Thu, 1 June 2023
Weekly Newsletter

DVN-I
Automotive Interior

NEWSLETTER #163

Editorial

CMF To Drive Interior User Experience

INTERIOR CMF DESIGN FOR GAC M8 (GAC IMAGE)

CMF—Color; Material, Finish—is a kind of industrial design applicable all over a vehicle, particularly in the interior. CMF designers define materials: the thickness of a leather grain; the touch of the paint. They are constantly looking for emerging new trends and innovative materials and finishes. CMF is about enhancing product aesthetics through materials; colors; textures, and patterns, so the product evokes the desired emotional response. And CMF also ties in with sustainability as that becomes a key criterion for material selection.

User experience is influenced by numerous factors, and CMF is one of the most important ones. This week's in-depth and Design Lounge articles look at that trend through different lenses, and we'll continue to publish CMF news on a regular basis.

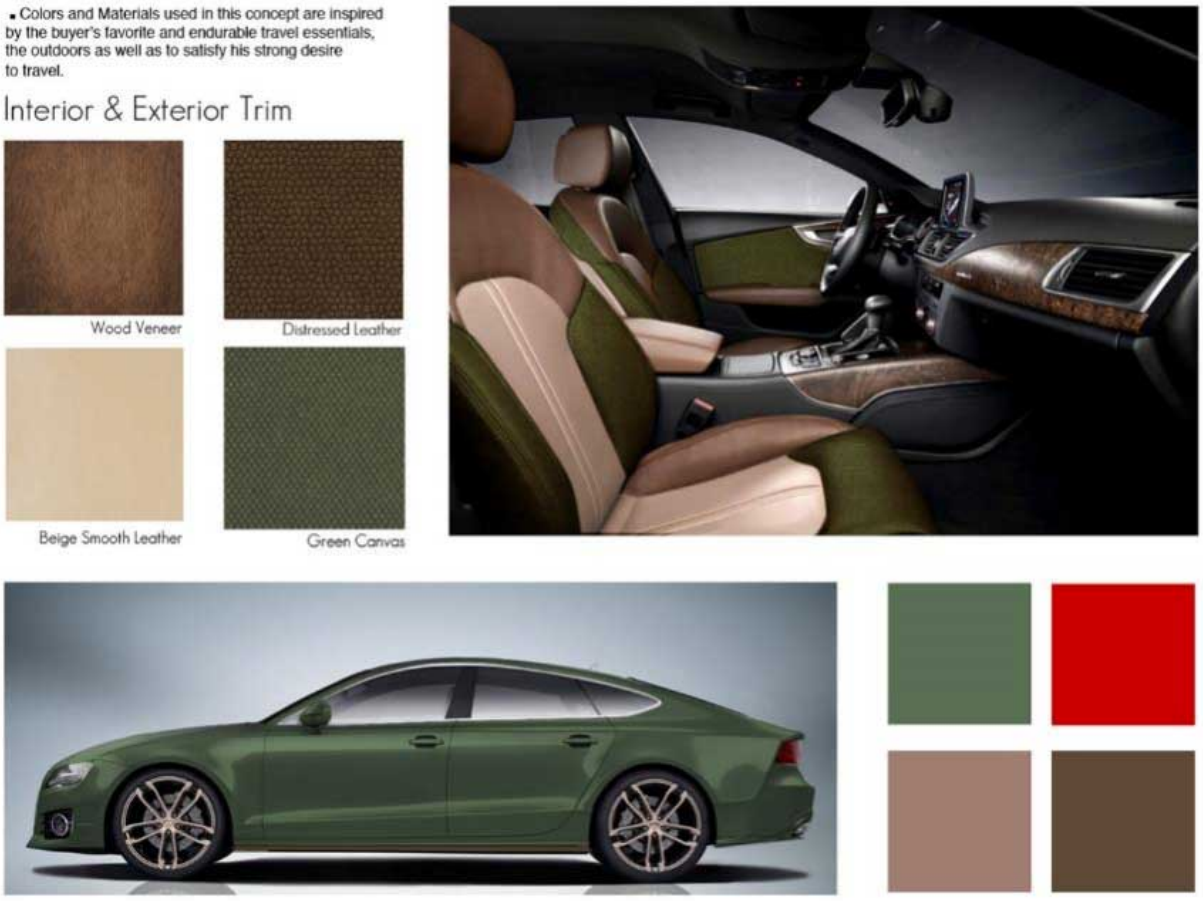
Remember-remember, the next DVN-Interior event is a Deep Dive session in parallel with the US DVN Workshop in San Francisco, California on 29-30 August. If you'd like more info, please **ping us.** The Deep Dive will focus on how interior lighting contributes and interacts—for user experience; safety, and comfort in the car. We're looking forward to seeing you there!

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

Color-Materials-Finish



BEHANCE BROCHURE

Color-Materials-Finish (CMF) is an area of industrial design that focuses on the chromatic; tactile, and decorative characteristics of products and environments. CMF influences whether a product feels cheap or luxurious; durable or fragile. Consumer aspirations and brand identity are key motivators for CMF design, which deals with the look; feel; sound, and scent of a product, all of which influence buyer decision.

Beyond look and feel, finishes and materials are critical to optimize functional aspects of a product like ergonomics or ease of cleaning. Designers and engineers take great care to make sure CMF design decisions during product development align with the product design brief and end-user expectations.

So overall, CMF design is a major lever to improve a product's real and perceived quality of design and construction. That's why it is being widely used in car interior design.

