DVN-I
Automotive Interior

Thu, 24 October 2019 - **NEWSLETTER #5**

Editorial

Experience, Technology, Interior On The Move

User experience is driving our industry, especially in the car interior. In this edition of DVN-I we present in-depth news and views on upholstery materials, obviously a very visible part of the iceberg, if you will. Experience is the sum total of what we sense—see, hear, touch/feel, smell, etc.—and increasingly there's a significant ecological aspect, as renewable and sustainable materials increase both in supply and in demand.

Safety goes along with comfort, and there are matters in need of diligent attention on that front. For example, gender parity in safety protection is still far from being achieved. As the interior is the interface area between the passenger and the car, we, in the auto-interior community have a central role in addressing that and other related issues.

Likewise, security is a half-step from safety. and we'll see how biometric recognition will progressively help with that as car sharing comes into its own.

We review some relevant new vehicle announcements and look at how they herald new technology like BMW's curved IP and the i-Cockpit in the Peugeot 2008; and cars which could constitute a first step towards a future market segment, such as Toyota's new-for-Europe Camry and the Renault's new-for-India Triber.

Then there's DVN-I's Design Lounge section, where designers' perspectives take center stage in raising awareness and understanding of how design language and product content reciprocally drive each other.

The focus of DVN-I will always center on vehicle interior user experience, and we cast our gaze wide to keep track of emerging innovation and ideas. For example, the recent Paris Air Show gave us a good opportunity to compare plane interiors—when AV use cases begin to gel, they will probably look a lot like those of airliners!

We also report on EcoMotion, Israel's big startup showcase. Keep an eye on the DVN-I Newsletter for coverage of interior-related innovations that country's vibrant startup ecosystem is putting forth.

We're very excited to release our first full-length DVN-I Report, with a thorough summary of the automotive interior shows and conferences from the first half of this year, presenting all trends driving this industry. Download your copy here.

We hope you find this DVN-I Newsletter № 5 informative and interesting. We're glad you're here, and we thank you for your support.

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Automotive Interior

New Upholstery Materials Challenge Leather's Luxury Dominance

Kvadrat's wool-blend textile in Range Rover Evoque—an alternative to leather

We've previously reported on the increasing relevance of new automotive upholstery and interior-surface materials as they gain traction versus traditional materials (primarily leather). New materials respond to new needs and wants including increased demands for sustainability, recyclability, light weight, good acoustic performance (noise absorption), desire for differentiation and a marketing need to demonstrate the automobile is a clean object and car manufacturers are responsible and concerned about the planet.

What are these new materials? Well, interior suppliers have used kenaf, flax and other natural materials for years. Those materials often are used in door panels as filler, with a vinyl or leather skin. But automakers have been reluctant to use kenaf as a surface material because to some people it might look cheap and unfinished. So natural materials are most of the time relegated to B-surfaces—we'll take a detailed look at them another time.

Other natural fibers derived from plants begin to be used and mixed with usual components to create new fabrics. As an example, JLR's new Evoque offers seating upholstered in a textile made from eucalyptus which boasts an excellent sustainability profile, since it is a plant that is not very water-intensive. The Eucalyptus Melange is 30 percent tensile fibers from eucalyptus bark, and the other 70 percent is polyester.

There are other natural fiber/polyester composites, too. Danish textile manufacturer Kvadrat provides a blend of polyester and wool—appreciated for its temperature control capacity. This wool-blend fabric is paired with a synthetic suede on the seats of the new Evoque, as a second non-leather uphostery option. The synthetic suede in this case, Dinamica® from Sage subsidiary Miko of Italy, uses recycled polyester derived from T-shirts and PET from soda and water bottles. Thus it has a high content of recycled material and is itself 100% recyclable. Recycling polyester means reducing energy consumption and CO2 emissions by 80% compared to the traditional petrol-based polyester production process. We can also find it in the Mercedes G-Class.
There are the vegetal-based eco-leathers, called that by the manufacturers even though the term "leather" means tanned animal skin. In these eco-leathers the grainy look of real leather can be provided—as seen in the apple-based leather in the VW ID Roomzz concept car.

Luxury automakers in particular are embracing the vegan trend. Tesla dropped animal leather from its seats two years ago. Volvo's Polestar 2 has WeaveTech, a material they describe as high-end, non-animal based, leather-free, and vegan. It's said to be water- and dirt-resistant and inspired by scuba dive suit material. Audi Head of Design Marc Lichte says vegan leather is a significant plus point for buyers. Two new Audi concepts, the e-tron GT and e-tron Q4, will be animal-free: synthetic leather will replace traditional animal leather and the cushions, armrests, headliner, window trims and center console will be produced with recycled materials. The carpets are sustainable, too, as they're made from old fishing nets and plastic bottles. Audi plans to expand the vegan leather upholstery option beyond the concept realm to production cars, as well.

