DVN-I
Automotive Interior

Thu, 13 May 2021 Weekly Newsletter NEWSLETTER #60

Editorial

Car Interiors: Platforms For Technology

CONTINENTAL COCKPIT PLATFORM (IMAGE: CONTINENTAL)

This week's in-depth article shows how it is possible to leverage a new dimension of interior lighting into a network integrating sensors and actuators into the ISELED chain. That paves the way for many new comfort and convenience features in car interiors—managing your coffee cup temperature; voice-activated climate controls, haptic feedback, and numerous others, all in a single network becoming a technology platform. That's integration!

It's surely interesting to have a look at the Pace Award finalists, and see the innovations they're bringing into the car interior. Out of 12 interior innovations, four are within the screen/HMI zone, three in occupant safety (especially child-in-car); two in thermal comfort; two on IAQ (interior air quality), which is essential in an airborne-virus pandemic, and one for instrument panel decoration. Overall, we see a clear picture of where the industry is putting its innovation effort, and why traditional car interior parts like seats, instrument panels and so on, are also becoming platforms for additional layers of technology.

Enjoy this week's news. I'm ever so glad you're with us!

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

Magna Ambient Lighting…and More!

Ambient lighting in the passenger car is reaching new dimensions. The number of LEDs and interior lighting functions are increasing. By using digital LEDs like those in accord with the ISELED alliance's standards, new dynamics and communication speeds can be achieved. Magna is looking at whether partially decentralized communication of ambient lighting in the interior offers an added value compared to a central control from the onboard computer.

ILaS (ISELED Light and Sensor Network) integrates additional sensors and actuators into the LED chains with ISELEDs for more comfort, emotional contact, functionality, personalization, performance, and safety.

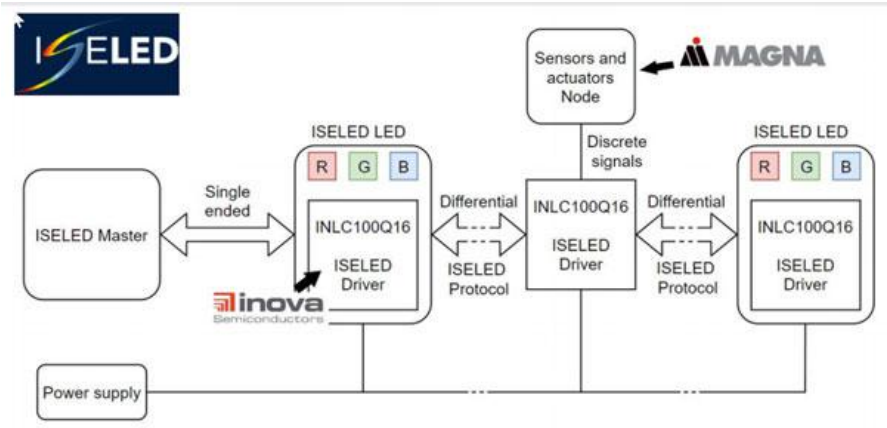


FIGURE 1

The ILaS network can extend the current LED chain and protocol capabilities of ISELED to promote the technology and potential of a decentralized electronics with lighting, sensors and actuators, controlled by a simple two-wire connection. Magna is focusing on the ISELED LED to use the existing

interfaces of the integrated LED controller for new HMI concepts with fast response times and lower system costs regarding implementation.

The digital ISELED LEDs simplify the alignment of individual light sources for dynamic ambient lighting, animated welcome scenarios and completely new functions. An ISELED LED Chain connects several of these digital LEDs in a chain, each with a dedicated driver chip from Inova Semiconductors, and an RGB LED in a very compact housing. The chip contains the correction data for the respective LED, which eliminates time-consuming binning. The manufacturer gathers the correction data during the final test of the RGB LED and stores it directly on the chip. The digital RGB LEDs can thus operate by an optimized protocol. Communication operates in a strictly master/puppet manner. The connection to the neighboring devices in the chain takes place via two bidirectional differential serial communication lines.

The direction toward the ISELED master is referred to as an upstream connection, while the opposite direction, toward the follower end of the chain, is known as downstream. The communication unit embedded in the controller driver controls both connections. Incoming upstream frames and responses from the downstream are forwarded to the main unit (embedded in the controller driver), which is responsible for command processing and overall device control. Commands always come from the ISELED master. The protocol allows addressing up to 4,079 LEDs with a bi-directional half-duplex serial differential communication bus of 2 Mbit/s with low latency. The serial line is oversampled eight times to ensure robustness of communication over a standard serial line. Figure 2 shows a concept for light and sensors with ISELED and ILaS, with a hot cup node prototype.

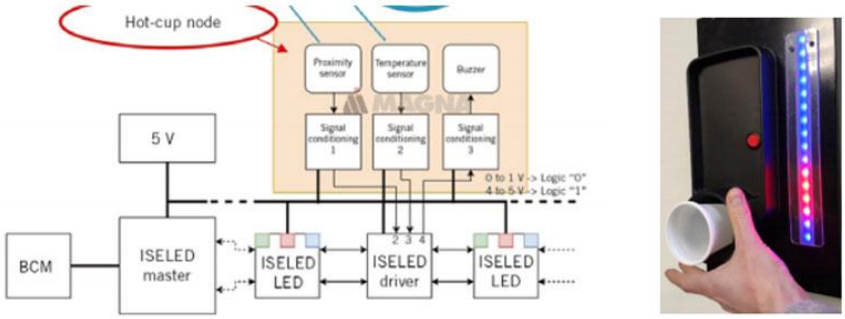


FIGURE 2

The node is part of ILaS chain, situated in the central tunnel or in a door pocket. The node detects the hand approaching, the ISELED master checks the node status and, according to the scenario, drives each LED strip. If the drink temperature is acceptable, the LEDs change color from blue to white. If the drink is too hot, the LEDs closed to the cup holder change color from blue to red, and a sound warns the driver. The proximity sensor is based on capacitive technology and the temperature sensor uses IR, capacitive or thermo-resistor technology.

