DVN-I
Automotive Interior

Wed, 23 October 2019 - **NEWSLETTER #1**

Editorial

Get In—Let’s Go!

Within the ongoing automotive transport revolution bringing connected, autonomous, shared, and electric vehicle, mobility use cases are changing drastically—and car interiors are becoming a stronger-than-ever product differentiator, facilitating new activities for vehicle occupants: relaxing, working, phoning, watching movies, and other suchlike.

That being so, the interior is one of the fastest-evolving areas of the vehicle, with endless new technologies being launched in interiors with new features, new apps, new configurations, new materials, new designs, and whole new concepts. That's the scope of DVN Interior: we're building a community of car interior experts with DVN-I Reports, DVN-I Workshops, and a twice-monthly DVN-I newsletter, all aimed at consolidating and presenting pertinent news and analysis to help DVN-I members stay efficiently and easily informed and up-to-date without having to chase widely-scattered, difficult-to-find articles in dozens of sources.

CES showed us tomorrow's autonomous mobility, and how to better use occupants' captive time during transport. Geneva was focused on EVs, with no real focus on interiors except the obvious need of different acoustics due to silent motors. Shanghai's auto show showed a strong focus on all kinds of EVs. Whatever the next events bring that's relevant to the vehicle interior community, DVN-I will find out and present it. (WardsAuto Interiors Conference Novi, Mi, Auto Interiors Expo Stuttgart,)

This edition of DVN-I confirms that luxury remains key to premium auto brands' attractiveness and differentiation, with specific significant examples from Mercedes, Porsche, and Aston Martin. And recognition of the Jaguar I-Pace as the Car of the Year as it combines EV technology with classic elegance confirms that luxury will endure as a strong level, whatever the underlying technology of the car.

Commercial vehicles are not left out; the interiors of new LCVs like the Renault Master range provide plenty to scrutinise and talk about. Meanwhile, safety is another key topic; in this issue we

look at Volvo's new occupant monitoring and IIHS concerns for rear occupants. We also take a look at the value of scent and aroma in a car, including various makers' approaches to using and eliminating them in deliberate new ways.

We'll always work to link the automotive market, new technology, and new mobility services to present and explain relevane in the car interior realm. Technology and services are serving an occupant experience, and that's where interior and mobility overlap. Mobility service providers will of course brand and promote their services, not least by creating a unique customer experience—from ordering with a click, to relaxing into a mobility tool. Here again, the interior is a major pillar of this experience, so new mobility will drive new interiors, and vice versa.

We're glad you're here with us. Welcome on board!

Philippe Aumont
General Editor, DVN-Interior

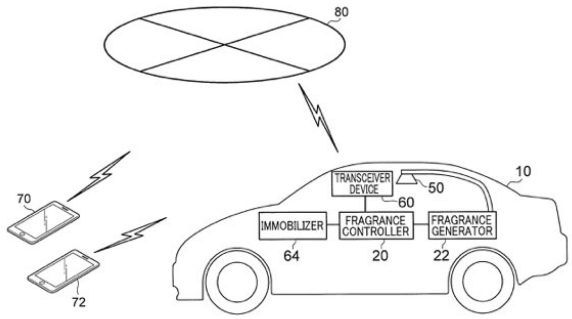
In Depth Automotive Interior

Custom Scents for Every Driver and Car Thief

Inside a vehicle, there is what we see, what we hear...but also what we smell. This may be the aroma of a new vehicle, of the leather of the luxury sedans and shortly after the purchase, all the odors impregnated or coming from outside. Up to now it's been incidental, but now car makers are working to make it deliberate. In premium vehicles, fragrance packs are available. The Mercedes solution, for example, allows to diffuse a personalised perfume in the cockpit; a glass vial is placed in a container in the glove box. Air quality can be further enhanced by ionisation and better filtration of indoor and outdoor air.

