DVN-I
Automotive Interior

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Editorial

CES: Self-Driving Technology—And Much More!

Nearly 200,000 people and 4,500 companies from around the world converged on Las Vegas for the annual geek-fest known as CES, the world's biggest innovation showcase. As in recent past years, the auto industry was well represented at the electronics expo which ended Jan 10th.

As cars grow more and more technologically sophisticated, CES is an increasingly attractive venue for automakers, suppliers, and technology-related startups to show their stuff. CES has a favorable environment for exhibitors and attendees alike: good weather, extensive roads, scenic deserts not far from town, and the shows, glitz, and gambling the city is famous (or infamous!) for.

In many aspects, CES set the tone for a year in the industry. Last year, as we reported, it was focused on autonomous driving interiors, showing how saved time could be used. This year, it was a bit more back to reality with technologies and techniques plausible in the shorter and mid term. Not a world of autonomous vehicles all around, but a world integrating a lot of driving assistance technologies. It's more showing a road map to a long-term self-driving world, where the next steps are real driving conveniences, safety systems, driver monitoring, augmented reality, and that sort of thing. Less emphasis on robo-taxis, more emphasis on progressive automation in cars to make them easier, safer and more fun to drive.

Convergent projections of a significant world auto market decrease kind of oblige automakers to limit their investment in advanced driving assistance technologies. At the same time, the level of automotive complexity has increased as we've come to better understand what autonomous vehicles are really all about. The car of the foreseeable future, before it gets to Level 4, will have more electronics than anything else in it. CES is not an auto show, it's a mobility show, as it combines all new technology with new service-oriented business models.

Still, it wouldn't be CES (or Las Vegas) without hype—Hyundai's flying taxis, for example, making the link between cars and mobility services, where automakers would like to be progressively considered as mobility service providers.

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

Automaker Introductions at CES

CES confirmed its commitment to the automotive mobility realm this year: that part of the show took up the whole North Hall of the Las Vegas Convention Center, plus several other spots scattered around the city. Many vehicles, spanning the spectrum from the implausible ideamobiles not intended to forecast any real car, all the way to production-ready prototypes, were seen for the first time. They sprang from legacy makers (Mercedes, Toyota, Hyundai, FCA, Nissan, BMW, Audi, Ford), new makers (Fisker, Byton, Faraday Future, Rivian/Amazon)—and even Sony as a surprise.

Here are some highlights we retain:

Electric Vehiclesare coming, in high volume with higher prices—on average $10k higher than vehicles with combustion engines.SUVsand pickup trucks will continue to dominate the U.S. vehicle landscape.Autonomous vehiclesare not coming soon, at least not beyond some controlled-access, gated areas. Daimler noted their “reality check” on plans for 10,000 robo-taxis by 2021, and Ford CEO Jim Hackett said, “We overestimated the arrival of autonomous vehicles.” Some Tesla fans actually still believe his timetable of the Model S being fully autonomous by May with a flip of a switch, but that seems most unlikely.Ride Sharingis happening, and operated fleets are sure to prosper over those who do not. But uptake is slow, except in China. Automakers keep investing, but at low volume and low profitability.

Now let's get to the good part: interiors! According to interior-design experts, the top emerging trends include larger and more user-friendly screen-based human-machine interfaces (HMI), reconfigurable seating and individual-focused drive deck environments. There are also safety- and health-promoting features ready to be deployed, such as biomedical monitoring. This can provide basic health metrics, but also monitor drivers' vigilance to determine fitness to operate the vehicle at various levels of automated driver-assist functionality.

BMW is introducing an interior concept for their i3 EV. The "BMW i3 Urban Suite," said to have the relaxed feel of a boutique hotel, features a large seat with footrest, a screen that flips down from the headliner, and a "Personal Sound Zone." The goal is to show how a car interior can be transformed into a laid-back place for relaxation. The seat knitted textile, its color and execution a bit of a throwback—not like a BMW signature as we know it.

