "CES will and must go on […] it will have many more small companies than large ones. It may have big gaps on the show floor. Certainly, it will be different from previous years. It may be messy. But innovation is messy. It is risky and uncomfortable". He also gave a trend overview:

Here's a look at the best of what we saw on our virtual tour.

Indigo

Indigo Technologies, based in California, is a startup automaker offering an entirely new class of smooth, roomy and affordable EVs. They showed two new vehicle designs aimed at the rideshare and delivery market: the Flow and the Flow Plus. Their robotic wheels enable new types of EVs that ride significantly smoother, are more spacious, and operate at lower cost than any other vehicles in their class, they say.

Volker Kaese, formerly Audi's head of innovation product management, has joined Indigo as Chief Technology Officer. Kaese, who led development of the Volkswagen XL1 and Audi e-tron show cars, brings over 20 years of vehicle innovation experience.

Togg

Turkish company Togg (Türkiye'nin Otomobil Girişim Grubu, that is Turkish Automobile Joint Venture Group) presented an electric, autonomous and connected vehicle as shown also in an online video. CEO Gürcan Karakaş aims to produce one million vehicles, in five categories, per year by 2030, with the first vehicle to be delivered at the end of this year, followed by a mid-size SUV in 2023. The vehicle design was developed with Pininfarina.

Vinfast

VINFAST INTERIOR MOCK UP – IMAGE: DVN-WH

Vietnamese automaker VinFast continues its rollout with the announcement of three more new all-electric models to be presented at CES, following their e35 compact and e36 mid-sized SUV, last month at the Los Angeles Auto Show, the three new models will fit into the A, B and C segments. Their goal is to price their cars attainably for as many consumers as possible that are ready to make the leap to electric in the coming years.

LG

LG IMAGE

LG's Omnipod is positioned as a preview of a future in which working from home is the norm. This pod can serve as a living space, workspace, transport module, gym…! The seats recline for sleeping. It comes with an AI avatar named Rhea to serve as a friendly on-screen companion as you autonomously navigate the metaverse.

The concept also shows that the in-car infotainment systems can be controlled via smartphone or voice command through the LG ThinQ app, a smart home solution service. This compatibility blurs the distinction between home and car.

Samsung

IMAGE: DVN-WH

A big area inside the Samsung booth was dedicated to automotive interior solutions. The first was an AR demo with a huge bended screen where different scenes where shown. A city-drive with many commercial AR information and also some safety AR, especially a dear-warning during a countryside ride.

IMAGE: DVN-WH

Second part at Samsung booth was a passenger mood detection with different sensors like camera, temperature measurement and info out of an e. g. sports watch. An AI Software recommends with this data light and sound environments to improve the mood of the driver or passenger.

Faurecia

FAURECIA IMAGE

Faurecia and Accenture showcased with Dassault—at Dassault's booth—a cockpit developed in MBSE (“Model-Based Systems Engineering”). Models and simulations provide great new ways of working between engineering parties. For example, Faurecia has unique tools to precisely measure the postural, thermal and HMI comfort of passengers. They converted this technology into APIs and FMUs that can be used by automakers in models and real time simulations to test the effects of design changes on comfort, thermodynamics, and HMI. These virtual twins will enable better collaboration of Faurecia’s cockpit engineering expertise.

Seeing Machines: DMS

SEEING MACHINES IMAGE

Seeing Machines, from Australia (see DVN-Interior 27 May 2021) designs AI-powered operator monitoring systems. Their DMS technology plug-in kit has been developed for the Qualcomm Snapdragon Cockpit Platform. Using a wide-field camera to monitor all front-seat occupants, their demonstration introduced new features including seat occupancy detection, body pose tracking, and cell phone detection. These features will be supported by SM's measurement of driver attention state, engagement level, impairment level, and system diagnostics, in line with the protocols recently introduced by Euro NCAP.

Cabin Air: Interior Air Quality

CABIN AIR IMAGE

CabinAir, from Sweden, scooped up a CES Innovation Award for their Nordzone Connected Health Zone System. It's a plug-and-chug air purifier for passenger cars, an on-the-go air quality monitor that goes wherever you do, and a modular air purifier for trucks and buses.

Nordzone Explorer uses a row of LEDs on one side to indicate the level of airborne particle and a row of LEDs on another side to indicate the levels of CO_2 and VOCs from interior plastics, carpets, cleaning products, humans, and more. The products will launch on selected markets starting this spring. Wearable air purifiers may be the fastest way to clean cabin air.

Ible Airvida

Another smart wearable air purifier comes from ible, in Taiwan. The Airvida E1 is said to be the world’s first air purifier with built-in earphones.It uses Ible's "Breathing Pathway Eco Ion" technology to purify surrounding air, with excellent coronavirus, PM2.5, pollen, allergen, and bacteria removal ability. Through this brand new air purifier concept, users can purify the surrounding air while enjoying music with the noise-cancelling earphones.

