DVN-I
Automotive Interior

Thu, 4 November 2021 Weekly Newsletter NEWSLETTER #85

ascorium INDUSTRIES

Editorial

Interaction Within The DVN Interior Community

JEEP GRAND CHEROKEE (STELLANTIS IMAGE)

DVN Interior is, of course, the newsletter you're reading right now. More than that, though, it is also a community of experts. The upcoming Workshops—DVN Lighting in Paris on 1-2 February; DVN Interior near Frankfurt on 26-27 April—are top-notch opportunities to meet and interact with your peers, colleagues, customers, and prospectives. Listening and talking with one another about the latest research, ideas, innovations, and discoveries is key to successfully meeting the challenges posed by today's technological and technical revolutions, CASE megatrends, and the drive toward sustainability in context of shortening development cycles and everpresent cost constraints. Find more information about the Workshops **online**.

This week we present Christoph Laeis, CEO of Ascorium, a company dedicated to premium interior surface technologies. His is the latest in our ongoing series of feature interviews with DVN-I community members. Want to join the list for a DVN-I interview? Gladly, just **drop us a line**!

This week's Design Lounge examines the newly-announced Range Rover's interior, including comparison with newcomers in this premium segment where the interior is of make-or-break importance as these vehicles vie for the crowns of comfort and status. Thanks for being part of the community! We're all better for your presence and participation.

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

Interview: Christoph Laeis, Ascorium CEO

Recticel Automotive is now Ascorium Industries. Based in Königswinter, near Bonn, Germany, they make premium polyurethane interior surfaces. DVN Interior general editor Philippe Aumont met Ascorium CEO Christoph Laeis at their headquarters shortly ago; here are the thoughts Mr. Laeis shared with us:

DVN-Interior: Tell us about the origin of Ascorium.
Christoph Laeis: Recticel had been looking already several years to find a partner to hand over automotive business to focus on key business. Admetos is a private equity and is looking for companies with this size and growth potentials.

DVN-I: What was the Recticel strategy? Is this a spin-off?
CL: Recticel wanted to focus on their key business—technical foam and insulation. Automotive was only a smaller division and not key target.

DVN-I: What were the main challenges when you took leadership of Ascorium?
CL: Move a minor division from a big chemical company with their structure to an independent, flexible, agile, and automotive-focused company.

DVN-I: Now, six months after your arrival, how's the company doing?
CL: Ascorium is making big steps forward. A lot of automakers and tier-1s appreciate

the new focus of customer orientation and automotive focus. Also, several new developments are getting very good feedback.

DVN-I: What do you see as the company's strengths and challenges?
CL: Strength is definitely the flexibility to react on customer demands in automotive. Currently automotive business has a lot of challenges with CO_2 reduction, use of sustainable materials, raw material prices, and autonomous driving. Ascorium is adopting quickly their product and innovation portfolio to these challenges.

DVN-I: Who are your customers?
CL: In general, Ascorium is a tier-2 and delivering to tier-1. But we have a special and unique technology which needs parallel an intensive contact to automakers' engineering and design departments. The possibilities in geometries, in the reproduction of grains and colors, in modular production, etc, need to be constantly and repeatedly communicated to the automakers' key decision makers.

DVN-I: There are several big tier-1s in the interior business—like Faurecia, Yanfeng, and Boshoku. How do you position Ascorium in this landscape?
CL: As mentioned Ascorium is a tier-2, and the big tier-1s are our customers where we already have good contacts which will be intensified now in Ascorium.

DVN-I: Are you working directly with automakers, and how?
CL: With our specific and unique technology, we have direct contact with automakers' engineering and design to place all our potentials and advantages of our product in the early phases of the design of a part. Ascorium cooperates and in some cases co-develops together with those departments.

PREMIUM INTERIOR (ASCORIUM IMAGE)

DVN-I: As the car is getting to more and more digital technologies, what are the new prospects you see for functional surfaces, as part of the HMI?
CL: We have been working already for years on integration of electronics in our products. Our technology has a lot of advantages compared to conventional products when it comes to a.o. temperatures and pressures during the production processes to which electronics can resist. Due to our new shareholders, we also got good contacts to electronic partners, with whom Ascorium has already developed interesting potential future concepts of smart surfaces. Also other functionalities, e.g. antibacterial properties, can be offered.

DVN-I: How do you handle sustainability and carbon neutrality?
CL: Sustainability and carbon neutrality is for Ascorium a key focus. Our technology is

already less energy consuming than some competitive materials, and our current products already contribute to sustainability thanks to their low weight—the Colo-Sense X-Lite is the best example here. The molds used last a whole project life time and beyond without having to change due to wear or cracking. Additionally, our innovations are focused on the use of more sustainable materials. Operation-wise, Ascorium will make further steps in the use of alternative energy sources where appropriate.

