



Thu, 24 October 2019 - **NEWSLETTER #12**

# Editorial

## DVN-Interior Website

We're busily at work applying our communication skills to devise a highly functional website that's an easy joy to use. It will provide easy, direct access to each newsletter as it is published, and naturally it will add also permanent, searchable access to all previous newsletters, DVN-I Reports, and all other content archives. Just as the Driving Vision News website is for DVN subscribers, the DVN-I site will be a tremendous value-add for DVN-I subscribers. Haven't got your subscription yet? [Contact us today.](#)

This week we continue our review of the Frankfurt motor show in the Design Lounge with a focus on VW ID3, a big EV introduction milestone from a leading mainstream automaker. Attendance figures have now been released: this year's show had 560,000 visitors, compared with 810,000 in 2017. That's more than a 30% plunge, and it probably portends a radically different event in the future—or none at all, as we've known it. It probably means automakers and suppliers will scatter their new vehicle and innovation introductions in many different, smaller, or even private exhibitions, reinforcing the value of DVN-Interior to report interior news from many different locations.

We've got an in-depth article today on smart interior surfaces. New use cases driven by ACES vehicles, new occupant positions, and a plethora of new features reinforce the need to use any and every surface and to manage the increasing complexity of interaction with the vehicle. That's now being done through smart surfaces combining aesthetics and functional capabilities through integration of design, materials and electronics...and DVN-I looks at it through a variety of interior-focused lenses.

Enjoy reading! Sincerely yours,

Philippe Aumont  
*General Editor, DVN-Interior*

A handwritten signature in black ink, appearing to read "Philippe Aumont".

# In Depth Automotive Interior

## Smart Functional Surfaces Abound in Tomorrow's Interiors



Major disruptive forces are moving the automotive world from use cases to use CASEs—connected, autonomous, shared, and electric vehicles. Automakers and suppliers are having to prioritize the driver and passenger experience in whole new ways, and HMI, the human-machine interface, is central. Yesterday's knobs, dials, buttons, switches, and other physical controls are rapidly giving way to touch screens, and futuristic further developments like holographic, gestural, and really good voice controls are in development to better integrate human/machine interactions into the occupant experience.

But with the possible exception of voice controls, the new control methods being discussed so far still involve a demarcation, a layer of separation between the car and its occupants. Meanwhile, there are virtual acres of surfaces all over the interior, which up to now have largely been uninvolved with any kind of active interface. Sure, the occupants will touch the various surfaces when they open and close doors and storage cubbies, they'll sit on the seats and they'll grip the steering wheel. But new technology developed by engineers and designers is bringing these surfaces into the realm of active interface elements with much more seamless integration of sensors and buttons into all kinds of surfaces, no matter their material makeup and regardless of their location: seats, instrument panel, doors, pillars, headliner, and even virtually as projections and holograms.

Textile- or leather-finished trim surfaces total up to about 10 m<sup>2</sup> in a 5-seater vehicle, so there's a lot of real estate. Smart textiles, then, are a key area for functional enhancement. Heating fabric is now possible; so is breathable textile to integrate ventilation, helping to improve comfort while saving space and offering efficiency improvements. The whole-car heater and air conditioner has less work to do, for example, if the seats are evenly and efficiently heated and cooled—a real boon for EVs. Beyond that, extended applications can be found today involving smart textile structures comprising sensors, actuators, and computing and storage devices integral to car interior elements. This could include sensors for temperature, humidity, and stress/strain; actuators for heating and cooling, different kinds of alert signals, flexible screens and displays, security systems, and so on and on. Flexible devices integral to textile structures can be used as physiological sensors for

various vital parameters—heart and breathing rates, movement, occupant position, and suchlike.