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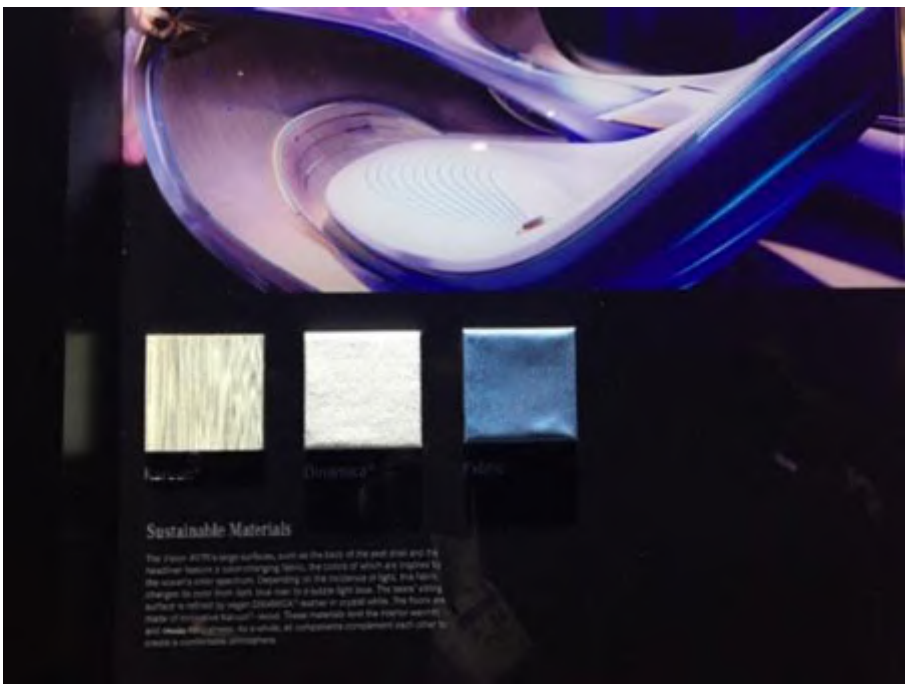
- 

Mercedes is showing a striking new car concept, see the Design Lounge. Consistency with nature, beyond the leaf seat idea, comes through materials and interior lighting. The commitment to sustainable materials starts with floors made of karuun, a wood composite made of fast-growing rattan (palm tree family). The seats are made with vegan Dinamica microsuede—its manufacture is similar to paper recycling, with no harmful chemicals—which is the only vegan microsuede to guarantee an entirely environmentally sustainable production chain. The batteries are also compostable and recyclable.

Interior lighting is controlled by the passengers' moods as sensed through their heartbeats, and can influence kids' mood out to their parents when they're in the back seats through a pulse in the seat.

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Audi is presenting the Audi AI:ME as a personal mobility partner, the empathetic Audi Intelligence Experience technology, and the innovative 3D mixed-reality head-up display.

AI:ME knows its users and their habits, and uses intelligent functions combined with artificial intelligence to increase the passengers' safety, wellbeing, and comfort. The self-learning navigation system, already in current generation of the MMI systems, saves preferred destinations, connects them with the date, time, and current traffic situation, and derives suggested routes from this data. Next, the car will also analyze preferences including the seat position, media, route guidance, temperature, and interior scents. Seats are built and adjustable on a central slider, and the instrument panel is a long curved flat wooden surface going all the way through left to right B-pillars.

The 3D mixed-reality head-up display is new technology developed in cooperation with Samsung. Just like with a 3D television, two views are generated of each picture: one pixel for the left eye and the neighboring pixel for the right eye. To the driver, the pictures appear to be floating at a distance of 8 to 10 meters; through clever representation, the apparent distance is even increased to over 70 meters with no re-focus necessary.

Other new innovations: a transparent display on demand screen is 15 cm high, 122 cm wide, and partially embedded into the instrument panel. It offers two layers: a transparent OLED display and a black layer for a particularly deep shade of black. Sections of the display that are not required for showing information remain transparent, allowing occupants to see the road through it.

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Ford showed their 2021 Mustang Mach-E crossover in a new GT version, with extended battery range of 300 miles. The Interior stays as presented in LA.

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Honda, besides their augmented driving concept (more in this newsletter's Design Lounge section) is showcasing technologies jointly developed by their incubator Honda Xcelerator and startups focused on improving workplace ergonomics and manufacturing efficiency: exoskeleton devices, voice-enabled, AI-powered personal assistant developed with SoundHound, and their "Smartphone as Brain" technology, which allows drivers to safely use their phones while on the road, because of optimized system integration. Honda personal assistant technology developed with Drivemode allows better control of data, compared to a Google or Alexa system.

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Nissan showed off their Ariya electric crossover concept, already presented at the Tokyo motorshow. It’s a production version of the 5-seater SUV with a 300-mile battery range. And for fun, Nissan presented their zero-emission ice cream van!

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Renault was present at the Otodo booth—that's a young French company with focus on smart-home connectivity—to deliver a secure link between car and user’s home connected objects (thermostat, lights, shutters for a leaving-home and arriving-home scenarios). This innovative will be available in all Renault cars that have the new Renault Easy Link multimedia system, including the new Zoe, Clio, and Captur.