DVN-I: How do you see PU skin recycling possibilities?
CL: Recently a lot of companies and organizations have increased their efforts in finding more efficient ways to recycle polyurethanes, mechanically as well as chemically. Ascorium has several contacts in that field, and is screening different possibilities as a key point in the innovation portfolio, with the aim to lower the carbon footprint of the products.

DVN-I: Can you talk about your latest innovations?
CL: As mentioned, sustainability is the common denominator through the innovation portfolio. Use of more sustainable and renewable raw materials in combination with recycled materials on the chemical side, while new processes are being developed to reduce the number of steps and amount of material needed to come to a final product, without loss of the key features of the Ascorium surfaces.

Composite materials based on natural fibers in combination with a more sustainable polyurethane are also in focus; the next generation of CompoLite is being prepared. Furthermore, Ascorium wants to evolve in the direction of supplying modules, offering more integrated solutions to the customers.

DVN-I: How is your innovation management organized? Is it program-driven, or ahead of programs?
CL: Innovation is ahead of programs. Due to close contact with the automakers, we are detecting quite early new demands and trends.

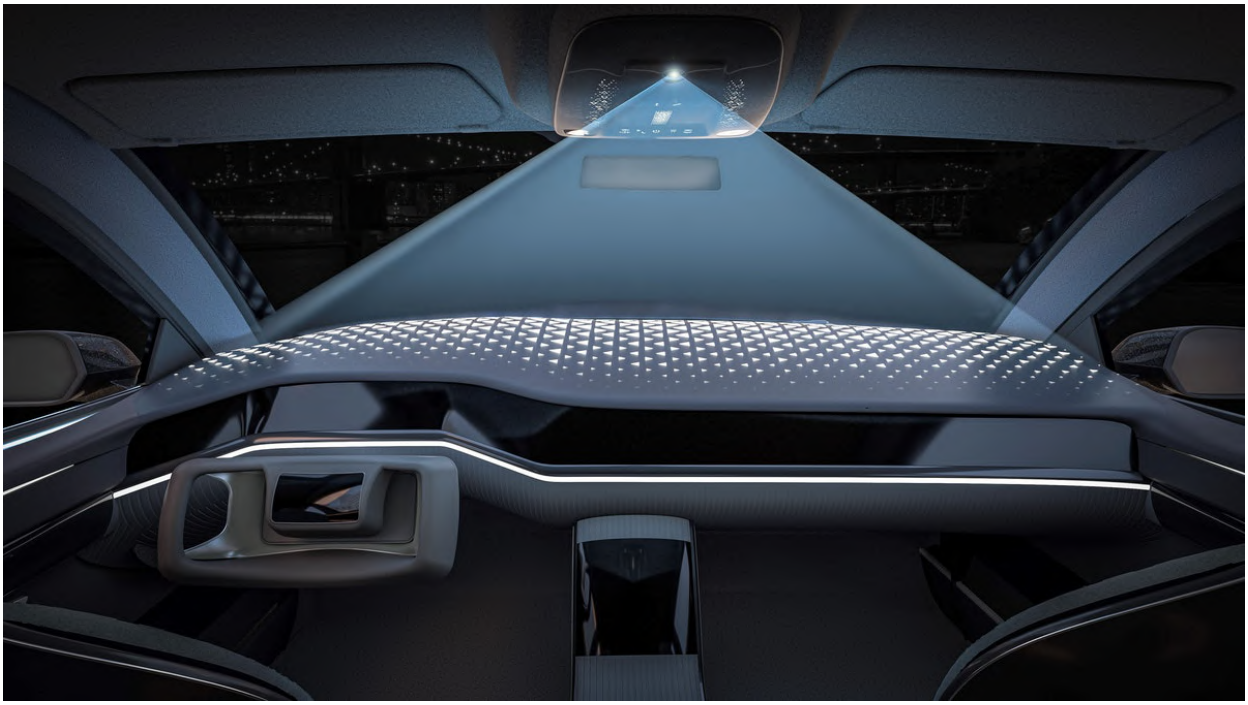
DVN-I: Will there be big changes at Ascorium over the next years, do you think?
CL: Ascorium has several new and sustainable products in the innovation pipeline, of which a few will be ready for market introduction quite soon. The operational footprint is under review and some consolidation is not to be excluded in the near future. Where Ascorium was purely focused on automotive until now, we are convinced that the possibilities of our products can also create value in non-automotive applications, a world we are starting to explore.