Major disruptive forces are moving the automotive world from use cases to use CASEs—connected, autonomous, shared, and electric vehicles. Automakers and suppliers are having to prioritize the driver and passenger experience in whole new ways, and HMI, the human-machine interface, is central. Yesterday's knobs, dials, buttons, switches, and other physical controls are rapidly giving way to touch screens, and futuristic further developments like holographic, gestural, and really good voice controls are in development to better integrate human/machine interactions into the occupant experience. But with the possible exception of voice controls, the new control methods being discussed so far still involve a demarcation, a layer of separation between the car and its occupants. Meanwhile, there are virtual acres of surfaces all over the interior, which up to now have largely been uninvolved with any kind of active interface. Sure, the occupants will touch the various surfaces when they open and close doors and storage cubbies, they'll sit on the seats and they'll grip the steering wheel. But new technology developed by engineers and designers is bringing these surfaces into the realm of active interface elements with much more seamless integration of sensors and buttons into all kinds of surfaces, no matter their material makeup and regardless of their location: seats, instrument panel, doors, pillars, headliner, and even virtually as projections and holograms.

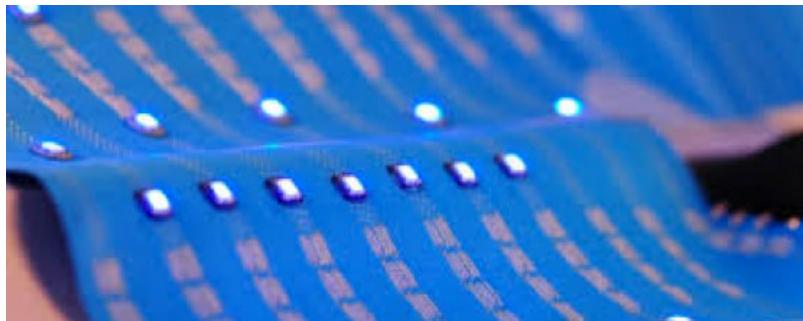
Textile- or leather-finished trim surfaces total up to about 10 m<sup>2</sup> in a 5-seater vehicle, so there's a lot of real estate. Smart textiles, then, are a key area for functional enhancement. Heating fabric is now possible; so is breathable textile to integrate ventilation, helping to improve comfort while saving space and offering efficiency improvements. The whole-car heater and air conditioner has less work to do, for example, if the seats are evenly and efficiently heated and cooled—a real boon for EVs.

Beyond that, extended applications can be found today involving smart textile structures comprising sensors, actuators, and computing and storage devices integral to car interior elements. This could include sensors for temperature, humidity, and stress/strain; actuators for heating and cooling, different kinds of alert signals, flexible screens and displays, security systems, and so on and on. Flexible devices integral to textile structures can be used as physiological sensors for various vital parameters—heart and breathing rates, movement, occupant position, and suchlike.



These trends have been under way for quite a while. In 2015 BMW, in a development with the Polytechnic School of Montreal, created an interior free of buttons and knobs using intelligent textiles. Control was achieved with just a stroke on the backrest to adjust lumbar support, for example, or on the side valence to adjust seat height and position. Development is ongoing, and in the iNext concept BMW is using what their designers call "shy technology": digital capability built

into wood, cloth, and other surfaces. Passengers can operate the infotainment system by tracing symbols with their fingers into the handwoven jacquard cloth upholstery that covers the seats and side panels.



The Fraunhofer ISC's Center Smart Materials is working on silicon-based materials, adapted printing pastes, and efficient production technologies to bring out the application potential of stretchable sensors and conductive paths. Their intent is to inspire new product ideas and speed their commercialization. They develop strain and pressure sensors based on extremely elastic dielectric elastomers (DES), switches integrated into textile and curved covers, pressure-sensitive seat covers, pulse rate measuring devices, and sensors for detecting postural defects of the human back.



*BMW 3-series head-up display Ford Explorer Tablet*

*Audi A8 air vent*

The now-standard central display screen is growing larger as designers innovate by using interactive surfaces to integrate more functions. This relieves the crowded-field-of-buttons effect, allowing more room for optimal aesthetics and brand-identity design while saving weight, reducing packaging requirements, and sometimes trimming costs. Examples drawn from the Wards 10 Best UX Interior nomination list presented on 1 October in Novi, Michigan, include:

- The new BMW 3-series, which lays a big, bright head-up display on the windshield showing navigation route guidance.
- Ford's highly integral LCD tablet on their Explorer to enhance usability of the touchscreen surface, as in a Tesla.
- Audi has done some artful work in their A8 by enhancing the surround of an air duct, creating a clever sliding electronic vent control that provides haptic feedback.