A second concept for ILaS from Magna, shown in figure 3, is a haptic soft key node prototype.

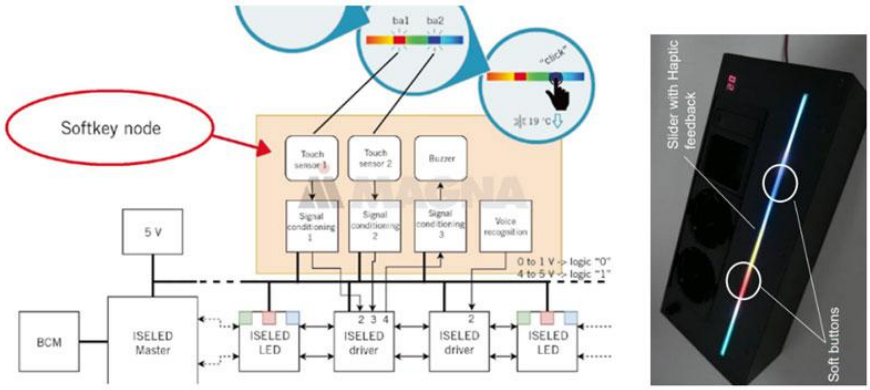


FIGURE 3

The soft key node is part of the ILaS chain, situated in the armrest. The soft key node can show more buttons areas using an ambient light guide. In a climate application, you could activate two soft buttons and a slider when the user says "climate", for example. Touching the blue and red soft buttons decrease or increase the temperature, respectively. By swiping a finger on the slider area you can increase or decrease the temperature and get a variable, vibration-and-acoustic haptic feedback.

Capacitive sensors are integrated into the mini optics, which are touch-sensitive in active mode. Incidentally, the rest of the ambient lighting remains activated in the color preset by the user. Dynamic color gradients are possible. While inactive, the softkeys are not visible and not touch sensitive.

Figure 4: Hot coffee control

Figure 5: Telephone call

An example for a flexible and modular system concept for light and sensors containing ISELED strips, capacitive buttons and slider modules, haptic, buzzer and voice control modules is shown in figure 6.

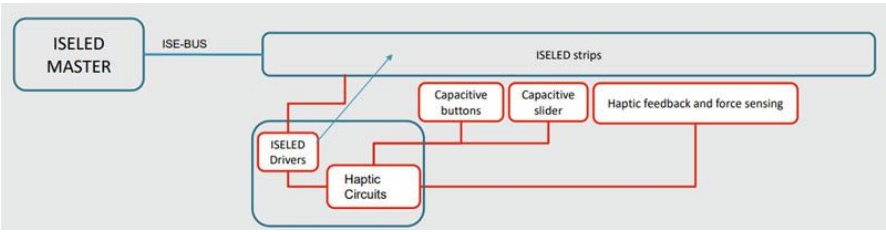


FIGURE 6

The system has sensors for voice recognition, using a local control unit in order to detect and process the human voice. Two touch sensors (temperature is increasing or decreasing) are added, using capacitive technology to detect finger contact. Visual feedback is perceived through LEDs color changing in the soft key area, and the temperature display is updated. Acoustic feedback is activated using the buzzer.

For all concepts, the reaction time over the complete communication chain is crucial. The user must not perceive any reaction latency or acoustic delay. The latency could cause safety issues and the softkey concept could be perceived as unpleasant for the driver. The latencies in the ILaS network between action and reaction (input and output of the same node) are independent from the node position in the chain. The latencies are approximately 64 ms (± 1 ms). The difference in accessing the nodes is negligible and equal to almost 1.5 ms for all nodes. The perceived quality dropped significantly between 70 and 100 ms latency, when the feedback is tactile or acoustic, and between 100 and 150 ms when the feedback is visual.

These values ensure that users do not perceive inferior quality. Using the ISELED master as a local control and decision maker, the reaction time of the ILaS network, where the chain comprises sensors, visual/acoustic actuators, and ISELED LED nodes, is sufficient to guarantee a good user experience. But if the ILaS network is used as control and decision maker instead of the local ISELED master via the body computer module of the vehicle, this has an additional impact on the latency behavior of the control unit. Based on the assumption that the communication between the ISELED master and the body computer module takes place via CAN bus, an additional latency of 80 ms was calculated. With a LIN communication protocol, the latencies could reach up to 160 ms.

In summary, the ILaS network can manage complex systems at high speed, supporting Magna's application ideas. A decentralized control in the ILaS network makes sense and prevents additional latencies that are perceived as disturbing by the driver. Shortened response times could be crucial for safety relevant functions. Therefore, it makes sense to discuss the benefits of decentralization for future architectures in order to improve the perceived system quality and to create completely new ideas and comfort applications.

Interior News

Car Interior 2021 Pace Award Finalists

INTERIOR NEWS

Technical innovations from 27 suppliers around the world have been named finalists in the 2021 Automotive News PACE contest, now in its 27th year. At the same time, 23 finalists from 20 companies have been named for the Automotive News PACEpilot award (pre-commercial innovations, created in 2019 to detect innovations earlier, such as at CES presentation). Awards will be presented on September 30 in Detroit.