Mark Takahashi, a Senior Review Editor at Edmunds, says non-animal upholstery is not really a new trend—what's new is its branding and promotion. "It was never called 'vegan leather' until very recently", he says, noting that the new materials are quite nice: "these non-leathers are very convincing; it's hard to tell the difference between leather and vegan leather". BMW's leatherette (an imitation leather made of vinyl) has been available for decades, but five years ago that automaker upped their game and began calling it SensaTec to promote the vast advances in its look, feel, and performance over what many car buyers might think of when words like "vinyl" and "leatherette" are used. The SensaTec material, which is standard fitment on numerous BMW vehicle ranges including the 2 Series, 3 Series, 5 Series, X2, X3 and X4, is a recycled blend of wool and other materials dyed with plant-based coloring. Like Mercedes-Benz's highly-regarded MB-Tex, SensaTec is more durable than leather, more water- and stain-resistant, easier to clean, and more

comfortable because it breathes better. All those advantages make it potentially a bit of an eyebrow-raiser that buyers can "upgrade" to leather for between $1,400 and $2,500.

Then there are non-vegetal synthetic leathers, often made from polyamide microfibre and polyurethane. And Eleather®, already in use on bus, train, and plane seats, is made of leather waste with no adhesive bonding—just hydroentanglement. Perhaps it has a future in car seat upholstery applications.

BMW iNext upholstery

In the 21st century, upholstery materials are more than just fine surfaces to sit on. Textiles have become intelligent by incorporating electronic components and new functional capacities. Beyond the common integration of presence sensors for seatbelt and airbag systems, the textile can evolve as a structure. At the last CES, BMW presented their iNext concept with "smart textile" upholstery: at each entrance, light spots come on to follow the movements of the fingers and thus produce a reaction signal. The jacquard fabric surface of the back lightens on contact with the fingers. It allows to control the music playback by different gestures, on the fabric that incorporates LEDs. This "shy-tech", as it is called, transforms high-end decorative elements into control tools.

INTERIOR NEWS

The Car Stares Back: Facial Recognition is the Future

Digital security specialist company Gemalto says facial recognition will dominate in automotive applications; its benefits, they say, combined with its passive nature, make it better than fingerprint-based technology.

The scenario sequence is imagined like this: you unlock your vehicle with your smartphone. The car verifies who you are and personalizes the settings to your preferences—including temperature, audio, and seat adjustment. Once you're seated, heart rate monitors and seatbelt sensors keep track of your physiological signs. From those, AI can derive and manage your psycho-emotional state, and alert emergency personnel if you suffer a heart attack or other medical emergency.

Fingerprint identification, by contrast, has limitations: the driver must be active and touch the sensor—which means removing gloves in winter. The hardware is complex, and in rented or shared cars there's the issue of people not liking to touch surfaces other people have touched. Facial recognition is a passive authentication: as soon as the driver gets behind the wheel, the car can recognize the face and go from there.

Some consumers remain skeptical of facial recognition and worry about privacy, but those concerns might be waning. In a 2018 survey by IBM, 67% of adults asked in the U.S., Asia, and Europe said they could be comfortable using biometric authentication today, and 87% said they could be comfortable with these technologies in the future. Face recognition technology is already being used on a trial basis for commercial air flight boarding.

In car-sharing, facial recognition can protect against auto theft or damage, and prevent unauthorized drivers. Car thieves or a teen driver might use a friend's or parent's ID to get access to the vehicle, but the sensor would recognize their face and notify the car sharing or rental agency, or the authorities.

And facial recognition can be piggybacked onto cameras already in vehicles to detect drowsiness (or vice versa).

The Plastic Innovation Boom

At the most recent monthly conference of SIA (the French Society of Automotive Engineers), major plastic process innovations were presented by Faurecia and Plastic Omnium.

Deco-plastronics combines "plastronics"—the integration of electronics in plastic—and plastic parts decoration, including touch and backlighting, bringing a perfect union of form and function. In particular, deco-plastronics allows to integrate controls in parts that are 50% lighter and 70% thinner than traditional control setups. This is in line with the overall interior trends to transform

any surface into a functional surface, and responds to the need for multiple functions loaded into more connected and automated vehicles.

Faurecia's NAFILite, used for instrument panel parts, is a microcellular foamed material reinforced with hemp fibers. It combines low mass with renewable materials.

Another example of innovation in plastics is fuel tanks. In its early days mainly in steel sheet, the polymer design provided relief, cost reduction and increased capacity. Process design progressed through various stages: extrusion blow-molding, monolayer process with fluorination, multilayer extrusion process, venting integration, sealing of the fuel system with components (gauge, pump, noise-cancelling bulkheads and ventilation valves) placed inside the tank.