Byton showed a production (or near-production) version of the M-Byte, with its giant door-to-door dashboard screen. Their story here is very much around plans for unconventional retail networks, with direct-to-consumer internet sales first in California, and later wherever they're able to change laws to make it legal (many U.S. states have laws protecting the dealership model of auto sales).

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Fisker: Henrik Fisker, personally at the booth full-time, presented the company's 80 kWh Li-Ion Ocean all-electric SUV with 300-mile range, which is expected to become available in 2022. We got our first chance to see the EV with a full-length solar roof and vegan interior—no leather! Subscription proposed at $379 a month.

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Faraday Future had no booth, just one car parked in front of the Renaissance Hotel (where BMW and Continental were). It's real, three years after first introduction. Interior remains as presented in the first place; large screens dominate the dashboard with a tablet-like infotainment display in the center and another screen on passenger side, plus a screen high on the dash in front of the steering wheel, integrating the instrument cluster information. Faraday also integrates screens into the doors that house the controls for seat setting, climate control, individual sound zones, and more. Comfort is a focus, especially for rears with zero-gravity seats, 60° recline, heat/cool, massage, lower leg support, lumbar and upper backrest adjustment.

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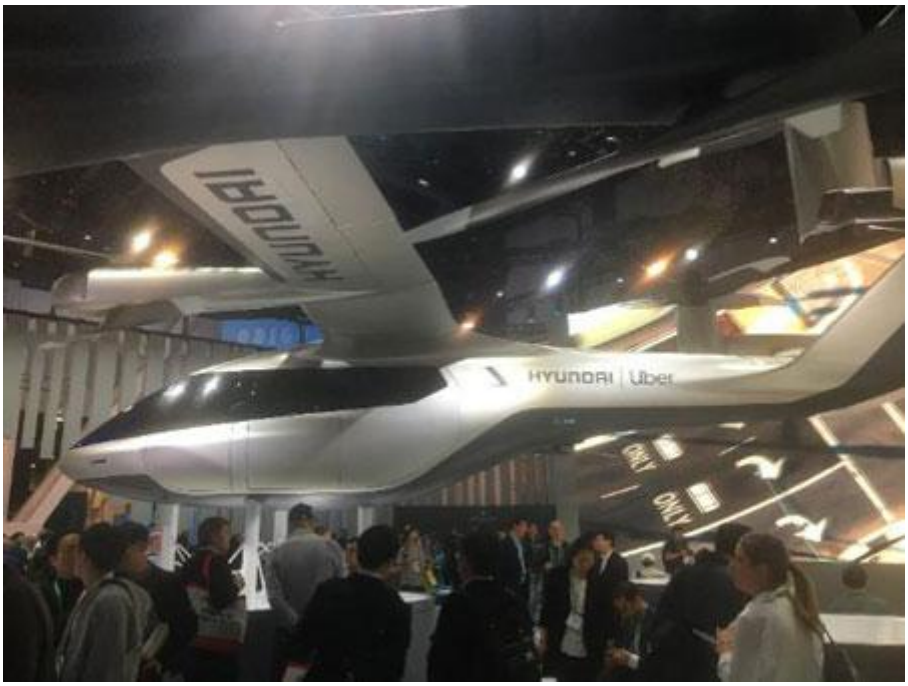
Rivian was at the Amazon booth—Amazon is now a major Rivian shareholder. They showed their upcoming R1T electric pickup truck and R1S electric SUV. One of the biggest highlights of these models is that they will come integrated with Amazon's popular voice assistant, Alexa. Unlike previously seen models from other makers, which only come with the ability for you to control Alexa-connected devices from your car, Rivian has embedded Alexa into the hardware of their upcoming electric vehicles.

GM was only present via a demo integration of Amazon's Alexa Auto voice-controlled virtual assistant in a new Cadillac CT5, also at the Amazon booth.

- 

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Hyundai revealed only some details about a flying vehicle concept, presented with an Uber signature. This strong strategic statement around new mobility with Uber seems to need further development. At this stage, it can transport four passengers within 100 km, with 8 electric fans to carry a 3400 kg payload. It's sort of dronelike, 10.7 m long with a wingspan of 15 m. From a pure energy equation standpoint, it’s far from a reasonable mobility solution—but it certainly generated buzz! Hyundai also presented a highly customizable prototype car with autonomous-driving capabilities, looking like an elegant Davos cable car cabin, not even on wheels. Will it eventually make it to production? Well…we'll see.

Toyota showed signs of an even more radical strategic shift, going directly to the city level, far beyond mobility itself. See the Design Lounge.