BMW have a similar system, with intensity settings activated by the iDrive controller and menu, or directly via buttons on the climate control panel. But these packs do not solve all the odour problems. That new-car smell so prized in Europe and America makes enemies in China: a J.D. Power study found 10% of Chinese dislike it—twice as many as the second-most-important gripe of excessive fuel consumption. In their eyes, the safety and performance of the car are less important than the smell of solvents and chemicals from new plastics and leathers. Ford, for one, intend to

eliminate this smell with a patented method to eliminate these odours—or at least minimise them—by leaving the vehicle stationary, windows open and heat on. The circulation of hot air that is then evacuated from the outside would destroy the odiferous molecules.This is an automatic mode that would activate at the factory and therefore not be seen by the eventual customer.



To go further on odour control, Toyota have filed a patent on perfume diffusable inside vehicles. The connected diffuser stores a selection of perfumes. As soon as a registered person gets behind the wheel, they are identified by their smartphone and treated to a previously-selected favourite perfume. Between different drivers a deodoriser will act to eventually accommodate another occupant. The system could also be a weapon against car theft; the patent includes a an anti-intruder device to dispense tear gas in the passenger compartment if a break-in is detected. After getting rid of the intruder, the diffuser will spread a deodorant to remove any trace of the gas. The owner can then take the wheel of his Toyota, as if nothing had happened—time will tell if Toyota will commercialise all aspects of this patent.

INTERIOR NEWS

Lagonda's Flying-Saucer Key

Aston Martin recently revealed the All-Terrain Concept for their Lagonda luxury brand. This concept must inspire a car that will be marketed by 2022 and produced in a new facility in Wales, the St Athan site. The fully-electric SUV stands out for its sleek design. In the cockpit, a normally mundane feature surprises visitors: the key. There is no physically-accessible lock and of course an EV has no starter, but there is a key. It's a disk placed on the centre console so as to levitate with electromagnets. The key contains information like the destination and the driver's agenda. The

visual effect is unusual and aesthetically pleasing, but of course it remains to be seen if the levitating key will make it to production.

The interior of the vehicle develops many of the bold design elements first seen in the Vision Concept presented by Aston Martin in 2018. For example, the two front seats can swivel to face the rear sets during autonomous driving.

Aston Martin want to innovate even with the type of interior materials. Chief Creative Officer Marek Reichman says the Lagonda brand is "unconstrained by the traditional values of current luxury products, it is not about wood and leather, we tried to design the interior with soft, natural materials like Cashmere. Lagonda reflects a future that is full of unique materials that are not set in the past". And indeed, in addition to the Cashmere, we can find silks and crystals.

Ultimate Interior Luxury: Mercedes-Maybach Pullman


When visiting an auto show there are two kinds of dream cars to be seen: high-performance hypercars and ultraluxury vehicles. Both are unaffordable to most, but so attractive to visitors!

With the new Mercedes-Maybach Pullman interior, the market is getting to a new record. Within a 6.5-metre long body, there's space to accommodate the best. The four rear passengers can sit facing one another, with the VIP occupants seated on front facing executive seats, enjoying the longest legroom in the segment, and all the comfort features you can imagine: numerous adjustments, massage, heat/cool, and much more. The seating arrangement can be electrically adjusted, while the audio system allows completely personalised rear cabin music, enjoyed amidst a selection of unique leather quality and colours.

This new jewel is supposed to be chauffeur driven. Will this market segment go one final day to autonomous and create a high-luxury mobility tool along the lines of an exclusive private aircraft?

Porsche Taycan Interior: Zen Design

Porsche have declared the name of their first 100% electric sports car. Production of the long-anticipated Mission E, known now as the Porsche Taycan, is close to start; final driving tests

are ongoing in Scandinavia and the Middle East.


Pictures of the Taycan's interior have been posted recently. What is immediately visible is a very sleek, simple and elegant instrument panel with a wide screen. Those attributes might look conceptually similar to a Tesla interior, but it's not a duplicate, and the steering wheel with a lot of knobs is very characteristic of a Porsche interior.