Let's have a look here at the innovations which are mainly applicable in car Interiors

Continental: Curved Plastic Lens

The **Curved Plastic Lens** multi-display solution enables the seamless integration of two displays thanks to its continuous 3D shaped plastic instrument panel. This integrated display solution demonstrates the next evolutionary step for a large-size user interface between a vehicle and a driver or a passenger.

Faurecia: IRYStec perceptual display platform vision

The IRYStec Perceptual Display Platform Vision("PDP **Vision")** is a customizable, scalable software solution that integrates seamlessly into the primary automotive **display**systems—instrument clusters, center stacks, side **displays**and HUDs. **It** adapts the displayed content to the ambient light, to the panel technology, and it is personalized according to the driver's unique vision. IRYStec, a software startup based in Montreal, Canada, was acquired by Faurecia in July 2020 and integrated into the Faurecia Clarion Electronics business group.

IEE: VitaSense child-presence detection system

VitaSense is a highly accurate, dependable radar system made to detect the vital signs of even sleeping infants. When an unattended child is detected, the vehicle's alarm and communications systems can alert caretakers or passersby that a child is still present in the car, helping save lives. It is a small sensing unit, easy to integrate behind the vehicle headliner without altering the interior design.

Inteva Products:InStitch technology with real-time scanning

Inteva's InStitch™ processes use programmed robotics equipment, patented sewing heads, and unique scanning methods adapted from other industries to provide a faster, more accurate alternative to the conventional cut-sew-wrap process. It reduces scrap and cycle time, and adds a variety of unique stitches to places on the instrument panel surface where it would otherwise not be possible.

Joyson Safety Systems: Integrated foam sensor for occupant classification

The integrated foam sensor (IFS-M) is an occupant classification system to determine the correct airbag deployment strategy. It is integrated into the seat foam and uses multi-zonal e-field force sensing. The device measures the amount of force transferred through the seat foam to the seat sensor zones and calculates an occupant's classification by means of a sensing algorithm.

Preh: Haptic rotary knob bonded to a touchscreen surface

HAPTIC ROTARY CONTROL BONDED—NO CUTOUT! —TO THE TOUCHSCREEN (IMAGE: PREH GROUP)

Preh combines electronics and mechanics in a central automotive control system in a very small space: a **touchscreen** with an integral **rotary knob** is integrated in the vehicle's interior in the door, steering wheel area, or roof area.

GHSP: **Grenlite**

GHSP's Grenlite uses UV-C technology to reduce exposure to viruses in cars. Already used in emergency services and commercial vehicles, Grenlite for personal vehicles will likely be better integrated into the cabin design.

Lear: INTU Thermal Comfort with ClimateSense technology

Lear's INTU™ Thermal Comfort with Gentherm ClimateSense™ technology aims to create an ideal personal climate through its intelligent software, using ambient cabin conditions to provide optimized comfort. (presented in DVN-Interior Sept 10, 2020)

Marelli: Indoor air-quality purification system and MFL transparent HMI

Marelli's SecureAire air **purification system** reduces organisms' ability to grow and provides the necessary voltage strength to oxidize and kill airborne pathogens. It is proven to effectively reduce airborne contamination levels including particles, VOCs, smoke, odors, CO, CO_2, and dissolved gas.

And Marelli's MFL transparent HMI, meant to be combined with the e-Cockpit, is a multifunctional transparent layer HMI that allows for icons, switchless buttons, histograms, and more to be displayed on a transparent tactile surface.

Valeo: FlexHeater

Valeo's FlexHeaters provide radiative and conductive heat, to be combined with convective heat coming from a vehicle's HVAC system. In cold conditions, it reduces time-to-comfort, with lower energy consumption—saving up to 50 per cent for one passenger at -7°C ambient. It is ultra-thin, stretchable, and flexible for perfect fit and finish in a tiny interior volume, trim shapes, and assembly processes.

Vayyar: Automotive 4D imaging radar

Within the cabin, one multifunctional Vayyar chip can support a multitude of systems including intruder alerts, child presence detection, enhanced seat belt reminders, and eCall to alert emergency services in the event of a crash. It delivers a revolutionary level of safety, unobtainable with traditional single-function sensors.

US SAFE Act Could Mandate DMS for Future Cars

INTERIOR NEWS

NXP/MOMENTA COLLABORATION FOR DMS

The SAFE Act, introduced on April 26, would prompt the US Department of Transportation to investigate driver monitoring systems and rule on whether they should be mandatory in vehicles.

The most recent crash involving a Tesla Model S and alleged connections to running driver-assist features without a driver behind the wheel spurred a lot of talk on how to handle advanced technology and its growing impact on drivers. Following Senators Richard Blumenthal and Ed Markey's calls for enhanced guidelines from NHTSA, the two senators introduced new legislation on Monday that aims to tackle the problem.

With Senator Amy Klobuchar signed on as a sponsor, the Stay Aware For Everyone (SAFE) Act would compel the DOT to study driver monitoring systems. With findings delivered to the appropriate committees within 180 days, the Transportation Secretary would then need to finalize a rule within four years deciding if the systems should become mandatory on all new vehicles, no matter what (if any) level of driver assistance or autonomy the car is equipped to offer.

A similar push is happening in Europe, with EuroNCAP awarding points for DMS starting in 2022. It's reasonable to expect DMS to be de jure or de facto mandatory everywhere, sooner than later. It will be interesting to see how privacy issues will be addressed.

Already most new vehicles include some sort of camera simply to track head and eye movement to ensure the driver pays attention to the road with an ADAS engaged. If they don't, many cars will deliver a series of visual and audible alerts. If the driver is unresponsive, some may even pull the car off to the side of the road and dial emergency services for assistance.