Women are More Vulnerable to Car Crash Injury

Men are more likely than women to be involved in a car crash, which means they dominate the numbers of those seriously injured in them. But when a woman is involved in a car crash, she is 47% more likely to be severely injured, and 71% more likely to be moderately injured, even when researchers control for factors such as height, weight, seatbelt usage, and crash intensity. She is also 17% more likely to die. It doesn't have to be this way; it's on account of how (and for whom) the car is designed.

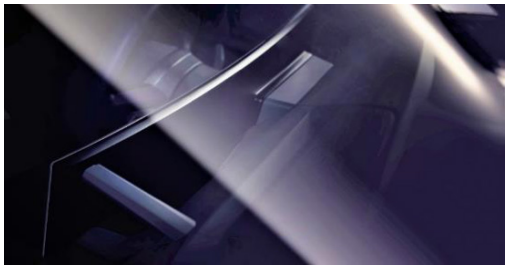
In The Guardian this past February was an article headlined "The Deadly Truth About a World Built For Men—From Stab Vests to Car Crashes". It described how women are technically out-of-position drivers, because they're smaller on average and their knee and hip angles and muscle mass distribution differ from those of the average male. Women are also more vulnerable to whiplash, because of less muscle on neck and upper torso, and overall protection is obviously worse for pregnant women.

Crash test dummies were first introduced in the 1950s, and for decades they were based around the 50th-percentile male. EU regulations now requires a 5th-percentile female dummy, but it is just a scaled-down male dummy. EuroNCAP uses male and female dummies in frontal crash tests. They base their female dummies on female anthropometrics "where data is available". The world's various NCAPs (New Car Assessment Programs) that more testing is needed to ensure the safety of female vehicle occupants. In response to that call, crash test dummy maker Humanetics has developed the THOR-5F, that is, the Test device for Human Occupant Restraint representing a 5th-percentile (height/weight) female. Humanetics says it's the most advanced frontal impact ATD (Anthropomorphic Test Device, i.e., crash test dummy).

Beyond crash safety, from a pure comfort standpoint, belt pressure on the chest and hips is also a different experience for women than for men. Designers and engineers must consciously, deliberately fight the natural tendency to assume that what works for them works the same for everyone. It's easy to believe one is making products for everyone, but in reality, this world's products are mostly made for men. It's time to start designing women in.

BMW's iNext Previews Curved IP

BMW confirms the production version of its electric-powered iNext SUV, due out in 2021, will feature a curved digital display within a newly designed but still driver-oriented cockpit.

The high-definition single-section display, which will also appear in other future BMW models, houses a fully digital instrument panel and touch-sensitive infotainment monitor. BMW says the new curved display in the iNext, mounted on a magnesium beam, looks completely suspended: occupants cannot see its connection to the dashboard, reinforcing what BMW calls a "sense of lightness".

As part of their newly-developed "ID8" system, BMW says individual content items can be shifted back and forth within the iNext's curved display, both within the driver's direct field of vision and the area that can be used by the front-seat passenger.

Complete interior design and content has not been released yet, but we can extrapolate from the concept car Vision iNEXT they presented last Autumn. On that basis we speculate that it might well comprise a fold-away steering wheel and pedals for autonomous driving, touch-sensitive panels built into the fabric of the rear seats for rear passengers' use, vegan-friendly materials such as open-pore wood, micro-LED lighted crystal glass and textiles, sensors for touch functions on most surfaces, and perhaps a conference-type seating arrangement with swiveling passenger seat.

Mercedes' New GLB Global SUV

The Mercedes range—already cram-packed with seven "GL" SUV models—now grows again with the GLB, slotted in between the GLA and GLC and based on the B-Class. It offers 3-row, 7-person seating, which is uncommon in this size class.

The dashboard is very close to those of the A- and B-Class. Only the right part of the dashboard looks new, with an aluminum crossbar in front of the passenger, a theme echoed on the doors. In front of the driver are two side-by-side screens and air ducts akin to those of the A-Class—they can be illuminated optionally in the driver's desired color, along with other key points of the dashboard and doors.

The optional driving assistance systems bring a Level 2 autonomous driving experience. Thanks to improved camera and radar systems, the GLB can look up to 500 meters ahead and can drive partially autonomously in certain situations, for example by adapting the speed before corners, intersections, or roundabouts using the Active Distance Assist Distronic™ with the use of maps and navigation data.

The optional "Energizing Comfort Control" networks various comfort systems, and uses musical and lighting moods plus a number of massages for a wide range of feel-good programs. The Energizing Coach recommends these programs according to the situation. If a Mercedes-Benz Vivoactive® 3 smartwatch or another compatible Garmin wearable is linked, personal values such as stress level or sleep quality improve the relevance of the car's recommendations.

