Thu, 16 February 2023
Weekly Newsletter

DVN-I
Automotive Interior

NEWSLETTER #148

Editorial

Natural Materials: Design And Value Chain

Spring will be here soon (in the Northern Hemisphere), and car interiors keep blossoming with more and more new natural materials. It's all in the name of sustainability, and it opens many new design opportunities to differentiate cars and car interiors. This week's in-depth report and Coffee Corner musings look through different lenses at this refreshing trend.

It's not enough just to swap out traditional materials with sustainable ones, though. Especially in premium cars, any and every material must meet all criteria for practical and aesthetic aspects. So the three main kinds of sustainability—ecological; economical, and social—have to be managed, including development of value chains that meet the unique needs of the automotive sector. Value chain analysis is crucially important for every involved business to gain an understanding of the costs and benefits, so they can be appropriately and optimally transformed into value for the customer.

These hot topics feature heavily on the docket of the DVN Interior Workshop on 25-26 April in Köln. Exhibition booths and lecture slots are filling up fast, so please **confirm your participation** sooner rather than later.

Enjoy this week's news and commentary!

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

Nature-Sourced Materials: A Botanic Garden Inside the Car?

BENTLEY HAS BEEN EXPERIMENTING WITH VEGAN LEATHER AND DASHBOARD TRIM MADE FROM LUMBER FELLED THOUSANDS OF YEARS AGO AND PRESERVED IN A BOG. (BENTLEY IMAGE)

To produce cars with the lowest possible emissions, automakers and suppliers are increasingly going to climate-neutral materials: recycled waste; mushroom and plant fibers, and more. in the long run, the car interior could become a veritable botanic garden with pineapple fibers for the seats; kapok nuts in the fabric, and floor mats made from old fishing nets. The sustainability push is sparking more and more new ideas. Often, CO_2 absorption during the growth cycle is taken into the equation, and that's a start, but cost and CO_2 impact of transport are not yet really fully understood. DVN Interior has constantly published many news on these materials as they pop up. This week we summarize some notable announcements in the field; some newer and some older:

Range Rover and Eucalyptus

RANGE ROVER VELAR WITH KVADRAT INTERIOR OF WOOL AND RECYCLED SUEDE (JLR IMAGE)

A eucalyptus textile interior is currently used in the Range Rover Evoque, and JLR also offers, in the Evoque as well as the Range Rover Velar and the Jaguar I-Pace, seats upholstered in a fabric made by Danish company Kvadrat: a durable blend of wool and suede made from 53 recycled plastic bottles per vehicle.

BMW: Kenaf; Hemp; Eucalyptus Wood

BMW I3 WITH HEMP; EUCALYPTUS WOOD, AND YARN FROM PLASTIC BOTTLES (BMW IMAGE)

BMW uses a wide range of recycled materials in their i3 EV. Examples include kenaf, a renewable raw material made from Hibiscus cannabinus, a plant in the Malvaceae family, also called Deccan hemp or Java jute. Here it's used in door trim panels. Elsewhere inside the car, there's hemp; eucalyptus wood, and yarn spun from plastic bottles. The BMW iX uses wood certified to the FSC (forest stewardship council) standard, and natural wool fiber. And Deserttex, as well—a material based on cactus fibers and polyurethane plastic, which could serve as a leather substitute in the future.

Sustainable Materials Comport With Volvo's Values

“We’ve chosen materials based on our values,” said Cecilia Stark, senior design manager at Volvo Cars. The automaker is selecting their interior materials to match their priority on sustainability. the materials they're picking include Nordico, made from recycled PET bottles, and bio-attributed material from responsibly-managed forests in Sweden and Finland. The wood paneling in the EX90’s interior is made from FSC-certified wood, and its seats can be covered in a wool-blend fabric certified to strict standards for animal welfare; environmental compatibility, and social justice. The carpets include a proportionof regenerated polyamide. Around 50 kg of recycled plastics and bio-based materials have been used in various componentry throughout the car.

VW: Flax; Hemp; Kenaf; Cellulose; Cotton, and Wood

VW ID.BUZZ (VW IMAGE)

Volkswagen interiors increasingly have new materials aside from the company's use of lower-CO_2 steel—including flax; hemp; kenaf; cellulose; cotton, and wood. In the ID.Buzz and Cargo, polyurethane recyclates are used instead of leather, and the seat surfaces and door panels are finished with fabric made of recycled PET bottles and shredded T-shirts.

VW's Open Hybrid LabFactory works as a public-private venture in partnership with universities; institutes, and suppliers including plastic processing companies. Cellulose is an important raw material in materials research. The OHLF researchers feed bacteria a sugar solution, and the bacteria generate pure cellulose. Once the growth process has ended, when the workpiece has reached the desired size, the researchers wash the bacteria off and dry the sourced cellulose over several steps. This is followed by post-processing and drying, then they use an organic plasticizer to generate the desired smoothness of the material. In the end, it replaces natural leather.

VW Innovation is also developing the raw material for an innovative coffee-leather, using feedstock supplied by Braunschweig-based coffee roasting house Heimbs.

Mazda and Cork

MAZDA IMAGE

Mazda uses cork harvested from fallen trees to spruce up the MX-30's center console area. Talk about circularity: the company that eventually became today's Mazda actually got their start producing cork material in their hometown of Hiroshima, where cork trees abound. Founder Jujiro Matsuda joined Toyo Cork Kogyo in 1921 as a board member, bringing innovation to the company's corkboard production before becoming president. 'Cork' was dropped from the name in 1927..