Prophesee Neuromorphic Vision Systems For Xperi DMS

INTERIOR NEWS

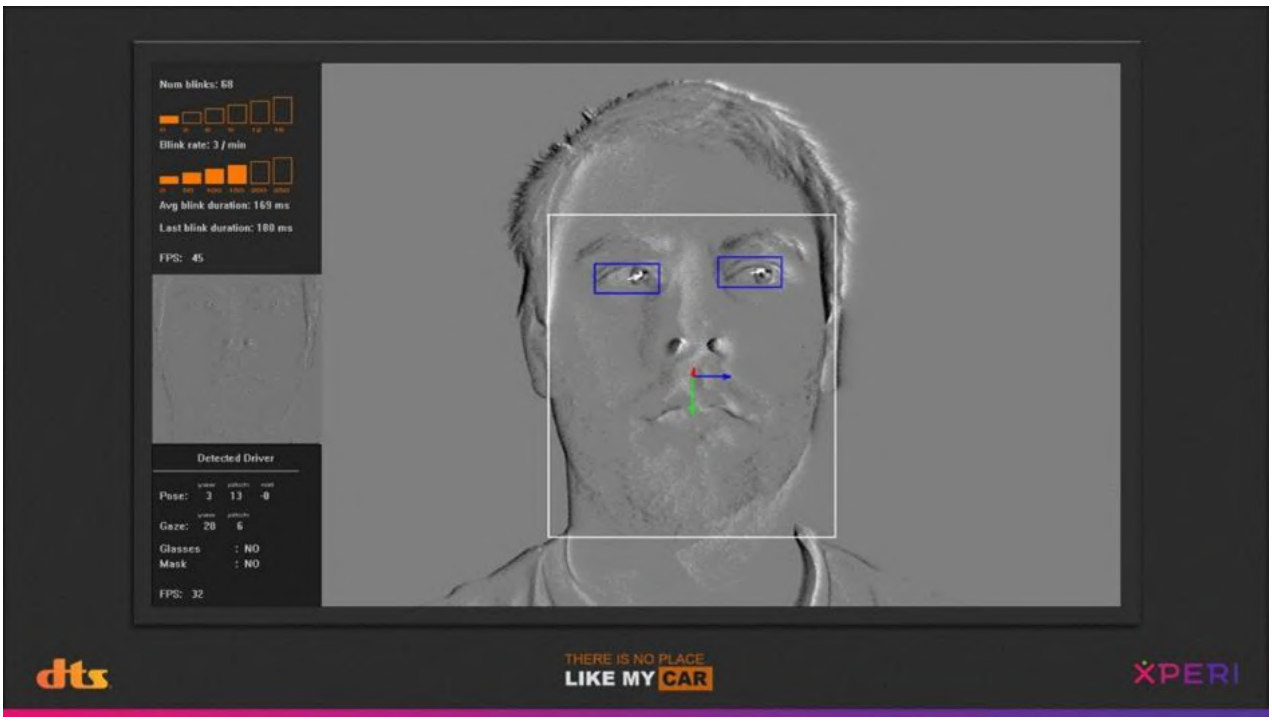


IMAGE: I-MICRONEWS

New sensing technologies complement standard vision system capabilities, enhancing driver and occupant safety, enabling increased personalization, advancing in-cabin experience to third space experience.

DTS®, a wholly-owned subsidiary of Xperi Holding, announced a world-first neuromorphic driver monitoring solution (DMS), powered by Prophesee Metavision® event-based vision sensor. DTS was covered in DVN Interior on April 1 2021.

Prophesee developed an event-based vision approach to machine vision. This new vision category allows for significant reductions in power consumption, latency, and data processing requirements to reveal what is invisible to traditional frame-based sensors.

Prophesee's patented Metavision® sensors and algorithms mimic how the human eye and brain work to dramatically improve efficiency in areas such as autonomous vehicles, industrial automation, IoT, security and surveillance, and AR/VR.

Prophesee is based in Paris, with local offices in Grenoble, Shanghai, Tokyo, and Silicon Valley. The company is driven by a team of more than 100 engineers, and holds more than 50 international patents.

Using the raw feed from the Metavision sensor, the DTS AutoSense team developed driver monitoring features such as gaze tracking, head pose, identification, and eyelid opening.

The neuromorphic sensors capture information at an equivalent frame rate of 10,000 frames per second without requiring active illumination. This enables better low-light performance for driver monitoring features as well as novel capabilities such as saccadic eye movement and micro-expressions, crucial next steps.