The GLB will be manufactured at Aguascalientes, Mexico, and in Beijing, and sold worldwide. Orders will be open at the end of this year, for first deliveries to customers in early 2020. It will make its first appearance in front of the general public at the Frankfurt show this September.

New Peugeot 2008 Boasts Smart Quality Interior


The new small Peugeot 2008 SUV looks a bit like a smaller-scale version of the maker's successful 3008. Inside, it has a "i-Cockpit®" combining a small steering wheel with a head-height 3D

quasi-holographic display and a large HD touchscreen—up to 25 cm (10") depending on the trim version. It can be controlled via direct touch access next to hard switches, or with the new voice command.

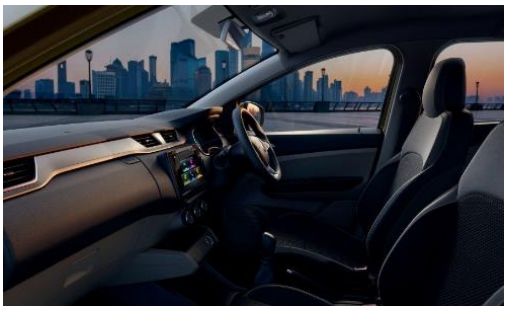
Indications on the display are dynamic and animated: Peugeot says they approach the central sightline according to their degree of importance or urgency, which improves driver response time on the order of half a second. This, they say, improves driving in every way: efficiency, reading pleasure, and safety are at an all-time high with it.

Interior materials have been upgraded as well, including a foamed IP complemented with classy materials such as Alcantara or Nappa leather. Door panels and IP inserts have carbonlike trim, reinforcing a technological effect.

As for the equipment and driving aids, the 2008 is equipped with what Peugeot calls "Drive Assist", combining lanekeeping assistance, adaptive cruise, stop-and-go traffic jam assistant, park assist, and automatic emergency braking that detects not only stopped cars but also pedestrians and cyclists, day and night, from 5 to 140 km/h.

Renault's Triber: A Small 7-Seater for India

The Renault Triber is a small 7-seater SUV for the Indian market. It's based on the Renault-Nissan-Mitsubishi Alliance's CMF-A platform, and follows on the heels of the smaller Kwid, which was an instant success in India when first introduced, selling more than 100,000 units in its first full year, though sales have since declined. The Triber is part of Renault's Global Access Range of low-cost vehicles. Renault CEO Thierry Bollore says it will also be sold elsewhere, eventually: "The Triber was conceived, developed, and produced in India, for Indian customers first, before we take it to the world", he said. It is to be priced at the equivalent of €6,300 to €11,400.



It is 3.99 m long, 1.74 m wide, and 1.64 m tall, and seats seven, where the smallest Renault mini SUV in Europe is the Captur, at 4.14 m long, 1.78 m wide, and 1.56 m tal with seating for five. That said, it must be remembered that developed markets like Europe exert much greater demand for vehicle safety and convenience than developing markets like India.

Inside, the Triber has a digital instrument cluster and an 8" (203 mm) central touchscreen with connectivity features. Renault is emphasizing the Triber's modularity, with dozens of different seat combinations, including removal of the third row. Seven adults can fit "comfortably" in the car,

Renault says. Seating configuration is key for India, where more than half of car-owning households have at least four adults.

The Triber looks like a perfect fit for its primary market—the SUV body, very flexible interior for large families, and low price. Will it be affordable and attractive enough to beat 2- and 3-wheelers, still so popular in India? Time will tell.

Toyota Camry Returns to Europe; Fleets Targeted

Toyota''s Auris and Avensis have gone, and after the return of the Corolla, now the Camry's back to Europe, too. The big Japa'nese sedan, launched in 1982. 700,000 Camrys are sold every year around the world, notably in the North American and Australian markets, and now the car returns to the European roster after disappearing from the catalog in 2004.
It follows Akio Toyoda's 2014 decree that there should be no more boring cars. The Camry is built on a new GA-K modular platform from the TNGA (Toyota New Global Architecture). That means a low center of gravity, a highly rigid body, and advanced double wishbone suspension, providing excellent road holding and ride comfort.
The car is 4.89 m long, which places it as a competitor to the Passat, 508, and Mondeo, and there's enough room for tall adults to get comfortable in front and rear seats. A special "Lounge" version has a powered reclining rear back rest, controlled through a tactile console, and some versions are leather trimmed.
European positioning for the Camry is fleets and vehicle-with-driver services, and that's where Toyota is targeting and forecasting over 80% of sales. This car is typically in between a personal car, and business saloon service vehicle, where now traditional driver environment content has been limited (no charm, small touchscreen, analog dials, no smartphone connectivity, and so on). Could the new Camry set new benchmarks for executive and chauffeur-driven cars? Let's watch and see!

