Thu, 6 July 2023
Weekly Newsletter

DVN-I
Automotive Interior

NEWSLETTER #168

Editorial

Smart Surfaces Are Going To Be Big—Really Big!

TACTOTEK SAMPLES (DVN IMAGE)

Smart surfaces are progressing in automotive interiors, integrating electronics and plastics. They bring intelligence to any structure by digitizing plastics. Any dashboard, door, headliner, seat…anything can become a functional surface. Think what that means for the more than 10 m^2 of real estate within a vehicle. Tactotek, based in Oulu, Finland, put on a technical conference around their technology and ecosystem, and we attend; you'll find our report in this newsletter's in-depth section.

There's all kinds of activity centered around smart surfaces, because they open a new dimension to interiors—with new HMI and lighting opportunities, integrations with screens, voice, and gesture controls. That's part of what the DVN Interior Deep Dive will be all about. It's happening on 29-30 August as part of the DVN Triple Workshop in San Francisco, California, in a session called Interior Lighting and Beyond. Beyond, in this case, means surfaces—including smart ones—within the reach of the driver.
Registration is open, but hurry fast; spaces are filling up quickly.

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

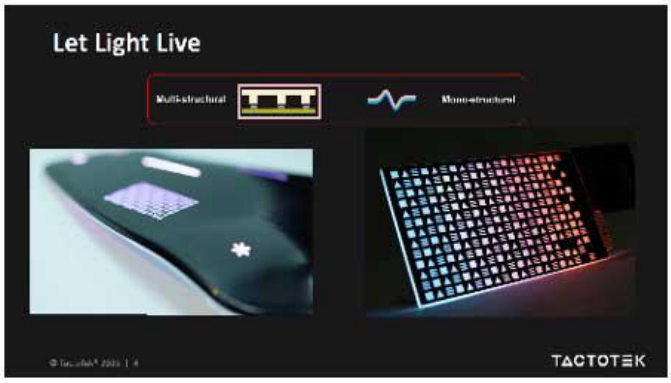
Tactotek Show Their Technology, Ecosystem at IMSE Days

TACTOTEK IMAGES EXCEPT AS NOTED

DVN Interior attended Tactotek's IMSE Days 'lift off' event. It was a showcase of the Tactotek ecosystem for In-Mold Structural Electronics (IMSE), which enable and differentiate brands in car interiors. With new designs integrating electronics and plastics, smart surfaces with IMSE bring intelligence to any structure by digitizing plastics. IMSE Days illustrated the best of what their technology and ecosystem partners can offer to industry. Have a look at our previous **DVN Interior interview** to understand who Tactotek is and their core value proposition.

The IMSE Days show (**agenda**) took place in the technology capital of the Findland's north, Oulu—famous for Nokia and that company's ecosystem. Former Nokia employees are now in the local industry, including Tactotek, leveraging expertise, and combining plastics and electronics.

The IMSE conference, chaired by CEO Jussi Harvela and moderated by product-management SVP Karthikesh Raju, brought 104 external participants, and over 14 sessions. Then, an interesting lecture from CTO Antti Keränen described the latest solutions of the Let Light Live™ platform for interior lighting and smart surfaces.



Tactotek's model is unusual in the automotive sector, developing the IMSE technology and its entire ecosystem. Interesting to notice that it went through many validation challenges successfully: temperature 105°C, max 8 pins per connector, costs, thermal, EMC, and ZEP (zero-error production target).

Highlights of the conference include:

- Technology readiness level 5 acceptance by the automotive ecosystem, Fabio Scaffidi Muta, Material specialist, CRF Centro Ricerche Fiat, Stellantis, gave a lecture on transfer to Higher TRL of IMSE for automotive components. Automotive megatrends—sustainability, autonomous driving, connectivity, shared mobility, electrification, and personalization—require new thinking on design and materials. Also new standards are needed for materials and testing. In that respect, positive results were achieved with TactoTek testing samples. IMSE: TRL is now sufficient, the door to application is open!
- A keynote by a premium German automaker: From Prototype to Serial Production - IMSE for Automotive Applications. This described how IMSE technology went through the automaker's complete validation process, confirming that the complete ecosystem is ready to pass all technical challenges to get to tangible automotive parts.
- An interactive workshop on sustainability, featuring multiple stakeholder participants across automakers, tiered suppliers, regulators, material and component providers, as well as consumers.
- Unveiling design workflow with computer-aided engineering (CAE) tools, including the IMSE Feature Library and Thermoforming simulation tools

IMSE technology uses plastic films and resins to confine light as a light guide, and a light spreader, meaning it's an important pillar of a light system. "Design with Light" was, therefore, the title of one session, around light being the user interface (UX) for the human-machine interface (HMI). Antti Mäkelä of Aivan (Design Services in Helsinki) discussed design challenges and how to bridge them with new technologies. Philippe Aumont of Driving Vision News discussed interior lighting as a new dimension of automotive UX, and Michael Brandl of AMS Osram explained dynamic and ambient lighting using intelligent RGB LEDs. Finally, there was a lively Q&A session hosted by Tomi Simula, TactoTek's principal integration specialist.