Faurecia and Hemp

As we **previously reported**, last year at the IAA in Munich, Faurecia (now part of Forvia) showed a cockpit made of hemp fiber; a special biofiber composite material, and fossil-free steel which is produced without releasing any CO_2.

Dial 'M' for Mercedes (and for Mushroom)

The Mercedes EQS and EQE has cable ducts made out of recycled household waste. For the leather alternative in the Vision EQXX study, Mercedes used powdered cactus fiber and mushroom mycelium, the underground root-like structure of fungi.

Bentley and Lumber

BENTLEY BACALAR HAS BOGWOOD DASHBOARD TRIM (BENTLEY IMAGE)

Bentley has experimented with Vegea, a vegan leather made from grape skins, seeds, and stalks. The automaker has trimmed dashboards in veneers from lumber felled 5,300 years ago and preserved in bogs, a replacement for cutting down live trees. The Bacalar, a luxury Bentley spider built—only twelve of them—by Mulliner, has a dashboard with wood that is air-dried, veneered, and split into two panels.

Concept Vehicles

Callum

Designers and engineers at Callum worked to identify new sustainable materials in what they called their SMS design study—intended to send a message to the automotive industry that sustainable alternatives are feasible.

Using a retromod Porsche 911 interior as the basis for the research, the team—led by Charlotte Jones and British designer Ian Callum—identified coffee pulp; eggshells; red lentils; walnuts, and rice as viable materials for a car interior in 2030.

Callum consulted with green-tech company Ottan to determine the most appropriate materials capable of replacing petroleum-based plastics while meeting rigorous automotive design; environmental, and engineering requirements.

One outcome: eggshells mixed with resin to create a smooth, opaque material with either a glossy or matte surface. Application examples include the trim surround for the window switches. By adding walnut shells to the eggshells, the recycled content of Ottan's material increased from 78 to 84 per cent.

And natural materials needn't constrain the designer to earth-tone colors. Callum found purple carrot pulp can produce a mulberry-like color for trim parts. Tree leaves can also be recycled into a dark, smooth surface to offer an alternative natural finish to wood veneers for the center console or dashboard.

For seats requiring wear resistance, comfort, and colorfastness, Callum experimented with discarded materials such as thrown-out clothing. "Around the world, we consume roughly 62 million tons of textiles a year and around 87 per cent of the total fibre input used for clothing is either landfilled or incinerated", said Charlotte Jones, Callum's head of materials and sustainability. Companies such as Planq take jeans, then shred and press them with potato or corn starch to create a hard veneer that could be used for seat shells or dash centers.

So interesting! Eggs and lentils and walnuts could make car interiors more sustainable. With thousands of tons of food being discarded each day in most rich countries, it makes sense. Take a look at these materials; they don't look alien or second-best, they look like legitimate, first-rate choices:

Left to right; top to bottom: seat felt from PET Bottles · flax composite for seat shels and steering wheels · Planq recycled denim dash center · eggshell material · lentil material · Cameria ocean waste material for seats and door centers · coffee pulp dash topper · Econyl carpet from fishing nets (Callum images)

If a smooth translucent material is required, the team found that out-of-date rice or lentils can be used for illuminated areas of the car, including for lamp covers and illuminated switches. If a flame-resistant material is required, coffee pulp can be used to replace conventional plastics for decorative trim pieces with a glossy finish.

The seat centers chosen for the design study are made from Camira, a fabric produced using marine plastic waste such as polyester. For the bolsters, the team chose Féline, a soft material manufactured using PET bottles. Both materials are lightweight and can also be recycled. For the carpet, Jones selected Econyl—a hard-wearing material produced from discarded nylon carpets and fishing nets.

Callum himself says "More of our customers are starting to think about sustainable projects and put an emphasis on the circular economy. With others, we might nudge them down that path, highlighting the business benefits of making a more sustainable choice".

Luca: an Eindhoven U. project

The Eindhoven University of Technology (TU/e) in the Netherlands developed the Luca EV project. After developing the world's first bio-structural car in 2017, students here have now created the first all-electric 'waste car' to show the automotive industry that waste can and should be used in the manufacturing process.

Matthijs van Wijk, public relations manager at TU/Ecomotive, says the design and construction team wanted to use the interior as a showcase of what can be done with waste materials; the car has "two very comfortable custom seats with cushions made from a combination of coconut fiber and horsehair. The fabric surrounding the cushions is made from recycled PET but looks and feels as if it is suede".

Other parts of the interior made from recycled materials include the central tunnel, which contains a plastic additive made from household waste. Even residual materials left over after the car has been manufactured are put to good use.

Interior News

Continental Wins German Design Award

INTERIOR NEWS

CONTINENTAL IMAGES

Continental had multiple wins at the German Design Awards 2023, which is the premium award of the German Design Council. Continental's Luxury Minimalism Concept has won Gold, in the category *Excellent Product Design—Automotive Parts and Accessories*. In addition, the Continental 5K Natural 3D Display and Curved Ultrawide Display were awarded in the same category.

The Luxury Minimalism Concept is built around simplicity. Its reduced design simplifies interaction to the essentials. Inspired by the trend towards luxurious vehicle interiors, the focus of the concept is a display in an avant-garde diamond shape. The display acts as a central driver information system, in addition to incorporating a virtual assistant that serves as artificial intelligence to support the driver. It includes 'In2visible Display' technology, where control panels appear only when needed.