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Sony Vision S sensor “menu” list

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Sony was a surprise newcomer. More details in the Design Lounge, but Sony has developed a car that is both drivable and gives full consideration to safety. They presented it as a glimpse into the future of mobility encompassing the evolution of safety, comfort, entertainment, and adaptability. The Vision S feels like the culmination of the many ways Sony and their many products could be shown and tested in a car, to help Sony engineers and customers to fully understand Sony product value.

For Sony, future mobility turns around enhancement of safety, comfort, entertainment and adaptability. It has advanced camera-based systems for driving and driver monitoring, 360° Reality Audio system, panoramic screen, and multiple sensors in their “oval sensing” approach.

Interior News

Faurecia: Reinventing the Mobility Experience

Faurecia confirmed a strong commitment to CES with their two locations, with many interactive demonstrators on the Central Plaza, and a private, by-invitation-only driving experience track on the Platinum Lot. It included a Ford F150 extended pickup truck with a versatile and intelligent drive deck combining seamless integration of all interior modules with new in-car infotainment services to provide a more adaptive and intuitive space where occupants can better use their time onboard.

There was a specific room for immersive and connected experiences for multimedia, gaming, and working—for spending time on the move that feels like you're at home or in the office.

Also, a closed room for personalized sound experiences combining activated surfaces, digital sound tuning, active noise control, and premium Devialet hardware to furnish occupants' preferred audio experience adapted to their in-vehicle activity.

Digital services have been developed through a recently announced partnership with Microsoft.

The focus on in-car experience includes adaptive front and rear displays, ambient lighting, smart surfaces, headrests that create private sound zones, seat-based vibration and intelligent airflow vents, comfort and wellness with "stretch coach" services to enhance the in-car experience and guard against prolonged sedentary sitting.

The scalable seat frame demonstrator showed the latest development stage with a modular upper backrest adjustment, a swivel adjustment of 10 to 20°, and a buckle extender to fit with any position including those created by the track extended travel.

Watch for more about Faurecia in the next Newsletter.

Valeo Smart Cocoon 4.0 Ramps Up Thermal Comfort

At CES, Valeo showed the latest iteration of their innovative Smart Cocoon. It creates personalized comfort bubbles adapted to each passenger depending on their real and unique characteristics, such as their size, metabolism, heart rate, and the type of clothing they're wearing. Adjusting the environment to suit each person's needs also improves energy efficiency, with savings of up to 30%. The system leverages artificial intelligence and the information captured by various sensors, including camera and radar, to deliver personalized comfort through a combination of temperature, lighting, sound effects and fragrance. The interior lighting, for example, adjusts automatically to reflect the temperature and reinforce the feeling of comfort, with warm shades for heat and pale shades for cool. The vehicle also becomes empathic in the sense that it can take into account the physiological state of its driver and passengers, by detecting signs of fatigue, distraction, emotion, and stress. The overall result is a significantly shorter time-to-comfort, and a reduction of energy needed. We'll have more about Valeo in the next Newsletter.

Features of Visteon's New Cockpit Display

Digital displays are key enabler of the next-generation drive deck, and as a highlight of their CES exhibit Visteon presented their "Say 'n' Serve" smart assistant, which is an embedded voice-interactive personal assistant based on

Visteon's AI-based speech recognition and natural language understanding engine. It features SmartCore™, onboard and embedded infotainment, intelligent arbitration across multiple cloud-based voice assistant solutions, and vehicle-specific noise reduction.

The system allows real-time recognition across multiple languages, it's customizable to accent, and it can be integrated on a range of hardware platform because of its small embedded footprint.

Visteon also showed their Flexible Rotating Glass Cockpit, an adaptable display, pending context usage, using Visteon's patented display hinge mechanism allows 5° back and 15° forward bend. It could allow either driver experience customization (information-just-for-me, or I-share-information scenarios), and facilitate a wide array of styling and car type differentiation.

These drive deck innovations establish a consistent human-machine interaction (HMI) experience between the driver and vehicle, enabling vehicles to seamlessly enable advanced automated safety functions, which will help smooth the transition from L^2+ to higher levels of vehicular autonomy.

LG/Adient Connected AV

LG partnered with Adient for their connected self-driving concept car that featured a giant oled screen, tablets, an 8-speaker sound system, rolling snack cart, a roll-out dry cleaner, and more. In the advent of an autonomous driving world, LG has set out to change and expand the definition of vehicles from a means of transport to a mobile space. LG says their AI-enabled cabin will help users make the fullest use of their time saved by not driving, turning their vehicles into a conference room, movie theater or even personal shopping boutique.