Antti Mäkelä of Aivan highlighted the gap between what UX expert expects and what the technology and the system can deliver: the first evaluation of UX through a digital model.

DVN Interior gave insights on interior lighting, thanks to many years of tech-watch on automotive interiors, as published weekly in the DVN newsletters, and lectures in the DVN Workshops organized around the globe regularly.

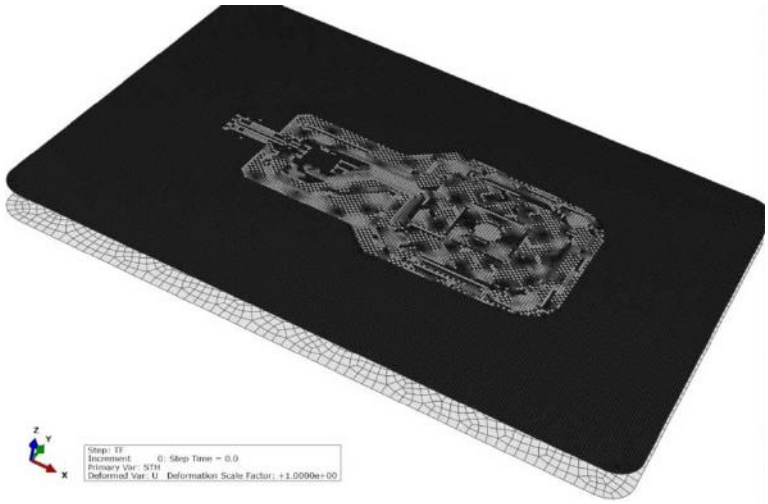
Automotive interior lighting started as simple task lighting, and became quite recently a decoration element, justifying for a time the saying that 'lighting is the new chrome'. Automotive designers, engineers, and UX/human-factors experts recognize the importance of interior lighting, for its contribution and interaction with all the interior system performance, such as user experience, safety, comfort, and wellbeing.

AMS Osram showed stylish, dynamic light, thanks to the pyramid and the Open System Protocol. Motion thickness reduction was already presented in DVN in Jan 2020. Lighting continuity and active light means to have 1 Led each 20 mm!

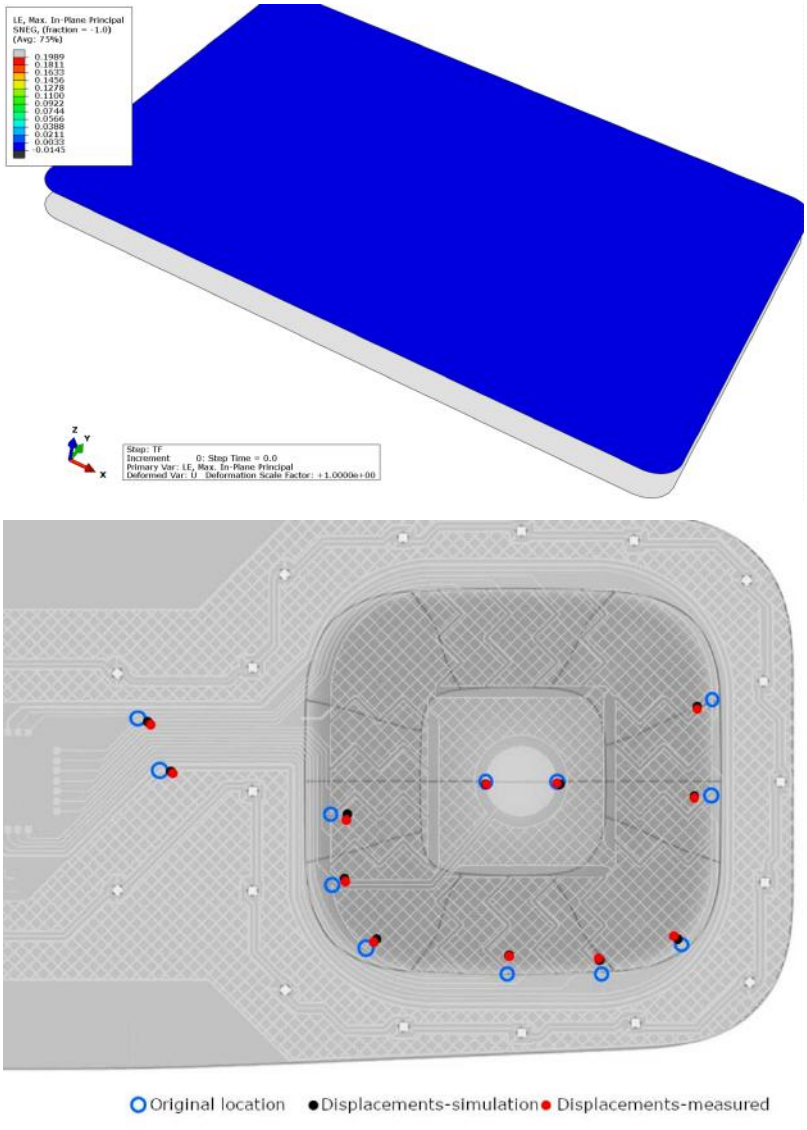
Building on the Let Light Live™ theme, several new concepts were showcased the LightChannels™ platform with its applications towards automotive HMI built by one partner company, Italian mechatronic specialist HSL, in the form of an illuminated emblem. This portends large applications like an intelligent front grill developed by Jonas Künzel of Covestro (**See DVN Interior report**), and the advancement of haptic control by Kyocera.