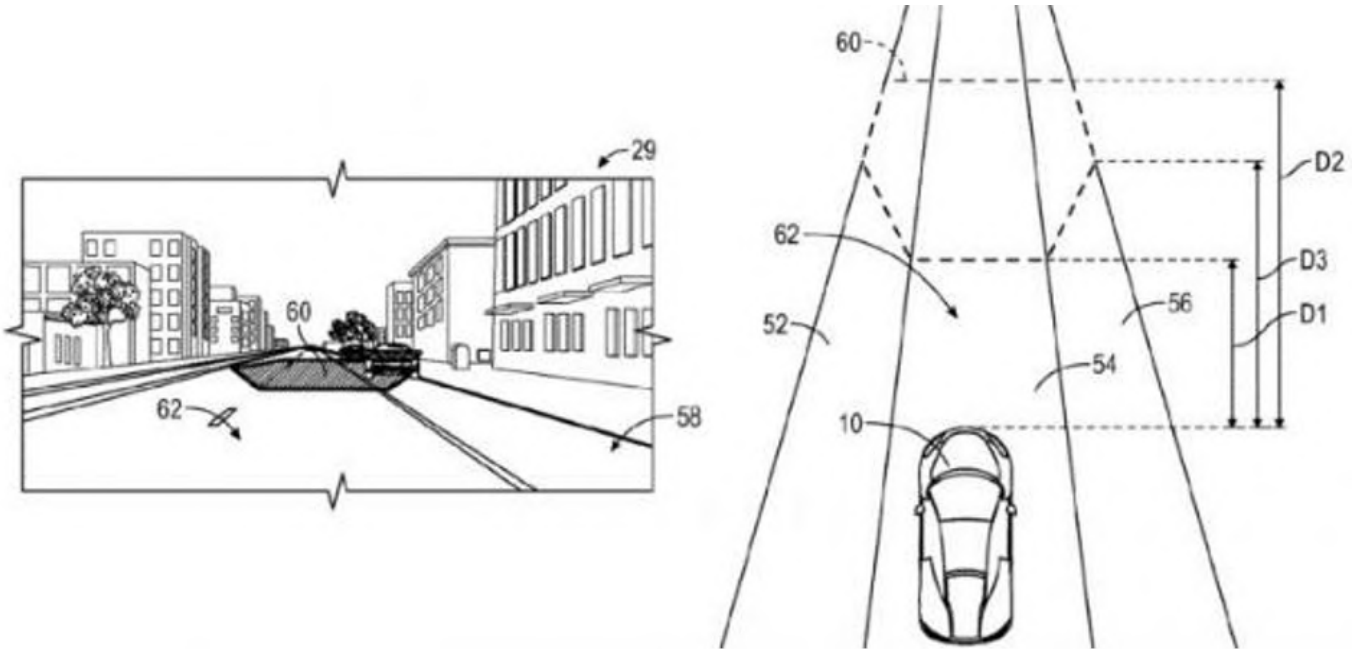
CURVED ULTRAWIDE DISPLAY

5K NATURAL 3D DISPLAY (CONTINENTAL IMAGES)

Continental is expanding their portfolio of 3D display solutions with the likes of the 5K Natural 3D Display; Light Field technology which enables a 3D experience without the need for additional special glasses or a head-tracking camera, and their Curved Ultrawide Display, which extends over the entire width of the cockpit and is therefore a driver, central and passenger screen in one.

GM Patent: Windshield Zone Dimming With AR HUD

INTERIOR NEWS



GM IMAGES

GM has filed for a patent on an AR-HUD that dims specific areas of a vehicle's windshield.

The GM patent filing, № **11,557,234 B1** (pdf) was published on 17 January. Essentially, the system described in the patent is designed to minimize the glare of an oncoming vehicle for the driver. The system incorporates an AR HUD and a windshield made of glass with electrically-tunable transmittance capabilities, as well as forward-facing sensors that can detect and identify headlights from oncoming vehicles and other bright light sources.

If the system detects that the light is above a certain threshold, the system will respond by dimming a section of the windshield to prevent glare.

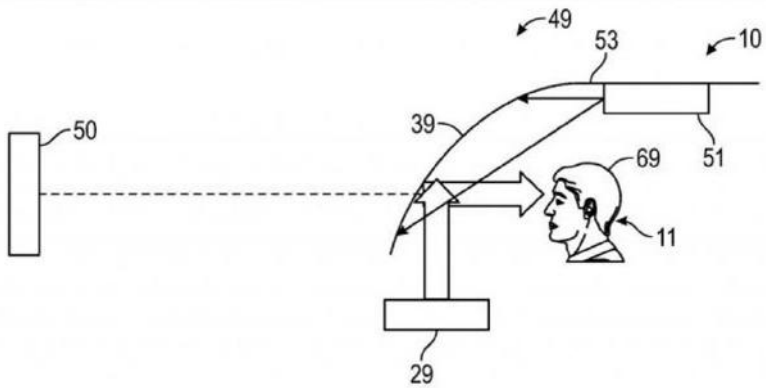


FIG. 5

This isn't the only patent GM has filed recently that aims to block light from dazzling the driver; they've also recently filed a patent for a system that uses a liquid crystal array and transparent LEDs to selectively darken sections of a vehicle windshield.