Color

When you think of a product, probably one of the first things that comes to mind about it is its color. Ferrari red; Alpine blue; John Deere green, UPS brown…many companies have made a specific color central to their brand identity. Technology has also its color; sustainability started as green, now (at least in the automotive sector) it is blue. Think of the Toyota Mirai, and countless EV and hybrid cars with a blue logo.

BEHANCE BROCHURE

Material

Material specifications play a big role in, among other factors, the functionality and ultimate cost of a product. This is true for a PU skin; a synthetic leather seat cover; parcel shelf felt; floor carpet…any surface you touch or feel. Material type is critical from the sustainability standpoint as well, as recently **reported in DVN-Interior.**

Finish

Just as with color systems, industry standards have been developed over the years to ensure consistency in surface finishes. Surface finish standards are specific to manufacturing processes and classes of materials; a plastic part will use standards from SPI (Society of Plastics Industry), while a metal part might use ASME (American Society of Mechanical Engineers) or ISO (International Standards Organization) standards.

SPI Standards define how the surface of a finished plastic part looks and feels, using a combination of letters and numbers for the grading system. SPI surface finishes range from untreated, as-machined to high gloss, with many options in between. For as-machined surfaces, the witness marks of the cutting tools are obvious; such surfaces are rarely used for the user-facing side of a part; they are sometimes specified for the hidden, inside surfaces of parts to save on tooling costs.

All in all, then, brand and product identity is crafted; shaped, and reinforced with color; material, and finish. All these spur strong emotional connections with people, which in turn spurs behavioral choices (such as whether to buy this car or that car, in this trim or that trim, for this price or that price). More, CMF decisions are inexorably connected to performance by dint of material choices. We refine the æsthetics of interior and exterior design, always pushing forward into material innovations and cutting-edge technology.

And now, a didactic CMF experience from the recent Milano Design Week (an event reported previously in **previously reported** in DVN-I).

The event occurred in Sforza Castle at the hall of the 12 Trivulzio tapestries, witnesses to the history of textile craftsmanship. The enriching exchange showcased various steps involved in the textile supply chain, from sourcing materials to the creation of final products and the better understanding of the challenges of this industry.

Borre Akkersdijk is cofounder and creative director of the Byborre Foundation, which combines technology and textile expertise. Akkersdijk studied fashion design while working at a Parisian design and trend consultancy in 2009 before starting Byborre. He is known for his pioneering design approach in reinterpreting supply chain, conveying these hidden labels into a visible design process. While he pinpointed the "heroes" that shape the future of this trade and shared personal stories and adventures next to the trailblazers of his industry, the entire venue felt like a celebration of a great upcoming change.

At Milano Design Week, he said, "*If good design is problem-solving, great design can solve a problem for a lifetime. Great design often means less but better–allowing for a sustainable solution to problems of all sizes. And sometimes, the very best design is no design at all, as we often need to be reminded that our needs are mere wants.*

"*Throughout design (and problem-solving in general), textiles have always been a universal tool. Whether it's a modern sofa, the cover of your car's dashboard, the back pocket of your trousers, or the rug on which you just wiped your feet–textiles are as ubiquitous as they come. And their influence goes beyond imagination.*

"*But while textiles are seen and felt everywhere, their heritage has always remained a mystery. Manufacturer labels are meant to be hidden in the back of your neck or the seam of your bag. You can read about the origins of the material you're sitting on by getting on your knees and bending your neck in such a way that it allows you to read the last letters of the name of a place that's very far away from where you're reading it. It's all part of the way the textile industry is set up. It's meant to be a secret. Unreachable.*

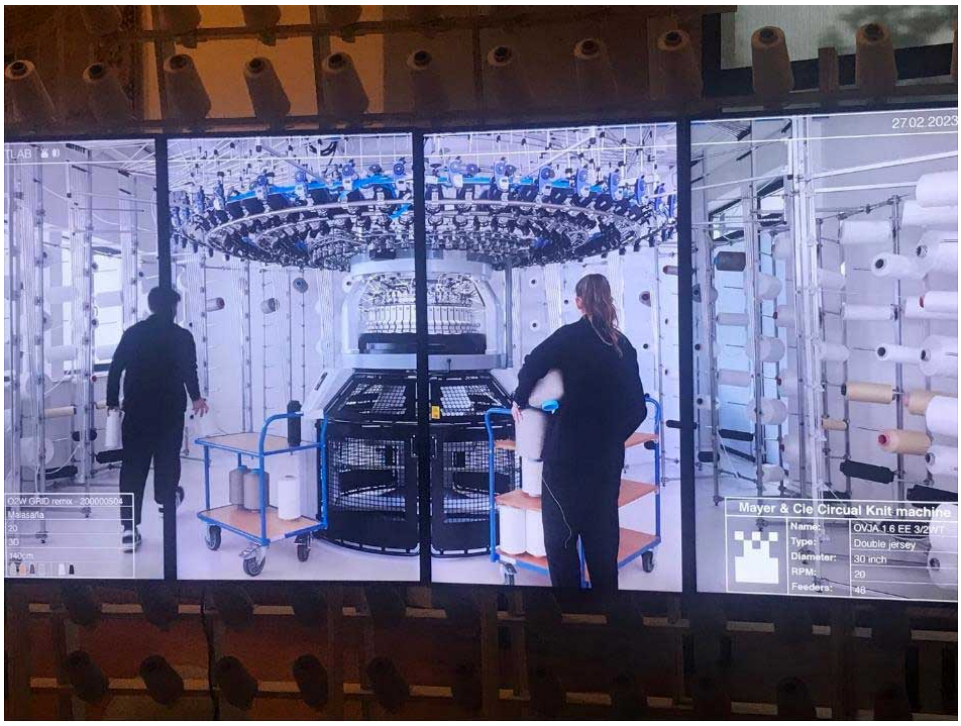
"*And yet, it is hiding in plain sight, just like the elephant in the room. Everything you see and touch is made with machines, needles, yarns, threads, fibres and raw materials mixed with energy to create something that solves your problem. Be it short or long-term, big or small. Textiles are always there to be counted on, as they have been for centuries*".