TactoTek also announced new products, including the IMSE Feasibility Analysis Tool, IMSE Feature Library, a High-Performance Thermoforming Simulation package, and new reference designs for aviation and automotive markets. The event also welcomed new engineering partners, Computer Aided Engineering (CAE) suite provider Dassault Systems and Altium provided further talks highlight their support and Tactotek tools built on their platforms.

TactoTek's Juha-Matti Hintikka started the second day by walking the group through the IMSE Applicability Tool and interactive cases.



Tactotek is currently developing automated workflows and routines to accelerate the IMSE development process. In particular, the HPTF simulation routine allows to compensate for distortions occurring in films during the high-pressure thermoforming stage, which is a key to developing tridimensional functional surfaces. With this workflow, information on the conductive ink layout, as well as any other printed layer, can be directly embedded in the Finite Element (FE) simulation model to consider its effect on the film distortion. As can be seen from the GIF hereafter, the simulations allow us to estimate the local deformation of the films very accurately, where the deformation of specific points (in blue) predicted by the simulation (in black) is shown against deformation measured on actual samples (in red).



Last, but not least: a trip into reality with the visit to Tactotek IMSE Experience Center, thanks to Paavo Niskala (IMSE technology SVP) walking me through a tour of the IMSE Technology Development Lab.

PHILIPPE AUMONT (L), PAAVO NISKALA (R) DVN IMAGES FROM HERE ON

Tactotek's IMSE license business model relies on a solid ecosystem, but first it needs a strong intellectual property, as it is visible on a striking patent wall, visible when entering the experience center.

The Experience Center is a show room, demonstrates parts and prototypes, and many applications examples. With videos and charts, it also introduces the different steps of the production process,

The production area, is used for prototypes, small runs, run-at-rate pre-production trials, and preparation for transfer to licensees, in a clean room, with all the different steps installed in an automatic line. Looks more like a pharmaceutical plant!

The different steps, as illustrated in this picture are: Film printing (Screen Printing), SMT (Surface-mount technology), Thermo Forming, Cutting, Injection Molding.

In short, TactoTek develops and licenses in-mold structural electronics technologies that enable the industry to create compelling user experiences, through interior lighting and smart surfaces.

Interior News

Continental's Smart Cockpit HPC as Pre-Integrated Unit

INTERIOR NEWS

CONTINENTAL IMAGE

Continental Smart Cockpit HPC is designed to provide ideal system performance for integrating instrumentation, infotainment, and driver assistance.

Continental has presented a pre-integrated solution with the Smart Cockpit High Performance Computer. The system is geared toward the typical configuration of two displays for the center stack and instrument cluster, but can be expanded to include up to three displays, for example a head-up display. The Smart Cockpit HPC combines all cluster and infotainment functions in one box. This reduces the number of installed control units and the required wiring harnesses.

The Smart Cockpit HPC enables the integration of various domains and functions, such as cluster, infotainment - with an interface to an Android operating system - (display, radio, telephone, phone mirroring and navigation) and Advanced Driver Assistance Systems (ADAS). With its customized system performance, the pre-integrated feature set is expected to help minimize cockpit hardware costs and accelerate time to market.

Webasto's Innovation Area Glass

INTERIOR NEWS

WEBASTO IMAGE

Light effects, shading at the push of a button or solar cells: roof systems in cars today are more than just an opening overhead. Webasto, based in Stockdorf, Germany, is a longtime top expert in sunroofs, and now they're developing high-tech glass and innovative, creative roof concepts.

Large glass surfaces - great cinema: A starry sky or geometric patterns shine in the car roof as you drive. High-tech features from Webasto make this and much more possible. High-tech glass is the technological basis for new equipment features such as lighting effects, shading at the touch of a button or solar cells.

Switchable glazing: The glass surface can be switched as required at the touch of a button. This is made technically possible by a wafer-thin layer in the glass. The technical term is Polymer Dispersed Liquid Crystals (PDLC). The liquid crystals are loosely sorted in the polymer coating. If they lie crosswise, they darken the glass. If the surface is placed under electrical voltage, they align themselves vertically, thus making the glass transparent to light rays. The initially optically clear glass darkens either over the entire surface or in segments.