Lexus EV has Radiant Heating

INTERIOR NEWS

LEXUS IMAGE

After decades of warm air convection heating, Lexus is using two panels in their forthcoming RZ BEV to create infrared radiation to warm the driver and front seat passenger. Unlike traditional convection heating, which warms the air, this design heats only solid objects in the panels' line of sight.

The radiant heat is claimed to be extremely efficient as it warms occupants more quickly and reduces energy consumption by about 8 per cent by delivering heat only where required. It reduces the load on the HVAC system, and helps safeguard the RZ's estimated 470km range. A Lexus representative said the new-type heater feels like "having a warm blanket placed around legs on a cold day; this is achieved by hiding the two radiant heaters at knee level, behind the lower instrument and steering column panels".

DENSO IMAGE

Driver or front seat passenger can avoid overheating with physical contact to the panel which automatically reduces temperature to around 43 °C to prevent discomfort. The radiant heating supplements and reduces the standard cabin heating and is in addition to the seat heaters and heated steering wheel. Radiant heating is integrated into Lexus Climate Concierge, the multi-zone climate control system, which automatically adjusts the cabin, seat, and steering wheel heating and cooling systems to ensure optimal thermal comfort.

The panels are produced by Denso, part of the Toyota supplier constellation.

Audi Q8 e-tron Quattro Interior: Sustainable Hi-Tech

INTERIOR NEWS

AUDI IMAGES

Audi's new Q8 E-Tron, planned for launch this Spring, has a sparkling new interior. The glass panorama roof makes the cabin space seem lighter and reinforces the sense of airiness and expansiveness. Four-zone automatic climate control is available, as is an air quality package. The three-stage ventilation provides for comfortable seating, even at high outdoor temperatures. This is available for the standard perforated-leather seats. The adjustable individual contour seats have pneumatics and a massage function and backrest adjustments.

The Q8 e-tron uses the MMI touch-response operating system. Its two large high-resolution displays replace nearly all conventional switches and knobs. Plus, a lot of features can be activated through natural voice control.

A HUD is available as an option. In some markets, the car will come standard with MMI Navigation Plus. Its media center supports the high-speed LTE Advanced data transmission standard, and it has an integrated wifi hotspot for the passengers' mobile devices. The navigation system recommends destinations based on previously traveled routes, and the Audi Connect navigation and infotainment package includes car-to-X services.

Audi offers the combination of cameras and touch displays instead of mirrors. A colored border around the display warns of objects in blind spots. The assistants, consisting of cameras, ultrasonic and radar sensors,

remain an honestly-described L^2 system. There is a distance control system and a lane departure warning system. A remote parking assistant is offered as an option, which can be used to park the car while standing outside.

Audi uses recycled materials for insulation and damping, as well as for carpeting. The decorative inlay above the display, called the Tech Layer, is available with a new anthracite-colored technical material that is partially composed of recycled PET bottles. With the S line equipment package, the sport seats are upholstered in synthetic leather and the microfiber material Dinamica. As part of the PlasticLoop project, Audi worked with LyondellBasell to establish a process in which chemical recycling will be used for the first time to reuse mixed automotive plastic waste in the series production of the car. Plastic components are dismantled and separated from foreign materials such as metal clips before being shredded and processed into pyrolysis oil through chemical recycling. This pyrolysis oil is then used as a raw material in the production of new plastics in a mass-balance approach.

Audi Activesphere Pick Up: Mixed Reality Interior

INTERIOR NEWS

AUDI IMAGES

The Audi Activesphere concept, like its three predecessors—the Grandsphere, Urbansphere and Skysphere—is intended to demonstrate the brand's vision of autonomous EVs, the integrated technologies they may offer, and potential flexibility. With the Activesphere's AR features, Audi is venturing into an area that BMW also focused on with its i Vision Dee concept car.

It is a self-driving sportback crossover, which can transform into a small pickup trucklet capable of carrying bicycles or other gear. And it features an AR interface. The designers paid particular attention to the interior space, which will become more of a lounge on wheels as cars are able to drive themselves without a human at the wheel.

"We are experiencing a paradigm shift above all in the interiors of our future Audi models. The interior will become a place where passengers can feel at home and at the same time connect with the world outside," said the brand's development chief Oliver Hoffmann.

With the Activesphere, Audi developed an augmented reality ecosystem Audi Dimension for driver and passengers, in which specially equipped headsets create 3D digital displays that allow control of the vehicle's functions, and interact with the vehicle's surroundings, especially in L^4 autonomous driving mode. It displays digital content in the occupants' fields of vision in real time.

The difference between Audi and BMW is that Audi uses headsets while BMW has developed a HUD covering the entire width of the windshield. "The mixed reality glasses don't limit us to the overlays in the front area on the windshield of the vehicle, but make content usable throughout the vehicle. We are making functions in the vehicle particularly intuitive and easy to use," Christina Huber, user interface designer at Audi, told Automobilwoche. "We see the glasses as part of a digital ecosystem. Our customers always have them with them, just as they currently have their smartphones," she said.

In autonomous mode, the Activesphere's dashboard, steering wheel and pedals retract, providing additional room in the cabin right out to the front of the car. The traditional front grille has been replaced by a glazed material that gives occupants a full view of the road.

The concept has also a transitioning rear deck which can be transformed into a mini truck bed. With the rear glass in sportback position, the Activesphere features a pop-up ski rack integrated into the roof.