VW ID.Light For Driver-Vehicle Communication

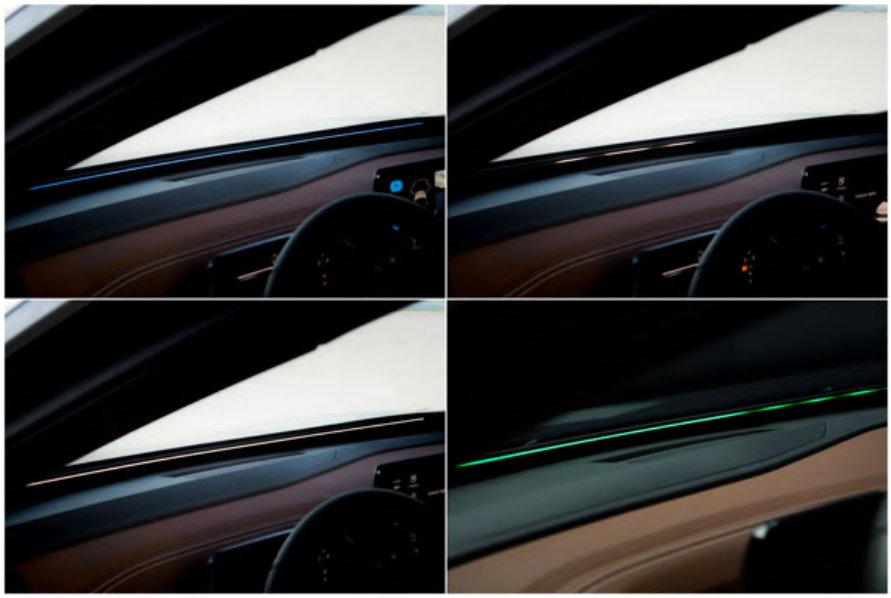
INTERIOR NEWS

ID. Light has arrived in the latest generation of VW electric vehicles. It is based on a narrow light strip designed to intuitively assist the vehicle occupants. It uses different light pulses to signal whether the car is ready to drive, which direction (according to the navigation system) it should turn, or whether the battery is currently being charged.

As shown in VW's **video**, the lighting strip consists of 54 multicolored LEDs, and is positioned along the underside of the windshield. It is visible only in the driver's peripheral field of vision or at certain angles from the outside. By dint of different colors and patterns, the ID.Light shows signals that the driver and front passenger pick up intuitively so that they can concentrate better on the road and traffic.

The ID.3 and ID.4 are the first VW models to be equipped with the new ID. Light as standard. This interaction between human and machine begins as soon as the driver sits down: a "welcome" animation in white and blue lights up to let the user know that the vehicle is ready for use, important for noiseless EVs that don't provide this cue via engine-starting noises. An inversion of these colors is displayed when leaving the vehicle.

If navigation is active while driving, it shows the next directions with a flowing left or right blue line, pending turn direction. Other scenarios include ID. Light dialog with voice control, incoming calls with a soft green flash in the central area, bright red for emergency stop, and the battery's state of charge, visible even from a distance and from the outside. This minimalistic interaction form is easy to understand and gives a feel of personalized intuitive communication, minimizing the risk of distraction.

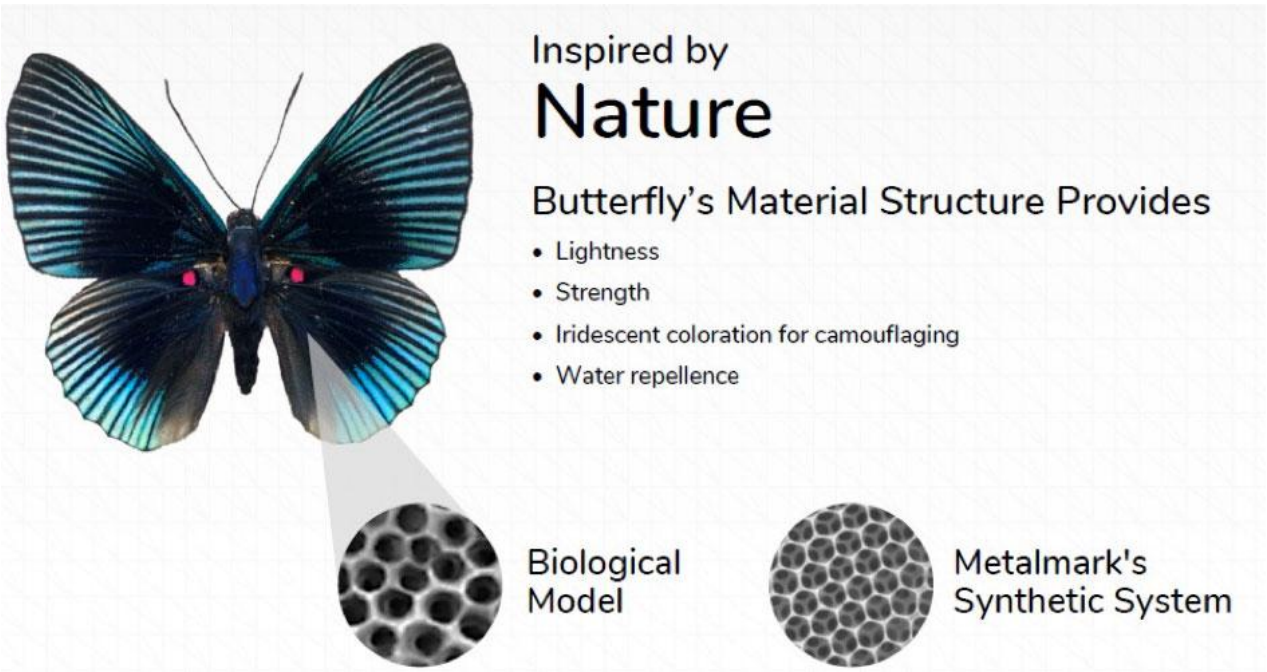


ID. LIGHT COMMUNICATES WITH DIFFERENT COLORS DEPENDING ON THE SITUATION.

"We can carefully expand our functions and visual symbols based on customer feedback and new technologies; the ID. Light for driver-vehicle communication can become a model for many future innovations in this field", says Thorb Baumgarten, VW Human Factors Specialist.