Paris Air Show Shows Automotive Interior Relevance

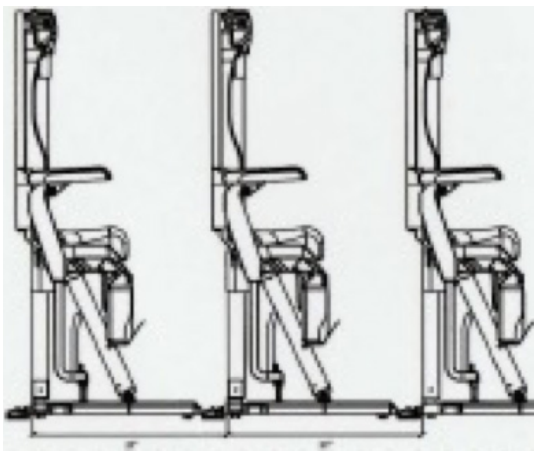
The Paris Airshow, the world's premier and largest event dedicated to the aviation and space industry, took place on June 17-23. It's always of high interest to evaluate trends in aircraft

interiors, as air travel is one segment of the whole mobility chain, where users have similar expectations.
Of course, specifications are very different, weight is of much higher importance, flame-retardance requires specific foams and plastics, comfort is static, only lap belts are provided, passenger density is key in coach class, and there are numerous other differences to automotive seating. Nevertheless, it's always interesting to compare and keep an eye on ideas and innovations as shared-car and autonomous-car models of automotive mobility move the aviation sector conceptually closer to the vehicular one.

Trends we have noticed while perusing booths of suppliers including Safran (including ex Zodiac), Stelia, and Avio Interiors, are: connectivity, at-seat USB ports and wifi, etc, and seat modularity, to reduce production time and cost and to allow simpler operation for passengers not ready to spend 15 minutes reading the seat brochure.

At the same time, there are many comfort and wellbeing levels from economy to first class through many levels of business class, where the seat is part of a "cocoon" providing privacy to the occupants. So, there are sensors to monitor occupant presence and status (such as sleeping or not to allow meal service or not). There's a unique economy proposal by Avio, with its ultra-narrow pitch seat (23", v/s 30" today for some low-cost airliners).



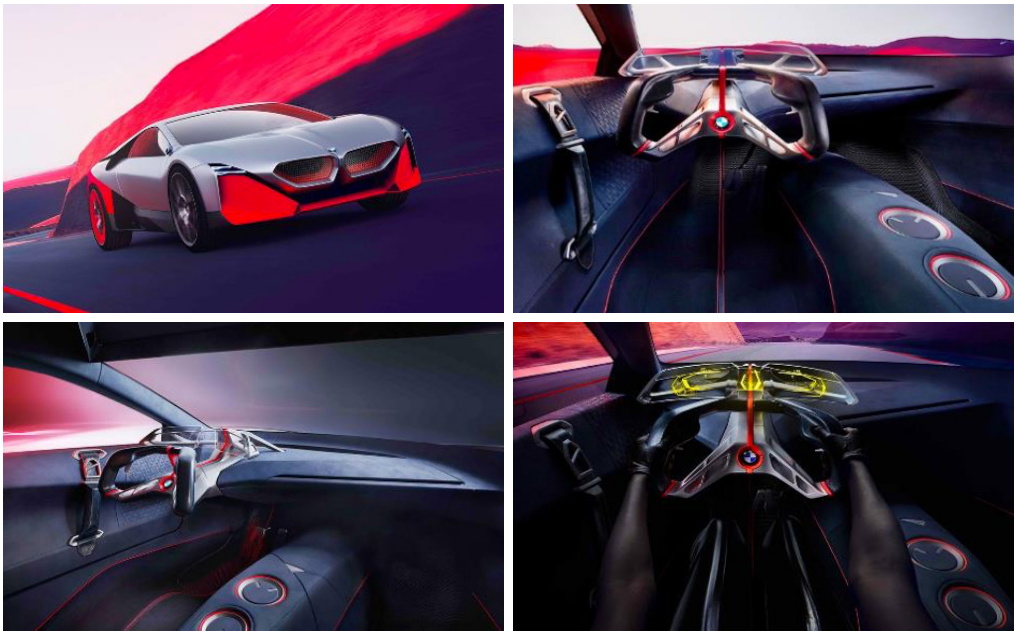
THE DESIGN LOUNGE

BMW's "Emotionally Engaging" M Next Driving Concept

BMW is hinting at plans for a new driving-oriented sports coupe with the introduction of the Vision M Next, a low-slung, two-door plug-in hybrid concept that previews the brand's design and technology roadmap.The Vision M Next follows BMW's Vision iNext large SUV concept, which debuted in September. Whereas the Vision iNext concept was an incubator of hands-free autonomous driving technologies, the Vision M Next is a decidedly hands-on driving experience.

