Thu, 6 April 2023
Weekly Newsletter

DVN-I
Automotive Interior

NEWSLETTER #155

Editorial

Plan Ahead: DVN Interior Köln Workshop

The Köln DVN Interior Workshop will be on 25-26 April at the Pullman Köln hotel. Take a look at the updated docket in this Newsletter, and you'll find:

- Three keynotes from BMW's Innovation Project Manager; the CEO of a new automaker creating the "first-ever plant-based vehicle", and Forvia's Design VP;
- Four automaker lectures from Volvo; Jaguar Land Rover; BMW, and Liux;
- 23 lectures by tier-1 and -2 suppliers and a university professor.

It's sure to be a don't-miss event, so: exhibitors, book one of the last two expo booths still available! attendees, register right away! (All DVN Interior members have received a coupon code to confirm their registration). Find all the information you need to join in **right here** on the DVN website.

In the meantime, enjoy this week's collection of interior news starting with the Interview of IRYStec Founder Dr. Tara Akhavan, followed by news about HMI and touch control; sound systems; iDrive QuickSelect; Affordable EV interiors; immersive UX, and more.

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

Köln Workshop Docket Update

Here is an update on the DVN Interior Workshop docket. Look at the VIP keynotes and lectures; the automakers sharing their innovations and projects, and suppliers sharing their expertise and perspectives.

DVN Interior's 3rd Workshop will take place in-person at the Pullman Hotel in Köln, Germany, on 25-26 April—that's **this month**!

The rubric for our two-day conference and exhibition is
Human Centered Interior Technology.

Sessions include HMI and Smart Surfaces; Safety and Driver Monitoring Systems; Interior Lighting, and Materials and Sustainability.

A human-centric approach means new technologies; planning, and integration focus on driver and occupants in term of increased safety, comfort, and well-being.

The event will bring together more than 150 participants from all around the world—experts; managers, and decision makers involved in the automotive interior.

Lectures are confirmed from:

- Automakers including BMW; Volvo; JLR, with presence of Ford; Honda; Hyundai, and Toyota. There'll be a keynote by BMW's innovation project manager Martin Enders about the I Vision Dee, and a special keynote by Liux CEO Antonio Espinosa; Liux is an automaker startup whose mission is to build a better world through a new sustainable movement.
- Tier-1 suppliers including Forvia; Antolin; AMS Osram; Ansys; Grammer; Kurz; Marquardt; Mocom; Novem, and Dow Chemical, including a keynote by Forvia's Design VP, Andreas Wlasak.
- Technology suppliers such as Grewus; Melexis; TTIV; Seoul Semiconductor; Tactotek, and TechnoTeam.

As the automotive market competes more and more on what is happening within the cabin, this event will highlight how new technologies increasingly contribute toward safety; comfort, and convenience within the car interior.

KÖLN WORKSHOP 2022 (DVN IMAGE)

25 April

Opening remarks (Philippe Aumont, **DVN Interior**)

Keynote: BMW, Martin Enders (Innovation Projects Manager)

Session 1: HMI & Smart Surfaces I

- **Antolin**, Demetrio Galindez (Senior Product Manager)
  Smart Surfaces for Human Machine Interface
- **Marquardt**, Felix Hake (Product Management/Innovation Lead)
  Potential of Printed Structures for Smart Surfaces
- **Ansys**, Gwenael Moysan (Application Engineering Manager) *Heads-Up on the road ahead - Future of Simulating Displays and HUD with Ansys Optics*

- **Grewus**, Elisa Santella (Managing Director) *Integration of Active Haptic Feedback in Automotive HMIs*

Session 2: HMI & Smart Surfaces II

- **Forvia**, Patrick Nebout (Cockpit Chief Technology Director)
  A Journey of Activated Surfaces Towards Efficient HMI
- **PolyIC Kurz**, Dr Wolfgang Clemens (Product Management & BizDev Director)
  Smart Decorated Plastic Surfaces With integrated Touch Sensors for HMI Applications
- **TITV**, Samuel Bollmann (Textile Structures Group Leader)
  Textile-Based Sensor Concepts for Control Modules in the Automotive Interior Environment
- **FLT** Björn Sobischek, Managing Director, *"New Automotive Heating Solutions on Paper, Foils and Textiles"*

KÖLN WORKSHOP 2022 (DVN IMAGE)

26 April

KEYNOTE: Liux, Antonio Espinosa de los Monteros (CEO) *The First-Ever Plant-Based Vehicle*

KEYNOTE: Forvia, Andreas Wlasak (VP Design) and Tony Allison(Product Development Manager)
Lumières & Enlightenment, Personalizing the Third Place

Session 3: Safety & DMS

- **Yole Group**, Pierrick Boulay (Lighting & ADAS Senior Analyst)
  OMS/DMS Technology Evolutions and Roadmap

- **Pontosense,** Alex Qi (CEO)
  The Biggest Hidden Trend in Automotive, In Cabin Sensing

- **Rheinmetall Dermalog SensorTec**, Björn Sondermann (Chief Interior Sensing Engineer)
  Sensor Fusion for a Holistic In-Vehicle Safety Solution

Session 4: Interior Lighting I

- **Volvo**, Johan Persson (Interior Illumination Technical Expert)
  EX90 Interior Lights
- **Jaguar Land Rover**, Lydia Hewitt (Lighting Attribute Group Leader)
  Title TBD
- **AMS Osram**, Michael Brandl (Automotive Systems Engineering Directo)
  Enabling New Dynamic and Colorful Lighting With Intelligent RGB LEDs With Open System Protocol
- **Tactotek**, Karthikesh Raju or Perttu Korhonen
  Let Light Live - IMSE® Light Channels

Session 5: Interior Lighting II

- **TechnoTeam**, Dr. Udo Krüger (CEO)
  Imaging Luminance and Color Measurements for Backlit Symbols and Light Guides
- **Melexis**, Roland Steger (Product Marketing & Sales)
  Solutions for the Increasing Complexity of Functional and Safety Relevant Lighting Systems
- **Seoul Semiconductor**, Aleksandar Drobn- jak (Senior Technical Marketing Manager)
  Re-Discovering Cabin Illumination under Natural Light
- **Uni Pforzheim**, Pr Dr Blankenbach
  Display Technology - Low Resolution Graphics "Scheibenwurzel-Display"