DVN-I: Thanks so much for talking with us! Do you have some closing thoughts?
CL: The automotive business has always been a special environment with many positive and sometimes quite problematic challenges. Ascorium with its very innovative products paired with convincing flexibility and speed, adapts to the new developments. The interior changes in design but never in demand. With our clever modular tool technology; sustainable materials and processes, we meet the challenges. Our new developments show that we recognize the trends at an early stage. In addition, we will continue to increase horizontal and vertical integration and thus significantly expand our product portfolio.

Interior News

AMS Osram's New Overhead Light Console

INTERIOR NEWS



AMS OSRAM IMAGE

Interactive interior lighting plays a significant role in creating high-quality ambience and comfort in the passenger cell of a vehicle. With the aim of personalized lighting design, AMS Osram; thin-film technology company Kurz, and plastics manufacturer Syntech Plastics have developed a new overhead light console. This complete solution is based on the combined expertise of the project partners in smart lighting, plastic processing and injection molding. Together, they have produced a modern, fully enclosed lighting element with an elegant, decorative look.

The console has matrix LED spots for reading lights which can be adjusted for intensity and white tone. The module also offers a wide range of welcome and entertainment scenarios across the full RGB color palette. The static or semi-dynamic projector in the module can project individual motifs on various surfaces to convey information or produce patterns or animations. The animations integrated in the module are matched to the design of the decorative surface and can be adapted to different driving situations or vehicle interactions. The light structures in the decor are invisible when inactive; they light up only when, for example, an incoming call is received—and always in keeping with the ambient lighting. The overhead light console therefore offers a wide range of options for customizing the entire front section of the passenger compartment.

The console has a fully integrated, capacitive touch sensor system that replaces conventional buttons, providing a seamless user interface. Particularly noteworthy is the high transparency of the touch sensor system, which lies directly above the matrix luminaire so its light shines through it, which means it can be intuitively activated by

touching the opening. Thanks to its ease of integration, the overhead light console can be readily extended with additional functionality such as haptic feedback via a piezo actuator, proof control and a handsfree function for more complex applications.

AMS Osram Automotive Lighting Systems, created this year and headquartered in Munich, is an independent division of AMS Osram's automotive business unit. They combine lighting technology with electronics and software to develop smart, innovative lighting solutions for the automotive industry.

Osram Light Projection: Happy Halloween!

INTERIOR NEWS

HAPPY HALLOWEEN, EVERYBODY! (OSRAM IMAGES)

AMS Osram showcased the benefit of high resolution, dynamic ground projection with a fun Halloween-themed demonstration. Their system not only offers personalization and a seasonal touch, but also provides a future-proof solution and enables on-demand use cases not yet imagined when the car rolled off the line. DVN Interior will explore interior projection in a soon-to-come in-depth.

Faurecia eMirror: Safety & User Experience

INTERIOR NEWS

FAURECIA IMAGE

Under the umbrella of the Cockpit of the Future, Faurecia has integrated electronic mirrors (camera outside, display inside) in what they say are hopes of reducing driver cognitive load and enhancing safety and comfort, by improving situational awareness.

An e-mirror replaces the traditional exterior door mirror with a camera designed to bring a better view of the surrounding environment into the cabin for the driver. It has a wider field of vision, enhances visibility in poor weather or lighting conditions, and also provides important safety warnings. Its light weight and streamlined shape also help reduce aerodynamic drag, lowering CO_2 emissions—especially when they replace giant outside mirrors on the likes of SUVs and commercial vehicles.

Faurecia is working on this e-mirror project in China with new mobility company Human Horizons. It will be integrated into two new electric sedan and SUV models slated for launch in 2022 and 2023. Human Horizons, created in 2017, develops smart transportation technologies and energy-intelligent vehicles. They began distributing their HiPhi X SUV this year, and they're working on more smart electric vehicle models, all designed around a highly-connected mobility experience. Typically, an e-mirror system consists of two cameras, display screens inside the cockpit, and an ECU (which is also coming from Faurecia, for the Human Horizons vehicles). The ECU processes the feed from the exterior cameras and can superimpose warnings about lanekeeping, blind spots, and potential obstacles, as demonstrated in a **video** posted online.

Krytox Lubes to Zap Buzzes, Squeaks, Rattles

INTERIOR NEWS

CHEMOURS IMAGE

Today’s car interiors are quieter than ever, especially in EVs with no engine and transmission noise—and that's a blessing that comes with a curse: any buzz, squeak, or rattle that might've got lost in the general din of yesterday's noisier interiors now has the potential to be a terrible irritant. Typically, these kinds of noises come from rubber rubbing on paint, metal on plastic, leather on leather, and other such friction. In the past, automakers unable to reduce noise at its source used bulky isolation and insulation materials and techniques. This works to some degree, but carries cost and weight penalties increasingly incompatible with today's interior requirements and constraints.