"The BMW Vision M Next provides a glimpse into the future of sporty driving," BMW Group design boss Adrian van Hooydonk says. "It demonstrates how state-of-the-art technology can make the experience of driving yourself purer and more emotionally engaging".

The interior is futuristic in every aspect of its controls and displays, inviting the driver to operate in symbiotic harmony with the machine. There's a red-and-black theme with high-tech appearances to every surface.



Rivian Brings It

With their pure-electric R1S SUV and R1T pickup truck, Rivian is being discussed as "the Tesla of trucks and SUVs". Positioned in the higher-end market segment, Rivian has the difficult task of competing with well-established competitors that bring a high level of design refinement to their vehicles.

A key design task for the design studios, is to establish a strong and coherent design language. This is critical so that the brand can differe'ntiate itself in the marketplace through, surface, forms and materials. Typically—as shown by the likes of Lexus, Infiniti, Acura, and Tesla—this takes time and experience to mature.

But Rivian seems to have done well on their first go. There's a floating horizontal mass for the IP that reminds of classic vintage pickup trucks and sets the basic theme for their interior design. Then there are thin floating surfaces like the large wood inlays and tablet displays, which visually lighten the volumes while adding a unique level of refinement to the interior. The layering effect is enhanced by the use of wood, glass, and metal for a luxurious experience.

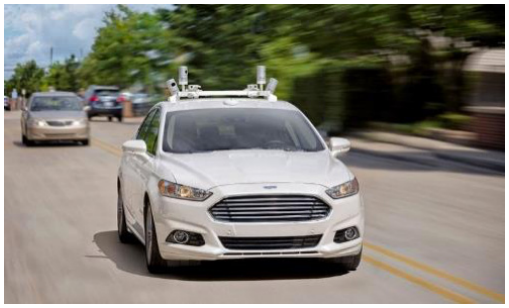
By separating the upper portion of the seatback, whether it's functional or not, the overall impact of their mass was reduced and refined. Detailed stitching and inserts used in the covers also add a high-quality look and feel.

NEWS MOBILITY

Ford's AV Biz Gets Insights From Airlines

The Paris Airshow was a perfect occasion to compare the automotive and aero sectors. Airliners have expertise in maximizing the time planes spend in the sky, and they understand how to sell

seats. Because of costs and complexity, aircraft uptime and payload have to be maximized. Probably the same will come to apply with autonomous and shared vehicles.



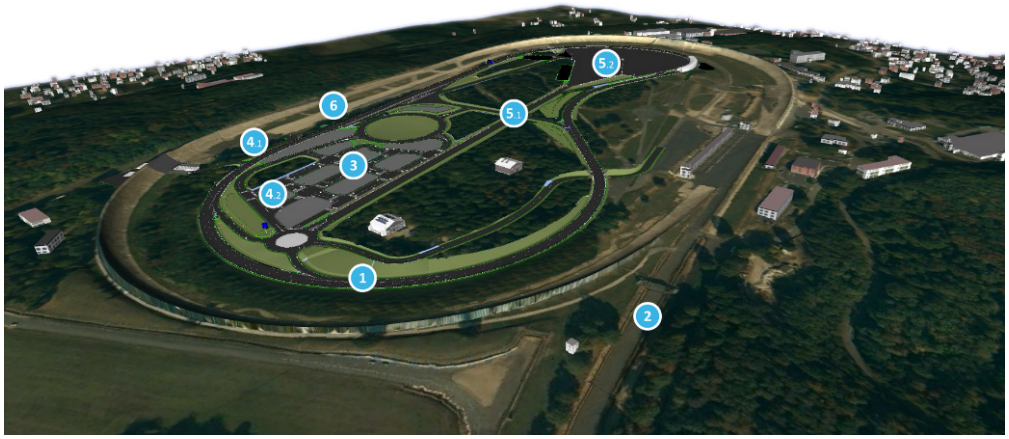
"Autonomous vehicles are a per-mile business, not an ownership business," said Sherif Marakby, CEO of Ford Autonomous Vehicles. "It's the same thing for the airline industry. You make money with high utilization. Your fixed costs don't change much."

As the company develops businesses in Miami and Washington supported by autonomous technology, its executives have sought advice from counterparts in the aviation industry. Business includes ride-hailing and delivery services, which must become around the clock.

Ford has aspirations of starting a commercial business underpinned by autonomous-driving technology in 2021, using a self-driving system supplied by Argo AI, the Pittsburgh company in which Ford has invested more than USD $1bn.

"We've learned a lot of things we've already incorporated into our model about utilization, and that's what drives the business," Marakby says. "We are designing our first car to go hundreds of thousands of miles in a shorter period of time, and it's the same as airlines using expensive planes and refurbishing them every few years."