Session 6: Materials & Sustainability

- **Dow**, François de Buyl (Scientist, MobilityScience™)*Material Science for Durable, Safe and Confortable Car Interiors*
- **Mocom**, Markus Funke and Eric Möller
  Polymer Diversity and Sustainable Compounds for Lighting Technology
- **Grammer,** Marco Redwitz (Advanced Development Director)
  Center Console – Strategy for a Green Product
- **Novem,** Dominique Heilborn
  Navigating Changing Market Requirements: UX, Costs and Sustainability

Discussion panels and exhibition booths will host opportunities for lively, productive information exchange; networking, and promotion. This Köln DVN Interior Workshop allows your company to network with experts, innovators, and decision makers from all over the world and promote your interior products or service offer.

The theme, **Human Centered Interior Technology**, discussed during the Workshop Sessions by the best international experts will help you to orient your company strategic decisions concerning your product and service roadmaps.

During Dinner on 25 April, there will be an award ceremony including a special Best Sustainable Interior Innovation award.

Don't miss it! If you haven't already, **register online**. (all DVN Interior members have been sent a coupon code to confirm their registration)

Interior News

DVN Interview: IRYStec Founder Dr. Tara Akhavan

INTERIOR NEWS

Dr. Tara Akhavan (Ph.D) is an acclaimed technology entrepreneur and leader in automotive display image processing. She is the founder; president, and CEO of Forvia IRYStec. Akhavan was crowned Entrepreneur of the Year 2019 by EoY Canada, and listed as a top-20 innovative Canadian startup founder in 2018 by CIX. Originally from Iran, she moved to Vienna to study before moving to Canada to start her company. Their technology so favourable impressed us at CES that we asked for an interview, which she graciously granted:

DVN: The Forvia display at CES was one of the most impressive in terms of information density. Your technology grabbed my arm and wouldn't let go! How did you get into this field? How did you start your company?

Dr. Tara Akhavan: I started a small image-processing software startup in Montreal in 2015, called IRYStec. our speciality was using image processing to improve visibility and power consumption; those are the two USPs [unique selling propositions]. We built a consumer-targeted product for about a year, then we changed directions to automotive; between 2017 and 2020 we worked closely with Mercedes-Benz on our sunlight-visibility image-enhancement product called Smart Dimming—it's in production with Mercedes since 2020. That same year, we got acquired by Faurecia (and so we're part of the Forvia family now).

What you saw at CES was our new image processing software solution we have for visual enhanement in camera displays. What it does is to particularly improve visibility in harsh lighting and weather conditions, day and night—foggy; rainy, or a combination of those where the visibility is poor, particularly for electric mirrors or rearview cameras.

DVN: If you have rain; fog; snow; headlight bloom from cars behind, sun glare… can you do multiple kinds of enhancement? If you have light bloom and falling snow, how does your tech handle that?

T.A.: We can do areas-of-interst: specify different parts of the display and then proces them differently knowing that this area has light bloom, that area has more fog in it, etc; that is in our roadmap. There are different ways to do it with different degradation in the image—the kind we get from reflection versus from a night scene which is more noisy, versus sun glare. There are avancements in the AI world based on some very intersting machine learning approaches: you can discern and define the different kinds of degradation and then apply the technology properly on the areas of the image that have that degradation. So you can have a very smart tuning based on the area and based on the content for image enhancement, rather than applying the same algorithm on the full image.

DVN: Until then, if you're faced with multiple kinds of image 'badness', how do you choose; how do you strike a balance? Whose decision is it?

T.A.: Ultimately, it's the automaker. The beauty of a software solution with a flexible STK [software development kit] is that there are so many parameters you can give to the automaker customer to tune. They can then decide how aggressive they want to be on, say, the contrast enhancement. And of course there's always a balance. Imagine there's a night scene: there are details to the road signs, and you can't read them well, but there's also flash glare from the cars. So you want to ennhance the road signs, but not the flash glare. What is the right balance to get the sign readable, but without the flash glare becoming unpleasant to the viewer? That's flexible in our solution. Of course we have a default value and a range to play with; in our experience, automakers will all choose differently based on their use cases and the hardware they have and their ergonomy.

DVN: In addition to differentiable regions of interest, what else do you foresee as the next evolutionary stages?

T.A.: We have multiple solutions. Right now we're looking at pillar-to-pillar displays, bigger and bigger. Power consumption is a challenge with them, so we're working on an optimised system performance—not only improving image quality, but also improving and optimising the power consumption, also helping the 'smartness' of the screen in terms of how it works in different conditions, with diferent viewers. We take a [whole-] system approach: power (especially with EVs); visibility; readability; flexibility of adapting to use cases, and all the metrics important for automakers. If we can have all of that in the package, that adds USPs.

Another aspect is personalisation. The same way we tune our seats and mirrors and everything to the person, the displays need to be tuned to our eyes as well. Our eyes are unique; they differ from one person to another person. As we age our eyes age with us (sometimes our eyes age faster than our nominal age—me, I'm 36, but my eyes are '50' because I'm always in front of a computer, so my eyes have lost contrast sensitivity). Then you can make sure you tune the display to the driver or the passenger looking at it, so that's a personalisation.

There is some new hardware technology coming, as well, on the display and camera sides. The more the hardware advances, that's another dimension we need to pursue; they always come with benefits and challenges. MicroLED displays are completely different to OLED or LCD, so we have to adapt our solution to these very different hardware technologies. For LCD, my main goal would be [to enhance] visibility, but for OLED my main goal would be lifetime.

DVN: What kind of time scale do you have in mind for the roadmap?