US Chemical maker Chemours says their Krytox high-performance lubricants for interior and exterior applications are an effective solution more in line with today's automotive realities. They're non-corrosive and have very good material compatibility, so they don't affect the appearance or properties of parts they come into contact with. That makes them suitable for use with plastics, elastomers, and textile fabrics. Due to their chemical stability, low volatility, and low coefficient of friction, they offer a long service life. Whether leather trim, door modules, or sealing strips, Krytox lubricants—easily brushed or sprayed—can permanently eliminate irritating interior noises.

Applications abound throughout the interior of any vehicle, basically wherever friction is possible with plastic, metal, leather, and within mechanisms such as seats, head restraints, armrests, latches, locks, and so much more.

Porsche's 3D-Printed Seats

INTERIOR NEWS

PORSCHE IMAGE

Unveiled last year, Porsche's new 3D-printed seating is based around the design of their existing bucket seats, with the same sandwich-like construction. Although the seat's base layer is composed of standard polypropylene, this is now bonded to a breathable comfort layer consisting of a mixture of polyurethane-based 3D printed materials.

SEAT LATTICE STRUCTURE (PORSCHE IMAGE)

Similarly, the seating's exterior may be made from track-ready nonslip Race-Tex, but its windowlike panels also show full-color sections of its 3D printed lattice-shaped internals.

This middle section is also customizable, allowing customers to choose their comfort, and how firm they want their seat to be, while the structure's overall weight reduction of 8 per cent, ergonomics and passive climate control are designed to provide users with a level of comfort similar to that of a professional racing driver's custom-fitted seat.

Porsche tested the new seats at the Nürburgring Nordschleife circuit, and gained valuable customer feedback which enabled them to make the final adjustments and ready the product for a full launch. This 3D-printed seat is now available for most of Porsche's racing product range. It was also presented at the last IAA for the Mission R concept car, where 3D-printed parts are also used in body construction.

We expect 3D printing and additive manufacturing in general to continue gaining traction for all sorts of parts in all kinds of production vehicles.

Harman Serves Up Sound Systems For World's Automakers

INTERIOR NEWS

Sound system engineering and design company Harman showed off a range of sound solutions at IAA Mobility in Munich. They serve automakers including Audi, BMW, Mini, and Ford through the company's brands Harman Kardon; Bowers & Wilkins, and Bang & Olufsen, all providing premium in-car sound experiences.

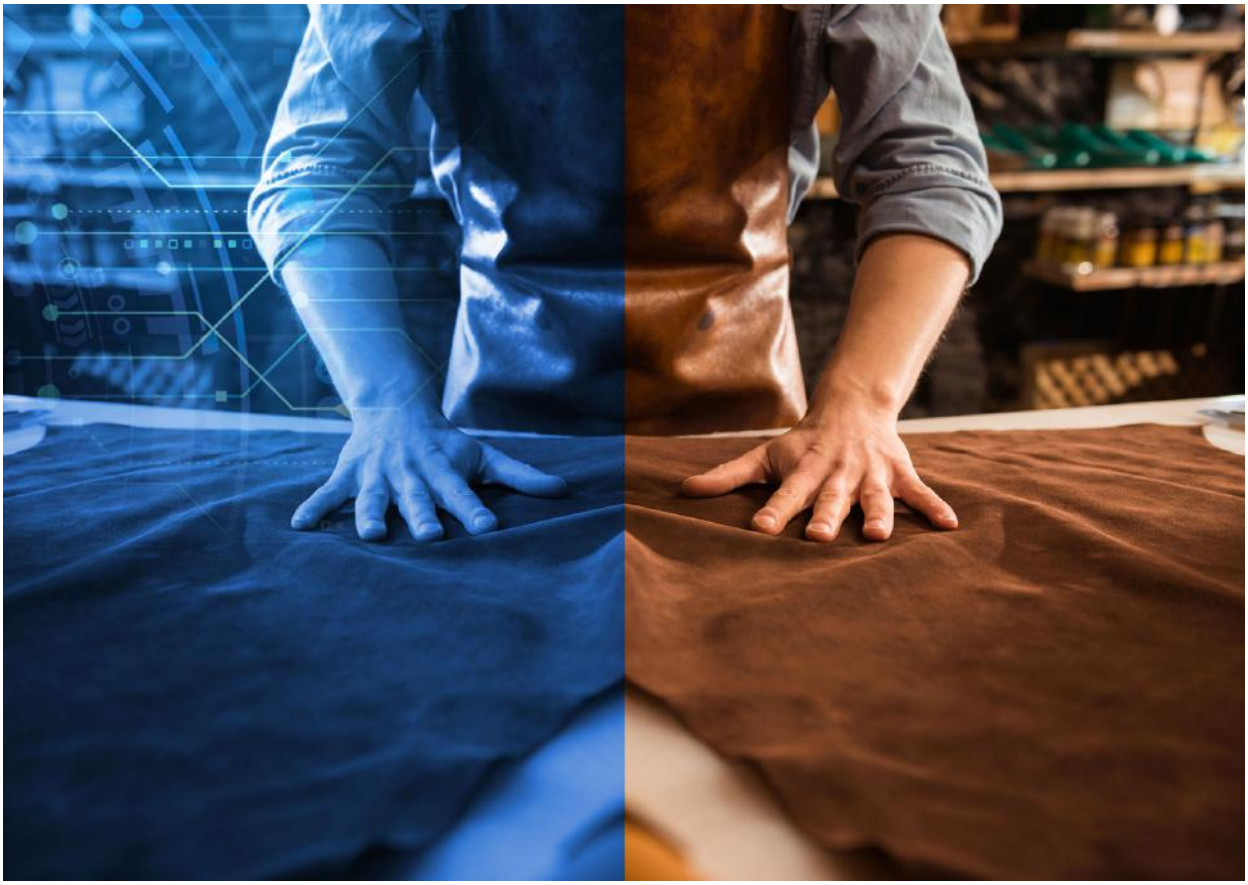
For example, as an option, Audi's e-tron GT can be equipped with a Bang & Olufsen Premium 3D Sound System built using what Harman calls in-depth psychoacoustic knowledge theories. The system also incorporates Symphoria 3D, a three-dimensional sound package collaboratively developed by Audi, the Fraunhofer Institute, and Bang & Olufsen.