Butterfly Nanostructure Inspires Metalmark Air Purification

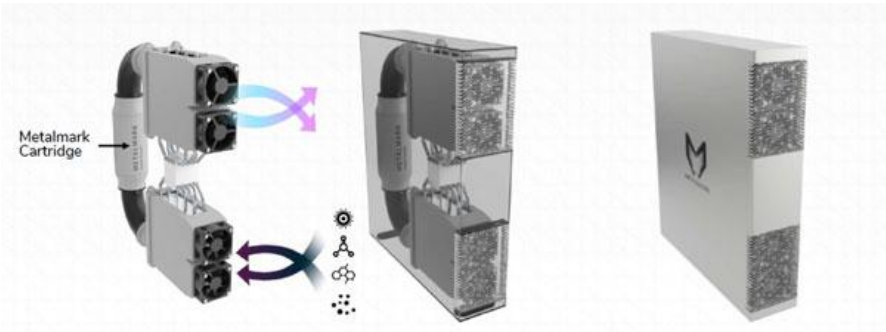
INTERIOR NEWS



Inspired by the nanostructures on the surface of butterfly wings, Metalmark has developed 3D nanostructured materials capable of catalytically breaking down volatile organic compounds (VOCs), ultra-fine particulates, and odor-producing chemicals smaller than 0.3 microns. When used in an air cleaning system, it breaks down pollutants without the formation or release of secondary contaminants.

IAQ (interior air quality) is a topic of growing importance, and Covid-19 has drawn urgent attention to the dangers of indoor airborne transmission of viruses.

Metalmark is on a mission to address challenges associated with air pollution and climate change. Located in Boston, MA; spun off from Harvard University in 2018, today they are funded in part by BMW. Butterflies show a dazzling array of iridescent colors due to the microstructures in the materials that make up their wings.



Metalmark's team has found a way to create a lab-based version of these nano-structures, so as to produce low-cost catalysts capable of cleaning both outdoor and indoor air. By placing tiny particles

of catalytic metals (made from readily-available metal oxides) within the butterfly-inspired lattice the team are able to maximize the amount of catalyst exposed to polluted air while minimizing the amount of materials required.

This technology can be installed into the air handler of an automotive HVAC system. It could be developed as well as an aftermarket product, and material could even be considered for interior surface coating.

Metalmark is preparing a demonstration for this coming summer. We'll keep you posted!

Polestar 2 Interior: Sustainable Materials Throughout

INTERIOR NEWS

The Polestar brand continues its efforts to be a sustainable brand following the introduction of its WeaveTech vegan upholstery in 2020. The new Polestar 2 comes as standard with embossed textile upholstery made from a vegan material that comes in two colorways to match new 3D-etched panels within the vehicle. Other interior features included on the Polestar 2 include eight high-performance speakers, a rear-view camera, an 11-inch central infotainment system and a 12.3-inch driver display, and Volvo-sourced seats.

An optional upgrade features a 13-speaker Harman Kardon audio system, a full-length panoramic glass roof, a heated steering wheel, heated rear seats and wipers, black ash deco panels, fully electric heated front seats with memory, and a new heat pump. Ventilated nappa leather upholstery can also be selected as an option (which, of course, is not vegan).

The addition of a heat pump reduces the need to use valuable battery capacity to prepare and sustain the cabin climate. The pump leverages ambient heat, as well as residual thermal energy from the drivetrain, to reduce HVAC load by as much as 50 per cent. This is most effective in colder climates, and most effective between 5 and 15 °C when as much as 10 per cent can be gained in vehicle range. Future improvements and gains to the system are to be made via OTA updates.

The Design Lounge

2021 Shanghai Auto Show Design Insights • Part II

THE DESIGN LOUNGE

Part two of the 2021 Shanghai Auto show overview will focus on some of the established automakers' product reveals—Toyota, Ford, Lincoln and Citroën. Although developed for the Chinese market, some of these vehicles are sold globally and help show how these established automakers are refining their designs regarding UX/HMI and BEV technologies.

The bZ4X CUV is Toyota's first BEV available globally, thus becoming a milestone for Toyota as they pivot away from Hybrid EVs like their well-known Prius. The bZ4X CUV exterior further develops the design themes used on the latest Toyota offering but does not attempt to tie into the form languages of previous Prius models.

Toyota has chosen to introduce a yoke-type steering wheel as a key differentiator for the bZ4X interior along with a wide central display and floor-console/tunnel.

Reminiscent of high-end video game driver’s consoles, the yoke and the lack of a traditional cluster binnacle or cowl creates a strongly driver-focused visual element from the base of the windshield to the yoke itself. This placement adds a sense of depth to the display and interface technologies specifically for the driver.

By using piano-black finishing for the tunnel console and door trim, and contrasting fabric materials and surface finishes, the technical areas are separated from the instrument panel and door panel backgrounds.

The seating forms, surfaces, textures, and materials are in line with the latest Toyota offerings with the light material colorways used as contrast to dark backgrounds.

The Ford EVOS is their latest entry into the CUV market, using a fastback roofline profile like the Mustang Mach-E. This vehicle also introduces a full-width horizontal UX/HMI display into the instrument panel. This display is bookended with HVAC venting that seems to flow behind the display while also wrapping into the door panels.

A differentiator of Ford's display units is that two thirds of the display (from the center console to the passenger area) presents as a single unit.

Previous full-width horizontal type displays used by other automakers such as Honda and Mercedes used individual displays placed under a common glass element that created a separation between these individual units when a full-width mode was used.

It will be interesting to see the UX/HMI from Ford take advantage of the wide-screen capability. As nearly half of the IP’s width can be displayed without interruption.

The use of orange as a contrasting color with linear trim fittings and extended stitching elements on the seats and door panels adds a visual highlight. This can be also seen on the exterior, in the front grille.