Teqmo: The New AV Test Town



The private group UTAC-CERAM has just inaugurated a new €20m test center called Teqmo (for technology and mobility) for autonomous vehicles in Linas-Montlhéry, near Paris. The ribbon-cutting ceremony took place on 17 June, with a roster of French VIPs and automotive makers including Finance Minister Bruno Lemaire.

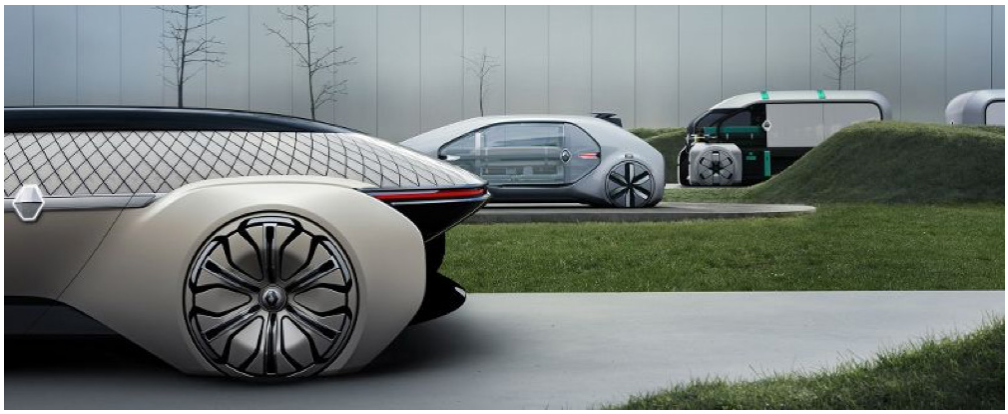
Teqmo has 12 km of test tracks, and boasts numerous road configurations including a 2.2-km highway circuit (1), a 6.5-km road circuit (2), an urban zone (3), parking zones (4.1 and 4.2), a 38,800-m2 ADAS test area, and a brake testing area. There are tunnels and tollbooths, intersections and junctions, a level crossing, a parking maneuver, zone and a low runway zone with low-adhesion roads equipped with watering systems. Pedestrians, cyclists and other vehicles will be represented as moving targets.

Teqmo is also equipped with communicating infrastructure along the road with the deployment of 5G solutions. French telecoms provider Orange has also decided to make Linas-Montlhéry its global R&D center for 5G. The test center help prepare and complement open-road test phases, which are necessary in order to meet a maximum of situations as far as an autonomous vehicle must know how to react to unforeseen situations.

Engineering services and more traditional test rigs are available nearby—NVH, EMC, crash, etc.

These type of ghost cities exist in different sites around the world (University of Michigan with M-City/Planet M, K-City in Korea, AstaZero (Active Safety Test Area and Zero fatalities), and other suchlike. Their development reflects the need of important premises for AVs and their challenging validation processes.

Tel Aviv is Mobility's Silicon Valley



EcoMotion provides a support platform for sharing knowledge, networking, and collaboration for the smart transportation sector, it hosts a yearly mobility conference in Tel Aviv where it has been announced that USD $6bn has been invested in Israeli smart mobility startups since 2013. We'll come back in our next edition on all interior startups relevant for DVN-I readers.

The latest investors are the car manufacturers Renault-Nissan and Ford.

Renault and Nissan announced a new joint innovation laboratory in Tel Aviv with an area of 1,600 m^2. The Alliance wants to set up a collaboration with Israeli startups, as well as a partnership with the Israel Innovation Authority which bring advantageous funding for POCs (proof of Concepts) carried out by Israeli startups focusing on smart mobility. The activities of the "Innovation Lab Tel Aviv Alliance" will concentrate on sensors for autonomous vehicles, cyber-security and big data.

The Lab team is currently working on more than ten prototype projects at different stages with local start-ups, including Apollo Power, Argus, AutoTalks, BrightWay Vision, Electreon, Enigmatos, IRP Systems, Karamba, Moodify, Saferide, and Upstream.

At the same time, Ford has opened its research center focused on technologies in connectivity, sensors, automated-systems research, in-vehicle monitoring and cyber security which is very close to what the Alliance has defined has objectives. The Ford site's researchers will work with those in Palo Alto, California and Dearborn, Michigan to explore these future technologies, and will also work closely with SAIPS, an Israeli computer vision company Ford acquired in 2016. Ford Executive Chairman Bill Ford says "This new center is not only an expansion of our existing research and innovation centers, but provides an opportunity to join a growing innovation community in Israel."

Intel—which bought Mobileye—Continental, Samsung Electronics, Daimler, and General Motors as well as SNCF (French Rail) and mobility operator Transdev have all also bought startups and/or set up their own development centers in Israel.