T.A.: We have some internal innovation metrics that we've been very strictly following when we were a startup and also post-acquisition. So we very strictly follow the metrics: Number of POCs we want to do per year; number of innovation projects, and how many successful innovations should come out of it. You saw two of them at CES

from my team; they were pure image processing innovations. We started with three projects, and two made it with the expected results. That's how we measure the process.

Every year we look at, say, five projects (the number is an example). For system-level innovation, especially with Forvia being very strong in interiors and seating, that gives us leverage of cockpit information: when I'm doing my image processing on the display, I have cockpit and sensor info my competitors might not have. So that's a system approach; or adding new USPs (like the personalisations we talked about), or adding new hardware. So we diversify the innovation projects in each of these domains and we [strive for] around 70-per-cent success rate. That's strict, for innovation, but we try to define our proofs of concepts and innovation process realistically enough that we can [do it], and we partner very early. That's inherited from our frugal startup days, that we partner very early with the customer, especially when we're doing software. We can afford to be as agile as possible.

DVN: That sounds like a coöperative approach with automaker customers, rather than just sort of plunking a product in front of them and saying "Here's our offer".

T.A.: The moment you put the first iteration of even a laptop or mobile version of the demo in front of the customer, it initiates those interesting discussions. And then they start to think what they would want in the next generation.

DVN: We've talked up to now about making life easierfor a human driver. Can your technology help machine vision? Can it expand the capabilities of visible-light sensing and maybe reduce the need for other technologies?

T.A.: Yes. The areas right now are very separate, when we are targeting showing content on display for a [human] driver versus the path it takes to process the content for [machine] object recognition. It's very different. But there are similarities because eventually you want the object visible enough to the driver and to the machine. Our technology can help, because the moment you remove, let's say, the fog from an image, of course the bicycle will be more visible! So we take that into acount for human anad machine. But one thing we're careful about is the paths. The camera input goes to the image signal processing unit (part of the camera), so there are optimisations happening there, and we—later in the pipeline, on the display side of things—need to make sure we know what has already happened. We collaborate with the camera guys and the ADAS and AD teams within our customers, and also the display guys.

DVN: The buzz is that human vision and machine vision are converging. I'm sure that's true when you zoom out, but this what you describe sounds like the two things are still very different, and to a large degree separate.

T.A.: Absolutely. But when it comes to object recognition and visibility, there are a lot of similarities. There are so many areas which are are really diferent in their architecture and pipelines, but when you're looking at visibility, there is a degree that helps both. Removing noise, removing degradation would help both systems.

DVN: You mentioned your technology has been commercialised with Mercedes-Benz. More generally, what stage are things at with regard to interet or orders by automakers?

T.A.: With some of our products we are more advanced—the older products; they're in production, so the first product, Smart Dimming, we're in production with MB since 2020—we won the Automotive News PACE award for most innovative products for that in 2021. And there's a pipeline of customers we're globally discussing and evaluating with. And then the newer products like the one at CES, the C-DIVE, that was actually the first time we were publicly showing that. It's very fresh out of the oven! We got great traction at CES, and we're showcasing that to our North American customers. The steps usually are the same for us; at the early stages we are very involved with the customer. We have the first version of a product; showcase it get traction; do joint-engagement developments and evaluations. There is an element of 'perceived quality' in image processing; we make sure we partner with our clients when they do the tests, so we help them with the evaluation, and then comes the RFQ and the SOP.

DVN: Coming back to the origin of things: you said you started a startup of yuor own. What came before? What's your educational background? How did you come to start your startup?

T.A.: I have my bachelor's degree in software engineering; master's in artificial intelligence, and for my PhD I did image processing and computer vision. I was a second- or third-year PhD student in 2013-14 when I came up with the idea. I was at a conference in Greece, presenting this idea I had, which my superviser at that time was not very keen on pursuing because it was a bit more industry-driven, and he wanted to be more like a pure academic and publish something and put it on the shelves. Just by dumb luck I was talking about this big idea, a very vague version of what would become IRYStec, and there was an investor sitting in the conference. He approached me at the coffee break and said he would write me a $500,000 cheque if I would move to Montreal. I moved from Vienna to Montreal, we did more fundraising, went through the whole process for building a startup, with all the check marks the investors need—market valuation; patenting; cofounder and teambuilding, POC (proof of concept) for the product etc. Within six months I got that cheque; the investment happened, and then I stayed in Montreal.

DVN: So you broke out of the strictures of a typical PhD thesis—a lovely paper that gets defended and then maybe never read again; it goes on the shelf. You gave it wheels instead, and here you are with this company you built. How have things changed as the result of Faurecia and now Forvia ownership? In terms of day-to-day life and company function and reach, what has changed now you're under the Forvia umbrella?

T.A.: I've talked about this a lot, because people are interested in what happens when a small company is bought by a big company. The horror stories I heard, before acquisition…*Oh my god, what's going to happen to us?* Swallowed up, disappear and never heard from again—that's mostly what I heard from my entrepreneur friends: six months in everything has disappeared; everybody leaves; the product's in the corner, nothing's going to happen to it any more.

We had a very unique acquisition process, I would say. An adaptive process; Faurecia called it 'docking'. So we were not getting integrated; it was a docking process. That's what we discussed from the beginning—full integration would not make sense, because we were a team of 20 in Montreal and this is a 100,000+ employee company! But at the same time, it would not make sense to leave us completely autonomous, because then what is the point? So we really figured out areas of integration. Roadmap needs to be integrated, and product. Sales needed to be handled by Faurecia, because we as a small startup had no presence internationally. It was actually very hard for me to close that deal in Germany; I was on the road every other week! But Faurecia had great strong presence in all the regions—Japan; China; Europe; North America, South America. So that would greatly expand our sales arm. I think this really helped us in the last two and a half years to keep our momentum and keep building the types of innovative produts that we were building before. Post-acquisition, our innovation KPIs [key performance indicators]—number of patents; proofs of concept; engagements, etc—have improved by 30 per cent.

So I would say kudos to everybody at Faurecia who took care of us, because this is definitely a succcestul integration. Of course, there were still the pain points to get plugged into this big finance machine; legal, HR…but step by step, we really adjusted. I'm still here…my team is still here…we've expanded!