Buyers of BMW's new iX can opt for either a Harman Kardon surround sound system or a Bowers & Wilkins Diamond surround sound audio system. The Harman Kardon option includes 18 speakers, and has a 655-watt amplifier. The Bowers & Wilkins upgrade is promoted as delivering sound as the artist intended via a 30-speaker setup and 1,615-watt amplifier. A range of tweeters and midrange speakers using aramid fiber are fitted high up in the cabin to enhance audio quality. Despite the large number of speakers, they are well disguised within the car, with brushed stainless-steel covers over the tweeter, while the door speakers are hidden behind acoustically-optimized

fabric to keep the interior design uncluttered and as minimalist as possible. Harman also worked alongside Ford to produce a 10-speaker Bang & Olufsen system for the Mustang Mach-E. It's powered by a six-channel, 560-watt A2B amplifier with DSP which Harman says provides a rich and warm sound.

JLR Digital Leather Supply Chain To Reduce CO2 Footprint

INTERIOR NEWS



JLR IMAGE

Leather is under pressure as environmentally unsound due to animal greenhouse gas emissions and use of chemicals along the value chain. In a world-first, Jaguar Land Rover partnered with supply chain traceability provider Circulor; leading UK supplier Bridge of Weir Leather Company, and the University of Nottingham to trial the use of traceability technology in the leather supply chain. It helps track the carbon footprint of the automaker's leather supply network, a key step to reducing the environmental and ethical impact of this material across its lifecycle.

As part of the Innovate UK-funded research, a ‘digital twin’ of the raw material was created, allowing its progress to be tracked through the leather supply chain simultaneously in the real world and digitally. A combination of GPS data, biometrics, and QR codes digitally verify the movement of leather at every step of the process using blockchain technology.

Dave Owen, JLR Executive Director of Supply Chain, says “The outcome from this world-first trial will allow us to further improve the sustainability of the leather supply chain around the globe, ensuring the complete traceability of raw materials from origin to vehicle. This is one step in our journey to net zero carbon emissions across our supply chain, products and operations by 2039, enabled by leading edge digital capabilities".

Blockchain technology is supposedly impervious to tampering or hacking, giving customers greater confidence that the sustainable supply chain is authentic, and all materials have been sustainably sourced. Bridge of Weir sees here the potential to

create carbon-positive leather if they source from local farms where the livestock is grass fed, where there is no deforestation, and coupled with zero-carbon, zero-waste manufacturing processes. The blockchain technology developed in this trial will enable each stage in the process, and the entire leather supply chain, to be accurately tracked and measured.

JLR is committed to offering customers more sustainable and responsible material choices for their vehicle interiors, such as the premium natural fiber eucalyptus textile; and Kvadrat, a refined high-quality wool blend textile that's paired with a suede cloth made from 53 recycled plastic bottles per vehicle.