Display surfaces can be enhanced by hard-coat films, seamless textures, antiglare properties, and easy-clean characteristics.



MacDermid Enthone XtraForm hard coated films, for example, deliver advanced levels of anti-glare clarity. They can be used in challenging designs including those with 3D deep draw and tight Radius configurations, even with a piano black surface. They're easily cleanable, and can be backlit.

More broadly, smart surfaces can combine numerous technology applications including coatings, films, multifunctional transparent surface treatments, OLEDs, backlighting, metal mesh touch sensors in plastic, integrated touchscreen film technology, haptics through polymer transducers, integrated heaters, and printed electronics. Functional surfaces are also an entry point for reconfigurable systems, which ease customization per brand, model, and individual preference.



Canatu, of Helsinki, Finland, provides design freedom for an intuitive user experience with 3D-shaped touch surfaces in automotive interiors and possibilities for smart touch surfaces throughout the drive deck of tomorrow. Canatu technology adds functions and controls discreetly to the interiors for a sleek and unobtrusive in-car experience, integrating transparent 3D touch sensors into displays, plastics, glass, leather, and textiles. An intuitive 3D user interface decreases driver distraction and increases safety while driving.



Faurecia and Canatu are working on a 3D center stack combining display and controls that are

tactile and aesthetic. Canatu's touch sensors have been formed to 3D shape, and the display has been integrated to the decorative surface offering high levels of perceived quality. Compared to other materials, Canatu's 3D sensors offer high optical quality, mechanical flexibility, and the possibility to achieve complex, decorative displays with 3D shapes. A concept door panel created by these two firms' cooperation with participation by Daimler has a transparent, thermoformed touch sensor integrated to display for power window and seat function operations on a seamless décor panel, which remains black until needed.



Faurecia, with its "Cockpit of the Future", is transforming traditional door panels into speaker less audio sources through surface activation, to get an immersive sound experience for each vehicle occupant with their own individual sound bubble.

And as far as the seats go, embedded integral sensors detect occupant position, pressure, movement, and physiological state. The gathered information then enables effective countermeasures for motion sickness, stress, discomfort, and drowsiness.



Yanfeng Automotive Interiors, for their part, is developing smart interior surfaces that combine innovative automotive interior aesthetics and efficient HMI technologies. Like a smartphone, smart surfaces provide user configurable, intuitive interfaces. Operating icons, visible only when needed, can be harmoniously integrated into the interior, and designed to be brand- and model-specific.

Center consoles and door panels are using illuminated fabric surfaces—the same surfaces also used for heating—through radiant panels. The boundary between decoration and function is reduced, creating a functional and aesthetic interior.



Yanfeng has partnered with Kostal for smart interior surfaces. Kostal, from Lüdenscheid, Germany,

is a specialist in mechatronics and switches. Electronic elements enable the vehicle of the future to become a living organism on the interior surface. Kostal is bringing reflective surfaces to turn into transparent, interactive control panels.

Smart electronics and software behind the surfaces are invisible but highly sensitive. Switching is intuitive and takes place in a flash. The effortless reaction makes the interaction seem easy.

The vehicle of tomorrow communicates with occupants using light signals on surfaces that are blank when the communications aren't required. LED lights help getting day and night design through tailored adjustment of the light intensity.

Eliminating traditional switches also means eliminating mechanical parts that jam or become damaged because of dirt, dust, or misuse.



It's a fact of life: interior surfaces have complex 3D shapes. Forciet, from Finland, has launched a new stretch-pad module capable of turning an entire car's interior surface into a stretchable control pad. The pad can continuously change form during its lifespan. It can be easily integrated under leather, fabric, and other materials, enabling it to transform any surface in a car's interior into 3D multitouch pads, sliders or stretchable force buttons. The module's control surfaces can be raised or lowered above the surface level when needed, allowing for a minimalist yet intuitive dashboard experience. This module makes it possible to design a personalized dashboard experience for each driver.