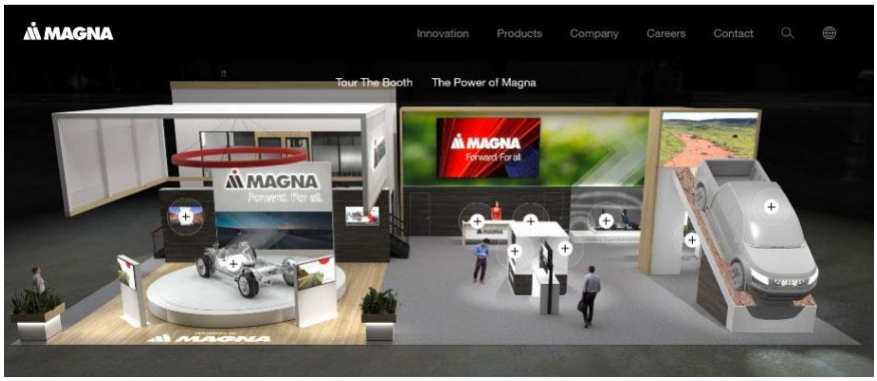
Valeo

VALEO IMAGE

Christophe Périllat, Valeo's deputy CEO, gave a press conference presenting his company's latest innovations in electrification; ADAS; lidar; lighting, and interior intelligence. Particulars included VoyageXR Panorama, which provides a drone’s perspective: a 3D, 360° view of your car driving down the road, as if it were filmed by a drone, but without a drone; Safe Insight, Valeo's DMS which identifies the driver by scanning their face then sounds a warning in the event of distraction or drowsiness. The system ensures that the driver has their eyes on the road when they need to resume driving in manual mode in an L^3 or L^4 vehicle; Valeo’s Health Shield for traveling well away from viruses, named CES 2022 innovation awards honoree; their Covid-19 detection terminal, a part of the smart cabin experience; Odor Free, which neutralizes—in the original meaning of the word—odors in a vehicle. Perfume isn't diffused to mask persistent odors in the car, but the diffusion of a "white" fragrance that cancels out the perceived smell. And Valeo AirSight is a dynamic pollution sensor for fleets that monitors city air quality.

Magna

Magna's virtual booth presented the latest in new mobility, eco innovation, driver assistance, distinction, and experience.

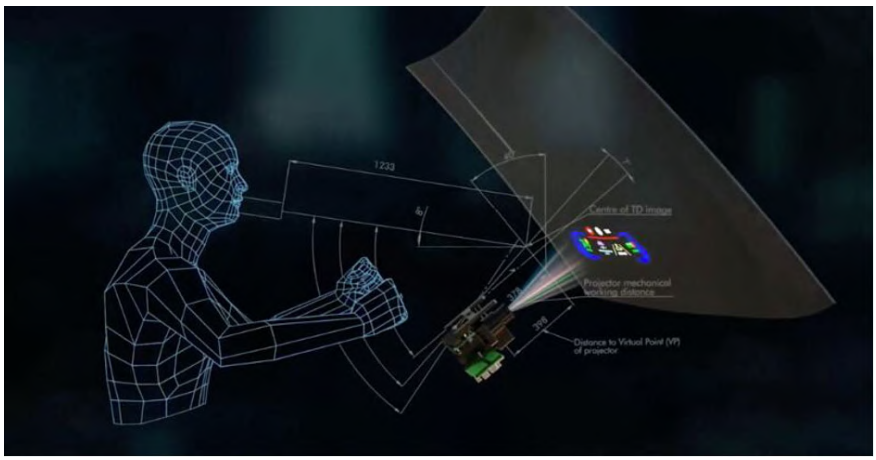


Among many other innovations, let’s focus in on seating and interior lighting. At CES 2019, Magna debuted the next generation of reconfigurable seating. Now, it is becoming a reality with an industry first demonstration of Stadium Swivel on Power Long Rails. From carrying cargo to a long car ride to ride sharing, they have reconfigurable solutions for new usages within the vehicle cabin.

FreeForm technology expands capabilities of traditional cut & sew seat trim covers. This award-winning seat cover allows automakers to differentiate their brand through new styling options, superior comfort, sustainable materials, excellent breathability, and enhanced cleanability.

Using high speed direct transfer technology of mini-LEDs, FlecsForm pushes the boundaries of lighting design. With the ability to place on flexible circuits, FlecsForm enables distinct styling in a thinner and more efficient package.

Ceres



CERES IMAGE

Ceres Holographics, from Scotland, specializes in the digital mastering and replication of holograms and holographic optical elements (HOEs). They design Holographic Transparent Display (TD) and AR-HUD systems that use the company's custom designed and precision-engineered, thin-film HOEs.

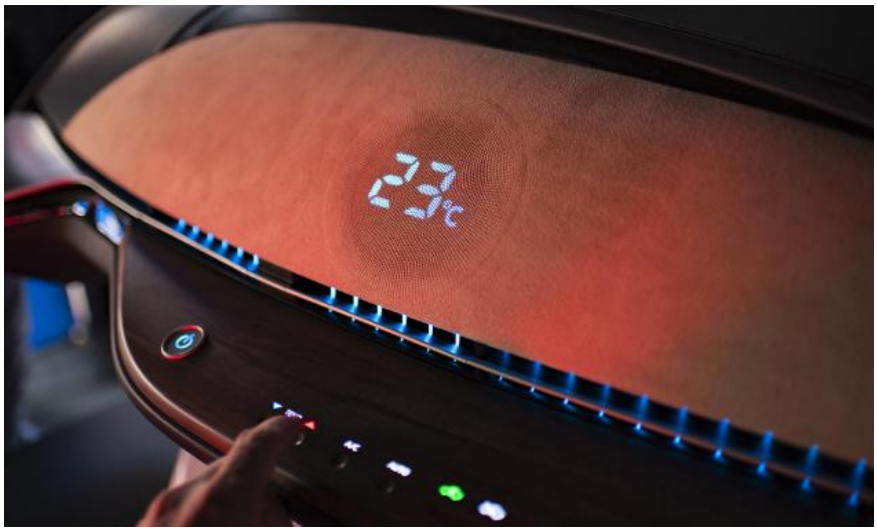
Ceres presented a holographic enabled demo of transparent displays and AR-HUDS for windshields and passenger windows. Enabled by their innovative HOE digital mastering and replication method, and supported by collaboration with Covestro and Texas Instruments, Ceres' HoloFlekt films can enable high quality and cost-effective smart displays for a variety of configurations and use cases.