Akkersdijk's intriguing business adventure started unexpectedly: as a teenager in a summer job, he was transporting fabrics across the factory floor. Out of extreme boredom, he noticed that often one thread was white, and he asked why. Seemingly, in every several meters of fabric, a default needle created the unexpected line. It was a tolerable mistake not worthy of observation.

Years later, today, he finds himself leading by design a major transformation of the global supply chain. Akkersdijk again:

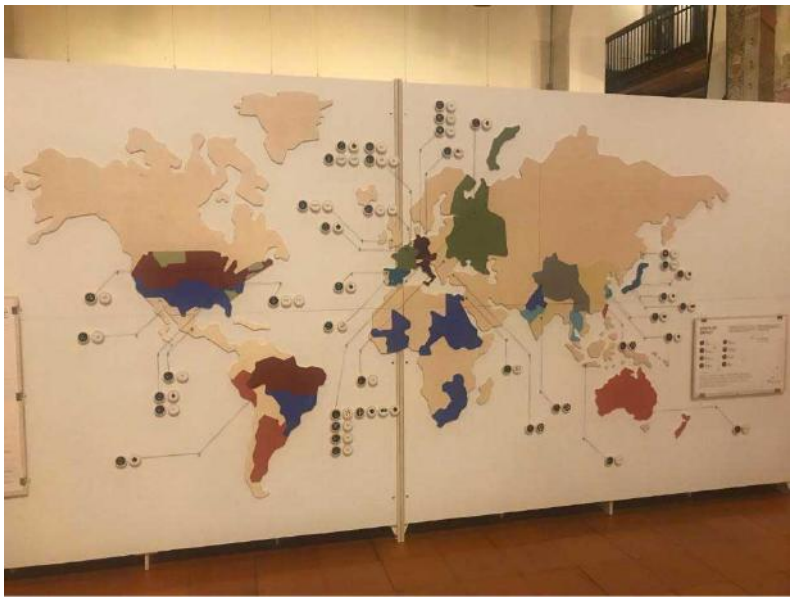
"*…what are the four ink plates of a computer-generated print? Cyan, Magenta, Yellow, and Key (black). What if the mistake was made in one of these colors instead of white? What if the mistake was multiplied? What if the multiplied mistake was cross-weaved by many other 'mistaken' threads? Bingo! You could now 'print' any colored fabric you wanted. But there is more to it, because fabric is not digital, you can add a third dimension in thickness and maybe a fourth one in density (resolution) etc, giving infinite possibilities, magic!'*

However, a major challenge comes from the fact that eighty per cent of a textile's environmental impact is set in stone during the design process. Designing consciously means understanding the impact of all steps involved in creating, producing, and distributing samples and textiles. The complex supply chain of the textile industry is founded on a worldwide web of interconnected relationships and siloed processes. Only stakeholders with an open-source mind-set can enable change and that becomes the real challenge. The ultimate mission is to inspire an entire generation of designers to create more responsible textiles for everyday products.



In the fabric business, the end result starts at the beginning. Hardware components are chosen accordingly forr knitting; felting; weaving; sewing; tufting, or carding using specific techniques, including extensive monitoring throughout the process.

Plant-based fibers; synthetics; animal fibers; cellulosics; biosynthetics; yarn development; machine manufacturing; textile production; software development; knowledge partners, and packaging solutions make up the global textile ecosystem. Such complexity cannot be managed singlehandedly; an online editor creates a textile-passport specific to each item. It contains information on the origins; quality; composition; knit type, and impact.



An open-source operation could render tools and information accessible, and the operator takes the important decisions alone, taking on all responsibilities that come along with specific choices. This way, a wide variety of options accumulates in an ever-growing textile library, which grows almost organically and dynamically over time, to allow professionals to 'compose' textiles.

‘Inspiring software’ was the term used instead of interface, in order to better depict all the above systemic aspects into one creative pallet, something like Photoshop for fabrics. The ultimate goal is to enable original creation and let fantasies roam free while composing extraordinary textiles.

The inherent and structural characteristic of fabric, a composite nevertheless perceived as unitary, is the direct expression of the complex supply chain that involves people; machines, and knowledge. Fabrics represented our social-economic structure for thousands of years. Fabrics can also take form. Woven pixels can cover an entire car interior universe other than the flat screens which are just a direct emplacement of their digital-device forebears. We can now envision the next big thing for car interiors…!

However, as Borre said, nothing can beat the question every client asks while holding a sample of a new product: is it sustainable?

Associated design events and industry talks during Milano Design Week were hosted and curated by The New Stijl;Staat; Byborre; Studio Sabine Marcelis; The Fabricant; Sheltersuit, and Studio Hagel. Support was provided by Byboore; Mayer & Cie; Sudwolle Group; Groz-Beckert; Lensevelt; The Woolmark Company; Santoni; Montis, and Arco.