The Design Lounge

Range Rover: Precision Refined

THE DESIGN LOUNGE

This past week, Jaguar Land Rover introduced their latest iteration of the premium Range Rover, a model which established the Land Rover brand as a builder of not just the rugged but spartan go-anywhere Defender, but also premium luxury vehicles in a segment where no such option had previously been available.

CLOCKWISE FROM TOP LEFT: RANGE ROVER I, II, III, IV

The previous Range Rover, although still off-road capable, firmly established the premium/luxury SUV segment by the use of premium materials with a constrained and sophisticated design language. For 2022, new competitors have also moved upmarket, inspired by the Range Rover's success. Although not direct competitors, both Jeep and Rivian have moved into the Range Rover's market space.

RIVIAN R1S

JEEP GRAND CHEROKEE

With these newcomers aspiring towards the Range Rover's appeal, Land Rover has further positioned their newest Range Rover further upmarket with an increased

execution of material quality, precision and an understated/refined aesthetic quality for their designs.

This can be seen in how their latest display screens are incorporated into the overall interior aesthetic. Thin, frameless displays are used for both the instrument cluster and center console; they ‘float’ off the base instrument panel surface, allowing the interior trim materials to present themselves unhindered by the displays. This clarity of material quality and detailing can be best seen in to execution of the wood trim used throughout the vehicle.

Along with the latest natural-matte finish as found in many premium vehicle interiors today, the new Range Rover also incorporates a metal-framed enclosure for these pieces to highlight the intricate detailing of wood and metal inlays used in their surface finishing.

Every storage and utility portion of the interior is also covered by these panels to create a smooth, flush aesthetic that eliminates interior surface clutter. Notice in these next images how one of the UX/HMI interface knobs—the one on the right—pops up only when in use. The various surface colors and material finishes used on the floor console also enhance the Range Rover's precision finish aesthetic.

See how the leather covered side facings, wood inlays and metal framing of the floor console create a cohesive tailored feel to their interior.

This quality execution extends to the door panels and rear folding center console's UX/HMI interface.

Primarily available as a 7-seater, the latest Range Rover also has optional "stadium seating" that can be used on the folding tailgate for a comfy sit-down outside of the vehicle.

THE BASE RANGE ROVER WITH SEATING FOR 7

PREMIUM INTERIOR OPTION WITH SEATING FOR 4 HAS A FULL-LENGTH CENTER CONSOLE AND LOUNGE-TYPE SEATING IN THE REAR. A CONTRASTING COLORWAY SETS OFF THE REAR SEATS.

The theme of precision and detailing can be also seen on the quilted-stitch seat covers. As this aesthetic is becoming more widespread in premium vehicles—Jeep offers it, too—Range Rover's multidimensional embroidery style stands out. At no point do the stitch lines cross, yet a diamond style feeling is still achieved using various stitch widths.

The use of metal framing can also be seen in the rear seat passthrough's wood inlay panel; the armrest supports; the tunnel console inserts, and seat trim inlays around the headrest area. Precision detailing and quality materials are thus highlighted.

With these last images, you can clearly see how the latest Range Rover's attention to material finish and quality, and its precision detailing, have moved this vehicle's design into the upper echelon of premium and luxury vehicles.

News Mobility

VW One Pod Robotic Taxi Study

NEWS MOBILITY

VW IMAGE

The VW Group has unveiled the One Pod in Berlin: The electric taxi has no human driver and caters to the special needs of its guests.

With the One Pod study, a self-driving electric shuttle, VW shows what future robotaxis with a flexible interior could look like. The concept, developed by the company's own Future Centre in Potsdam, offers a van-like body with generous glass surfaces. The wheels are positioned right at the four corners, and the flat underfloor battery means the platform can be adapted to a wide variety of superstructures.

The One Pod has two swing doors that open in opposite directions, allowing particularly spacious and comfortable entry for passengers with special needs. This is recognized by the car before boarding, and the doors open automatically when the passenger approaches. In addition, when the car stops at a sidewalk, the interior floor of the One Pod lowers to the level of the pavement, allowing barrier-free access for people with prams or wheelchairs.

A display in the door informs the user. Via control elements in the armrests of the seats, passengers also have all necessary applications in view. External communication is provided by signals in light strips that inform and, if necessary, warn other road users.

Citroën Turns Mobility Into Skateboard

NEWS MOBILITY

What if the car of the future is…not a car? Citroën is imagining such a vehicle and a possible ecosystem for its use, where the car becomes a skateboard and the body is a capsule that takes different shapes as needed.