Marelli

Marelli picked up a CES Innovation Award for their indoor air quality (IAQ) purification system. It uses UV-A and UV-C light with a titanium dioxide (TiO_2) filter to destroy bacteria and virus-causing particles, including COVID-19.

It can be installed inside the cockpit module or the ductwork of an HVAC system, fully integrated and invisible to vehicle occupants. This unit works with traditional and alternative powertrains and can also be used for high occupancy transit (taxis, buses, trains, airplanes).

Or, it could be an automotive standalone unit that can fit inside a cup holder or be mounted onto a dashboard, mirror, or interior vent. Positioned for the aftermarket, it's powered by the cigarette lighter and/or USB charger.



MARELLI IMAGE

Marelli also presented translucent surfaces that manage increased information load in an aesthetic, stress-free way, and haptic switches to promote safer two-way communication.

IMAGE: DVN-WH

Demonstrator of transparent illumination

Forciot

FORCIOT IMAGE

Forciot is a Finnish technology startup cooperating with Volvo cars in the development of Concept Recharge. Forciot Touch and Force sensor technology solutions are integrated for example as part of the concept car's exterior in door elements with illumination functionality, and as part of the interiors to headrests and seats with haptics feedback. DVN Interior presented this past November their Hands-On Detection steering wheel and their stretch-pad module, the world’s first stretchable 3D multitouch pad.

Aptiv

APTIV IMAGE

Aptiv showed improvements to their suite of advanced driver assistance systems, notably leveraging the power of machine learning technology to help self-driving prototypes detect and classify objects, even those that are out of sight.

Traditional ADASCan scope out the environment it operates in. It can detect that there's a car in front, if there's a bike coming the other way, and that there's a traffic light it needs to stop for. Machine learning builds on this by allowing a car to "remember" the different scenarios and objects it has encountered. In turn, it can plan ahead: it knows that there is a crowded bus stop around the corner that it might need to slow down for.

Aptiv has amassed a catalog of 360-degree scenes that includes challenging urban scenarios and tightly grouped objects, which can easily confuse a car's brain. The firm's catalog includes over 100,000 tracked objects, and they're all annotated.

Aptiv demonstrated their radar-based perception system in a modified 2021 Ford Mustang Mach-E.

Raythink

The Raythink FOV AR-HUD, a CES Innovation Awards honoree, can render augmented-reality graphics and information directly onto the windshield, allowing drivers to keep their eyes on the road. It can display information such as speed, lane-departure warnings, pedestrian crossing warnings, incoming calls, points of interest and more. Founded in 2019, Raythink has an international team with headquarters and factory in Shenzhen, a software team in Changsha, am optical research institute in Taiwan, and a software algorithm development center in Bangalore.

Veoneer

Veoneer's theme for CES 2022 was "Fit-to-Drive," an approach to automotive safety technology system design and connectivity. The target is to ensure that every vehicle and driver is fit to drive at any given moment thanks to collaborative driving and interaction between driver and tech as much as on the function and veracity of sensors or intelligent technologies alone.

In Veoneer's digital CES showroom, attendees got firsthand virtual experience with new technologies including thermal sensing; lidar (in partnership with Baraja); DMS in partnership with Seeing Machines; the research project Smart-RCS; and the 5th-generation vision solution with Arriver software on the Qualcomm Snapdragon Ride Platform, a scalable portfolio of System on a Chip (SoC) and accelerators for ADAS and AD.

Asahi Kasei

AKXY POD (ASAHI KASEI IMAGE)

Asahi Kasei is a multinational Japanese-based chemical company. They presented at CES their prototype vehicle interior of the future, Akxy Pod. It's composed of proprietary textiles and engineering plastics that can significantly damp sounds while reducing the vehicle's overall weight to create a cabin atmosphere with optimized comfort. In addition, automotive interiors will need to be safe and clean, which is made possible by Asahi Kasei's Healthy Car portfolio: ultraviolet-C LEDs from Crystal IS in the HVAC system to clean the air, and other safety innovations like a touch-free alcohol sensor from Senseair can be seamlessly implemented into the vehicle to detect alcohol on the driver's breath in a matter of seconds, exceeding automakers' requirements.

The "Biological information measurement system" allowed booth attendees to monitor their heartbeat and breathing live without physical contact. By installing a thin electrode into the car seat, the system detects important physical information related to the

driver, such as drowsiness or if a child has been left in an unattended car, without any functional or aesthetic obstructions.