Aston Martin DBS 770: Classic In-Cabin Experience

INTERIOR NEWS

ASTON MARTIN IMAGES

The DBS 770 Ultimate will be Aston Martin's most powerful production car to date, and will feature a range of new interior design elements that set it apart while retaining the instantly recognizable cabin environment of the current DBS.

The 770 comes with Sports Plus Seats as standard, upholstered in full semi-aniline leather and Alcantara with a quilted and perforated pattern. Carbon Fiber Performance Seats can be optioned as an alternative. To complement the seats, a range of differing trim inlays can be selected, consisting of Dark Tamo Ash, Satin Chopped Carbon or 2×2 Twill Carbon Fiber.

A bespoke trim split has also been introduced, with contrast colors linked to edge and stitching, and a tailor-made strap and buckle badge featuring a laser-etched DBS 770 Ultimate logo, located on the 770's central arm rest. Located either side of the steering wheel are carbon fiber gearshift paddles which are also fitted as standard.

Aston Martin's own Premium Audio System comes as standard, with a Bang & Olufsen audio system available as an optional extra. Sill plaques featuring Aston Martin Wings, the DBS 770 Ultimate logo and Limited-Edition numbering signify the vehicle as one of 300 Coupes or 199 Volantes. Production of the DBS 770 Ultimate is scheduled to begin in Q1 of this year and first deliveries in Q3.

The Design Lounge

Eucalyptus

By Athanassios Tubidis

THE DESIGN LOUNGE

BOTANIC PORSCHE', MILANO DESIGN WEEK – PORSCHE IMAGE

While soft robots harness viscous fluids to perform complex motions driven by AI, car interiors go botanic. Farmers get up with the sun and that is a way of living once your life is in sync with a rhythm set by nature. After the Civil War, America was essentially a farm country, but by 1920, millions of people had already moved into cities. In tune with the industrial revolution, capitalism steadily conquered man's greatest rival—nature—imposing a very sudden shift from a life defined by nature to a life defined by a powerful mechanism that coordinated everyone, the clock.

In 1878, the world was divided into time zones accommodating railway transport. Mechanical clocks ignore earth's orbit—sometimes 7:00 am is still dark, sometimes not—and they don't care about seasons. It is all a constant process, often hard to get used to. From a life wherein people controlled their land and owned their tools, we advanced to a world where tools moved people to cities and places that they didn't even own. Our entire relation with the world around us radically changed within a hundred years. A fundamental shock of the industrial societies manifested itself with numerous labor moves and riots. It signified indeed a drastic change in the perception of our surroundings. And then…
you stared at your alarm clock to figure out your day plans. Did the sun wake you up this morning? It is the moment we said, we are controlled by robots.

The uprising of the modern world structured cities around coasts, rivers, natural resources, or logistic passages, is producing evermore tangible results. The average worker though, would not necessarily get a sense of accomplishment. Everything got extracted and separated by the natural way of doing things. However, following

that powerful and imposing technical chronicle, today, nature in our minds is as strong as ever enhancing new creative expressions and trends even within highly technologic sectors such as the automotive. Besides the open-pore wood veneers that appear as elegant and authentic in many of today's high-end cars, fabrics that achieve their color without artificial dyes are offered as a statement of commitment to sustainability. Bentley's recently-introduced stone veneers and Volvo's dazzling crystal gearshift levers (XC90 T8) are emerging material applications, very desirable aesthetically, for the specific segments.

But there is more! Eucalyptus; pineapples; coconuts; mushrooms; cork; apples; cactus; bamboo; corn, and other types of fibers of botanic origin constitute the primary materials of an unexpected future design scenario. Each is a signature product of companies* that undertook the challenge to paint, or rather upholster, the panorama of the new era car interiors. Certainly, a different way to tame nature.

While back then, the first internal combustion engines were tested and initially assigned to agricultural work, today curiously after a century of automotive innovations, pioneering tech applications and industrial prouesse, all upcoming trends claim natural farmed materials for our closest proximity: car interior environments. A great effort to reconstitute surrounding nature after a century of taking distance from it.

** Lenzing, Ananas Anam (Piñatex and Piñayarn), Mylo, Coir Indonesia, Deserto, Appleskin, Will's Vegan Store, Veja, Fleather, Veerah*

Senna Cockpit: Aerospace Design & Technology for Cars
by Rob Miller

THE DESIGN LOUNGE

SENNA IMAGES IN THIS ARTICLE

When we think about innovation in seating for humans, it involves a lot of thought, and as everyone knows, seating is used by almost everyone everywhere on earth. In automotive interiors, seating has dramatically improved over the years. Before the mid-1970s, most car seats were simple benches with metal springs, some stuffing or foam, and a vinyl or cloth cover. Next came bucket seats that gave you a sense of connection and performance when driving the vehicle. Over the years, seating has expanded dramatically, and now automakers have created specialty seating fine-tuned for every level of car performance.

Enter the Senna Cockpit. Inspired by the enduring spirit of Brazilian motorsports racing driver Ayrton Senna, Embraer has partnered with Senna to design the ultimate seat in the world—for a very small number of people; only 22 of them will be made. Embraer SA, the Brazilian multinational aerospace manufacturer, and MetalCrafters Transparencies and Composits of California came up with a unique seating design to embody Senna's passion for excellence.

According to the brochure, the Senna Cockpit is "a symbol of strength, determination, balance, and empowerment needed to make your best decisions. High-end cockpits inspire its performance and technology in the automotive and aerospace industries".