The project is reminiscent of certain science fiction films in which the car takes the form of a capsule to transport people, while the movement is taken over by another vector that attaches itself to the capsule to take it where it is needed and steers itself. This carrier would be the Citroën Skate, which moves in all possible directions. The capsules, called pods, are picked up by the Skate in less than 10 seconds and brought up to a top speed of 25 km/h.

The first three concepts of these capsules were developed by The Urban Collectif, an alliance of three companies led by Citroën and including the French hotel multinational Accor and the advertising company JCDecaux.

URBAN COLLECTIF IMAGE

The first is the Pullman Power Fitness, a mobile gym that makes use of the time otherwise spent in city traffic. Here there is a rowing machine and an exercise bike to start short workouts with the support of a digital trainer. The pod has tinted windows so you can work out in peace to the rhythm of the music. The energy generated by using the fitness equipment is used, among other things, to power the skate's batteries.

For those who prefer to relax, there is Sofitel En Voyage, the pod for the short trips of the luxury hotel chain's clients. It offers a modern, elegant and sophisticated ambience in colours and materials. It can accommodate up to three passengers, contains a

minibar with drinks and snacks and an LED panel displays real-time news, weather and arrival time at the destination.

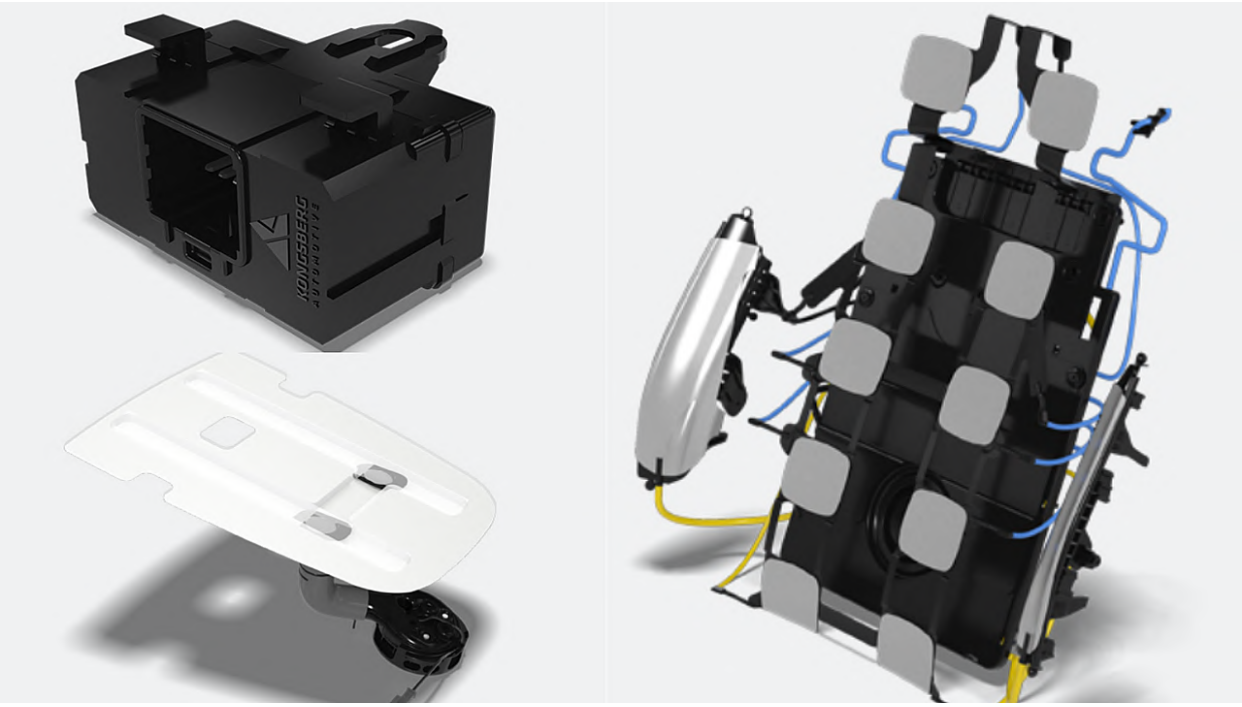
The third capsule is the JCDecaux City Provider pod, intended as a community pod for public transport. The materials are therefore more robust, weatherproof and vandal-proof, and the structure has been designed with disabled access in mind. The maximum capacity is five people, who can count on USB sockets for charging smartphones and two interactive screens for info.

Of course, all this would not take place on roads open to regular vehicular traffic, but on dedicated lanes. The city should therefore be made compatible with this type of vehicle, designed for shared use and various superstructures.