Associated Design events and industry talks During Milan design week were hosted and curated by:

THE NEW STIJL, STAAT, BYBORRE, Studio Sabine Marcelis, THE FABRICANT, SHELTERSUIT, STUDIO HAGEL

Supported by:

BYBORRE, MAYER & CIE, SUDWOLLE GROUP, GROZ-BECKERT, LENSVELT, THE WOOLMARK COMPANY, SANTONI, MONTIS, ARCO

Interior News

DVN Welcomes Paul-Henri Matha to The Team

INTERIOR NEWS

DVN IMAGE

Everyone on the DVN team is happy and proud to welcome Paul-Henri Matha onboard in august!
DVN President Jean-Claude Lebrun says "Paul-Henri Matha has acquired a great knowledge working with Renault, then Volvo, and with leading positions in the GTB. We are excited to work with a so experimented colleague in lighting and regulations. I welcome him in DVN with a great pleasure".

A decade and half from its start, DVN has become a great tech watch company with a dynamic and growing staff on three continents working in three activity areas: Lighting; Interior, and Lidar.

Each year, DVN brings you:

- in lighting: four Workshops; 10 Reports; 52 Newsletters,and one Study;
- in Interior: one Workshop; three Deep Dives; one Report, and 52 Newsletters;
- in Lidar: one Conference; three Deep Dives; 12 Newsletters, and four White Papers.

J.C.LEBRUN

H.FRATTY

W.HUHN

PH.AUMONT

ERIC AMIOT

C.ABOUAF

G.LEBRUN

CH.LAMEIRAS

D.STERN, USA

JEAN-PAUL RAVIER

GERD BAHNMUELLER

MICHAEL HAMM

EIICHI ONO,
JAPAN

ANN AI,
CHINA

JOHN COOPER,
US

CARSTEN BEFELEIN,
GE

Eco-Friendly Materials Inside VW's ID.Buzz

INTERIOR NEWS

NETCARSHOW IMAGE

As the industry continues to decarbonize their operations, vehicle interiors are being designed to enhance sustainability. For decades, these spaces have featured leather seats and plastic trim pieces. For the Volkswagen ID.Buzz, those materials are a thing of the past.

The ID.Buzz is announced as the first passenger and delivery vehicle to be manufactured and delivered with a CO_2-neutral emissions balance.

The ID.Buzz uses a range of innovative materials and processes to ensure leather does not feature anywhere inside the vehicle. The steering wheel rim is now made from a synthetic material that looks and feels like leather. Recycled products have also been used for the seat covers; floor coverings, and roof liner. One of the fabrics is made of Seaqual yarn, 10 per cent of the fibers of which are made using ocean plastics and the remaining 90 per cent of PES (recycled PET bottles).

Carsten Intra, Chairman of the Board of Management of the Volkswagen Commercial Vehicles Brand, says: "Both versions of the ID.Buzz are pioneering in terms of their sustainability: their manufacture and shipping has a carbon-neutral footprint. We are also using recycled synthetic materials and the interior is completely free of any real leather".

With its attractive interior finish, this VW vehicle confirms that sustainability doesn’t exclude attractive fit and finish, and that CMF is compatible with an environmental focus.

Sustainability Essentials for All Future Models: Kia

INTERIOR NEWS

KIA IMAGE

Kia is aiming for carbon-neutrality across their operations by 2045, and their Design Sustainability Strategy is key to achieving this. That's an initiative seeking to achieve sustainability at scale and promote, as Kia says, “the best material solutions for all new model lines”.

The first major step taken under the initiative is to commit to phasing out leather in all new models, and Kia has stated they will continue to invest in testing and development programs to speed up the implementation of biofabrication.

Adhering to their '10 must-have sustainability items' checklist, a wide variety of sustainable materials feature on the interior of the Kia EV9, including bioplastics produced using a variety of renewable biomass sources—vegetable oils; corn extract; sawdust, sugar cane—to make parts of the dashboard; console; pillars, and trim.

Post-consumer material, made from recycled products, has been incorporated into the EV9’s door garnishes, with bio-PU (polyurethane) replacing leather on the seats and other interior coverings, and bio-PU foam in the headrests.

Recycled polyethylene terephthalate (PET) is used extensively throughout the vehicle—it's in the fabric covering exposed surfaces such as the seats; headliner; sun visors; garnish; and headrests, and 100-per-cent recycled PET is in the vehicle’s carpets, with a portion of this material coming from recycled fishing nets. Recycled PET yarn produced from drink bottles is used for the seat stitching, and PET felt in the luggage board.

Bio-and BTX-free paint (benzene; toluene, and xylene—three particularly noxious solvents) have also been used throughout the vehicle to bolster its sustainability credentials.

All these materials are readily integrable into both CMF and sustainability strategy.

Valeo's Immersive Technologies at Laval Virtual

INTERIOR NEWS

VALEO IMAGE

Valeo presented their in-vehicle innovations for their first time at Laval Virtual, the first event dedicated to Immersive technologies, in the French western city of Laval.

Virtual- and mixed-reality radically transform the car cabin into an immersive and interactive entertainment space. Long journeys and recharging times in an EV become a playful experience; passengers can immerse themselves in virtual worlds, watch 3D movies, or communicate in mixed reality with their loved ones.

At Laval Virtual, Valeo's showcase included:

• The **eXtended Reality Experience**, which offers passengers an immersive; intuitive, and interactive experience. Wearing a virtual reality headset, they can immerse themselves in the world of their choice. Valeo's sensors in the cabin allow interaction with these virtual worlds. Similarly, Valeo's external sensors integrate the reality of the vehicle's environment with these virtual worlds for a particularly comfortable mixed reality experience for users.