DVN: Given that you haven't been swallowed up and disappeared by Forvia, what activities do you do at your facility there in Montreal, Quebec? Do you do manufacturing work there?

T.A.: No, Faurecia is very strong in manufacturing with a global footprint, and we just work with them. Taiwan, China, Mexico have big Faurecia manufacturing sites. Montreal is a pure-R&D innovation centre; an image-processing and software centre of excellence. We started here with our expertise in software, now we're expanding that expertise toward hardware as well. Definitely the focus and core of our knowledge here is computer vision and AI; these are the tools we use to build new products. So we're an innovation centre.

DVN: Thanks for showcasing your technology; your company, and your great success…keep going!

T.A.: My pleasure!

Marquardt: Light, Touch, Screens are In Control

INTERIOR NEWS

MARQUARDT IMAGES THIS ARTICLE

Steering wheels of the future could feature crystal screens with thumb-operated scrolling. Screens on the inside of the steering wheel can be programmed to handle many vehicle functions, requiring just a quick movement of a thumb to change menus.

Marquardt, based in Germany's Rietheim-Weilheim—near Freiburg, in the Black Forrest—takes technology into the future for HMI with infotainment; HVAC; doors, and other interior components. They're a tier-1 supplier, connecting humans and machines with intelligent electronic and electromechanical systems and components.

Ever since touch screens started finding their way into cars around 20 years ago, interior designers have been trying to figure out what to do with all the switches, buttons and knobs—and it's been a bit of a **bumpy ride** so far.

Marquardt is embracing the EV era, working to replace old-fashioned mechanical parts with lighter, simpler, and easier to use electronic components. They've built a demonstration interior that houses the technology that engineers are working to bring to production; see video. It's got capacitive touch doors which can be opened and closed with just a slight touch on the door panel, or programmed to open by sensing a hand movement, or controlled by a phone (added benefit: the door exterior is more streamlined, with better aerodynamics).

Innovations also include:

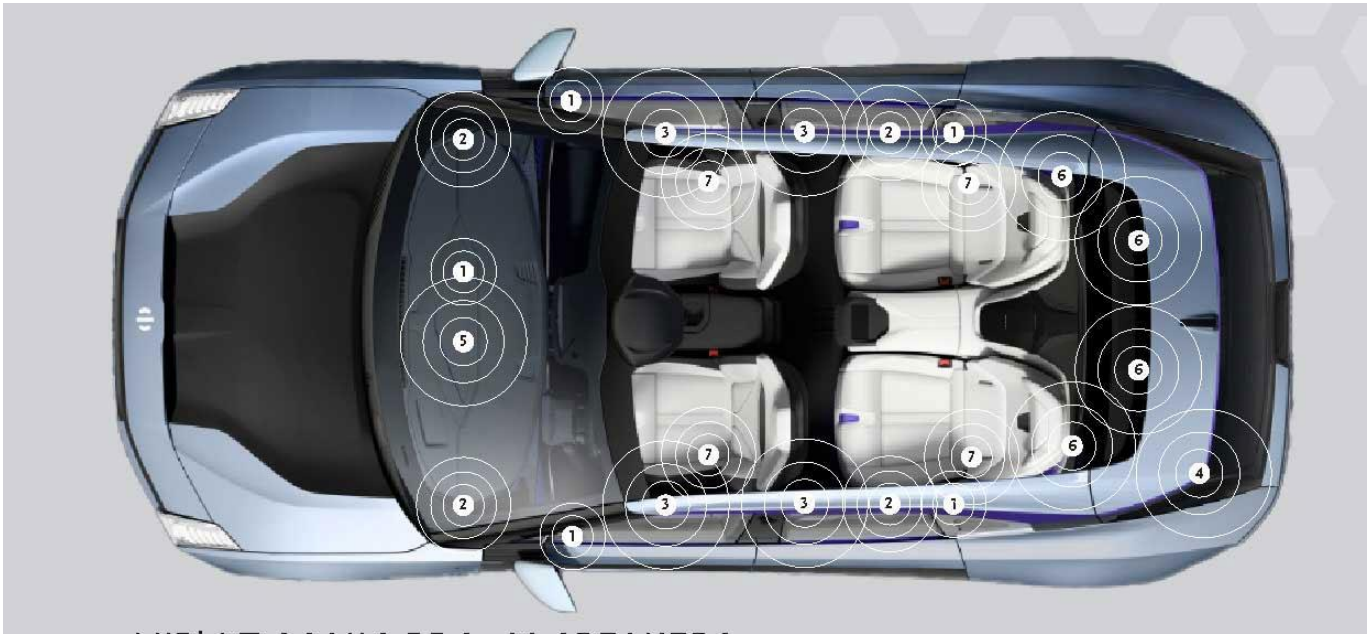
- switch icons projected on the dash, to eliminate mechanical switches. The switch icons operate when a finger touches the projected icon and interrupts the light beam;
- Crystal steering wheel screens with thumb-operated scrolling. Two small crystal screens on the inside of the steering wheel can be programmed to handle many of the car's functions;
- An advanced EV charge port, shown here, features a holographic screen impervious to fingerprints, road grime, snow and moisture.

Marquardt products are used by major automakers. The thin band of cool color-changing LED lights inside Mercedes-Benz vehicles is from Marquardt. The steering wheel switches on General Motors trucks and SUVs, too. They've been making interior switches and lighting for light vehicles for half a century.

Branden Jarbo, Marquardt's R&D innovation technical project manager, said in a recent interview with Automotive News: "The one thing you can say about all this technology is that it is getting smarter. The old-fashioned switch, which used to be a [mechanical] contact for us, is now a microcontroller sitting on a [controller area network] bus communicating with a supercomputer in the vehicle. It's providing a heck of a lot more information".

Meridian's Sound System for HiPhi Z

INTERIOR NEWS



MERIDIAN AUDIO IMAGE

As part of an ongoing partnership, UK audio specialist Meridian Audio and HiPhi, the EV brand from Human Horizons, have collaborated on the HiPhi Z Fully Electric GT's audio system.