The Taycan cabin can seat up to four passengers, each in a belt-integrated single seat. At this stage the seats look extremely slim, but they might not be final versions. OLED technology abounds, and there's quite a set of innovative features. For example, an eye tracking system identifies the instrument watched by the driver, who can thus navigate through the menu by simply moving their eyes and validating their selection via a button on the steering wheel.

Gestural controls are also anticipated, allowing occupants to control certain functions (applications, navigation, air conditioning...) without any contact.

Jaguar I-PACE: Interior of the Year?


Jaguar's first 100% electric vehicle clearly impressed the jury of the 2019 Car of the Year competition. Competition was tough, and the Jaguar I-PACE took the prize versus the Renault Alpine A110.

The interior design harmonises quite well with the exterior: a careful balance between sportiness and elegance, between performance and quiet EV driving, all underlined by the Jaguar luxury with elegant leather, twin-needle stiched upholstery, and a sleek low instrument panel. Unconstrained by a transmission tunnel, spaciousness has been maximised within the SUV architecture for leg and knee room.

The "Touch Duo Pro" package includes two touch screens, a 10" infotainment screen above the lower panel line, and a 5" screen underneath for settings (climate and suchlike). Smart settings personalise the car to its driver(s) and learn along trips. The car can be precooled or preheated to

have an ideal temperature inside before anyone even gets in it. In case of preconditioning when the vehicle is being charged, the battery is not used, thus avoiding a prolongation of charge time. Among a long list of other new features, the I-PACE offers an ionisation system that improves air quality and neutralises odours.

Volvo Arm to Fight Impaired, Distracted Driving

After announcing the voluntary restriction of the speed of itheir vehicles to 180 km/h, Volvo appear ready to fight against intoxicated and distracted driving.

The Chinese-owned, Swedish-based automaker are to begin installing in-car cameras and sensors to check the driver's fitness to drive. Sensors in the car will monitor changes in the physical movements of both the driver and the car to determine if an intervention is required. Cameras focused on the driver's facial features will sense changes to pupil dilatation and whether the eyes are open. Sensors on the steering wheel can tell how reactive the individual's hands are behind the wheel. Other sensors fitted to the car itself will sense whether the car is moving erratically.

If the vehicle experiences erratic driving classified as being due to intoxication or distraction and the driver does not respond to warning signals, the vehicle may take control of the car and slow down while alerting the Volvo call center in an 'emergency state' response. An agent will speak to the driver and take over the car if necessary to safely park it.

Installation of the technology will start next year, according to Volvo, first on larger models such as the XC90 SUV before it migrates also to smaller cars.

In response to worries about the confidentiality of the data recorded by the cameras, Volvo say all the data will be stored only in the vehicle, not transmitted elsewhere.

Renault: Functional & elegant interior for LCVs

With the whole of the automotive industry focused on technology, autonomous driving, and connectivity, most of the innovation announcements relate to premium passenger cars. But there's enormous innovation happening in LCVs—light commercial vehicles—as well. While we might think of LCVs as typically equipped to the minimum, that sector of the industry is fielding new ideas similar to those in cutting-edge passenger cars. It only makes sense, given that a multipassenger van could serve extremely well as a sizeable connected mobile office.

The new Renault Trafic, for instance, turns into a real mobile office. Its intelligent cockpit boasts connectivity on board with powerful multimedia solutions, enormous storage—90 litres of it, including a 54-litre locker under the passenger seat, ideal to store office stuff.

Interior design has been enhanced with particular attention to details like air ducts, the centre console surround, air conditioning controls, gear lever, counters, and suchlike in terms of colour and materials. There are touches of satin chrome and dark carbon, blending luxury-car beauty with special attention to material durability appropriate for a shared commercial vehicle.

And the big new Renault Master, redesigned with sleeker lines, is now equipped with an "Easy Life" table tray above the glovebox. It opens with a simple finger touch and offers space to work or eat lunch. There's also a large new central cup holder, a tablet dock in the central part of the dashboard, an induction smartphone charger, and connected multimedia access with the R-LINK Evolution and Media Nav Evolution systems.