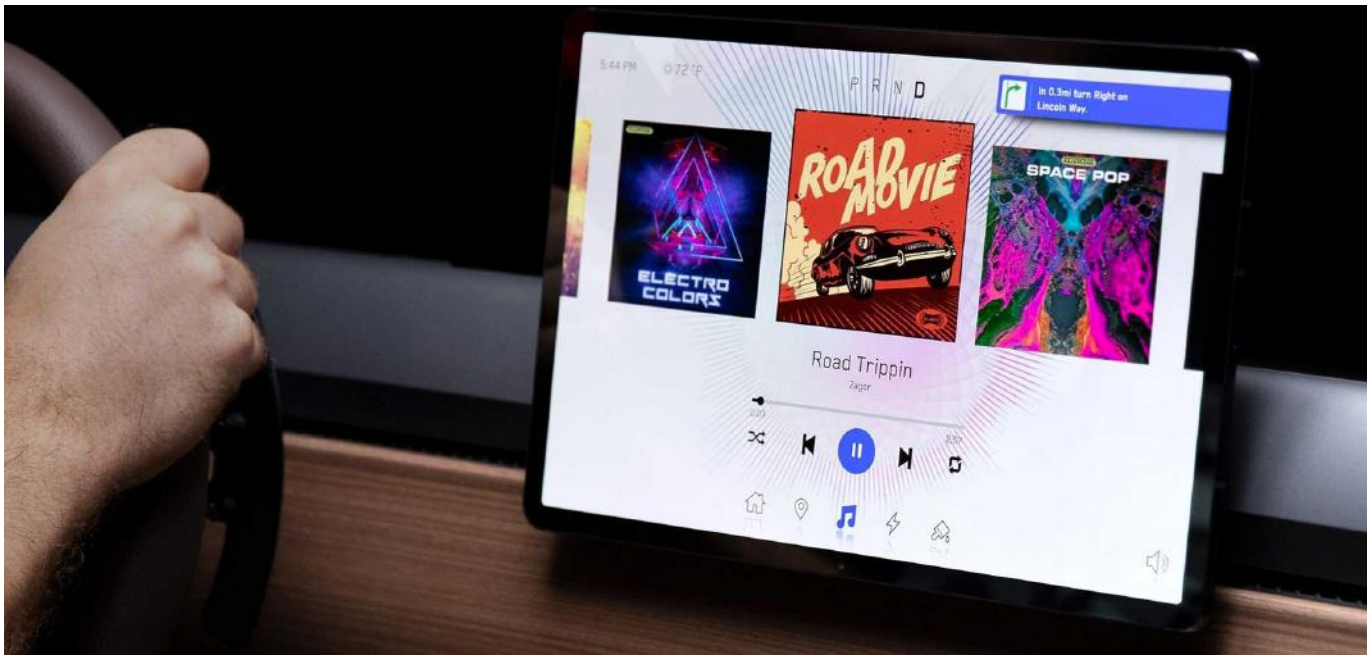
• **Panorama XR**, which allows users to share with their contacts, in real time, a 3D representation of their car, in the real environment filmed by the vehicle's cameras. Their contact can see the car on their smartphone as if they were flying over it in a virtual drone that they can pilot, allowing them to enjoy the landscape in which the car moves.

• **Voyage XR**, which creates the illusion that a person of your choice, located outside the vehicle, is by your side. The individual's avatar appears in the rear-view mirror and you can both interact in real time. The remote traveler meanwhile enjoys an immersive experience thanks to a helmet and virtual reality controllers. In addition to its enhanced safety features for remote-control driving, Valeo Voyage XR opens the door to a whole new world of experiences inside the vehicle.

Passengers are looking for a personalized and comfortable in-vehicle experience that provides a sense of safety and well-being, while allowing them to be entertained and connected to family and friends and the outside world. This trend represents a significant opportunity for Valeo, and the market, to enrich interiors, by integrating advanced screens, high-performance connectivity systems, interactive surfaces and observation and monitoring devices.

Epic's Automotive HMI With Unreal Engine

INTERIOR NEWS



EPIC IMAGE

The ability to integrate game-quality HMI is among the latest features released by Epic Games for Unreal Engine, the real-time visualization platform which the company says is now used by nine of the world's top 10 automakers.

The latest upgrades, Epic says, will help automakers develop vehicles faster, with increased global collaboration and increased manufacturing efficiency while also facilitating in-car communications; marketing, and cloud-based services.

Unreal Engine now supports the latest graphics chips increasingly specified for vehicle HMI, enabling fast development of in-car systems featuring high-quality 3D visuals. The first vehicle to use an HMI built using Unreal Engine will apparently be an all-new premium EV that introduces new ways of communicating with the driver, and is enabled for a new generation of cloud-based services and customization options.

HMI designers can create a rich user interface in the same software that runs on the vehicle. The result is faster development, impressive graphics, simplified porting to cloud-based services, and fewer resources needed to bring this big technology step to market. The new Collaborative View Template simplifies that process, facilitating in-house development of virtual reality (VR) environments in which remote users can gather around a CAD model or a rendered styling model to discuss challenges and explore solutions. The environment is completely open, so will complement all specialist software.

Epic says one of the challenges of computer graphics has been the quality of human avatars. To address this, their new MetaHuman Creator tool provides customizable digital humans that look and move like real people, with every facial feature carefully synchronized with real expressions. Also upgraded is Unreal Engine's ability to create photorealistic renders. Features include ray tracing in real time, for realistic representations of lighting and shadows, and a library of customizable materials.

Epic Games has published a free-to-download Automotive Field Guide that takes the reader through the latest automotive applications of virtual reality, mixed reality, augmented reality and real-time 3D graphics, showing how each is being used to transform how cars are designed, engineered and sold.