"Building this new in-car experience requires a wide range of different solutions in both hardware and software… which is why we need open collaboration," said LG CTO Dr. I.P. Park, illustrating his company's continued efforts to facilitate a culture of open innovation. He introduced LG's collaboration with Adient to develop smart seats for a more personalized in-car experience. Also announced was LG's new plan for its operating platform webOS which has been open sourced since March 2018. "From

this year, we'll be adding to webOS open access to LG's proprietary AI platform for developers all around the world." said Dr. Park.

Bosch Virtual Visor for Driver Safety, Comfort

Drivers block large parts of their visual field when they swing down a visor to keep bright sunlight out of their eyes. Along with sunlight, a traditional visor can block out traffic lights and other important things the driver ought to be able to see. Bosch's new Virtual Visor aims to fix that. It's a transparent LCD panel with integral camera, designed and positioned like a regular visor, but it shades only the sunlight from the driver's eyes.

"For most drivers around the world, the visor component as we know it is not enough to avoid hazardous sun glare—especially at dawn and dusk when the sun can greatly decrease drivers' vision," said Dr. Steffen Berns, President of Bosch Car Multimedia. "Some of the simplest innovations make the greatest impact, and Virtual Visor changes the way drivers see the road."

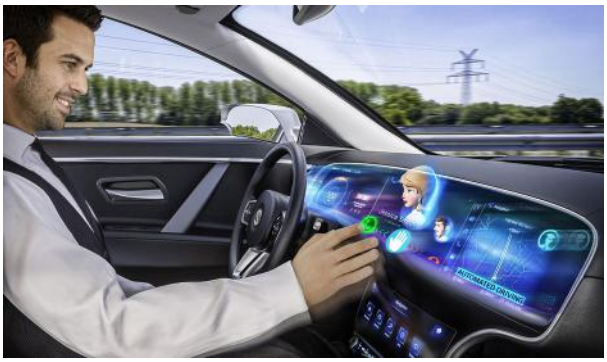
The Virtual Visor was honored as a Best of Innovation in the CES Innovation Awards. It also was chosen as an honoree in the awards competition, which recognizes products across 28 categories. Virtual Visor received the Best of Innovation for the In-Vehicle Entertainment & Safety category, as it received the highest ratings from a panel of judges that includes designers, engineers and members of the tech media.

Virtual Visor links an LCD panel with a driver or occupant-monitoring camera to track the sun's casted shadow on the driver's face. The system uses artificial intelligence to locate the driver within the image from the driver-facing camera. It also utilizes AI to determine the landmarks on the face—including where the eyes, nose and mouth are located—so it can identify shadows on the face. The algorithm analyzes the driver's view, darkening only the section of the display through which light hits the driver's eyes. The rest of the display remains transparent, no longer obscuring a large section of the driver's field of vision.

Continental Technology for Self-Driving Vehicles

Continental introduced a suite of automotive products at CES, around the lobby of the Renaissance hotel, with emphasis on autonomous vehicle technology, software integration, and security.

A few highlights from the company include their new vehicle-contact sensor, their EasyMile CuBE human-machine interface, and new generations of their 3D center-stack display and keyless vehicle-access technology.



Continental officials discussed the company's development of keyless vehicle access through ultrawide-band technology and the use of smartphones, which could play a role in self-driving vehicles parking remotely and secure passive entry.

Like other suppliers at CES, Continental focused on vehicle cockpit architecture with the introduction of their next-generation 3D Lightfield center-stack display, which uses both a 3D experience and a touch function as another in-vehicle human-machine interaction.

CuBE HMI

Continental also unveiled the EasyMile CuBE HMI, an interior and exterior interface for AV detection of objects, communication with pedestrians, and other internal cabin offerings, and their transparent hood technology. The feature uses satellite cameras under the hood to make it virtually transparent and give the driver a view of the ground below.

Other Continental exhibits included a collaboration with audio specialist Sennheiser, a speakerless audio system for the vehicle interior. The unique system fills the vehicle interior with lifelike immersive sound. The two companies are integrating Sennheiser's patented Ambeo 3D audio technology with Continental's Ac2ated Sound system, to excite selected surfaces in the vehicle interior to produce sound without discrete speakers as such.

BMW's ZeroG Lounger Seat Debut

The new ZeroG (Zero Gravity) Lounger seat will offer the first fully personalized recline and relax experience in a BMW model when it goes into series production in the next few years. The design made its debut in a modified X7 SUVs front passenger seat .