It was only a matter of time before the technology of today and tomorrow facilitated new use of the vast space in LCVs, configured and equipped as convenient, connected, polyvalent workspaces—and the time is now, as it seems!

Apples Instead of Cows?

Buyers in some of the world's biggest car markets regard leather as the signature of premium luxury in car interiors. It's expensive and relatively difficult to work with, though, so automakers and suppliers have long tried to differentiate with leatherlike alternative materials like polyurethane leatherette and Alcantara suede. None of these has really succeeded so far, but pressure to move away from leather is growing, as raising cattle and producing leather heavily contributes to pollution, greenhouse gas emissions, and animal harm and suffering.

Several new leather alternatives have popped up recently in car interiors. Volvo's Weave Tech coating in the Polestar 2, Aston Martin's cashmere in Lagonda models…and Volkswagen put an

apple-based synthetic leather in their ID Roomzz electric SUV concept presented at the Shanghai Motor Show.

The material, called AppleSkin™ and already used in the furnishing industry, is partly made from apple-juice waste including cores and skin from the fruit. It has been described by Volkswagen as a 'renewable raw material'. The manufacturing process uses 100% of the apples, crushed, dried, powdered and, after some coagulation processes and patented expertise, the result is a soft-touch, eco-friendly, vegan material with a wide range of colours.

It's not just apples, either; Piñatex, for example, is a synthetic leather based on cellulose fibres from pineapple leaves.

NEWS MOBILITY

New Didi-BAIC Partnership

Calling a Didi is the Chinese equivalent of calling a Lyft or an Uber—in fact, Didi bought the Chinese subsidiary of Uber in 2016. With EV registration growth in China, where the market has approached 1.2 million vehicles in 2018 (0.4 million in Europe) and could reach 2 million in 2019, Beijing Electric Vehicle Company, a unit of state-owned BAIC Motor, and Didi Chuxing have signed an agreement for a strategic JV as well as the delivery of 20,000 EU5 compact electric cars.

The EU5 has onboard payment and navigation systems to allow drivers to automatically pay vehicle parking fees and plan routes. The electric sedan also offers in-car infotainment and wireless internet connection for ride-hailing customers. It will provide vehicle location and vehicle-theft warning services for future ride-hailing fleet operators.

Didi and Beijing Electric Vehicle have created a new joint venture called BAIC-Xiaoju New Energy Auto Technology (or Jinglu, for short). The two companies, leaders in their fields, say they will combine their efforts on "new energy fleet operation and AI transportation solutions to develop next-generation connected-car systems". They want to foster mobility with electric cars together, including fleet operation, big data applications, design, and EV charging services.

Stanley Robotics' Autonomous Parking Valet

After a year of testing with 1,600 users, four parking robots will now park passenger cars at Lyon Saint-Exupéry airport in France. The objectives are to facilitate travelers' parking while optimising parked-car placement to save up to 50% of space.

In long-term outdoor parking, travelers who have previously booked their place on the internet will simply leave their vehicle in one of the twelve reception boxes. Then comes the robot to take care of everything: the customer gets on his shuttle to go and board the plane; once back from the trip, they need only scan the reservation to retrieve their vehicle.

The developed system is based on electric robots, but not exclusively so. An artificial intelligence drives them and is able to calculate the optimal place to park a car so that it is easily recoverable. With cameras and a 3D scanner accurately analysing the surrounding environment, Stan the robot takes the vehicle (weighing up to 3 tons), lifts it, and puts it away. The cars are parked in multi-rows. Traffic lanes are eliminated, which densifies the parked vehicles so more of them can fit.

In addition to the new application at Lyon, Stanley Robotics already supply Roissy airport, and soon London-Gatwick as well.