The Lincoln Zephyr Reflection also uses this wide-screen format, but in a traditional sedan package. Fittingly for a premium luxury vehicle, traditional metal detailing contrasts the interior from that of the Ford EVOS, with its orange-and-black appearance. The steering wheel, squared off at top and

bottom, does the first half of demonstrating that everything old is new again; the second half of the demonstration is provided by this 1961 Plymouth:

1961 PLYMOUTH SQUARED STEERING WHEEL (IMAGE: JOHN LLOYD/FLICKR)

Note the use of contrasting color coverings for the squared steering wheel. This further exaggerates the squared form along with the two spoke design.

A large, metal-framed prindle is located above the HVAC controls, while in the prindle's traditional location on the floor console sits the UX/HMI interface switching and touch surfaces. This emphasizes the user’s priority shift form driving interaction to UX/HMI interface.

Finally, the Citroën C5 X. This is a mix of a CUV and combi (station wagon) package. Contrasting to the Ford and Lincoln interiors, the C5 X uses smaller clusters with separate displays for the UX/HMI interfaces and driver information.

The only strong horizontal element used to tie-in the IP and doors is a natural finished wood trim strip. This is further bisected by the HVAC/UX/HMI cluster and then expanded threefold into the door trim panels.

Citroën's cluster- or island-themed approach can also be seen in the pill-shaped seat trim detailing and trapezoidal HVAC ducts.

This driver’s cockpit view can best summarize the approach form Citroën as you can see how these clusters (HUD, drivers cluster, UX/HMI/HVAC) create a high tech experience but not a calming one.

Citroën’s direction contrasts completely from those of the Chinese automakers we looked at last week. It wil be interesting to see how the Chinese marketplace reacts.

News Mobility

_Car interiors Unplugged

NEWS MOBILITY

18. Ownership_

(this story is part of an ongoing series introducing automotive interiors as an evolution of our habitat)

Ever since alchemists failed in their attempt to create gold out of dust, value creation became somewhat more complex of an issue. Humans though, have never given up the tale of a magic act that enables possession of material assets. From the odd physical properties of metals revealed in Bronze Age, turned into coins as a form of currency, to the long-lived middle ages barter exchange, the postwar monetary system to global economy and today's digital currencies, a relentless endeavor to create value, frames our history.

Speculating on trends and predictions, durable assets are gradually conquered by soft investments, generating passive income such as the use instead of the car itself. Breeding wealth on immaterial assets is strongly accentuated in today's economy redefining ownership under new and mostly unknown upcoming premises. If we follow the historic trajectory from the earliest stores of value in Mesopotamia to today's bitcoin, where does that lead? ...we do not know; but we can rely to the fact that economy regenerated every time through its surrounding contemporary events. Independently from the deflecting opinions and debates between world-class economists, we can agree that phenomena such as bitcoin and block chain are attempts to create a new form of ownership.

In a world that ownership is defined by the experience instead of possession, while the global industrial model converts to local collaborative platforms, how would that monetize into the most complex product/environment ever industrialized: car interiors. In a global era of established corporate giants how would a shared interior generate assets and could we really own the use of a car interior?

The established leader of hotel business in 2008, Marriott, owned over 600 000 rooms with an ambitious expansion rate that would reassure leadership in the sector for the years to come. Unlike the odds, in the same timeframe, an outsider challenged the business case as well as the establishment by capitalizing on the narrative of hospitality, prioritizing usage on material assets. Shuffling Ions instead of magic dust, created seven years later the most performing platform in the sector recording over 80 million guests with an expansion rate that would double that figure in just 2 years on rooms and services. An idea of superfluous ability augmented durable assets through time and space, like assigning them a superpower and rapidly conquered popularity in the automobile sector. We are entering an era where physical objects acquire multiple dimensions of time usage. And this is possibly a moment in history that everything we have created and produced so far becomes an

infrastructure for future assets. We humans have the capacity to build tools and then depend on them.

Prior to that, parked cars and empty rooms, vacant space in time, was just irrelevant information. Harnessing the excess capacity of any setup is when you don’t have to build hotels or buy cars but you use the time as the uniqueness and the experience of being there at a specific moment.

Sense of ownership is at the heart of our legal system and our social behavior. Possession is part of our status, starting very early in life with "this is mine!". As of how car interiors can change into a new form of ownership and attitude, many things are vague and uncertain but, it might be that time has come to change paradigm in both our greatest assets as one. It is not about Uber meeting Airbnb, but an unprecedented form of ownership while inhabiting mobility…

_to be continued…

_____INDUSTRIOUS__

Occupant Monitoring: The End of Privacy?

NEWS MOBILITY

Guidehouse Insights is a market intelligence company that provides emerging technology research, data, and benchmarking services for today's rapidly changing and highly regulated industries. Principal Analyst Sam Abuelsamid says eventually high-resolution systems will be used for authentication: a camera recognizes you and can bring up your preferences and authenticate you to use the vehicle. Even radar will be used for biometric health monitoring systems to detect of if the driver is having a heart attack, or just to monitor his or her general physical state.

"You can also expect to see things like driver workload monitoring, which will detect pulse and temperature and look for changes, for example an elevated heart rate, which could be used to trigger changes in the vehicle," Abuelsamid said. "These could include increased sensitively for stability control, or the car automatically turning down the radio and blocking notifications, if there are indicators the driver needs to be more attentive to driving conditions."

Abuelsamid said some consumers may be concerned about the vehicle being a nanny, and taking too much of their control away, and there are potential concerns about data being transmitted outside the vehicle. "Automakers say the technology is only used for real-time driver assist, frame-to-frame looking for indicators that the driver is not engaged, and none of that data is saved or transmitted," he said. "There should be a regulation that clearly says that, although I doubt that's going to happen, but automakers need to ensure the data is not saved, in order to maximize privacy".