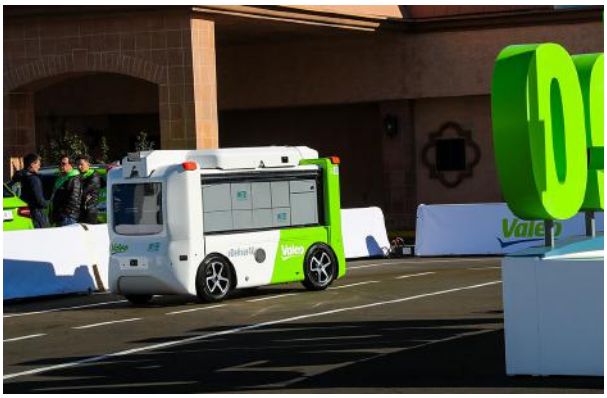
BMW says that the luxurious seat can be tilted back by 40° or 60° into a comfortable reclined position. It has an integrated seatbelt to fit with any reclined position, ensuring maximum safety regardless of seat or occupant position.

The BMW X7 ZeroG Lounger already meets all the apposite safety standards, according to its maker, thanks to innovative features. Besides the integration of the belt into the seat, this also includes a cocoon airbag providing wraparound protection for the occupant in a crash and efficient dissipation of impact energy via the seat rail.

Made from top-quality materials, the ZeroG Lounger responds to the passenger's needs while on the road. When the seat is in the reclined position, for instance, the passenger can enjoy the in-car entertainment program on a screen built into the headliner. They can also choose to have directional information shown on the screen during a journey, complete with animated graphics when making a turn. As well as aiding spatial orientation, BMW says, this can reduce motion sickness by a factor of four. And a new inductive charging facility allows the seat occupant to view the smartphone's display clearly in any of the ZeroG Lounger's various sitting or reclining positions.

News Mobility

Valeo eDeliver4U Last-Mile Autonomous Delivery



Another Valeo presentation at CES was their autonomous, electric delivery droid prototype, eDeliver4U, developed in partnership with Meituan Dianping (China's leading e-commerce platform for services), which operates popular food delivery service Meituan Waimai. The two groups signed a strategic cooperation agreement at last year's CES to develop a last-mile autonomous delivery solution. At 2.80 m long, 1.20 m wide and 1.70 m tall, the droid can deliver up to 17 meals per trip, autonomously negotiating dense and complex urban environments at about 12 km/h without generating any pollutant emissions. With a range of around 100 km, this prototype gives us a glimpse of what home delivery could look like in the near future, especially in the ever-growing number of zero-emissions zones that are being created around the world. Meituan Dianping's connected delivery locker allows for safe delivery to the end customer, who can book through a smartphone application.

The droid's autonomy and electric power are delivered by Valeo technologies that are already series produced and aligned with automotive industry standards, thereby guaranteeing a high level of safety. The droid operates autonomously using perception systems including algorithms and sensors. It is equipped with four Valeo Scala® laser scanners (the only automotive lidar already fitted to vehicles in series production), a front camera, four fisheye cameras, four radar devices and twelve ultrasonic sensors, coupled with software and artificial intelligence. The electrified chassis features Valeo's own 48-volt motor and inverter, the latter of which acts as the system's brain to control the power; a speed reducer, a 48-volt battery, a DC/DC converter, and a Valeo 48-volt battery charger, as well as electric power steering and braking systems.

BMW, Daimler Ride–Hail Venture Steps Up

FreeNow, the ride-hailing venture owned by Daimler and BMW, expects to double revenue this year and next in a fresh challenge to Uber in Europe and Latin America.

Half of the 130 cities in Europe and Latin America where the company that was previously named MyTaxi currently operates in are already profitable, according to the company.

Mobility providers face intensifying pressure to show they can generate profit, as indicated by the low stock performance of Uber and U.S. peer Lyft since their initial public offerings.

Varying transport regulations across regions can complicate efforts to scale up, and authorities worldwide have increased scrutiny of background checks for drivers to address safety and employee regulation concerns.

Still, Uber's market value of almost $50bn reflects investors expectation for technology firms, playing a key role in shaping future transportation.

FreeNow is pursuing a collaborative approach with regulators so it can avoid the legal battles that Uber got in London, its biggest European market. It requires drivers to show up in person to obtain a license and agree to criminal record checks, as traditional taxi. Business remains very local, since regulation varies a lot from city to city, and its key for this type of players to constantly work with local authorities to build mutual trust.

The company is exploring options to complement its main business with more private-hire services, short-term rentals, micro-mobility options like e-scooters and bicycles, and adding public transport services in some cities.

Apart from the main FreeNow brand, the company operates the Beat and Kapten ride-hailing services as well as Hive electric scooters. It's active in 130 cities across 18 countries in Europe and Latin America.