Alpine's A290 β Concept Has Race-Inspired Interior

INTERIOR NEWS

RENAULT IMAGES

Alpine has unveiled their A290 Beta concept ahead of its 2024 launch as a production model. It is a small EV hatchback based on the forth coming Renault 5, but with a specially-tuned chassis; more power, and a heavily modified body, as well as a race-themed interior.

The production version will be launched in the second half of 2024. Like the Renault 5 and a future Nissan Micra, it will be based on the Renault-Nissan Alliance CMF-B EV platform; it will be built in Douai, northern France.

The A290 Beta is 405 cm long; 185 cm wide, and and 148 cm high—the same length as a Renault Clio, but 5 cm wider and 4 cm higher. Renault has not released dimensions for the Renault 5.

The A290_β presents a multitude of unique design aesthetics inspired by racing cars. The interior is minimalistic and designed to deliver performance and efficiency. Occupants are met with two outer seats and a center seat for the driver. Each bucket seat structure is 100-per-cent raw carbon, and comes with Sabelt safety harnesses and seat insert pads for support.

Linking inside to outside is a windshield that flows onto the hood and provides a singular perspective of the arrow-shaped dashboard, which drew design inspiration from the nose cones of Formula 1 cars. This design is deliberate, highlighting the driving position and all of the controls which all run down the centerline of the vehicle. The dashboard is upholstered in environmentally friendly-certified vegetable-tanned leather. The door panel leather is laser-machined to create a contrast and to underline the high-tech upholstery.

Above the driver is a console built into the roof to provide access to features including a kill switch, indicators, and light settings. Alpine designed the A290_β with no interior screens to ensure the driver can concentrate on the task at hand. A minimalistic head-up display over the steering wheel delivers relevant information such as speed and battery charge.

Asahi Kasei's Automotive Interior Survey

INTERIOR NEWS

ASAHI KASEI IMAGE

In November 2022, Japanese supplier Asahi Kasei and German-based market research institute Skopos conducted their fourth Automotive Interior Survey in the four most important automotive markets: Germany; China; the USA, and Japan. 1,000 vehicle users with different income levels in each market answered questions about their purchasing behavior; understanding of automotive sustainability, as well as acceptance and usage scenarios for autonomous vehicles.

Car sharing has low preference

Respondents in all four regions prefer to own their own car. Half of respondents in Germany and the U.S. can imagine purchasing a new car; this proportion is significantly higher in China (79 per cent) and Japan (62 per cent). In contrast, not owning a car—or only using car-sharing services—is not yet an option for respondents in Germany (11 per cent); the USA (3 per cent) or Japan (4 per cent).

Range and charging times are key when buying EVs

58 per cent of Chinese respondents would consider buying a purely battery-powered electric car. In Germany, only 29 per cent can imagine themselves choosing this option—that figure is 21 per cent in the USA, and 18 per cent in Japan. Among potential EV buyers in all regions, range and charging time are important factors in the purchase decision. 39 per cent of potential EV buyers in Germany also look at the CO_2 emissions during vehicle production.

Understanding of sustainability is changing

Even with the transformation to a zero-emission vehicle, the mission of achieving 'sustainable mobility' is far from complete. The survey results show a 'sustainable vehicle' is no longer just defined by the drivetrain technology, but also by the CO_2 footprint in production; easily-recyclable materials, and decarbonization of vehicle manufacturers and their suppliers. In short, sustainability and transparency along the entire value chain are also playing an increasingly prominent role from the customer's perspective.

Low acceptance for AV, and steering wheel still preferred

In Germany and the U.S. more than half of respondents rejects fully autonomous vehicles. In Asia, on the other hand, survey participants are much more open to the new technology; in China, only 10 per cent were against such vehicles, and 22 per cent in Japan. In both countries, half of respondents could imagine themself buying a fully autonomous vehicle.

The different AV usage scenarios also give rise to new needs in terms of interior design: easy-to-clean textiles and surfaces as well as easily-adjustable seats are very important to respondents in all regions and regardless of the type of ownership of AVs. Individualized interior lighting and a function for darkening the windows help with reading and relaxing. Fully rotating seats play only a minor role. Even in AVs, a large proportion of vehicle users everywhere want to have a steering wheel and brake pedal for optional manual control.

Infotainment is High on Chinese Shopping Lists

INTERIOR NEWS

BAIDU IMAGE

As early as fall 2021, the management consultancy Oliver Wyman found in a survey that 80 per cent of car owners in China would be willing to switch car brands if they received better digital services. In Europe, only 40 per cent of drivers would be willing to take a similar step.

For Germany's largest carmaker, that matters keenly. Volkswagen sells almost 40 per cent of their annual production in China. Tesla and the Chinese e-car manufacturers, however, are much further ahead in terms of digitalization.

Because the markets are so different, it has long been a premise of VW's Chinese operation to increasingly develop vehicles *for* China *in* China. This also applies to digital features. The Cariad software unit alone has doubled its workforce in China to around 900 in the past twelve months.

In January, VW China board member Ralf Brandstätter told journalists in Berlin that anyone who does not offer cars in China that drive largely autonomously on the highway in two or three years' time "will probably not be able to sell any more vehicles". For the infotainment sector, software chief Dirk Hilgenberg stressed a commitment to "provide scalable, innovative solutions for infotainment and connectivity in China faster."

Hamburg Haptics Conference on 14-15 June

INTERIOR NEWS

LG IMAGE

Grewus, a specialist in developing and producing innovative acoustic signal sensors and haptic actuators for all industries and applications, has announced that it is launching the inaugural Interactive Haptics Conference in Hamburg, Germany. It's targeted at automakers; tier-1 and -2 suppliers; researchers, and experts from all industries in the field of haptics. Automotive Interiors World is a media partner for this event.