Phiar

Phiar Technologies, formed out of Harvard University in 2017, announced they are working to “transform the automotive cockpit” by adding AR navigation capabilities to Qualcomm’s Snapdragon automotive cockpit

The Phiar system requires the use of only one camera to capture images for its spatial artificial intelligence (AI) engine. It then transforms the information into intelligent AR heads-up display (HUD) navigation. The technology is being marketed to manufacturers to incorporate into vehicles as part of the automotive ecosystem, and consumers are not likely to see the actual systems in operation until 2024.

Cerence

Cerence Co-Pilot is a first-of-its-kind in-car assistant. It analyzes voice, gaze, gesture, and touch, as well as data from the car’s sensors, while flexibly integrating with cloud services to keep drivers informed safe, and productive. This, too, is a CES Innovation Awards Honoree.

Eyelights

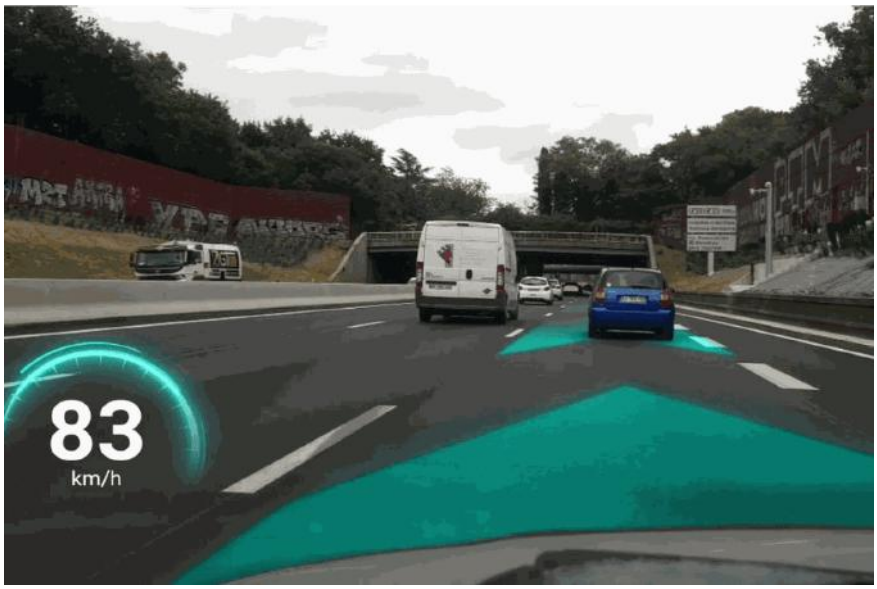


IMAGE: EYELIGHTS

The Toulouse, France based augmented reality startup Eyelights offered visitors to get into a Mercedes B-Class to experience augmented reality projected on the windshield in order to view the driving assistance information relating to navigation, the correct safety distances, or attendance. cyclists and pedestrians in blind spots. The whole windshield becomes a large augmented reality screen, and Eyelights' system projects an image onto a virtual screen that is the equivalent of 14 m diagonally. Eyelights has partnered with auto glass supplier AGC to establish an industry standard for augmented reality windshields, while honing technology that allows the system, for example, to position the GPS arrow at the right place on the road so that the guidance information provided to the driver is more precise.

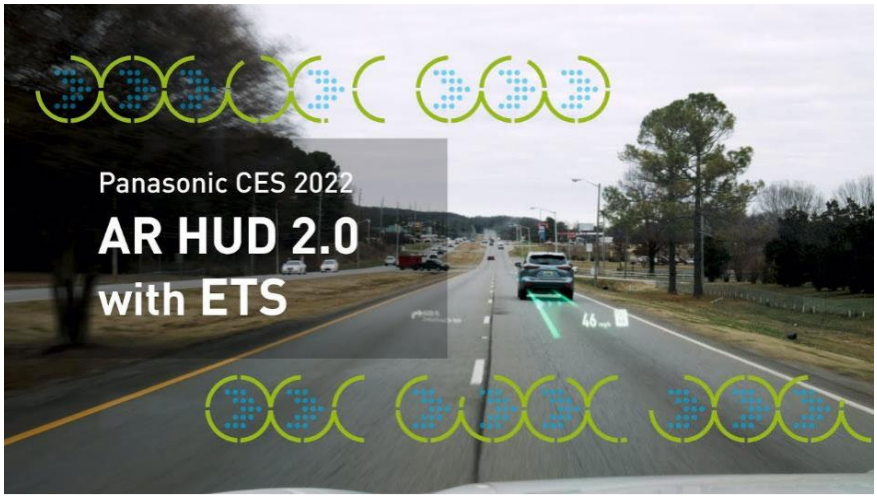
Gentex

Gentex's cabin monitoring system uses structured light technology that can detect the breathing of a sleeping child in the back seat. CES attendees in the Gentex photo here are checking out this new vehicle simulator for driver monitoring. This technology can detect distracted or drowsing driving and monitor everyone in the vehicle cabin.

Gentex's booth staged two vehicles. One was a Cadillac with front and rear dimmable sunroofs; new dimmable sun visors, and pillar displays.

And a Lexus LS 500 was equipped with a Gentex mirror-integrated digital video recorder that captures front and rear video, for use with a new companion app to download, browse, and play recordings.