Waymo Buys Latent Logic

Waymo has acquired Latent Logic, a U.K. company that spun out of Oxford University's computer science department, as the autonomous vehicle company seeks to strengthen its simulation technology.

The acquisition also marks the launch of Waymo's first European engineering hub, which will be in Oxford, England. This likely won't be the end of Waymo's expansion and investment in Europe and the U.K.; the former Google self-driving project that is now an Alphabet business is saying they will continue to look for opportunities to grow the team in the U.K. and Europe.

Earlier this year, Waymo locked in an exclusive partnership with Renault and Nissan to research how commercial autonomous vehicles might work for passengers and packages in France and Japan. In October, Waymo said that they are working with

Renault to study the possibility of establishing an autonomous transportation route in Paris.

Waymo has made simulation one of the pillars of their autonomous vehicle development program. But Latent Logic could help Waymo make its simulation more realistic by using a form of machine learning called imitation learning.

Imitation learning models human behavior of motorists, cyclists and pedestrians. The idea is that by modeling the mistakes and imperfect driving of humans, the simulation will become more realistic and theoretically improve behavior prediction and planning.

Waymo isn't sharing financial details of the acquisition, but it appears the two Latent Logic founders, Shimon Whiteson and João Messia, CEO Kirsty Lloyd-Jukes and key members of the engineering and technical team will join Waymo. The Latent Logic team will remain in Oxford.

The Design Lounge

CES Design Highlights

Welcome to a new year and decade that starts off, in terms of shows, at Los Vegas and the traditional electronics fair that now is dominated by EVs, autonomous mobility, and the full user immersion of the UX/HMI. So, let’s start off this new decade with some vision castingfrom automakers, starting with Daimler. Their Mercedes-Benz brand recently has been showing their future vision regarding premium automobiles and autonomy; for this year's CES they created and showed the Vision AVTR, inspired by the movie Avatar along with Director James Cameron.

By using the film as an inspiration, or a reference, the Vision AVTR heavily relies on lighting, sweeping organic forms, and transparency that give a floating aesthetic while also cocooning the occupants. By making a drivable vehicle, they were able to highlight the ambience of this concept in a real-world setting.

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Mercedes Vision AVTR concept

The interior, behind fully glass doors, does away with the established form separation of seats, IP, floor console, and other usually-discrete components. The steering wheel is completely replaced by a rising circular tower to operate the motion of the vehicle while using sweeping forms that overlap and integrate the displays with the pillar trim and the headrest with the headliner.

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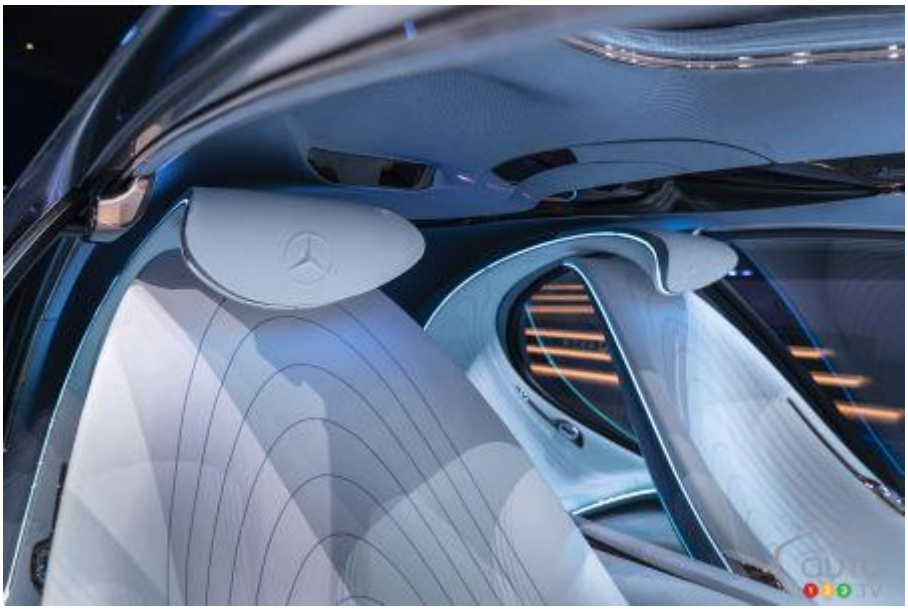
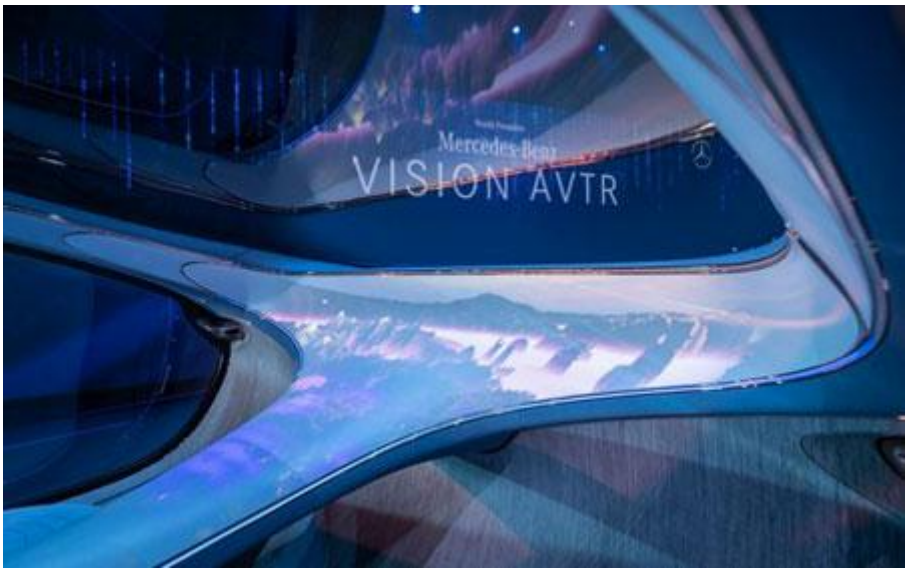
Mercedes Vision AVTR concept steering interface