ZF Buy 2GetThere

ZF Friedrichshafen have bought a majority share of 2GetThere, a MaaS (Mobility as a Service) provider founded in 1984 and based in Utrecht, Netherlands. They develop and operate driverless passenger and cargo transport systems in cities including Rotterdam, Abu Dhabi, and Singapore, as well as numerous ports and airports.

The buy is so ZF can strengthen their position in the growth markets of MaaS, autonomous transport, and shared AVs as part of the supplier's Next Generation Mobility strategy, complementing existing activities such as the e.GO Moove autonomous minibus.

As automakers pivot towards mobility-based business models, the ZF buy is an illustrative example of major tier-1 suppliers moving in the same direction.

Ford Buy Harder into MaaS

Ford, through their Smart Mobility subsidiary, have bought their partners Autonomic and TransLoc to help Ford's new mobility business take shape.

TransLoc build technology to support microtransit services, including real-time tracking, demand modelling, and response analysis, as well as consumer-facing mobile apps and services.

Autonomic are building the first open cloud-based platform to connect and empower tomorrow's mobility systems: AVs and ride hailing/sharing services need access as easy as a smart phone app tap, so Ford and their partners will collaborate toward solutions based on a modern connectivity platform like the Autonomic TMC (Transportation Mobility Cloud).

Ford's buy of these two companies as well as others like scooter-sharing service Spin, to strengthen their Mobility group and help "Ford X", an internal experimental department, where new ideas can incubate before the company decide whether to develop them toward commercialisation.

GENERAL NEWS

Automakers Must Upgrade Rear-Seat Safety: IIHS

The U.S. Insurance Institute for Highway Safety are saying automakers must do more to protect back-seat passengers from death and serious injury in severe crashes. The IIHS are using data from frontal crashes that result in injuries to back-seat passengers to develop a new front crash test that evaluates crash protection for both front- and rear-seat passengers. Test crashes are being conducted this year.

IIHS are urging automakers to put some of the same safety technologies used for front-seat passengers in the rear of vehicles, such as seat belt pretensioners, which take the slack out of the belt at the start of a collision, and force limiters which allow the belt webbing to unwind slightly as the forward motion of a body pulls against the belt in a collision. The institute would also like automakers to put in airbags that deploy from the roof and prevent a rear-seat occupant from smashing into the back of the front seat, and seat belt airbags—which were tested around 2010 by automakers including Ford, and seat and safety suppliers including BF Goodrich and JCI, and are now used on Mercedes vehicles.

IIHS President David Harkey says his research institute has confidence "that vehicle manufacturers can find a way to solve this puzzle in the back seat just as they were able to do in the front. Manufacturers have put a lot of work into improving protection for drivers and front-seat passengers. Our moderate overlap front crash test and, more recently, our driver-side and passenger-side small overlap front tests are a big reason why. We hope a new evaluation will spur similar progress in the back seat".

New Chief Engineer at PSA

Gilles Le Borgne, PSA Group's longtime chief of engineering and the director of many of the automaker's platform and vehicle projects, will be leaving the company for personal reasons. He will be replaced by Nicolas Morel, now Senior VP for vehicle projects.

Gilles Le Borgne

Nicolas Morel

PSA also says Carla Gohin, senior VP for research and advanced engineering, will expand her portfolio as chief technology officer. Le Borgne has been executive VP of Quality and Engineering and a member of PSA's Executive Committee since April 2013. CEO Carlos Tavares noted Le Borgne's contributions in a statement, saying he had driven his teams "with rigour and professionalism in the execution of the vehicles and technological developments of the Push To Pass strategic plan." Tavares said Le Borgne's departure offered the "opportunity to position young

talents in key positions in R&D" at PSA.

Nicolas Morel has held managerial and executive positions in engineering and R&D at PSA Group since joining the automaker in 1995. He was named a Senior Vice President for R&D in 2010, overseeing areas such as packaging, safety, performance requirements, and electronics. In 2015 he became head of R&D and design for PSA China, based in Shanghai.

Sebastien Jacquet, currently senior VP for global vehicle programs and a veteran of PSA's operations in China, will succeed Morel.