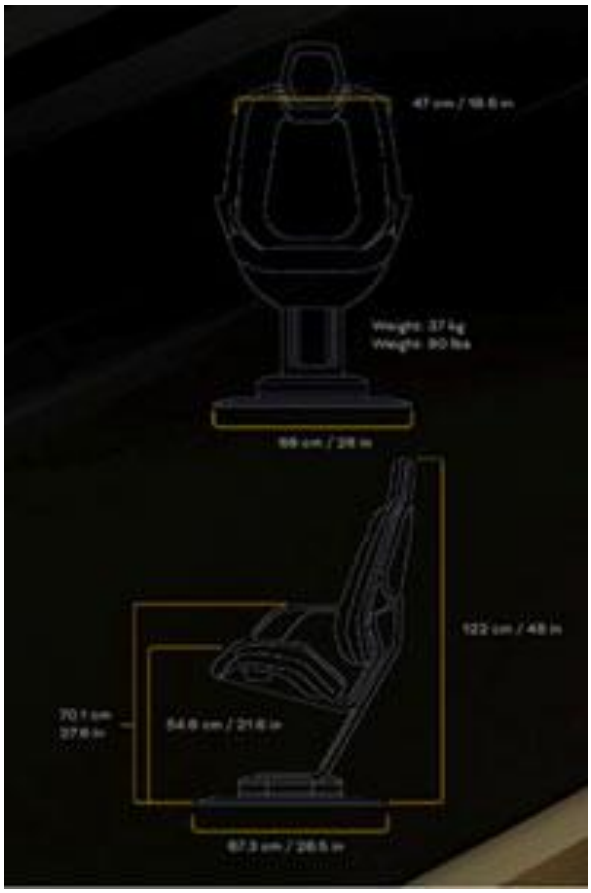
The $35,000-per-chair price gets the buyer cutting-edge materials and performance. It uses 6061-T6 machined aluminum; graphene-reinforced carbon fiber, and 100-per-cent full-grain leather. In addition, the design is backed by sustainable design solutions; exceptional ergonomics, and more than 50 years of aerospace technology.

So, what can we learn from this product offering? In two words, **design innovation**. The elements of perfection and advanced technology may seem excessive for some, but there are hidden lessons within the design of this

chair. Producing only 22 units makes it even more tempting for those who wish to sit at the top of their game.

It's a dream chair with great comfort and innovation, and can offer some innovations for mass production of seating. First, its overall design. It fits with today's design trends. Using graphene-reinforced carbon fiber forces others to look at this design and figure out how to take some of that uniqueness and apply it to their plans—perhaps eliminating the use of older materials that weigh more.

The Senna chair extends one's thinking into the cockpit. The cool factor of this design offers you a 'cockpit experience' wherever it's used. The finely machined parts, the extra broad base, the thoughtful touch of gold trim accents, and its use of fine leather only add to the visual experience. Of course, it would be nice if this chair offered some new eco-friendly space-age fabrics to help cut down on animal consumption and environmental destruction.



Will it be possible to adapt this innovation and its design in automotive? probably yes. Will it possible to use more environment friendly materials? probably yes, as well. Will it be possible that costs become affordable for a vehicle? Let see if automotive mass production scale is enough.

News Mobility

Seriously: Where are Autonomous Cars Going?

NEWS MOBILITY

MERCEDES-BENZ IMAGE

The days are over for big promises on highly automated passenger cars, even for those companies whose CEO and fanbase won't admit it. The industry is now focusing on assistance systems. Mercedes-Benz plans to expand their L^3 Drive Pilot system into the USA, taking a leadership role they will likely retain for quite awhile.

The industry has recognized the hurdles on the road to autonomous driving. On the hardware side, a redundant and always-reliable sensor set is still missing. In addition, many manufacturers lack the appropriate electronics architecture to process the data in the vehicle. The software is also not mature, and there is a lack of tools that make it possible to test and validate the systems with manageable effort.

Finally, there is the question of liability, which each car manufacturer must answer for itself: "We won't take that risk," said BMW CEO Oliver Zipse. Beyond that, Zipse sees no business model for L^3 systems in passenger cars. Because of the current limits that hardware and software impose on developers, the technology has to be switched off in tunnels, in the rain, in the dark, in fog. "No customer will buy it," he says.

This leaves the industry to successively improve established technology like improved radar technology, high-resolution thermal images from IR sensors, new concepts for the use of stereo cameras; improved validation tools, and so much more.

Driverless Cars Will Make Traffic Much Worse: Report

NEWS MOBILITY

Impact Rank	Urban Area	Hours Lost	Change from 2021	Change from 2019	Last Mile Speed
1	London	156	5%	5%	10
2	Chicago IL	155	49%	7%	11
3	Paris	138	-1%	-16%	11
4	Boston MA	134	72%	-10%	11
5	New York City NY	117	15%	-16%	11
6	Bogota	122	30%	-36%	11
7	Toronto ON	118	59%	-13%	10
8	Philadelphia PA	114	27%	-20%	11
9	Miami FL	105	59%	30%	15
10	Palermo	121	11%	-12%	9

Motorists lost an average of 80 hours last year due to congestion in UK, a seven-hour increase from 2021, according to analysis by traffic information supplier Inrix. London is even worse, with drivers spending an average of 156 hours sitting in traffic (Chicago, 155; Paris, 138; New York, 118…as shown in this Inrix ranking).

The UK Department for Transport said congestion will be twice as bad as current levels if self-driving cars become commonplace.