The Sonic Pro sound system installed in the HiPhi Z includes 23 fully active loudspeakers, comprising woofers, midranges and tweeters in the front and rear doors. These are supported by four rear surround channels and four height channels, in addition to a center channel and subwoofer.

"The ambition for this model was to create fully immersive entertainment in the vehicle that is lifelike, natural and authentic, while also providing occupants with the flexibility to personalize elements of the experience to match their own taste," says Meridian sales director Paul Andrews.

Meridian technologies in the vehicle include Horizon, an up-mixing technology which provides the end user with four different sound setting modes and five EQ pre-sets; Intelli-Q, which enables data-driven equalization to optimize audio playback within the cabin based on data available from the vehicle; Perfect Balance, which dynamically applies psycho-acoustically informed frequency compensation to incoming audio to ensure a consistent tonally balanced audio experience at all listening volumes; Digital Precision; RE-Q cabin correction technology, and True Time, as well.

BMW iDrive with 'Zero Layer' QuickSelect

INTERIOR NEWS

BMW IMAGE

The next stage of development of the BMW iDrive has been unveiled, consisting of a newly designed home screen with clearly laid out functions to enable ease of use on a curved display. The latest system, with its QuickSelect concept, brings an improved menu structure that takes inspiration from consumer electronic devices. The new BMW iDrive will be gradually introduced in current models during 2023.

The updated system brings a wider array of digital content; including more information and entertainment features; shorter function update cycles; better information on charging points for electric vehicles, and improved access to online services. BMW's iDrive also benefits from a new graphic interface and an optimized menu structure and can be operated using the vehicle's touchscreen and voice control.

Designed with a zero-layer principle, all relevant functions and information are shown on a single level, without first having to enter a submenu. Now, live widgets appear in a vertical arrangement on the driver's side of the user interface and can be selected using a finger. These widgets can also be configured individually.

Using the QuickSelect functionality, occupants can select entertainment programs; contact lists and vehicle settings, or start interaction with the BMW Intelligent Personal Assistant. Once a widget is chosen, a user can return to the home screen by tapping on the home icon at the lower edge of the display. Similar to using consumer electronics devices, the flat menu structure makes interaction with the system easier and more efficient.

The system will continue to be based on Linux, and will be combined with the largest version of the BMW Curved Display. The latest BMW Operating System 9, based on Android Open-Source Project software, will first appear in the BMW X1, beginning with November 2023 production.

New Renault Espace: Shorter Outside, Longer Inside

INTERIOR NEWS

RENAULT IMAGES IN THIS ARTICLE

What are the 6 covered vehicles on that picture? Six generation of Renault Espace since 1984. Renault presented last week via press releases (no Auto Show release!) their 6th-generation Espace, repositioned as a midsize SUV and based on a full-hybrid drivetrain, with a focus on efficiency and interior flexibility.

The new Espace preserve the heritage of its predecessors while embracing modernity with more second-row space; more screen surfaces, and more light inside by dint of a full square meter of roof glass. Renault says it's the largest fixed-glass sunroof on the market, at 133 cm long by 84 cm wide.

The new Espace is shorter and 215 kg lighter than the previous generation. It offers the best of Renault technologies with 4control advanced 4-wheel steering and the state-of-the-art openR link multimedia system with integral Google.

The new Espace is 215 kg lighter, with weight savings in the drivetrain (50 kg); the platform (43 kg); the bodywork (38 kg), and in the overall smaller dimensions (84 kg). It will be available in 5- and 7-seater configurations, and is closely related to the Austral compact SUV launched last year. The Espace and Austral are built in the same factory in Palencia, Spain.

Both uses the latest version of the Renault-Nissan Alliance's CMF-C/D platform, which has been optimized for a full-hybrid powertrain, with a wheelbase 70 mm longer than the Austral's.

Inside, the Espace includes Renault’s OpenR Link Google-based infotainment system. OpenR Link now includes 39 custom apps developed for Renault, many of which are free, although some are subscription-based after a free trial. It also enables OTA updates of Google maps and other services.

It will be available in three trim levels: the base Techno level; the sporty Esprit Alpine, and the luxury-focused Iconic. Renault expects 80 per cent of buyers to choose the two higher trim levels.

Volkswagen Unveils ID.2All Concept

INTERIOR NEWS

VW IMAGES IN THIS ARTICLE

Volkswagen has premiered the ID.2All concept, an EV vehicle they aim to launch by 2026.

VW's affordable EV will be the first front-drive vehicle based on their new modular electric drive (MEB) platform.

The main focal point of this vehicle's interior is a 12.9" touch display which works as the infotainment system and has a new menu structure.

Situated below is a new separate air conditioning control panel and in the middle of this is a small thumbwheel to adjust the volume of the infotainment system. Under this are two large inductive charging interfaces for smartphones, which are magnetically locked in position. There are also magnetic holders for inductive charging of mobile devices on the back of the front seats. Several other vehicle functions can be changed or personalized using the menu control in the center console, such as being able to alter the look of the digital instruments.

For the driver, a new multifunction steering wheel features with only two thumbwheels on the left and right and two buttons each for a simple, easy-to-use design. The air conditioning is controlled via a separate control panel with illuminated buttons. A rotary pushbutton is located in the center console, which controls the menu on the large 12.9" screen. A vintage mode can be seen on the touch display, where a cassette deck from an older Golf can be seen for media playback. Important information is delivered to the driver via the digital cockpit and a head-up display.

To ensure the concept vehicle is flexible and offers maximum space efficiency, Volkswagen has included a fold-down front passenger seat backrest. This provides a continuous load area which is 2.2 meters long when folded

down in combination with the 60/40 split rear seat backrest and luggage compartment. The luggage compartment, with a capacity of 440 L—features a rectangular storage box underneath. The automaker now plans for at least one in every five vehicles sold globally to be electric by 2025, with the production version of the ID.2All being one of ten EVs launched by VW by 2026. This year, VW will introduce the new ID.3; the ID.Buzz, and the ID.7, which will be followed by a compact electric SUV in 2026.