He noted that while today the systems are not capable enough for features like face-based authentication, longer term, as they become more sensitive and accurate, people are going to have to consider if that's a function they want and give up that security and privacy to get the capabilities that come with driver monitoring technology. "When we get to autonomous vehicles and robotaxis, that's something we'll have to do," he said. "You've got to keep track of who's in the vehicle, what they're doing, as well as authentication for payment."

This means there will be sensors in those vehicles that can do all those things, as well as tracking someone smoking in the vehicle, or someone who's gotten sick and thrown up. Abuelsamid concluded: "Riding in a robo-taxi, you will have no privacy. There should be no expectation of that and it is all going to be recorded."

Abuelsamid's perspective is an interesting one for the burgeoning privacy file.

General News

Joerg Buchheim is New Kongsberg CEO

GENERAL NEWS

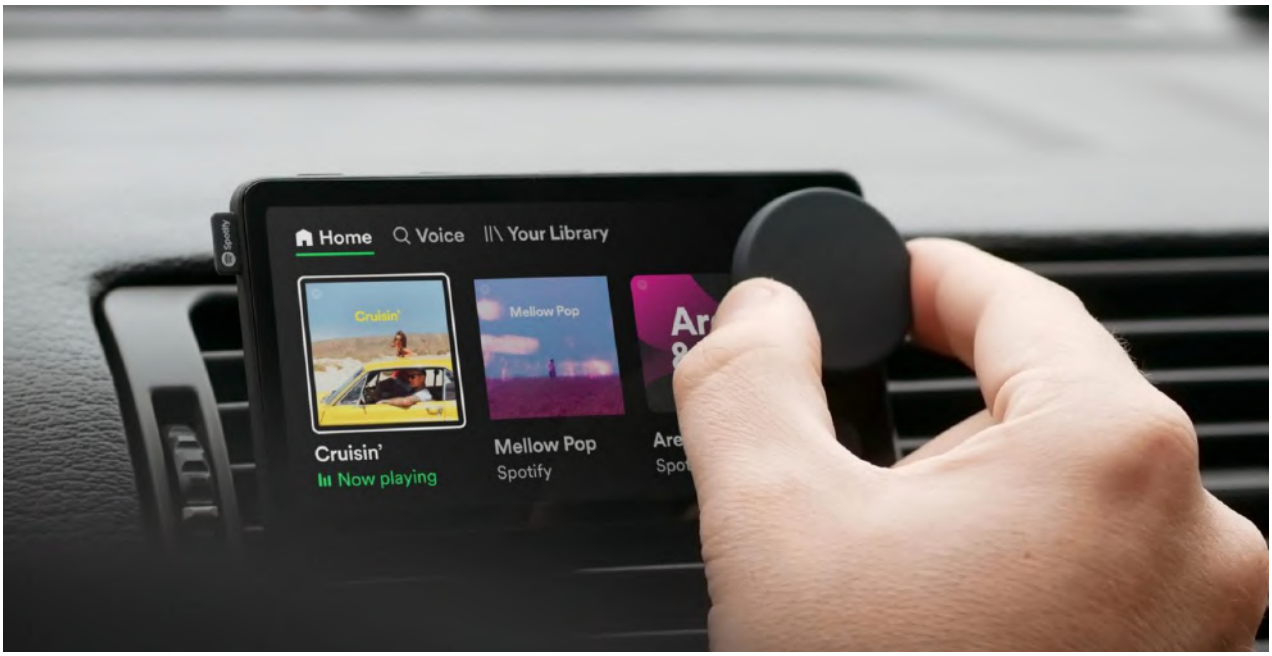
VOLVO XC90 SEAT (IMAGE: KONGSBERG)

Kongsberg Automotive has named Joerg Buchheim as their new Chief Executive Officer and President, starting the first of this month. He brings more than 20 years of international executive leadership experience in the automotive supply industry and a vast personal industry network to the organization. He was previously President and CEO of Inalfa Roof Systems, and also played a pivotal role in profitably growing the Chinese market as President and CEO of Hella, a leading Tier 1 lighting and electronics company.

Kongsberg Automotive, based in Zurich, Switzerland, provides seat support and climate systems. They also make cables and actuators for seats, window regulators, sunroofs, and the like; driveline and fluid transfer components. With about 11,000 employees in 19 countries, Kongsberg has more than 27 production facilities worldwide. They are well positioned to navigate out of the pandemic thanks to a strong order book resulting from successful business wins over the last years.

Spotify Launches In-Car Streaming

GENERAL NEWS



SPOTIFY IS A SWEDISH AUDIO STREAMING AND MEDIA SERVICES PROVIDER, FOUNDED IN 2006.

There are 70 million user-generated driving-related playlists on Spotify. Looking to capitalize on this market, the music streaming service has created a limited release of Car Thing, an automotive-dedicated smart player. Spotify first announced a voice-activated music-streaming service for cars in May 2019. This "Car Thing", it represents the music-streaming service's first entry into hardware devices.

Using this, users can perform various actions such as pulling playlists, launching radio stations, playing or pausing songs. This voice-based virtual assistant (it could be as well touch or physical buttons) may be intended more towards Spotify's own hardware such as its "Car Thing".

The company says "Our focus remains on becoming the world’s number one audio platform—not on creating hardware—but we developed Car Thing because we saw a need from our users, many of whom were missing out on a seamless and personalized in-car listening experience.

"The limited release of Car Thing is not meant to compete with in-car infotainment systems. Instead, it’s another step in their larger ubiquity strategy—creating a truly frictionless audio experience for our users, wherever they are and however they choose to listen."

Car Thing from Spotify is currently a limited product launch, and is available at no cost to select Spotify users.