IMSE (Injection Molded Structural Electronics) brings electronic functionality to places traditional electronics could never be integrated. Because they can conform to complex shapes and are very thin, designers have the freedom to add electronic functions wherever they choose, and in shapes they need: shown here are door upper panels with integrated seat controls, supplanting traditional switches.

Geely Design, CEVT and TactoTek (also from Finland) have jointly announced initiation of projects to develop smart surfaces for multiple automotive brands owned by CEVT's parent company, Zhejiang Geely Holding Group.

## INTERIOR NEWS

### BlackBerry AI for Better Safety, Security



BlackBerry, actively involved in transforming themselves into a major player in the automotive technology sector, will be combining its AI and automotive products in a move to protect and accelerate their 25% of their revenue.

The goal at hand is to give the car's computer systems a "health check," and then guard against what might go wrong. The system uses machine learning to judge what the normal state of the car should be, then compare it with what's happening in the vehicle. It not only looks under the hood at the engine and other systems that owners can't see, but at the human drivers themselves. The idea is to monitor their seat position, steering habits, acceleration patterns and other signs to construct a model of what is normal for the driver. If something is amiss, the system will raise a red flag—for example, if an unauthorized person is at the steering wheel. BlackBerry wants to start selling the system within five years, says CEO John Chen.

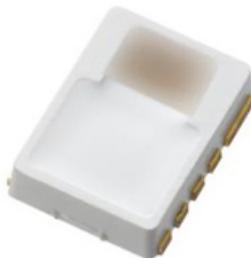
BlackBerry has several products supporting this logic. One is called QNX, an onboard operating system that allows carmakers to use BlackBerry's infotainment system or simultaneously run a third-party system by suppliers such as Google. It is already installed in more than 150 million cars on the road from makers like Audi, BMW, Ford, GM, Honda, Hyundai, Toyota, and Volkswagen. Another is QNX Hypervisor, a guardian software that acts like a firewall to protect onboard systems.

The company's latest product, announced last month, is an integrated HMI digital cockpit system based on QNX. BlackBerry developed the system with Denso, and the technology's commercial launch is in the 2020 Subaru Outback and Legacy models. BlackBerry's product allows several different drive deck systems to run off the same microprocessor, including those that control the instrument cluster and infotainment systems.

# Everlight SmartLEDs for Interior Lighting

Taiwan-based Everlight Electronics has released a new generation of lighting products for automotive interior applications. Everlight is a member of the open ISELED Alliance (28 members, including Hella, Valeo, Magna...), developing intelligent RGB LED technology for automotive interiors and providing innovative solutions for automotive lighting.

**EVERLIGHT®**  
**億光 LED 照明**



The new Everlight SmartLEDs are configured to present colorful combinations in the vehicle interior. Featuring a unique package technology to achieve improved uniformity of light, they have an embedded intelligent IC driver to optimally manage colors and adjust brightness via a controller—enabling the provision of complete and smart solutions for automakers.

The driver IC is integral to the RGB LED package, which measures  $3.0 \times 4.1$  mm, and can closely control chromatic aberration. The integrated driver IC allows control of thermal runaway by temperature sensing of the red LED. Up to 4,000 LEDs can be ganged in series via a LIN interface with a transmission speed of 2 Mbps. Compared to a traditional solution for RGB LEDs, the SmartLED provides better color uniformity. A wide application range for lighting the automotive interior includes interior light, roof reading lighting and dashboard displays.