Taking place on 14-15 June at the historic Gastwerk Design Hotel Hamburg, the two-day conference will bring HMI-relevant disciplines together to discuss which aspects need to be considered when integrating haptics into an application, in terms of how the design; the UI; the UX; the sensors; the mechanics; the driving and the actuators all interact.

Different industries in the field of haptics will explore the challenges faced in each sector and discipline, interfaces and synergy. Experts in gaming, automotive and academia will look at which aspects need to be considered for optimal haptics and which physical parameters can be integrated into the desired design. Elisa Santella, Managing Director at Grewus, said: “The integration of active haptic feedback in automotive HMI is a visible trend. The first reason is safety: anything you can do to help people not take their eyes off the road is essential!

Presentations on day 1 will include an opening speech from Elisa Santella on ‘Haptic Trends in Automotive HMI’, followed by a presentation on ‘Unlocking the Power of Haptic Technology in Gaming: Industry Leaders Explore Best Practices and ROI’ by Eric Vezzoli at Razer. Wolfgang Clemens from PolyIC will speak on ‘Smart integrated touch solutions for HMI surfaces in Automotive and Home Appliances’; Iyad Nasrallah from TouchNetix will deliver a presentation called ‘Touch, Force, Hover, Proximity, Haptics … aXiom!’; and Jörg Stierand from Haptics Alliance will discuss ‘Immersive HMI solutions’.

Day 2 will focus on technology and science with speeches from Prof. Dr.-Ing. Thorsten Alexander Kern (Technische Universität Hamburg – TUHH) on ‘Vibrotactile Actuators – how to really quantify their performance for a more general applicability’; Anouschka Esselun from Grewus on the ‘Measuring of active Haptic Feedback’; Morten Rothmann (Hamsø Engineering) on ‘Criteria for chip selection for driving and sensing’; Daniel Shor from Innovobot on ‘Haptics Language and Design Rules’; and Ralf Sandomeer of Grewus on ‘The recipe of haptic integration’.

To integrate participants within the discussed topics, Day 2 will host two workshops: ‘Haptics Language and Design Rules’ and ‘Let’s Become Active now—From Theory to Practice’.

The Design Lounge

Fishing Nets and Mummies

By Athanassios Tubidis

THE DESIGN LOUNGE

WIKIMEDIA COMMONS IMAGE

Pantone 82877 is known as the Mummy Brown. It is also known that organic materials in painting, give a very nice transparent hue.

Edward Burne-Jones's great painting (279 × 650 cm) 'Last sleep of Arthur in Avalon' is painted using a rich brown bituminous pigment, known already at the time as 'mummy brown'.

When medieval European travelers ventured to Egypt, mummies caught the attention of the medical field. They were transported to Europe, ground up and used as remedies. It was observed though, how 'rich and earthy' the color of the powder was. This begins the story of mummy brown paint, which is unfortunately, exactly what the name says.

Business is business, and the more the demand the more the supply. From the mid-eighteenth century into Victorian era, mummy brown was so popular among painters, that paint firms would purchase mummies to grind up and sell to artists. It is reported that when Edward Burne-Jones was informed about the paint's ingredients and origin was so upset that he descended with a tube of 'mummy brown' to his garden and held a burial ceremony stating that 'this is made from dead pharaohs and it must be buried accordingly'.

The pigment became so popular from mid eighteenth to nineteenth century that the demand exceeded the available supply of true Egyptian mummies, leading to occasional substitution of contemporary corpses of enslaved people or criminals. The vogue of 1850s gradually declined and by the start of twentieth century ceased production in its traditional form, which brought a significant drop in demand.

Design today is heavily solicited on material use and supply chain ethics. A key element of any design presentation is Sustainability and the entire pallet of colors, materials and finishes in car interiors is rapidly evolving into new trends such as cacti, pineapple, banana peel or fish skin based leather or recycled polyamide fabrics based on fishing nets recuperated in the ocean. The success of our financial system is measured by scaling. Involving stakeholders in managing ecological areas can create a virtuous circle where improved ecology encourages the actions that maintain and develop the field. Finally, we are looking so much for recyclable materials that we might have to produce more waste. What happens when demand exceeds the supply?

The Mother of Invention
By Athanassios Tubidis

THE DESIGN LOUNGE

ART CENTER IMAGE

I am not aware of any design competition that was not judged against the one and only uncontested parameter, time. Ever since the early Art Center years, just about any design solution arrived literally the last minute before its presentation. For some strange reason that no designer can explain up to now, the planning of a project does never follow the linear/visual representation of the corresponding excel document. Apparently, it is far more complex.

But what happens once the deadline is set at the beginning, say in comfortable amount of time for example 14 weeks from now, and why we end up working the last minute like bats-out-of-hell (popular Art Center expression). It seems like beyond the mother of all inventions being necessity, there is another structure that grows exponentially once the timeline is approaching or when the project awareness reaches a certain maturity. A high intensity of dialogue between stakeholders and players is rhythming the beat of the project as the pace increases in all activities, simultaneously (research, presentations, meetings etc..)