The findings are based on the possibility of connected and autonomous vehicles making up half of the car fleet by 2047, and a fast uptake of electric vehicles. And, according to traffic projections for England and Wales, delays may rise by up to 85 per cent from 2025 to 2060.

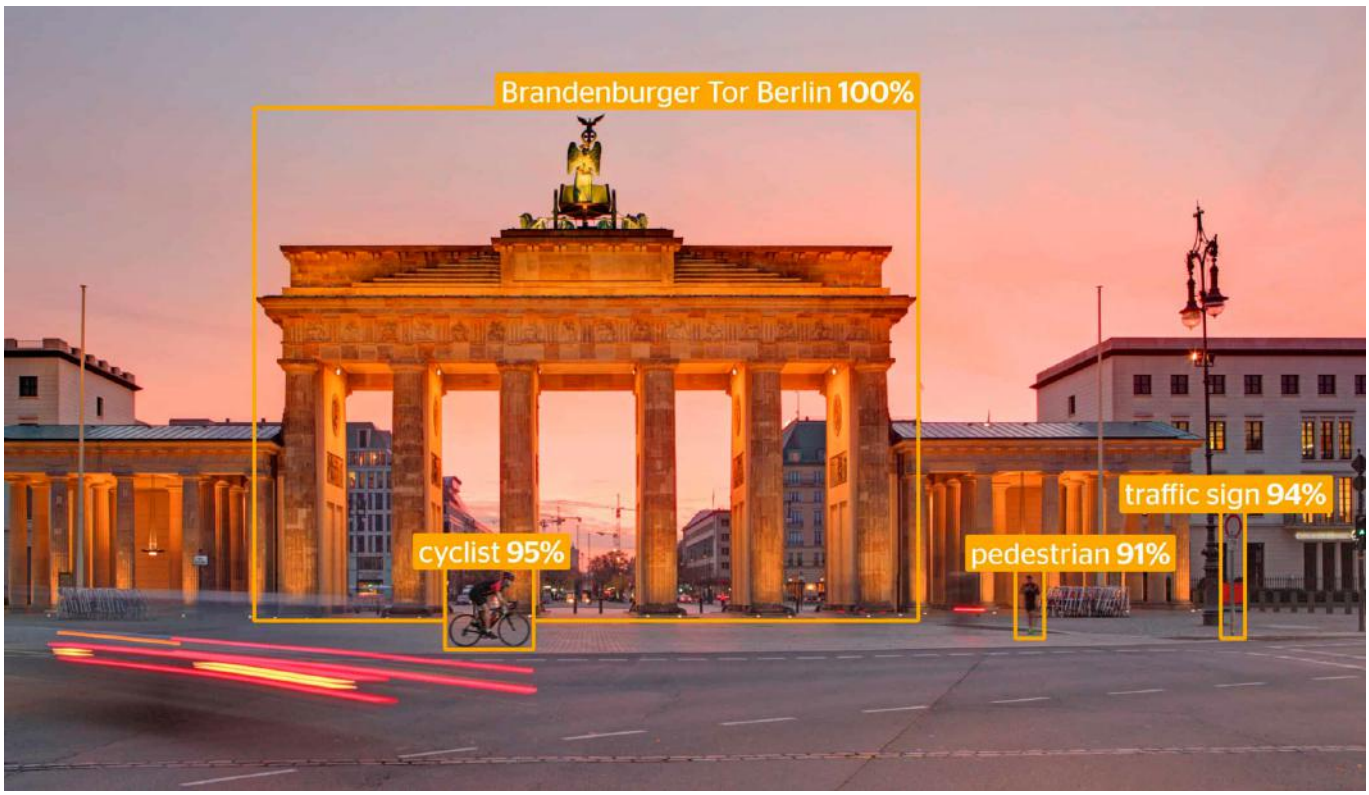
As part of the plans, self-driving vehicles would not need anyone on board with a driving licence because they would be able to drive themselves for the whole journey. According to the report, this would lead to more traffic by increasing the mobility of the elderly and those who do not currently hold a driving licence. At the same time, the report says, the ability to work or relax while travelling in a self-driving car means occupants will be more willing to sit in traffic.

"In the foreseeable future, automated vehicles offer the tantalising prospect of independence for the many millions more people who fall into the older age group but for whatever reason—cost, medical impairment—don't currently drive", Said RAC Foundation director Steve Gooding told the PA news agency, predicting that the way in which autonomous technology is deployed will be significant. "However, if we are prepared to access these vehicles on demand and forego personal ownership then we could have a win-win situation: quieter roads, fewer cars shared by the many, and cheaper transport".

General News

Continental Opens AI Lab in Berlin

GENERAL NEWS



CONTINENTAL IMAGE

On 1 February, Continental Automotive CTO Gilles Mabire opened the supplier's AI lab in Berlin. There, experts from different business units are to work together on technology such as machine vision; hybrid AI (combination of machine learning with conventional software programs) and automated data labeling (marking objects in images, for example, as a prerequisite for machine learning). From this, the data and software engineers will develop applications for autonomous driving and robotics.