Light spectacle in the glass: By day, passengers enjoy the unobstructed panoramic view through the generous glass pane and the bright atmosphere in the interior. Barely visible: a transparent print integrated into the glass. In the dark, the roof impresses with effective dynamic lighting scenarios. This is because a wide variety of patterns in many colors can be realized in the pane when the light is controlled, leaving plenty of scope for individual customer wishes.

WEBASTO IMAGES

For sustainability, Webasto has been offering solar roofs since 1989. With e-mobility, they have come back into focus. The pioneers: Hyundai is equipping their Ioniq 5 EV with an optional solar roof from Webasto; the solar power generated can charge the drive battery via an intelligent battery management system.

Webasto has been developing convertible roofs since 1986. In terms of acoustics, comfort and safety, they stated a soft-top convertible today is in no way inferior to a sedan with a fixed roof.

Webasto is going in lightweight construction with the hybrid roof for the BMW 4 Series convertible. It consists of four panel crossbars, the core of which is made of lightweight yet extremely stable paper honeycomb, or PHC for short. At around 65 kilograms, it weighs only half as much as the hardtop of the predecessor model.

Another trend is also emerging with electric cars: instead of steel roofs, there is increasing demand for fixed glass roofs. Tesla puts such a roof as standard equipment. Market analysts anticipate a demand for up to eleven million fixed glass roofs per year in 10 years' time. Webasto is the only roof manufacturer in the world (so far, at least) who can offer fixed and openable roof systems from a single source.

Omnivision's New NIR In-Cabin Monitoring Tech

INTERIOR NEWS

OMNIVISION IMAGE

Semiconductor supplier Omnivision has revealed two new pieces of componentry for their near-infrared (NIR) technology portfolio: the OX02C1S, a 2.5MP RGB IR BSI global shutter (GS) sensor for in-cabin driver and occupant monitoring systems (DMS and OMS), and the OX01H1B, a 1.5MP mono (IR) GS sensor for driver monitoring systems (DMS). Both new sensors feature a pixel size of 2.2 µm and an NIR quantum efficiency of 36 per cent. The units also offer low power consumption and high performance.

The OX02C1S and OX01H1B small-size automotive-grade sensors use OmniPixel4 GS technology to enable simultaneous image detection in all pixels to accurately reproduce rapid motion without any deformation. Furthermore, both sensors have integrated ASIL B and cybersecurity to adhere to industry standards.

“Our OX02C1S and OX01H1B sensors are the newest additions to our in-cabin solutions portfolio, with the same features as the 5MP OX05B1S GS sensor that we introduced during the Consumer Electronics Show in 2022,” said Paul Wu, Omnivision's automotive product management and marketing manager. “All three sensors share the same pixel technology, so it’s a seamless process for [automakers] to incorporate any combination of them as solutions in their full line-up, from high-end to mainstream vehicles.”

Semicast Research principal analyst Colin Barnden says, “The CMOS image sensor market for automotive DMS and OMS can be divided into three distinct segments: digital cockpit, automated driving and NCAP/GSR (New Car Assessment Program/General Safety Regulation) compliance. Performance requirements differ significantly for each. Designers must also consider sensor location, including rear-view mirror, steering column and center console. With the new OX02C1S and OX01H1B sensors, and existing OX05B1S, Omnivision provides auto makers with solutions for the total market".

Wu added, “The OX02C1S is essentially a more economical and lower resolution (2.5MP) version of the OX05B1S for DMS and OMS, while the OX01H1B is a flexible 1.5MP solution for DMS that offers the ideal price/performance for (…) flexibility to place the DMS camera into different locations within the vehicle based on their unique interior design".

Asahi Kasei Predicts How Plastics Will Shape Future Cars

INTERIOR NEWS

AKXY2 CONCEPT VEHICLE (ASAHI KASEI IMAGE)

Plastics play a key role in the transformation to more sustainable mobility. The Japanese technology group Asahi Kasei conducted, at the end of 2022, their fourth Automotive Interior Survey of 1,000 vehicle users in each of Germany, the USA, and China.

Result: A sustainable vehicle is no longer defined solely in terms of drive technology, but also in terms of the carbon footprint in production, easily recyclable materials, or even the decarbonization of vehicle manufacturers and their suppliers. Sustainability and transparency along the entire value chain are playing an increasingly prominent role from the user perspective. For the automotive industry, the current crises are additionally intensifying the pressure to use alternative energy sources, optimize existing production processes, and use materials with a lower carbon footprint.

With their new AKXY2 concept vehicle, Asahi Kasei has demonstrated the possibilities that plastics with a holistic approach can open in vehicle construction.

Every component of the vehicle that can be seen, touched, or felt at the car is manufactured or co-developed by the company. The vehicle's window fronts are made of hard-coated polycarbonate. The company does not manufacture this material itself, though they were the first supplier in the market to develop a process that uses CO_2 as a raw material for production.