It is astonishing how much is going on during the early and middle stages of the project and how the amount of information is rapidly amplifying to a moment where—we all felt it—the project becomes exhausted and obsolete at about midterm. This is a very moment where we know enough about it but also comprehend that all our initial, spontaneous ‘genius’ ideas have already been previously explored by others in a different form or context. Everything collapses and feels like failure. Need to start all over on new grounds and now the deadline is half the way. Initial planning falls apart. “Everyone has a plan till he gets punched on the nose” as M.Tyson stated. Fast fixes tend to replace previous well-panned methodology, while resources decrease as well as the perception of time-left-to-the-final-presentation. Instant solutions take over tactical planning, leading into a making-and-braking-a-million-times type of process. There is an overwhelmingly long history of anxiety depression, to the point where no one feels up to the task anymore.

That is the moment when creativity kicks in. Any measurable value, any certainty, any statistic, and common sense are not enough from now on to solve the problem. ‘You need to cheat if you want to make it on time’, and ‘Cheating’ is the world that comes in mind every time I have to talk about creative process.

In another setting, in Special Forces school, every project is designed to fail, but no one knows it beforehand. It is the definition of mission-impossible every single time. An eliminatory process from the get going unbeknownst to all participants. If anyone, ever, comes out as a winner, (very unlikely) is exemplary punished on an unconventional justification. The deeper reason is that you’re not meant to win this one: the more often you lose the more creative you are forced to become. And that is most likely one of our deepest qualities: survival.

Comparing the two, I must distinguish the difference between education and training. The repetition of tasks creates a reflex that is custom to every irrational achievement. And that, is the mother of all inventions.

Ingenuity and problem solving is not custom to design but to any aspect of business and life. The question is, are we always determined to fail in order to discover?

Another story goes:

“I cannot sleep because I am always afraid there’s someone underneath my bed”, he confesses to his psychoanalyst, *“I’m terrified and exhausted. I don’t sleep anymore”*. After the long lasting and costly therapy, there is really no hope. Drained, depressed and bankrupt he quits his doctor. Years later, they meet accidentally and he looks great, he had apparently solved his problem. In a frantic instant of his tortured and devastating sleepless nights, he stood up, took the saw and, cut off the legs of his bed! Just so, no one could get underneath it.

In times of stress and chaos, embracing the unknown is where the brightest ideas come about. It might be that just refusing to accept things the way they are, is really the mother of all inventions.

Art Center College of Design, a global leader in automotive design education, played a seminal role in the founding of the first advanced-concept design studio for the automotive industry in the 1950s.

News Mobility

DiDi-GAC AION JV for AEV Robotaxi

NEWS MOBILITY

GAC IMAGE

DiDi Autonomous Driving, the self-driving technology arm of DiDi Global, has deepened their partnership with GAC AION New Energy Automobile, to set up a JV to produce autonomous electric robotaxis under a joint project named “AIDI”, and they're saying it'll be a milestone for L^4 autonomous EVs’ mass production and commercial operation. See GAC video.

The first mass-produced model is expected to be on DiDi’s shared mobility network and integrated into a large-scale mixed dispatching system by 2025.

This joint venture will be the industry’s first in China between an automobile company and an autonomous driving company to push forward self-driving EVs’ mass production. This is also the first time DiDi Autonomous Driving and GAC AION disclose their cooperation updates since both parties reached a strategic partnership back in 2021.

The design of the first generation mass-produced robotaxis will be based on GAC AION‘s latest high-end pure electric exclusive platform AEP 3.0 version, with its X-soul EE architecture and the safety redundancy system installed in Robotaxi.

The first model will also be equipped with DiDi Autonomous Driving’s technology solutions and DiDi Generalised Engine for L^4 autonomous driving designed to deal with long-tail driving scenarios in complex urban traffic conditions, while replying on DiDi‘s experience and insight in robotaxi operation and shared mobility.

Both parties will work together to develop an intelligent L4 self-driving system that meets the needs of passengers and provides an excellent riding experience.The first mass-produced model is expected to be introduced to DiDi’s shared mobility network in 2025 for a large-scale mixed dispatching system.

General News

VI-grade and Sound To Sight Partner on NVH Simulation

GENERAL NEWS

Under a newly formed strategic partnership, VI-grade and Sound To Sight (STS) will bring together their expertise in the fields of NVH simulation and active sound design to deliver enhanced driving experiences for vehicle occupants.

Sound To Sight, based in Bordeaux, France, is a sound-design agency, using methods from UX design and product design, to develop bespoke, brand-aligned sound profiles for vehicle OEMs. The sound profiles include immersive soundscapes that reflect brand identity and heritage.

VI-grade, headquartered in Darmstadt, Germany, is a global provider of vehicle development solutions, with the aim of zero-prototype vehicle development.

The sound designs are then accurately reproduced and integrated into VI-grade's NVH simulator to enable test drivers to experience and evaluate the sounds during simulated driving scenarios. The development process enables automakers to create custom sound designs with Sound To Sight and then immediately test them using VI-grade's NVH simulator before a physical vehicle prototype is made.

"Combining Sound To Sight's sound design expertise together with real-time human-in-the-loop virtual prototype simulations provided by VI-grade simulators exemplifies our commitment to the zero-prototype strategy," commented Guido Bairati, managing director of VI-grade. "Vehicle design and development teams can decide on the exact right sound of the vehicle, evaluating the holistic vehicle experience of the sound design in context with all other sounds, vibration, motion and other factors in a dynamic, virtual environment much more efficiently, and long before a physical prototype could be made."

"We are thrilled about this new partnership, which has already demonstrated success through a collaborative customer project in 2022 with a renowned Italian car manufacturer," added Antoine Châron, co-founder of Sound To Sight. "VI-grade and STS have worked together on an interior active sound design project, achieving impressive results thanks to the synergistic expertise of the two companies. We look forward to embarking on this strategic partnership and pushing the boundaries of unique sound design."