Premium Vehicles, Premium Immersive UX

INTERIOR NEWS

AUDI IMAGE

Experience-per-mile is considered the new currency to attract and retain car buyers. The latest trend is immersive experiences, where passengers are immersed in worlds of images and sounds, in virtual and mixed realities.

Audi, for example, emphasizes it in their Activsphere concept (**see our DVN Interior report**). In this recent electric crossover coupé, "the most important technical innovation is our adaptation of augmented reality for mobility. Audi dimensions creates the perfect synthesis of the environment and digital reality" said Audi board member for development Oliver Hoffmann. In the concept car, physical and virtual reality become mixed reality. A corresponding pair of glasses allows a view of the real environment and the route, and at the same time—individually configurable for driver and passengers—superimposes information and interaction elements that appear three-dimensional into the field of vision.

For example, the driver can be shown driving-relevant data and controls that are not otherwise visible. And he can operate these virtual elements using gesture control. If the user looks at an object, other related functional elements are displayed. For the passenger entertainment and other functions can also be displayed and operated in the glasses.

The Holoride system has been on the market at Audi since the end of 2022. It offers elastic content via virtual reality glasses. Rear-seat passengers can use the glasses to immerse themselves in virtual worlds that are synchronized with the vehicle's movements, so that VR images match the physical experience.

Mercedes-Benz is working with Apple Music and Universal Music Group to offer the "ultimate in-car sound experience" with Dolby Atmos. Appel Music's Spatial Audio technology with Dolby Atmos support will be used for this purpose. The immersive audio experience gives music more space, clarity and depth. In an "outlook on the car entertainment of the future," BMW presented the "My Mode Theatre" concept. This involves orchestrating various vehicle functions such as lowering the Theatre Screen, lighting and blackout blinds to optimally tune the occupants. They say "The 31-inch display, 5G connectivity, 8K resolution, surround sound and customized streaming program create an unprecedented experience that sets new standards in in-car entertainment".

The Design Lounge

Data

By Athanassios Tubidis

THE DESIGN LOUNGE

BINARY BLUE (WIKIMEDIA COMMONS IMAGE)

A company manager is flying across the desert in a hot air balloon when he realizes he is lost. He calls down to a man riding a camel below him and asks where he is. The man replies "You're 42 degrees and 12 minutes, 21.2 seconds north; 122 degrees, 10 minutes west; 212 meters above sea level; heading due east by north east". "Thanks," replies the balloonist. "By the way, are you a data analyst?" "Yes," replies the man, "how did you know?" "Everything you told me was totally accurate, you gave me way more information than I needed and I still have no idea what I need to do."…

The joke continues, but at this point all clichés on data analysts are clearly laid out. As rigid and boring as it can be, data analytics could be seen, to the contrary, with humor. In another count it has been mentioned, that 'data is like people—interrogate it hard enough and it will tell you whatever you want to hear' and 'Statistics prove offspring is an inherited trait. If your parents didn't have kids, odds are you won't either'.

Often factual data can be even amusing:

- There are more Panda Express restaurants than actual Pandas
- You have far more chances to die from a coconut fall than by a shark attack
- Of the 30 fastest 100-meter sprint times, 21 were run by athletes who tested positive for performance enhancing drugs. The other 9 were Usain Bolt.
- One of the most dangerous of all jobs is being president of USA since for the 46 men that occupied the oval office, 4 have been murdered while several others survived assassination attempts
- If you made $250,000 every single day since the birth of Jesus Christ, you still would not have as much money as Elon Musk has accumulated.

How about cars:

- Car insurance companies state that the average driver will get into about 3-4 accidents during their lifetime. In other words, a driver will file a claim for a collision about once every 17.9 years.
- Roughly one million animals are killed in American roadways per day
- People who use public transportation rather than their cars are, on average, 5 pounds lighter.
- There are more cars than people in Los Angeles
- Approximately five months of a person's life is spent waiting in a car at red lights
- A car is stolen in the United States every 45 seconds.
- Approximately 75 per cent of the cars that Rolls Royce has produced in its history are still on the road.

There is something unthreatening in all statistic certainties, the fact that we can anticipate their translation. And, the joke continues:

…"I'm sorry," replied the camel-riding analyst. "By the way, are you a company manager?" "Yes," said the balloonist, "how did you know?"

"Well," replied the analyst, "You've got no idea where you are, no idea what direction you're heading in, you got yourself into this fix by blowing a load of hot air, and now you expect me to get you out of it!"

Conclusion: get to know your goals!

References:

• Toups, Des. "How Many Times Will You Crash Your Car." Forbes. July 27, 2011. Accessed: February 12, 2016. • Schaul, Jordan Carlton. "Road Deaths May Be the № 1 Threat to Wildlife." National Geographic. April 25, 2011. Accessed: Septe 3, 2017. • Lutz, Catherine and Anne Lutz Fernandez. Carjacked: The Culture of the Automobile and its Effects on Our Lives. New York, NY: Palgrave Macmillan, 2010. • Whitten, Sarah. "The Ten Most Stolen Vehicles of 2014—Is Yours on the List." CNBC. September 28, 2015. Accessed: February 9, 2016. • Huntingford, Steve. "New Research Suggests British Motorists Spend a Fifth of Their Average Daily Drive Waiting at Red Lights." Telegraph. April 15, 2016. Accessed: September 4, 2017. • Paxinos, Sam and Hannah Jones. 101 Amazing Facts about Cars. Car Fact Lover: Amazon Digital Services LLC, 2014.

Matthias Hossann: Peugeot Design Chief's Vision

THE DESIGN LOUNGE

Matthias Hossan, head of Peugeot design, presented his vision of automotive design for the coming years at a "Grandes Ecoles" ('major schools') alumni meeting, at Hotel des Arts et Métiers in Paris.