## Veoneer Awarded for AV Thermal Camera



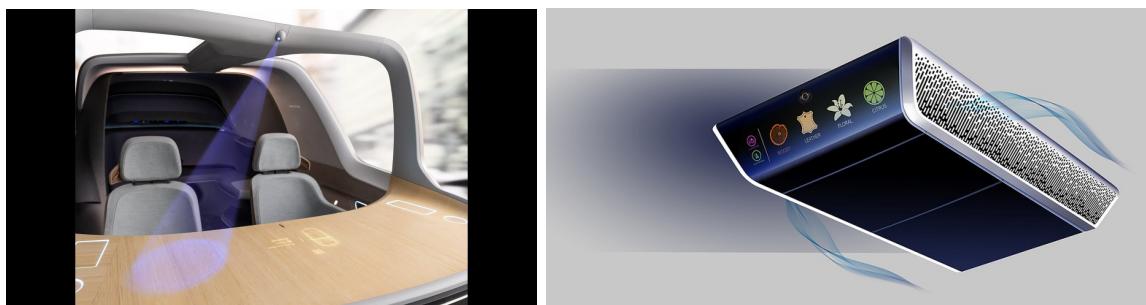
Veoneer CEO Jan Carlson is calling it a breakthrough: his company has won a production contract

to manufacture a thermal camera for an autonomous vehicle made by an as-yet-unnamed major automaker.

Veoneer's products include radars, vision systems, and advanced driver assistance and autonomous driving software. Thermal cameras are well-suited for nighttime driving, and can see through glare and most fog. They also have in-car applications to keep track of driver distraction and drowsiness levels.

Production start on the new thermal camera is planned for 2021, and Veoneer says although volumes are expected to be low, the contract is of high technical significance, with a representative saying it is "the first time, as far as we know, that a carmaker has made the decision to include thermal cameras as a sensor on self-driving cars".

## Yanfeng Sanitizes Interior Air with Wellness Pod



Shared vehicles' interior cleanliness is legitimately questionable from a hygiene standpoint. It's just a simple fact of multiple users, just like in any mass transportation vehicle. Moreover, IAQ (interior air quality) is an issue especially in polluted places like China.

Yanfeng Automotive Interiors, a JV with Adient, has a solution. Last month, the company debuted what it calls the Wellness Pod. It attaches to the overhead console and claims to kill 99.9% of germs in the vehicle. There's a simple touch interface to turn on the device and it also supports smartphone integration. It cleans the air with invisible ultraviolet rays, and can also disperse aromas to keep the car smelling fresh. In testing, the UV air sanitizer and surface sanitizer reduced present bacteria by 99.9% and indirect surfaces that didn't have total contact with the UV rays showed a 95% reduction, according to the company. When there isn't enough time to run a full 30-minute cleaning cycle—that requires the car be unoccupied, and involves recirculating the air via the HVAC system—there's a quick-clean function: sensors record areas the previous passenger touched and the UV rays get to work removing bacteria and viruses.

Fragrances come in replaceable cartridges, and initially the Wellness Pod will offer four scents. Interestingly, Yanfeng claims several of the scents will also possess the ability to mitigate motion sickness in the car.

# New Hyundai Mobis Passenger Safety Tech



Hyundai Mobis, the parts-and-service arm of Hyundai Motors, has developed a new safety technology for protecting passengers through interworking with the autonomous driving sensors. It's called the Safety Integrated Control Module, and it combines two ECUs for airbags and electronic seatbelts into a single unit. It receives real-time data from advanced radar sensors enabling enhanced protection of passengers in hazardous driving situations. It also adjusts airbag deployment levels and seat belt retraction according to the position or movement of passengers.

The new module maximizes safety system efficiency by controlling active and passive safety system elements using the one single ECU. The active protection side is also keyed into the automatic emergency braking system, taking slack out of the seatbelts if a collision is imminent, and if the collision can't be avoided, pre-tensioning the belts and optimizing the airbag according to the collision severity.

The next step will be to optimize airbag deployment in correlation with occupant position and movements, with the objective to minimize passenger injuries as the range of likely occupant positions expands.

Hyundai Mobis aims to apply and mass-produce the fruition of this work on Korea's domestic high-end sedans starting from 2021.

## Renault's New China-Market EV



Renault needs new products to rescue their sales in China, which plunged 64 percent in the first eight months. To that end, they launched their first China-built electric vehicle, the K-ZE, at an auto

show last month in the southern Chinese city of Chengdu.

The small SUV targets urban commuters. According to Dongfeng-Renault, after government subsidies it is priced from USD \$7,900 to \$10,100, about a third of the price of a Renault Zoe in Europe.