Panasonic



Panasonic's automotive division unveiled their newest AR-HUD, the first to include a new patented eye tracking system to enhance the AR experience. Powered by SkipGen2, the eCockpit infotainment controller leverages Panasonic's legacy of advanced optics. This proprietary innovation is enabled by an IR camera packaged with the AR HUD projector and optics, eliminating the need for a standalone driver-facing camera. ETS recognizes the driver's line of sight and optimizes the AR imagery for clarity and accuracy, creating a more intuitive and pleasant experience, as shown in the online video.

The ETS technology identifies the individual driver's height and head movement behind the wheel and dynamically adjusts and compensates the images in the "eyebox." Drivers are constantly shifting their head and changing their line of sight, but with parallax alignment and dynamic autofocus working together, drivers will only see accurately positioned, crisp, high-resolution overlays and icons.

This AR-HUD eliminates the need to package a standalone driver monitoring camera and supports driver identification and other driver monitoring features like detecting drowsiness, impairment, and distraction.

Panasonic also introduced their ELS Sudio 3D Signature Edition premium audio system available on the new Acura MDX Type S.

Kurz

KURZ IMAGE

The focus this year is on the circular economy and recycling concepts, and Kurz presented their one-step application method called IMD DecoPur, with 5G, self-healing surfaces, and designs incorporating light. Crystal Design is another highlight, with concept studies developed jointly by Kurz and Swarovski. Crystals, surface operation via touch, and shy tech design: this interplay make a futuristic and luxurious statement in the interior.

The next CES is planned for 5-8 January 2023. Let us hope greater attendance will be possible!

Interior News

Mercedes Vision EQXX: A New Benchmark?

INTERIOR NEWS

MERCEDES IMAGES

The Mercedes-Benz Vision EQXX concept's impressive efficiency makes it able to travel about 1,000 km on a single charge. It has an extremely low drag coefficient of only 0.17, better than the most aerodynamic car in production today. Mercedes says the front end has a smaller area than their own CLA compact. The body narrows at the rear to improve airflow, as transparent wheel covers cut down on air resistance from the alloy spokes. The ultra-low rolling resistance tires come from a collaboration with Bridgestone; they have aerodynamically optimized sidewalls that work together with the hubcaps.

The maximum system voltage is 900 volts. The battery and the frame for it weigh only around 495 kilograms.

On the roof is a solar panel with 117 cells, which the vehicle uses to power many of the electrical ancillary systems, mainly in the interior, such as the air conditioning, lighting,

and infotainment systems.

Inside is a seamless display that stretches 1.2 m, from pillar to pillar. It has 8K resolution and runs a navigation system with 3D graphics that can display a city from a satellite view up to a height of 10 m.

Sustainable materials are also used extensively in the cabin. These include fabrics with silklike Biosteel fibers, vegan leather derived from mushrooms, animal-free leather made from powdered cactus fibers, and bamboo-based carpets.

Sony's Vision S EV

INTERIOR NEWS

SONY IMAGE

At CES two years ago, Sony unveiled the “Vison-S” EV prototype equipped with autonomous driving technologies and innovative passenger comfort features.

(IMAGE/ DVN-WH)

This year, Sony chairman and president Kenichiro Yoshida said Sony Group plans to examine entering the electric vehicle market, looking to harness its strengths in entertainment and sensors to play a bigger role in next-generation mobility. A new company has been created for that purpose, Sony Mobility. Yoshida unveiled a prototype SUV, the Vision-S 02: a seven-seat electric SUV based on the same platform as the Vision-S sedan, which was created with suppliers Magna Steyr, Qualcomm, Nvidia, ZF, Continental, Bosch, and others.

By offering entertainment experiences utilizing the large interior space and variations of a 7-seater, this new prototype will, together with Vision-S 01, promote the accommodation of a large variety of lifestyles within a society where values are becoming increasingly diversified. **See video**.

Yoshida said the company sees mobility as an "entertainment space" where passengers could choose individual entertainment options and use 5G internet connection.

External sensors (CMOS image sensors, lidar sensors, etc) understand the dimensional space, and provide intuitive driver interaction in conjunction with the vehicle's sound system and HMI system, so the driver can accurately judge the status of the surrounding environment, such as the presence of emergency vehicles, even from inside the vehicle.

The Vision-S 02 SUV has the same full-width display we first saw in the Vision-S 01 sedan, with three screens integrated into the single housing. Rear-seat passengers get a pair of multimedia displays, as well.

Time-of-Flight (ToF) sensors are used to provide monitoring functions for driver authentication and to watch over passengers. They also support intuitive gesture and voice commands that are intended to enhance usability of the car interface. Additionally, in order to deliver an environment that suits each user's preferences, the vehicle will include a new function that allows users to customize the display theme and the acceleration and deceleration sounds of the vehicle.

The seat speakers, which create a three-dimensional sound field, and the streaming service compatible with "360 Reality Audio" provide an immersive music experience as if passengers are surrounded by the live performance of a favorite artist.

In addition, to provide a high-quality movie experience, the Vision-S includes a fully integrated digital video service called "Bravia Core" The service enables shared or individual video playback on the front panoramic screen and individual rear-seat displays.