General News

Lear to Buy Kongsberg

GENERAL NEWS



KONGSBERG PRODUCTS (KONGSBERG IMAGE)

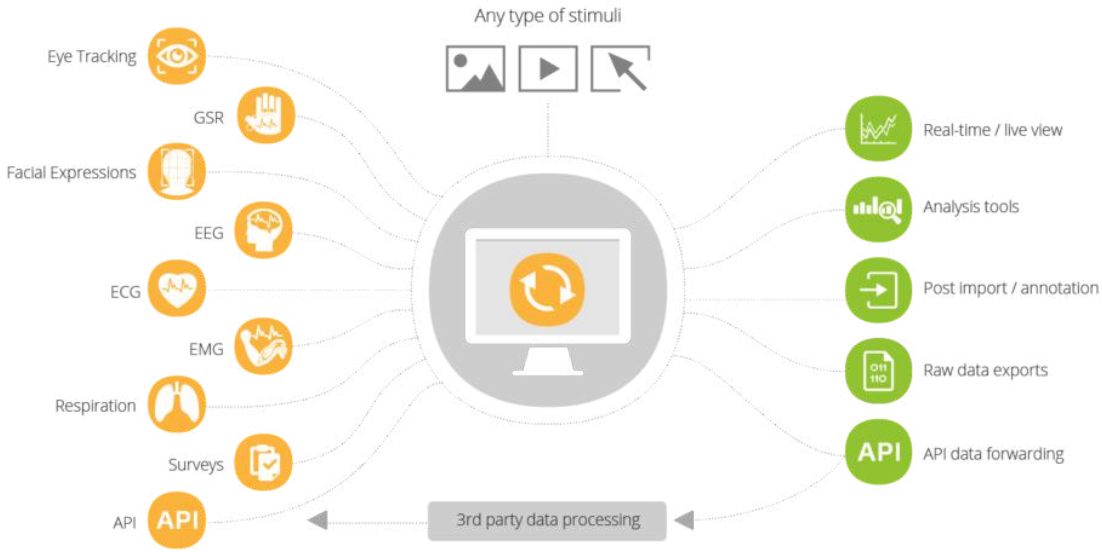
Lear Corporation, global supplier in Automotive Seating and E-Systems, have agreed to buy all of Kongsberg Automotive's Interior Comfort Systems (ICS) business unit.

Kongsberg Automotive is a global supplier with 27 production facilities and about 11,000 employees in 19 countries. They make seat comfort systems—massage, lumbar, seat heat and ventilation; driver and motion control systems; fluid assemblies, and industrial driver interface products. Kongsberg Automotive, based in Zürich, Switzerland, intends to focus on Couplings, Fluid Transfer Systems, Powertrain & Chassis, and Off-Highway, strengthening and maintaining its competitiveness and future position of profitability, cash flow and growth.

The purchase of Kongsberg Automotive's ICS business unit will further advance Lear's component vertical integration and expand product offerings into specialized comfort seating solutions that improve vehicle performance. Under the terms of the deal, Lear will acquire Kongsberg Automotive's ICS business unit for €175m, on a cash and debt-free basis. The transaction, subject to regulatory approvals and other customary closing conditions and adjustments, is expected to close early next year.

Smart Eye Buys iMotions

GENERAL NEWS



SMART EYE GRAPHIC

Smart Eye, a global supplier in Human Insight AI, Driver Monitoring Systems and Interior Sensing solutions, will buy human-behavior software supplier iMotions for €40.3m.

Smart Eye serve automotive; aviation & aerospace; assistive technology; media & marketing; psychology, and many other fields. Founded in 1999 and headquartered in Sweden with offices in the US, UK, Germany, Egypt, Japan, and China, they are a publicly traded company since 2016.

iMotions, founded in 2005 and headquartered in Copenhagen with offices in Boston, Singapore and Berlin, develop human behavior software which combines data from numerous sensors—eye tracking; facial expressions; sweat gland activity; brain activity, and more—in one easy-to-use software that uniquely and in real-time tracks, aggregates and analyses nonconscious emotional, cognitive and behavioral data.

Smart Eye will couple their advanced eye tracking and emotion AI technologies with iMotions' innovative, multiple-sensor data collection and analytics software to create a "powerhouse" in human behavioral research and analysis. Together they will provide an end-to-end, multi-modal approach to analyzing complex human behaviors and delivering holistic human insights.

iMotions, which will be a wholly owned subsidiary of the Smart Eye Group and will continue to be independently run by CEO Peter Hartzbech.

This follows Smart Eye's recent acquisition of Affectiva, experts in emotion AI claiming to connect machine logic with human empathy; Smart Eye, iMotions and Affectiva have a long history of partnering together.