The K-Ze is built on the same Renault-Nissan CMF-A platform as the Indian-market Renault Kwid. It's a 5-seater, and the highest level includes a 8" LCD TFT screen, in between traditional needle-style gauges. It has an advertised range of 271 kilometers (168 miles) and a maximum speed of 105 km/h (65 mph). It is the third product Renault has built with local partner Dongfeng, following the Koleos crossover and Kadjar SUV.

## Canoo's Urban Loft on Wheels



California-based Canoo, founded by some former Faraday Future engineers in 2017, has created a vehicle for a future that's electric, shared, and autonomous. The company is headed by Ulrich Kranz, the former head of BMW i.

Canoo's vehicle is described as "an urban loft on wheels," with interior appointments designed to look more like furniture: a big sofa in a living room or in a lounge.

A combination of the thin battery pack mounted just below the floor and a steer-by-wire system help free up lots of space for the cabin. The interface is minimalist, and the user is expected to bring their own device for what the company calls an experience comparable to a connected home/smart phone. Instead of a dashboard, there's essentially a styled crossbar, carrying the gauge cluster and providing a place for phones and devices.

For climate control there are ducts up top to blow air to the back seat, and there are heat vents down low that use some of the waste heat from the powertrain. Cabin air is filtered, with the filter

housing in the trunk to ease changes when needed.

The open rear space with four straps makes it easy to secure bicycles, strollers, dog carriers, wheelchairs, and the like. Additional seats fold down on the back of the front seats; child seats can also be secured to the back seats. Total cupholder count can go as high as 32 (god bless America), with holders on the front dash, back seats, and optionally on door pegboards.

Canoo's plan is to offer the model from 2021 with no dealers or stores, with a monthly "hassle- and commitment-free" EV subscription, and with no set end date. The monthly fee will include vehicle registration, maintenance, insurance, and charging access, all via a smartphone app.

## THE DESIGN LOUNGE

### IAA, the Frankfurt Motor Show 2019

Wrapping up our DVN-I coverage of the Frankfurt Motor Show, we will focus on two major new vehicle launches: the Volkswagen ID.3 and the Land Rover Defender. Both of these vehicles represent significant milestones and significant risk for their manufacturers moving in a new direction.

The challenge of redefining such an iconic vehicle as the Defender was for Land Rover to keep the essence of all terrain utility that defined this vehicle for so many decades, while also integrating the modern requirements and needs that will carry it forward. By integrating enormous amounts of high tech hardware—touch screens, dials with integrated screens, and a HUD—in a sturdy, high quality interior, the new Defender has reinterpreted the classic Defender for the modern world.



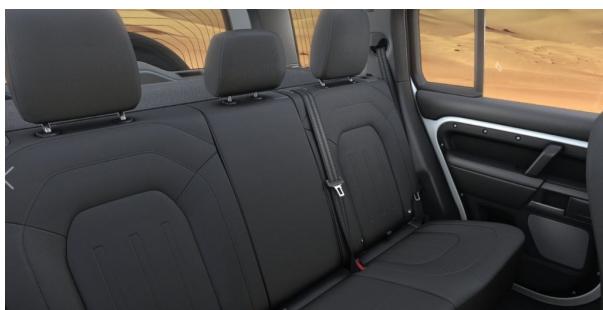
Displays floating between a crafted leather horizontal beam instrument panel give the new Defender a robust quality while also keeping the off road prowess of the original.



Luxury and robustness also carry over into the seating and floor materials enhancing the sturdy feeling of the whole vehicle.



Optional three-row seating, with a fold-flat function for the front passengers expands the utility of the new Defender.



High quality detailing on the door panels with exposed fasteners and exterior metal finishes along with seating surfaces with embossed and stitched finishes highlight the durability and quality expected of a vehicle like the Defender.



Stout flooring materials with a focus also on panel fitment bring both toughness and quality to the storage/loading area.



Ambient lighting effects bring a modern feel by enhancing the floating screens from the transverse beams integrated into the instrument panel.