Today, 15 per cent of global polycarbonate production is manufactured using this technology. In order to be able to use the plastic as the material of choice for lighter windshields, the Group is currently developing a hard-coating technology that will give the material UN R43-compliant abrasion and weather resistance. The interior surfaces are upholstered in Dinamica, a microfiber suede made partly from recycled polyester and manufactured by Italian company Miko, a subsidiary of Sage Automotive Interiors. Sage Automotive Interiors has other products in its portfolio made from recycled PET, bio-based PET, blends of natural raw materials or even marine plastics. All fabrics can be finished to be antiviral and antibacterial, as well as liquid repellent and stain-resistant.

The transparent polymer AZP used in the display of the concept car exceeds the optical properties of conventional polymers and opens up new possibilities for plastics as glass substitutes in demanding optical

applications, such as curved and large-area vehicle displays or lenses in VR glasses. With near-zero birefringence and excellent design capability, this material enables high transmittance and low color distortion from all angles.

ASAHI KASEI IMAGE

The high-quality appearance is maintained even when the display is viewed through polarized sunglasses. In polarized optical applications such as AR/VR headsets and HUDs, clear images without white break or blur can thus be achieved.

Together with Japanese partner company Microwave Chemical, Asahi Kasei launched a joint project in April 2023 with the aim of establishing a commercial chemical recycling process of polyamide 66 using microwaves. The project will depolymerize PA66 waste using Microwave Chemical's Pla Wave microwave technology. The monomers hexamethylene diamine (HMD) and adipic acid (ADA) are extracted in the process with low energy consumption and high yield, and can be reused to produce new PA66. With partners from the value chain, both companies want to establish an effective and more sustainable material cycle for PA66.

Dongfeng's 'Smart Car's Eye' Digital Sideview Mirror

INTERIOR NEWS

DONGFENG IMAGES

Effective from July 1, a new regulation on motor vehicles' indirect vision devices will be officially implemented in China, signaling the legal acceptance of electronic rear-view mirrors on automobiles. Wuhan-based Dongfeng, the № 2 Chinese automaker, has developed their own electronic rear-view mirror called the "smart car's eye" (translated from Chinese), which will debut on Dongfeng's upcoming Aeolus-branded flagship model, the Haohan, providing drivers with enhanced convenience.

The introduction of the smart external rear-view mirror not only solves numerous issues associated with traditional rear-view mirrors but also delivers an entirely new driving experience. It improves driving comfort while effectively enhancing road safety and reducing accident rates.

Dongfeng Motor's smart rear-view mirror incorporates an external camera and an internal display. By utilizing digital image processing technology, it captures and analyzes real-time images of the vehicle's surroundings and presents them on a dedicated high-definition screen within the car for the driver's perception and judgment.

Unlike the traditional rear-view mirrors, Dongfeng Motor's smart rear-view mirror employs an external lens to transmit images, reducing the size of the mirrors by approximately 40 per cent. This also cuts down the vehicle's aerodynamic drag and wind noise, leading to potential advantages in fuel efficiency and energy consumption.

The wider field of view and increased flexibility in adjustment, achieved by modifying the wide-angle and telephoto settings, address the limitations of traditional mirrors such as limited adjustability, glare, and blind spots. The built-in display adopts a high-definition digital image sensor, providing a clearer image. Furthermore, a special coating on the lens of Dongfeng Motor's smart rear-view mirror ensures water repellency, preventing water droplets from affecting the visibility. It also solves safety concerns related to traditional optical rear-view mirrors, such as blurred vision in rainy or foggy weather and dark imaging at night.

Huawei Patent for Posture-Determined Airbags

INTERIOR NEWS

According to the official website of the China National Intellectual Property Administration, Huawei has publicly disclosed a new patent for the "control system and control method of safety airbags, and transportation vehicles."

Currently, the working principle of automotive safety airbags involves sensors detecting collision information when a vehicle experiences a traffic impact. These sensors then immediately send an impact signal to the control unit of the vehicle's safety airbags. Upon receiving the sensor's signal, the control unit measures the current deceleration. If the deceleration exceeds a predetermined value, it commands the inflation device of the safety airbags to ignite the ignition device, resulting in an explosion.

The rapid inflation of the airbags from the explosion helps prevent collisions between the vehicle's occupants and objects such as the dashboard, steering wheel, and cabin, thus protecting the lives of passengers. However, the current safety airbags still have room for improvement in terms of their protective performance.