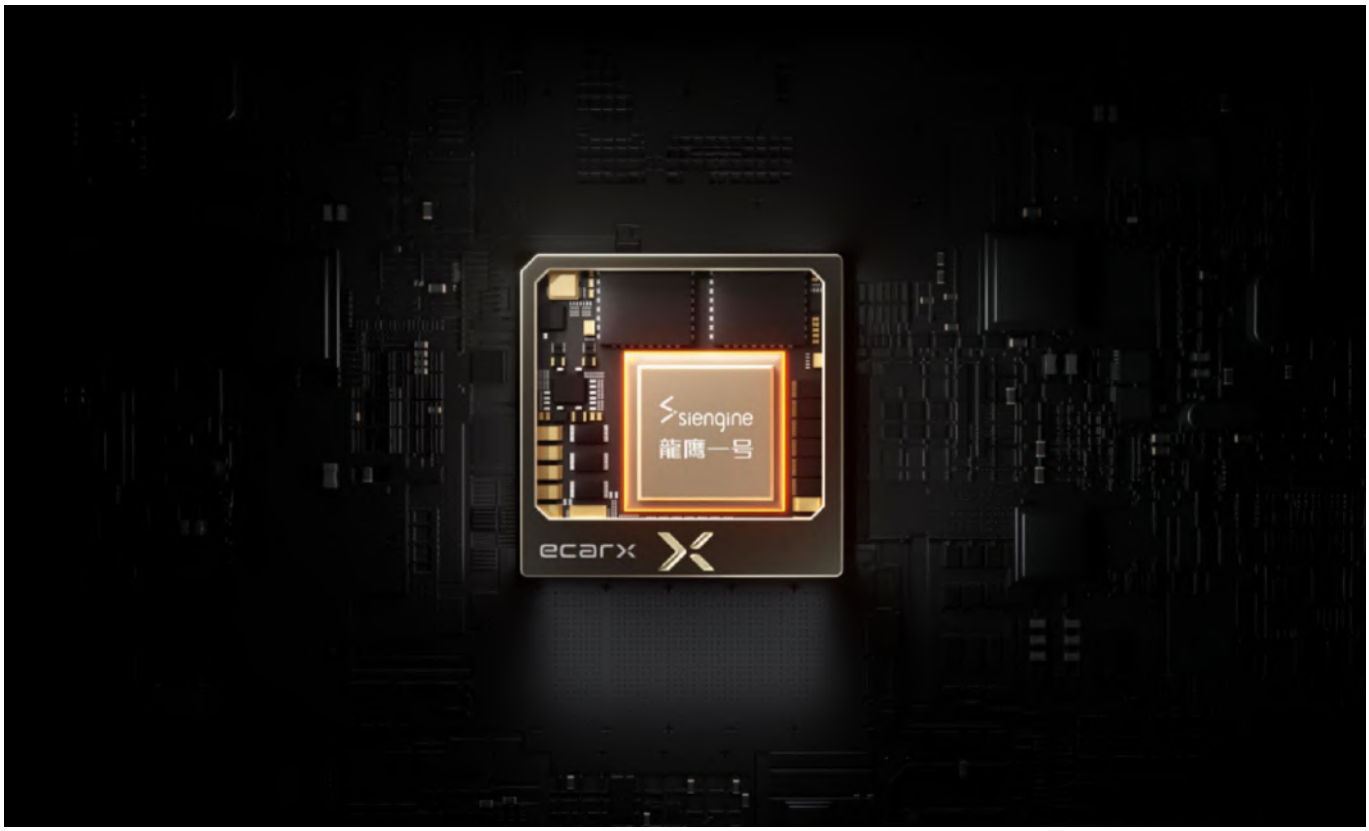
Continental currently employs some 20 people at the AI lab. Worldwide, they have 1,000 AI experts. "Berlin offers by far the best ecosystem in Germany for creating new things together," says Corina Apachite, Program Head Artificial Intelligence and Data at Continental Automotive, of the choice of location. Berlin has a high appeal for the AI scene, she adds.

Possible applications of AI include interior and driver monitoring. At CES in Las Vegas, Continental showed an application in which artificial intelligence helps to establish the identity of the driver. This could be used, for example, to approve payment transactions without contact. In the example cited, however, the AI comes from Trinamix. The BASF subsidiary develops technology for facial recognition.

"A driving factor for the further development and future of mobility is clearly artificial intelligence," said Gilles Mabire in his opening speech, explaining the importance of AI for the sector automotive strategy.

Ecarx-FAW Smart Cockpit ; SiEngine SoC

GENERAL NEWS



ECARX IMAGE

Mobility tech provider Ecarx and automotive semiconductor (and Ecarx investee) SiEngine have established a strategic collaboration with Chinese automaker FAW to co-develop high-performance digital cockpits based on the SiEngine SE1000 System-on-a-Chip. The new digital cockpit is planned for mass production by the end of this year onFAW vehicles.

Ecarx was founded in 2017 and has grown to almost 2,000 employees. The cofounders are two automotive entrepreneurs, Chairman and CEO Ziyu Shen, and Eric Li (Li Shufu), who is also the founder and chairman of Chinese automaker Zhejiang Geely which has ownership interests in other automakers and brands including Lotus; Lynk & Co; Polestar; Smart, and Volvo Cars.

The platform is the first computing platform to ride on the SE1000 chip and Ecarx's self-developed hardware computing module, integrating globalized onboard operating system and software stack together. As a global oriented company, Ecarx’s cockpit platform also supports Android Automotive and GAS-based Google services. The platform is planned to go into mass production by the end of this year.

The SE1000 SoC uses a 7-nm AI processor combined with 8.8 billion transistors. It adopts a multi-core heterogeneous architecture design and high-performance computing cluster with 8-core CPU; 14-core GPU, and an independent NPU with 8 TOPS of computing power.