Hossann participated in the development of the Citroën/DS design office in Shanghai, then led Peugeot's concept cars and advanced design department, and has been leading Peugeot design since 2020.

INCEPTION CONCEPT AT CES 2023 (DVN IMAGE)

His challenge is to continue the good trends of recent years, during which the work of designers has greatly contributed to the success of the brand, with a design staff of 110—including 50 creative people, coming from 10 different countries. The latest Inception concept car presented at the 2023 CES is a brilliant achievement indicating the major styling directions to come.

Car design today is a daily-life experience, and must focus almost equally in four areas of the vehicle: exterior; interior; colour & material, and HMI (human-machine interface). EVs are changing the game with new modes of interaction; new kinds of seats and surfaces, and more autonomy for powertrain, but also with adaptation along the useful life of the vehicle

New objects are getting into the landscape, such as front end re-thinks (grilleboards), and new kinds of steering wheels like the 'Hypersquare' in the Inception concept). All this means the innovation scope is much broader, and many new ideas flow from external inspiration—other mobility modes; consumer electronics; suppliers, and startups.

HOSSANN LECTURING IN PARIS (DVN IMAGE)

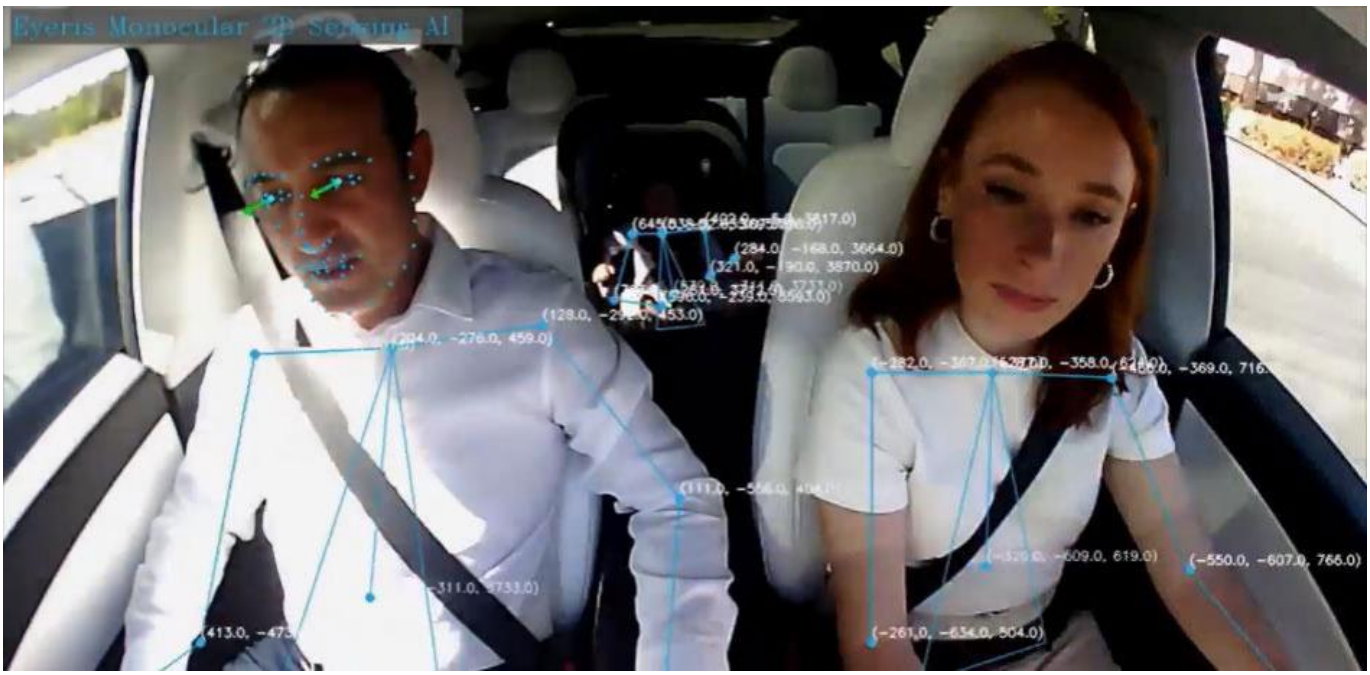
Six Takeaways:

- Peugeot cars are easily recognizable with their brand pillars: excellence; allure, and emotion.
- Lighting and materials are central to meeting today's design challenges—Peugeot lightstyle with vertical claws and the illuminated grill; materials relevant with increased drive for recyclability and sustainability.
- EVs are a great opportunity for new design (in turn, more lighting) and brand differentiation.
- Using new design tools is crucial at Peugeot; virtual reality to reduce development and tooling costs and improve efficiency; HMI (human-machine interface) development using proposals from within and outside the auto industry (iCockpit started 10 years ago, already 9 million equipped cars shipped).
- Peugeot uses its great heritage of design as a framework to integrate technologies—historic design cues are used not to resurrect an old model but to contextualize new designs
- Concept cars are very important for Peugeot: great return on investment in the form of feedback; concept cars are used as labs to optimize technologies and refine brand vision. Here are Peugeot concepts presented over the last decade (Onyx, Exalt, Quartz, Fractal, Instinct, E-Legend, Inception)

News Mobility

Eyeris In-Cabin Sensing AI Also for Fleet and Traffic Safety

NEWS MOBILITY



EYERIS IMAGE VIA YOUTUBE

In a recent video published by Bloomberg TV, Modar Alaoui, Founder and CEO of Eyeris (Speaker at DVN Interior 2020 online Workshop) was interviewed in a test vehicle by Hannah Fry, British mathematician, author, and radio and television presenter. See the video here.

The purpose was to test the new Eyeris DMS, named here In-Car Surveillance Technology, including Driver Monitoring, Child in the rear seats, and even pets.

It's based on an AI programmed to recognize human behavior by looking at faces; eyes; gaze (are the eyes still on the road?), and emotions, and hands (still on the wheel?), and body posture (indicative of attention or distraction?). The big promise here is to improve safety by making the car alert a driver who is distracted or falling asleep, with a steering wheel or seat vibration or an audible sound.