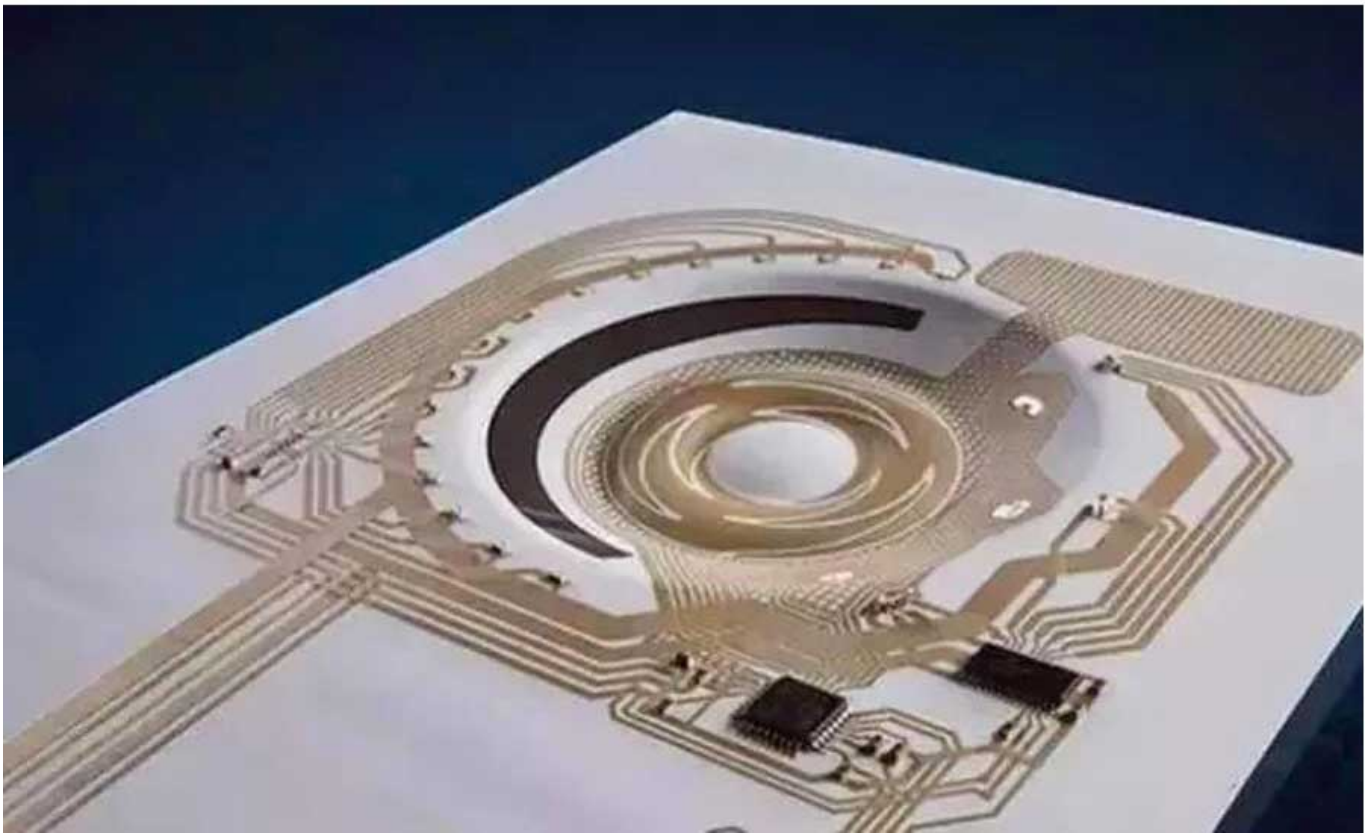
According to the patent abstract, the proposed solution includes a detection device and a controller in the control system. The detection device is used to sense the seating posture of the occupants. When instructed to deploy the safety airbag, the controller determines the seating posture of the occupant based on the sensed information and controls the airbag's deployment from its folded state to the target deployed state, which corresponds to the occupant's posture.

Furthermore, the safety airbag described in the patent can also provide protection for rear-row occupants. For example, the seating posture information mentioned earlier can include the angle between the seat and the seat cushion or the seat coordinates. By considering different seating postures, the airbag can adjust its deployment accordingly, thereby improving its protective performance for different occupants.

The Design Lounge

Surfacing

THE DESIGN LOUNGE



TACTOTEK IMAGE

By Athanassios Tubidis

Using clay in different forms is a practice lost in time (beyond 14,000 BCE), while over the centuries its obvious association with ceramics became identitary. Evidently, there is a deeper aspect to it, a very gratifying one. The primary and somewhat magic idiom of its viscous and tactile nature, to easily take any shape, or the somewhat metaphysical twist of trading forms with our imagination, was finally described, pronounced, and patented, in 1880s and later trademarked as plastilin (or plasteline). Clay was already widely used for many form-requiring applications such as molding and sealing yet, automotive designers used clay for the first time in the 1930s. At the most amazing moment and place in automotive design history, the General Motors Design Department, under Hurley Earl, clay became part of the automotive design toolbox, assimilating the design process, for the exponential growth of the decades to come.