GM CEO's Keynote on Real EV Plans

INTERIOR NEWS

GM CEO Mary Barra gave the keynote of public day one, and it was a presentation on how GM is strategically preparing for the future of the industry—including a new revolutionary electric platform, Ultium; a new software platform, Ultifi; a bunch of new EV models including electric versions of the Equinox and Blazer, Cadillac Halo luxury two-seater concept, and many other important topics, such as a battery plant, Ultracruise, next generation autonomous diving system together with Qualcomm, and new Brightdrop delivery van. In a nutshell, a paradigm shift of GM around the Ultium platform, targeting EVs for everybody, under the umbrella that technology can change the world.

CHEVROLET SILVERADO (GM PRESS CONFERENCE IMAGE)

The Chevy Silverado is a 5-seat pickup truck with 400 miles of range, 10,000 pounds of towing capacity, the ability to power up to 10.2 kW of electric tools or whatever else electric you might want to power (amps? sound stage? rock 'n' roll concert?) via 10 outlets that can recharge another EV or power your home in the case of a blackout. Inside, there's a 17” infotainment screen, 11” instrument panel, and a HUD floating in front of the driver offering 14” of programmable info. GM’s Super Cruise cruise is also available, and it now works on up to 200,000 miles of roads across the US and Canada. Chevy claims passengers well over 6 feet (1.83m) tall can sit in comfort at any of the five seating locations.

CADILLAC’S INNER SPACE (GM PRESS CONFERENCE IMAGE)

Mike Simcoe, VP of GM global design, introduced the Inner Space, “a dramatic two-passenger electric and fully autonomous luxury concept.”

“The Inner Space puts human wellness and connection at the center of a driver’s environment, allowing two passengers to focus on their journey,” said Simcoe. “The expansive glass roof and sculpted body side allows unimpeded views; the doors and the roof open as one and the seats pivot outward to create a welcoming and comfortable entry and a thoughtful gracious egress.” Simcoe did not say when something like the Inner Space, or even the flying-car thingie, might make it to market. GM premium brand echoed the Audi SkySphere concept, announced at IAA.

Stellantis Transition to Sustainable Mobility

INTERIOR NEWS

Chrysler, as one of the three historical pillars of the new group (with Fiat and Peugeot), presented the second version of a new concept with an old name: the Airflow.

STLA Brain, the new electrical/electronic and software architecture, is the backbone of the Airflow user experience. This flexible architecture enables software developers to create and update features and services quickly, taking advantage of capabilities built into the cockpit without waiting for a new hardware launch. It powers STLA SmartCockpit, providing an extension of digital, work and home environments, synchronized to create a personalized experience for every passenger, with screens that can be simplified and grouped to deliver AI-based applications such as navigation, voice assistance, e-commerce marketplace and payment services.

There are soft, leather-wrapped seats, while materials including vegetable-tanned leather as well as floor mats, fabric and carpeting are made of recycled materials. Infotainment screens appear as glossy black sculptures. Seats are on a pedestal base, allowing for maximum legroom, shoulder space and personal storage for each passenger. Functional and ambient lighting helps create personalized space for the driver and passengers, while the Airflow's panoramic roof allows daylight to illuminate the cabin.

Hyundai Combines Mobility and Robotics

INTERIOR NEWS

Hyundai says they consider robotics and mobility a synergistic combination that will add value to the business and foster progress for humanity within a robotics-based Mobility of Things ecosystem.

Metamobility pioneers a smart device-metaverse connection that will expand the role of mobility to virtual reality (VR) and ultimately allow people to overcome the physical limitations of movement in time and space and provide a means for connecting and interacting in the metaverse.

“The idea behind Metamobility is that space, time and distance will all become irrelevant,” Chang Song, Hyundai Motor Group president and head of Transportation-as-a-Service (TaaS) Div., says in a news release. “By connecting robots to the metaverse, we will be able to move freely between both the real world and virtual reality.”

Diverse mobilities, including automobiles and Urban Air Mobility (UAM) will also serve as smart devices for access to the metaverse platform. Hyundai Motor also exhibited the MobED (Mobile Eccentric Droid) small mobility platform that uses the DnL module, an eccentric wheel mechanism, combining the drive, steering and braking systems in one structure. With DnL mounted on each wheel, MobED can lift the platform up and down, so the body can stay level as MobED traverses uneven terrain or low barriers such as steps or speed bumps.x

“Hyundai and Boston Dynamics both envisage the future in which robots and people work together to improve the safety of productivity and broadly improve the quality of life,” said Raibert. “In order to achieve that vision of companion robots we’re going to need to achieve athletic intelligence, the ability to balance, to climb stairs and to move in any kind of terrain.”

Automobiles were not really the main thing this year for Hyundai at CES, but rather new mobility, **see video**.