As to the Volkswagen ID.3: the interior design is focused on creating a modern aesthetic by contrasting floating screens with a simple, clean horizontal instrument panel structure and finish, though traditional in layout regarding the Volkswagen brand.



*Volkswagen ID.3*

The SEAT El Born, for its part, has a color-keyed instrument panel cover defining a more driver-oriented feel.



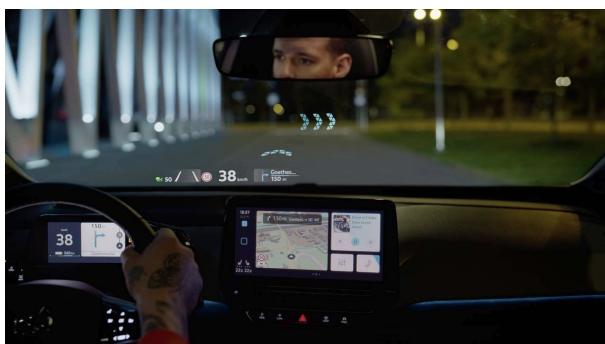
Seat El Born



Color treatment and material finishes create a bright, friendly, inviting environment for both the driver and passengers.



Using ambient lighting to separate the soft upper cloth section from the rigid lower section also enhances the feel of space within the vehicle.



A great deal of technology is to be found in the ID.3's interior. Displays include an optional HUD, further enhancing the modern feel of the interior.



Innovative switchgear on the ID.3 eliminates the gaps between traditional moveable switches. This gives the visual appeal of a much cleaner aesthetic for the switch packs for the lights, mirrors, door and steering wheel switches.

Clearly both Volkswagen and Land Rover have made the deliberate decision to move their vehicles into the modern age by leveraging new technology to reference their famous pasts without allowing the retro whimsy to crimp or constrain their design executions.

## NEWS MOBILITY

### Aptiv, Hyundai in AV JV



Aptiv (formerly Delphi Automotive) and Hyundai are forming an autonomous driving joint venture to advance the design, development, and commercialization of level-4 and -5 autonomous technologies, furthering the partners' leadership position in the global self-driving ecosystem. The two companies will begin testing fully driverless systems in 2020, and plan to have a production-ready autonomous driving platform available for robotaxi providers, fleet operators, and automotive manufacturers in 2022.

As part of the agreement, Hyundai and Aptiv will each have a 50% ownership stake in the JV, valued at a total of USD \$4bn. Aptiv will contribute their autonomous driving technology, intellectual property, and approximately 700 employees focused on the development of scalable automated driving solutions. Hyundai operations Hyundai Motors, Kia Motors, and Hyundai Mobis will collectively contribute vehicle engineering services, R&D resources, and access to intellectual property.

The new JV will be led by Karl Iagnemma, president of Aptiv's Autonomous Mobility division. That's headquartered in Boston, with technology centers across the USA and Asia. The JV's Korean operations will serve as a key technology center as well as a base for vehicle modification.

## First AV experiment in NYC



In the US, most of the autonomous vehicle services are finding their footing in places like Silicon Valley or Phoenix. So far, they've been scarce in New York, where state regulations aren't as facilitative.

Behind the line, it's maybe easy to understand that the local environment is not appropriate for early validation: traffic conditions are complex, weather is challenging with a lot of snow and ice in winter, and the taxi industry is deeply entrenched and politically very powerful.

In that context, nevertheless, a Boston startup called Optimus Ride transported more than 7,000 people last month in autonomous shuttles. The Optimus launch is the first commercial deployment of a self-driving system there in New York City.

Legislation passed in 2017 allows autonomous vehicle testing in New York as long as the company agrees to state police supervision and meets insurance and other requirements. The law was amended this year to ease some of the restrictions, in a pilot program set to expire in April 2021.

Because the shuttles are based at a navy yard, a private development with private roads, the two-year sunset period does not apply to Optimus.

# Robotaxis Still A Ways Away: Argo CEO

In a recent interview with Automotive News, Argo CEO Bryan Salesky said mass transport with autonomous vehicles and robotaxis is still far away.