All along the automotive history, form was seen as a property of materials and, ‘the skin’, car body or interior (veneered or) upholstered surfaces, were perceived by designers as a cover to all mechanical and ergonomic functions. Thus, the creation of surfaces (surfacing) was taking place by the mere assets of bending and

stretching a metal sheet or folding and stitching a piece of fabric. Carving, milling, welding, and grinding to a seamless surface, molding, polishing, and varnishing, are practices that brought about most of the automotive surfaces, all based on their nature and limitations when applied on specific materials. Clay, beyond sealing between hard materials, became the catalyst that would fill-the-gaps between known processes, giving the form incentives of 3D interpretation at places that conventional ingredients, were not suitable. It could be added or subtracted at any time, several times, until a consensus across the design team was established on a specific design proposal. In expert's hands, clay became the enabler of choice and the value creator of the process of making in the post war era. Later, the science of surface was brought to new levels by introducing 3D modeling and a new aesthetic dialog between physical and virtual. CGI (Computer-Generated Imagery) created a digital twin process of all previous states of form/surface development. However, the more the technical means the more the challenges.

The intensity of tech applications used today in car interiors, creates a completely new perception of the development process. We could argue that every single square inch of interior automotive surface, is or soon will be, integrating a new technology. Surface treatment, paint, color, and finish, are still part, but also lighting, remote functions, screens, motion and voice detection, haptics etc. From the inner, deeply engineered, soul of the automobile, functions emerge to the surface thanks to a new era of technologies, coupled by modern lifestyles and perceptions of mobility. It is likely, new vehicles will be surfaced-by-technology and their corresponding interfaces, instead of materials and their physical properties. Flat surfaces (screens), that rapidly conquered instrument panel designs, was just a first glimpse and the rough beginning of a new design era. Most of these functions can now integrate just about any surface, soft, hard, upholstered, or veneered. Form is not anymore just a tactile creation, but also a perception of intricate schemes made by backlit shapes, haptic surfaces, and graphics. Weaved fabric light patterns, conductive ink - as a complete circuit pattern embedded into surface treatment, capacitive touch buttons and ambient illumination, all with a strong emphasis on weight reduction and sustainability, are the new tools for shaping future car interior surfaces. It might be, that very soon the-process-of-making will be embedded into the product itself, enabling infinite design alterations in real time.

The upcoming challenge: removing boundaries between technology and natural human experiences.

Porsche Reveals Mission X Concept for 75th Anniversary

THE DESIGN LOUNGE

Porsche celebrates their 75th anniversary with the unveiling of the Mission X concept, an electric-powered supercar that previews a potential successor model to the plug-in hybrid 918 Spyder.

The 2-seater is presented as a “lightweight super sports car” with a dedicated electric powertrain, which Porsche indicates could deliver nearly 1,500 hp.

The automaker says the rear-wheel Mission X has been conceived to become the fastest road car (ever?) to lap the Nürburgring Nordschliefe circuit in Germany. If granted production approval, Mission X would become a new range-topping Porsche model, filling the gap left by the 918 Spyder, which ceased production in 2015.

Porsche CEO Oliver Blume describes the electric supercar as a “technology beacon for the sports cars of the future.” “It picks up the torch of sports cars of decades past: the 959, Carrera GT and the 918 Spyder before it. The Mission X provides critical impetus for the evolutionary development of future vehicle concepts,” he says.

Blume said they target at lifting the production-car lap record at the Nürburgring, currently held by the Mercedes-AMG One, which lapped the 20.8-km circuit in 6 minutes, 35.18 seconds in 2022.

PORSCHE IMAGE

Porsche says the Mission X's battery is installed behind the cabin in a so-called "e-core" concept like that planned for the production version of the Mission R. Porsche says it is part of a 900V architecture designed to charge at twice the rate of the automaker's Taycan sedan.

The Mission X was unveiled June 8, the 75th anniversary of the day German authorities granted Porsche production approval for the 356 roadster, the company's first road car.

News Mobility

Air taxi eVTOLs at Paris Air Show—Aerial Mobility?

NEWS MOBILITY

The Paris Air Show broke all records for attendance (400 000), deals ($55 billion) but the main stars of the 2023 biannual event were also the next-generation electric vertical-takeoff-and-landing (eVTOL) air taxicabs making their first appearance.

Full-sized and fully-equipped eVTOLs by Archer and Volocopter attracted the most, and it is scheduled to provide the world's first air taxi services during the Paris 2024 Summer Olympics. Close inspection of both craft revealed the emphasis makers are placing on passenger comfort and flight information tailored to each trip.

VOLOCOPTER IMAGE

Eve and Lilium participated with demonstration models of their respective air taxi passenger sections.

Other makers featured reduced-scale versions of their eVTOLs, including Toulouse-based Ascendance Flight Technologies' hybrid-fueled, wing-ducted rotor-powered air taxi.

AIRBUS IMAGE

Also present were Airbus, Wisk, AutoFlight, Plana, Joby, and China's EHang, which exhibited their full-scale craft.

Also visible amid the new-car smells of those interiors were the controls and navigation panels pilots will use for air taxi operation.

AutoFlight's Prosperity eVTOL machine has been also officially unveiled at the Paris Air Show sporting bodywork created by Frank Stephenson Design, who already supported Ferrari and McLaren.

AUTOFLIGHT IMAGES

Paris Air Show chief organizer Patrick Daher said the objectives were to familiarize and entice visiting members of the public through close-up and personal interaction with emerging transportation they'll soon be seeing in the air, and taking for their own inner-urban travel.