BMW's Change-Color Technology

INTERIOR NEWS

BMW IMAGE

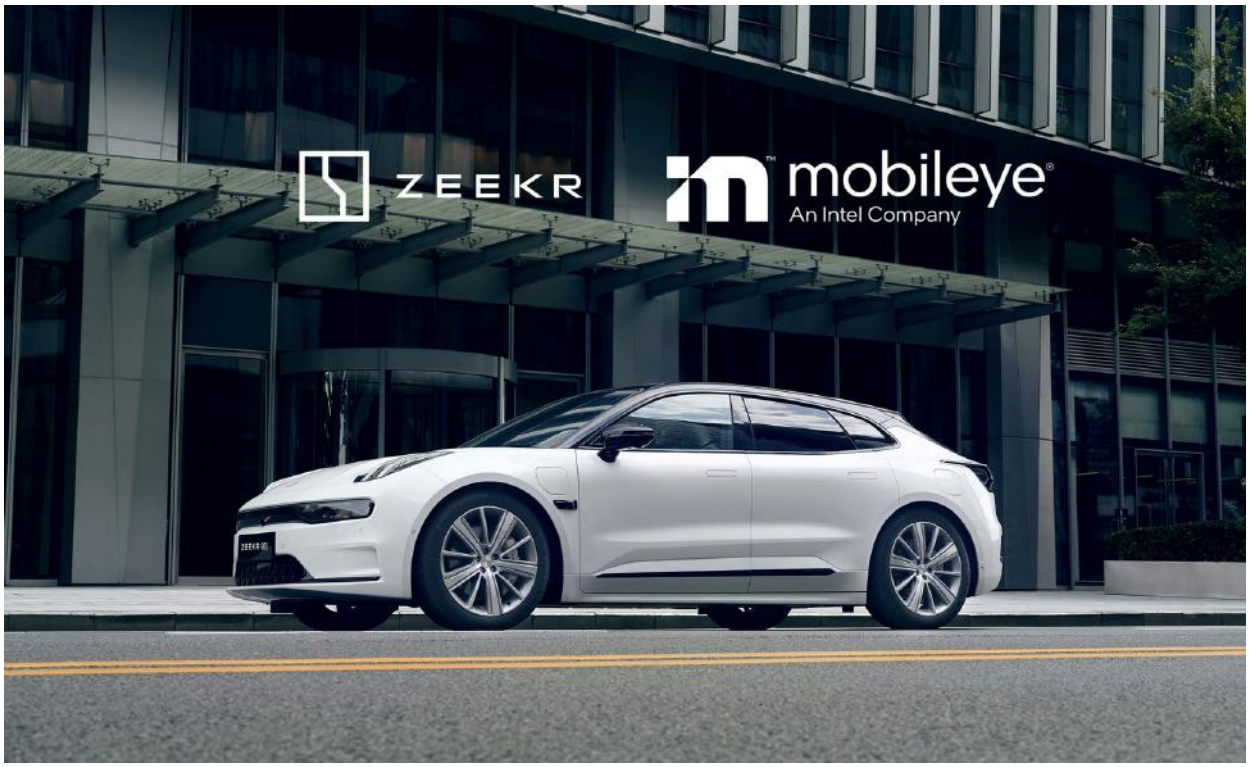
BMW showed off a new technology: push a button, and *presto change-o*, the car changes from black to white, or a pattern of both. Cool! (But not too cool, and not too warm; BMW had to keep a spare demo car in a climate-controlled space in case the primary demonstrator went above or below the operating temperature range of the technology). The magic was shown on a concept version of their new electric iX Flow SUV. E-ink, which enables the “electric paper” technology that powers e-readers like Amazon’s Kindle, drives the paint of this concept car. The ink is impregnated with microcapsules, about as thick as a human hair. White pigments within these microcapsules are negatively charged, and black pigments carry a positive charge. Input from the user shifts the electric field around the capsules, nudging some of the pigments to the surface where they change the color of the paint. The technology is currently available in black, white, and a few shades of grey. **See Video**. Hopefully in the near future the concept will be incorporated in the materials of the interior, like textiles, to achieve the same impact on temperatures.

This performance CUV will be sold with BMW’s new Iconic Sounds synthesizer as an option. It provides a range of different sounds composed by Academy Award-winning music composer Hans Zimmer.

News Mobility

Mobileye, Zeekr AEV Mobility for China

NEWS MOBILITY



ZEEKR 001 EV, WITH MOBILEYE TECH

Intel subsidiary Mobileye is partnering with Chinese automaker Zeekr to develop an autonomous electric vehicle (AEV) to be sold in China starting in 2024, and eventually roll out to other markets—that was the extent of the announcement; dates and countries werent' specified. But Mobileye also announced separate deals with Ford and Volkswagen to use Mobileye mapping technology to support their respective advanced driving assistance systems.

The planned Zeekr autonomous vehicle—let us hope the Zika virus does not mutate into one that affects Zeekrs!—will combine Mobileye's chips with Zeekr parent company Geely's electric vehicle architecture, which includes redundant braking, steering and power. The company didn't show what that vehicle might look like.

The upcoming vehicle will have L^4 capabilities. The Mobileye tech will include six of its EyeQ5, or fifth generation, system on chips, which will be used to process incoming data from sensors as well as incorporate the company's branded "Road Experience Map" mapping technology and Responsibility-Sensitive Safety (RSS)-based driving policy.

Mobileye also announced a scale-up of their research and development efforts in China with plans to open a local data center and boost with workforce there.

Mobileye's REM mapping system crowdsources data by tapping into consumer and fleet vehicles equipped with its system on chip to build high-definition maps that can be used to support ADAS and autonomous driving systems. That data is not video or images but compressed text that collects about 10 kilobits per kilometer. The mapping technology is accessed via the cloud to provide, in real time, up-to-date information on the drivable paths ahead.