For fleet management, companies could want to change their routes of the GPS according to stress levels and mood. With this information, they might reroute you to a quieter route. It could be longer, but certainly quieter. If you are too angry then the car just won't drive. That sounds nice, if only happy people can drive—it also sounds completely dangerous, if it would prevent frightened; alarmed; upset, or threatened people from driving away from the danger or driving to fetch help.

Usage-based insurance could be developed, leveraging the in-cabin sensing data for the benefits of customizing insurance premiums. Data could be used for traffic analytics, stress route at certain hour, driver resistance, bad driving behavior, etc. Limitation comes from data privacy, and fraudulent usage of collected data.

May Mobility's Gen-3 ADS

NEWS MOBILITY

MAY MOBILITY IMAGE

Autonomy specialist May Mobility has announced their third-generation autonomous driving system, which they say enhances safety; efficiency, and rider satisfaction. Notable improvements to the system include increased speed, tele-assist capabilities and better detection accuracy.

May Mobility, established in Ann Arbor, Michigan in 2017, is building their proprietary Multi-Policy Decision Making (MPDM) system, at the core of their mission to help make cities safer; greener, and more accessible. They've delivered more than 320,000 autonomy-enabled rides to date in several public transit applications across the U.S. and Japan, and have developed strategic partnerships with the likes of Toyota.

Advancements to the autonomy stack include improved pedestrian modeling which enables the system to make more robust predictions about pedestrian behavior in complex environments. This means the company’s vehicles can operate more efficiently in busy, pedestrian-loaded downtown environments. Other changes include enhanced policies which enable the vehicle to move more smoothly within its lane.

System includes enhanced tele-assist capabilities which aid the vehicle in maneuvering through pop-up situations such as roadworks for a more efficient journey. May Mobility’s tele-assist combines in-the-moment human insight with the company’s MPDM. The vehicle remains autonomous throughout the assistance while the human operator monitors the surrounding situation to ensure the vehicle remains within its designed operating parameters and approves actions that the vehicle proposes to take. The tele-assist operator can provide hints to the autonomy system, capable of generating alternative routes through complex situations.

Additionally, May Mobility has implemented its on-vehicle traffic light detection (OVTL) to further enhance safety with increased precision in challenging lighting conditions. The enhanced vision also detects non-working traffic lights, ensuring the vehicle treats them as stops. May Mobility intends to launch driverless commercial operations by the end of 2023.

General News

Antolin's New Brand To Reflect Transformation

GENERAL NEWS

Grupo Antolin is transforming their business based on technological innovation; sustainability, and talent as differentiating values. Seventy years after their founding, the company is a global provider of innovative and technological solutions for automobile interiors. Now they've launched a new brand and corporate identity to convey the essence of the new Antolin. The new brand represents the link between the company's history and its aim of leading future mobility. Jorge Álvarez-Naveiro, Corporate Director of Antolin Brand; Communication; Marketing, and Partnerships, says "It's a new image that reinforces who we are and who we want to be. A change that looks to the future without losing sight of Antolin's essence and roots and that strives to contribute to the transformation of mobility from within, providing the best onboard experience for people. Antolin is talent, innovation and sustainability, concepts that the new brand captures".

The core element of the new brand is Antolin's A, a triangle that represents the company's past, present and future: stability, growth and progress. The word "Grupo" disappears. The style of the **A** represents a crossroads, the period of transformation that the industry is experiencing. The green element is Antolin's business, the window through which we see the interior of the automobile.

In addition to representing the business and essence of the company, the new brand aims to connect with stakeholders. That's why the chosen typography conveys experience, knowledge and the future. These same concepts are reflected in the color range: blue reflects collaborators´ professionalism and the shade of green represents sustainable innovation. The brand is accompanied by the company's claim, which always begins with 'in' and which defines its essence as a global provider of technology solutions for automobile interiors:

- Creating intelligent vehicles (Intelligent). New mobility brings with it a new, more advanced, technological, and sustainable interior that offers the traveler a unique travel experience.
- Developing integrated solutions (Integrated). To develop this interior, Antolin is researching state-of-the-art solutions that integrate new technologies optimally and efficiently, lighting systems, decorative surfaces and electronics.
- Providing talent with values from the inside (Inside). At the heart of this strategy are people. Having the best professionals is essential to respond to industry challenges and always apply Antolin's Values daily.

Volvo CampX to Push Sustainable Mobility Innovations

GENERAL NEWS

VOLVO IMAGE

CampX by Volvo Group is a global concept designed to accelerate new technology and business innovations for sustainable mobility by partnering with startup companies. First launched in Gothenburg, Sweden in 2019, Volvo Group now has four innovation hubs located across three continents: in Lyon, France; Gothenburg, Sweden; Bangalore, India; and Greensboro USA. Last week they announced the opening of the new CampX Lyon in France, near the headquarters of Renault Trucks.

Under the CampX concept, startups with promising technologies for electric and autonomous vehicles and digital solutions are invited to collaborate with Volvo's chief engineers and business experts during short validation projects at the CampX innovation hubs. CampX also offers an ecosystem where startups in an earlier phase are provided with mentoring, networks, and business insights by Volvo Group experts. Here they can validate their ideas and test them out at laboratories, workshops and in test vehicles.

Lars Stenqvist, Volvo Group CTO, says "Climate change is by far the biggest challenge of our generation. At the same time, demand for transport and infrastructure continues to grow and we must be able to meet this demand with sustainable mobility solutions. Volvo Group is therefore committed to the decarbonization of the transport industry by developing innovative technologies within electrification, automation, and digitalization. CampX is our strategic engine to boost this transformation through partnerships with innovating startups. We co-create to accelerate".

CampX Lyon will focus mainly on decarbonization, urban logistics, and uptime services to better support customer needs and help tackle the many challenges posed by continuously growing cities. With seven partnership agreements signed already, CampX Lyon is on its way to validating and bringing new innovations to market through the collaborations with startups.