Mobileye to Trial Robotaxis in Israel

Mobileye expects to launch a trial of robotaxis next year in Israel. Intel CEO Officer Bob Swan rode a Mobileye autonomous car through Jerusalem congestion with pedestrians crossing the street and traffic going both ways, on and off ramps and through roundabouts.

Intel announced last October that Mobileye is working along with VW Group and Champion Motor Group to commercialize a robotaxi service. Swan says the plan is to deploy the self-driving ride-hailing service in Israel first, then expand globally. Software development is expected to be completed by the end of this year. The Mobileye operation is a bright spot among Intel's business lines as the company head for its first annual sales decline in four years.

Swan also says Intel is launching a 20-week program to aid early-stage Israeli startups working on artificial intelligence and autonomous system technologies. The program, called Ignite, is part of a strategy to re-invent "what it means to power a world where computing is really pervasive and contributes profoundly to our quality of life," Swan said.

Intel started operations in Israel in 1974 and together with Mobileye now has more than 12,000 people here, making it one of the country's largest employers. Last year Intel exported USD $4bn

worth of products from Israel, and Finance Minister Moshe Kahlon said in January the company is planning a new $11bn plant in Israel.

Ignite will start operations later this year with as many as 15 hardware, software, and services companies.

Volvo's AV-EV Truck to be Tested in Sweden

Volvo's new 100% electric transport truck, Vera, will get its first real-world tests in Sweden. Designed to facilitate the transport of goods from a logistics center to a port terminal in Gothenburg, the Vera truck is electric, connected, and autonomous.

Volvo Trucks and its main partner DFDS, a Danish ferry and logistics company, will set up a connected system consisting of several Vera vehicles monitored by a control tower. The purpose is to allow a continuous and constant flow, meeting requirements of increased efficiency, flexibility and durability. The Vera system is suitable for short distances and the transport of large quantities of goods, all with great precision. The maximum speed is fixed to 40 km/h.

Vera transporting a container on a public road in Gothenburg

APM Terminals, a port service and container terminal solution provider, the Swedish Transport Administration and the Swedish Energy Agency through the Strategic vehicle research and innovation program FFI are also involved as supporters in the experiment. This test phase will allow the Vera autonomous transport solution to be improved in terms of technology, operations management and infrastructure adaptation. Moreover, necessary safety precautions will be taken in order to meet safety requirements for the generalized use of autonomous vehicles.

Uber Volvo Hybrid man/robo Taxis

Uber Technologies unveiled its newest Volvo self-driving vehicle in Washington, D.C., on June 13 as it works to eventually deploy vehicles without drivers under some limited conditions. Uber says the production-ready XC90s, assembled by Volvo at its plant in Torslanda, Sweden, will have human controls such as steering wheels and brake pedals, but will have factory-installed steering and braking systems designed for computer rather than human control.

Previously, Uber purchased about 250 Volvo XC90s and retrofitted them for self-driving use.

The new vehicle also has several backup systems for both steering and braking functions as well as battery backup power and new cybersecurity systems.
Besides being hybrid for a propulsion standpoint, these cars will be hybrids from a driver standpoint, being human- and/or self-driven and at least at the beginning with a safety driver.

The target is to convince people, to get public and regulatory trust, following previous tests which were stopped because of safety issues—an Uber-modified Volvo in Arizona was involved in the first death attributed to a self-driving vehicle; Uber had disabled the vehicle's automatic emergency braking system without even leaving a warning light for the safety driver, who in that case was too busy watching TV on her smartphone to pay attention to the road.

Each new XC90 vehicles has an interior fisheye camera to scan for lost items. They don't have sunroofs since the self-driving vehicles have large sensors on the roof and are equipped with auto-close doors to prevent an unsafe departure.

Volvo Cars CEO Hakan Samuelsson expects fully a third of the cars his company sells to be fully autonomous by the "by the middle of the next decade". Volvo Senior VP of R&D Mats Moberg says working with Uber is paying dividends because it has forced the automaker "to reduce the hierarchies inside our own company" to speed up its decision-making.

GENERAL NEWS

Europe Car Market Up, but YoY Still Down

European registrations rose marginally in May—the first rise in nine months—helped by a jump in deliveries in Germany. Sales in the EU and EFTA markets climbed 0.04% to 1.44 million cars compared to a year ago, industry association ACEA said last week. The slight increase in May registrations was the first in nine months, while for the year through May, Europe's car market declined 2% to 6.94 million.

Among the winners for the month were Lexus, whose registrations rose 26%; BMW and SEAT up 15%, Citroën up 14%; and Toyota (brand) up 11%. Losers included Alfa Romeo, whose volume plunged 49%, Nissan down 18%, Jeep down 13%, Renault (brand) down 10%, and VW (brand) down 9%.

Sales in Germany surged 9%, UK sales fell 4.6%, and in Spain fell 7%. The French and Italian new-car markets were both down 1%.