Ford Argo test vehicle



Designer view of a Ford AV with HUD and no wheel

Argo AI, funded in 2016, is a Pittsburgh-based autonomous vehicle startup in which Ford invested a billion dollars in 2017. This year they got an additional investment of \$2.6bn from VW. The company was founded by former Uber and Google leaders, and Carnegie Mellon University alumni. Argo has testing fleets in US big cities including Pittsburgh, Austin, Miami, Washington DC, Detroit, and Dearborn. The company plans to spend \$15m to form a self-driving car research center. The Carnegie Mellon University Argo AI Center for Autonomous Vehicle Research will use those funds to "pursue advanced research projects to help overcome hurdles to enabling self-driving vehicles to operate in a wide variety of real-world conditions, such as winter weather or construction zones," the company and university announced in last June.

"There are still technological hurdles", stated Balesky. "Operating at night, in fog and falling snow, in underserved areas—those are challenges that have yet to be solved". To pass those challenges, they will leverage the newly-created CMU research alliance. He says communication around autonomous driving is misleading in that driver-assist features, camera and radar alone are simply not robust enough to develop a safe self-driving system, and "if the vehicle asks you to take back control, it's not a self-driving car!".

## GENERAL NEWS

### New CEO for Plastic Omnium

Plastic Omnium has appointed a new management team and revised its corporate governance, with co-CEO Laurent Burelle—son of the company creator—becoming chairman of the board, and Laurent Favre, a veteran automotive industry executive, stepping in as CEO.



Laurent BURELLE

Laurent FAVRE

Félicie BURELLE

Jean-Michel Szczerba, who shared CEO duties with Burelle, will take on an advisory role after 34 years with the company. Burelle's daughter Felicie Burelle was named managing director and will work alongside Favre.

In addition, COO Paul Henry Lemarie is leaving his post after 39 years, but will continue as a director and the chief operating officer of Burelle SA, the family holding company that holds a majority of Plastic Omnium shares.

Laurent Burelle, a billionaire whose family built the company into one of the largest global suppliers of fuel systems and exterior panels and modules, said the moves were necessary to ensure long-term growth "by seizing opportunities related to the transformation of the automotive market." He will remain chairman and CEO of Burelle SA.

Favre, 48, was most recently a managing director at ABB, the Swiss-Swedish maker of robotics, power, heavy electrical equipment, and automation technology. Before that he held executive positions at Benteler Automotive, the German supplier of exhaust systems, chassis components and other products, starting as an executive vice president then becoming COO and CEO. He has also worked at ThyssenKrupp and ZF Friedrichshafen.

Favre and Felicie Burelle, 40, will take up their new positions on Jan. 1, 2020. She started her career at Plastic Omnium in Spain, then worked for consultant EY before returning to the family business, where she has held a number of executive management positions.

## Johan de Nysschen Back at VW as COO

Longtime Luxury Brand Executive Johan de Nysschen, most notably known for recently leading Cadillac, has returned to VW as COO, reporting to Scott Keogh, head of Volkswagen Group of North America.



Over 30 years in the business, including 20 at VW Group, de Nysschen helped elevate the German automaker's Audi unit to its current status among the industry leaders in the U.S. during his tenure between 2004 and 2012. He jumped to Nissan's Infiniti premium brand with intentions of raising it to an Audi level, but stayed only two years before GM hired him to resuscitate Cadillac.

As president of Cadillac, de Nysschen was given control of a \$12bn product investment plan, but with a sedan-centric lineup in a market segment rapidly moving toward CUVs and SUVs by rivals such as Mercedes-Benz, BMW, Audi and Lexus. Cadillac's high-end positioning, reflected in relocating sales and marketing personnel from Detroit to New York City's fashionable SoHo district didn't fully succeed. Cadillac has since moved back to the Detroit area and is run by GM President Mark Reuss.

VW says de Nysschen's new role will streamline its executive reporting structure and permit the brand to better coordinate and align operations in North America, where they are aggressively remaking their product portfolio and continuing to recover from the Dieselgate scandal.