"The technologies are ready, the first tests have been successful, and the revolution of daily aerial mobility may be for tomorrow," Daher said. "Will those 'cars' be flying in the skies above the cities of tomorrow like in science-fiction motives? We're almost there… and this event allows us to help the public understand that better."

ALEF IMAGE

In parallel, Alef's eVTOL was unveiled on October 19, 2023. It is 100 per cent electric, can be driven on public roads, and has vertical take-off and landing capabilities.

The carmaker has received a significant number of orders already in the hundreds, but with each vehicle priced at $300,000 it will be out of most people's financial reaches. "We're excited to receive this certification from the FAA. It allows us to move closer to bringing people an environmentally friendly and faster commute, saving individuals and companies hours each week. This is a one small step for planes, one giant step for cars," said Jim Dukhovny, CEO of Alef.

General News

Opel Redesigns Logo for EV Era

GENERAL NEWS

OPEL IMAGE

Opel, part of Stellantis, has redesigned their lightning bolt logo for the electric era. The logo keeps the familiar lightning bolt as the central element, but the symbol has been given a sharpened design that Opel says gives it a progressive and modern look. **See video**. It will continue to form a central element of the Opel Compass, one of the main features of the Rüsselsheim-based carmaker's exciting and critically acclaimed design philosophy, while simultaneously continuing to sit proudly at the center of the Opel Vizor brand face (it is this black strip that bars the grille horizontally).

The logo will be introduced at the IAA Munich auto show in September during which Opel will highlight its electrification shift.

The brand will debut the Astra Sports Tourer Electric EV compact station wagon, an updated battery-electric version of the Corsa small car and a third electric model.

The logo conveys the brand's commitment to becoming fully electric in Europe by 2028, Opel CEO Florian Huettl said in a statement.

"The lightning bolt—or 'Blitz' in German—is closely associated with electricity and is the ideal emblem to symbolize Opel's approach to the era of electromobility," Huettl said.

The logo will be introduced on Opel's new cars starting in 2024.

Rivian Buys Iternio for Open EV Ecosystem

GENERAL NEWS

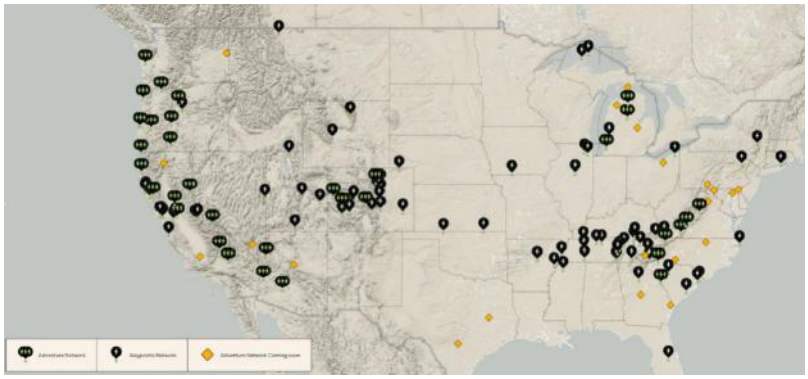
RIVIAN R1T EV TRUCK (RIVIAN IMAGE)

Rivian, based in Irvine, California, has announced the acquisition of Swedish mapping company Iternio, developer of the 'A Better Routeplanner' (ABRP) app.

ABRP facilitates EV trip planning and Iternio says it has a strong community of EV drivers in both North America and Europe. ABRP gives EV drivers the ability to plan and compare routes and charging stop options.

Rivian and Iternio will continue to maintain and improve ABRP as a stand-alone app for drivers of any EV, as well as integrating ABRP's technology into Rivian's in-vehicle navigation system and newly available trip planning experience in the Rivian mobile app.

It will enhance Rivian drivers' ability to plan their journeys, key for EV drivers, concerned about battery range and charging network density. Trip planning improvements will not only enhance Rivian's in-vehicle navigation, but Rivian will also be introducing the ability to create trips in the Rivian mobile app. Rivian owners will be able to plan their route from the comfort of their own home and send their trip directly to the vehicle's navigation system.



RIVIAN IMAGE

To enable road trips and charging flexibility, several years ago Rivian decided to develop their own charging. This DC fast charging platform, which is capable of 300 kW and up to 900 volts, is now being deployed as part of Rivian Adventure Network (RAN).

With Tesla's move to open their well-executed charging connector, they have decided to transition to NACS both in vehicles as well as for RAN.

RAN is still in the early stages of deployment, with plans to scale to more than 600 sites. Location strategy will complement North America's existing fast charging footprint while continuing to extend out to more adventure-forward destinations. While the network is currently only available to Rivian vehicles, they plan to open it up to all EV drivers soon.

It shows that a car, in the future, has to be integrated into an eco-system, where charging is key, that's where navigation is essential to help the driver to find where and when having charging spots available.