Mobileye already has agreements with BMW, Nissan and Volkswagen to collect that data on vehicles equipped with the EyeQ4 chip, which is used to power the advanced driver assistance system. On fleet vehicles, Mobileye collects data from an aftermarket product it sells to commercial operators. Today, they have over a million vehicles harvesting REM data—now up to over 25 million kilometers per day. Mobileye has used all of this crowdsourced, anonymized information to create a database of precise, high-definition maps that it has branded Mobileye Roadbook.

Walmart, Fedex Order GM's BrightDrop Vans

NEWS MOBILITY

In parallel to GM CEO, Mary Barra Keynote speech, General Motors' logistics sub-brand BrightDrop announced that Walmart has placed an order for 5,000 of their EV600 and smaller EV410 electric utility vans, for last-mile delivery network and goal of operating a zero-emissions logistics fleet by 2040.

Walmart plans to use BrightDrop electric vans to support the expansion of their InHome delivery service, for customers to have fresh groceries and other everyday essentials delivered to their kitchen or garage refrigerator.

In addition, BrightDrop will be expanding their relationship with FedEx, with the delivery company "reserving priority production for 2,000 electric delivery vans over the next few years." This is in addition to the 500-unit order the company placed for the BrightDrop EV600 last year. FedEx also plans to eventually have as many as 20,000 BrightDrop vans in their fleet over the next decade, although BrightDrop said this is still "subject to further negotiations and execution of a definitive purchase agreement."

The FedEx pilot program for this delivery pallet, which uses a small electric motor to reduce strain on delivery personnel, started in Toronto last January and increased package delivery efficiency by about 25 per cent.

General News

Qualcomm in Multiple Automotive Deals

GENERAL NEWS

QUALCOMM IMAGE

At CES, Qualcomm announced deals to supply their chips to Volvo Cars, Honda, and Renault. These are involved with Qualcomm's full suite of automotive platforms, which it calls the Qualcomm Digital Chassis. The goal is to provide automakers with a variety of tools they can use to help make their cars more intelligent and more connected, and they include:

• Snapdragon Cockpit, for in-car experiences, including SoCs and software solutions for powering multiple displays and audio / video / multimedia

• Snapdragon Auto Connectivity, for providing automakers with LTE, 5G, Wi-Fi, and GPS solutions for connecting cars to the internet, cloud, and other vehicles

• Snapdragon Car-to-Cloud Services, which provides security features and a platform for adding over-the-air updates and paid services, in addition to vehicle and user analytics, so that automakers can monetize more of their vehicles

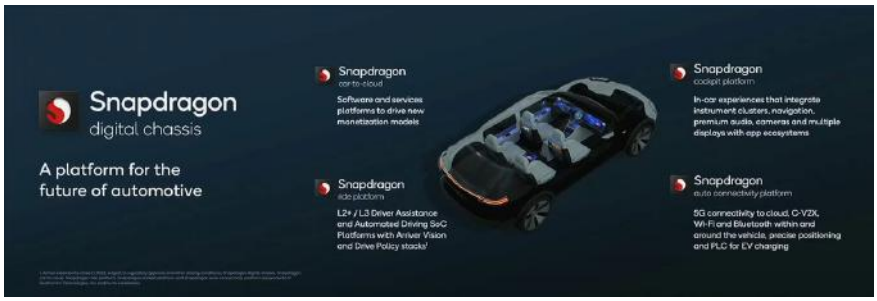
• Snapdragon Ride, which provides driver assistance and automated driving technologies

Renault Group will work with Qualcomm to leverage the Snapdragon Digital Chassis to equip upcoming Renault vehicles with the latest connected and intelligent solutions

and cut digital development times.

Volvo selected Qualcomm's Snapdragon Digital Cockpit Technologies and Google's Android Automotive Operating System to power next-generation infotainment systems in an upcoming fully electric SUV and the Polestar 3 SUV.

Forthcoming Honda models will use Snapdragon Cockpit Platforms to power the automaker's technically advanced infotainment systems. The upcoming Honda vehicles will feature an Android-powered infotainment system.



David Slump Succeeds Beda Bolzenius as Marelli CEO

GENERAL NEWS

David Slump (photo) is Marelli's new CEO. He arrives from Harman International, a $9bn wholly owned subsidiary of Samsung Electronics making connected products and solutions for automakers, consumers, and enterprises worldwide. Slump held a variety of leadership positions over nearly 15 years at Harman. He replaces Beda Bolzenius who, after most of four years with Marelli, is standing down as CEO.

Marelli executive chairman Dinesh Paliwal noted Slump's strong experience in the industries and regions Marelli operate in: "David’s ability to think strategically, rapid decision-making and focus on execution is the right combination that Marelli needs today".

Slump, for his part, says “I am delighted to join Marelli and work alongside a proven leader Dinesh Paliwal and the Marelli leadership team. The industry continues to be impacted by severe structural challenges, but I believe that the opportunity for Marelli and its customers is enormous. I will do everything to make all of our stakeholders proud as we continue to build and strengthen our company for the future".

Marelli, which has 170 facilities and R&D centers across Asia, the Americas, Europe and Africa, ranks #18 on the Automotive News Europe list of top 100 global suppliers, with sales to automakers of $11.57 billion in 2020.

Bolzenius has had a long career in the automotive industry. He was named CEO of Calsonic Kansei in 2018 ahead of the acquisition of Magneti Marelli. Before that, he spent 10 years at Johnson Controls after two decades at Robert Bosch, which he joined in 1986 after receiving a doctorate in physics.