- 
Mercedes Vision AVTR concept “leaf hammock” seating

- 

Mercedes Vision AVTR concept instrument panel

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Mercedes Vision AVTR concept doors

Honda also showed a reinvention of the steering wheel and how autonomous driving can be more than just a people carrier. By pushing or pulling the steering wheel itself one accelerates or decelerates the vehicle while also steering. Or, one can swipe to go into full self-driving mode and enjoy the scenery. Overall, a very clean and simple

aesthetic was pursued that integrated high tech features into the steering wheel that contrasted with a traditional wood rim.

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Honda Augmented Driving concept

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Fiat Chrysler, on the other hand, chose a more traditional approach with 2 vehicles for the show. The North American debut of the Fiat Centoventi that was shown in Geneva last year with its quick-change battery (removed from the side and under the front

seat) and dusting off the very old Chrysler Airflow name for an EV layout with a full-length center console and pedestal seating.

By showing two completely different EV layouts, FCA demonstrated their efforts to further differentiate their various brands.

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Fiat Centoventi concept

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Chrysler Airflow concept

The surprise of the show was a fully-functioning demonstrator vehicle by Sony. This was developed along with Magna, Benteler, and Bosch to showcase Sony's expertise in sensors, displays, and software. A fully-functional vehicle allowed showgoers to interact not only with the full-length IP screen and integrated side camera displays, but also camera recognition systems that monitor the driver, and passenger positioning.

Though stylistically very straightforward, the interaction model using Sony's technology expertise was exceptional.

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Sony Vision S concept

After building a complete exhibition hall to showcase Toyotas Mobility of the Future for last year’s Tokyo Motor Show. Toyota announced at CES that they will be building an autonomous & mobility test bed, a community of 2000 inhabitants called Woven City.

This will be built at the base of Mt. Fuji on 175 acres, and designed by Danish architect Bjark Ingels, who worked on New York's 2 World Trade Center and Google's Mountain View and London headquarters.

From where we're sitting, it surely looks like 2020 and the new decade has started with a bang!

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Toyota "Woven City" of the future

General News

Mercedes, Geely in Global JV for Smart Brand

Mercedes-Benz and Geely Holding, the German and Chinese automotive groups, have formally established a global joint venture called Smart Automobile for the Smart brand after receiving the regulatory approvals.

The global headquarters of the new joint venture has been set in Hangzhou Bay, Ningbo with operational sales functions based in China and Germany.

The new generation of Smart vehicles will be designed by the worldwide Mercedes-Benz Design network and developed by the Geely global engineering network. Future production will be located in China. As part of the vehicle-development program, the Smart product portfolio will be extended into the fast-growing B-segment that are in line with Smart's brand positioning with a focus on pure premium electric and connected vehicles.

Tong Xiangbei has been appointed the new global CEO of the Smart joint venture and will oversee all operations relating to the brand including sales, marketing, R&D, production and after sales. Tong has more than two decades of experience in automotive industry. Before joining the Smart joint venture, he has worked for global automotive automakers in the United States and China.