



Editorial

DVN Paris Workshop: Building Up To The Best

The 24th DVN Paris Workshop is coming up in two months' time: 1-2 February at the Hyatt Regency Hotel Place Hotel, Paris Étoile. All prevailing Covid safety measures in effect in Paris at the time will be applied: vaccinated/recovered, masks, physical distancing, etc. We all know that the Covid pandemic is not over, yet we are all looking forward to meet in person again and interact in the most direct way. This is also the intention of our conference, but at the same time all participants need to safe and this has the highest priority.

The conference and expo spaces will be safely laid out for hundreds of in-person attendees to benefit from the full docket of lectures, presentations, and exhibitions.

The whole international DVN team are doing our best to make a big success of the event. European, North American, and Asian contingents hope to be able to come to France, but in case travel restrictions will prevent them, we have arranged for online attendance in real time or in a replay mode to account for time zones, via our DVN Workshop online platform

So we are confident this event will be a grand success, no matter what form it will finally take. The rubric, **Safety & Design: Challenges & Opportunities**, is timely and crucial, and the information and ideas shared at the event will make real contributions to decrease traffic fatalities in the world and propose new designs.

[Registration](#) is now open, and we look forward to welcoming your attendance and participation in an inspiring, exciting, lively and safe conference in Paris. Of course we will regularly keep you informed about any changes and updates, here in the weekly DVNNewsletter.

Sincerely yours,



DVN CEO

In Depth Lighting Technology

On the Docket at the Paris DVN Workshop



There will be two keynotes, thirty lectures, and one panel discussion at the Paris DVN Workshop. The first keynote will be from GRE President Timo Kärkkäinen.

DVN **DVN PARIS WORKSHOP** **1-2 FEB. 2022**

**SAFETY AND DESIGN:
CHALLENGES AND OPPORTUNITIES**

TIMO KÄRKKÄINEN
Chairman
GRE

FRANÇOIS BEDU
Lighting Expert
Renault

MICHAEL HAMM
Development Headlamp
Manager
Audi

MORE INFO AND REGISTRATION: www.drivingvisionnews.com

For the first session, we will welcome top automaker experts who will present their achievements; lighting managers from **Audi, BMW, Renault, Rivian, SEAT, Stellantis, and Volvo** will explain what they've achieved and what remains to be done to improve safety and design.



Additional sessions will include:

- ***Effects of new front and rear design on safety***
- ***Effects of safety functions on design***
- ***Smart interior lighting's influence on design and safety (outlook on AV)***
- ***Light sources' effects on design and safety***
- ***Enabling new design and safety functions***

Attendees will have the great privilege of lectures from **Hasco, Hella, Koito, Marelli AL, Mind, Valeo, ZKW, Magna, Varroc, Xingyu** will like confirm as well. The speakers will explain how digital and HD lighting allow communication with other drivers, pedestrians, and cyclists; the effect on safety for vulnerable road users, and how new technologies will facilitate new designs.

The 5th session involves the vehicle interior, an increasingly important domain to enhance safety by the likes of driver monitoring systems. There'll be high-content lectures presented by knowledgeable experts; watch for more details about this soon.

The last two sessions will cover light source innovations and technology enablers for safety at night. Lecture topics will including status and trends in LED, OLED, matrix, and μ LED technology.



SHANGHAI DVN WORKSHOP, SEPTEMBER 2021

The panel discussion will grapple with the rubric **Design depending on technology, or vice versa? Impact of regulations.**

There will be ample time for individual communication and networking during the coffee breaks, lunches, and especially the cocktail and dinner as a highlight on the first day.



The workshop will highlight how new technologies will contribute increasing safety in the world, while facilitating new designs. Topics will include front, rear, and interior lighting; ADB, LED, microLED, OLED, laser, and MLA technologies' effects on safety and design; and new functions including lit design elements like illuminated front grilles.

The event will bring together more than 300 participants from all over the world—managers, experts, decisionmakers, researchers, and practitioners involved in lighting and ADAS. Discussion panels and exhibition booths will host fruitful exchanges between all attendees.

And, special for this Workshop, there will be a gala award ceremony during the dinner on 1 February. Plaudits to be presented include the DVN Personality of the Decade award.

Lighting News

Innovative Lighting on Car: Movie theater on wheels Extract from "Frankfurter Allgemeine Zeitung" 30 November 2021

LIGHTING NEWS



Frankfurter Allg. Zeitung



CONSTRUCTION PROJECTION LIGHT



DMD MODULE AUSSI E-TRON

Germany's most important newspaper «Frankfurt3er Allgemeine Zeitung» published an unusual big article of 3 quarters of a page about car lighting with DMD projectors. The journalists were obviously deep impressed by the surprising functions of the newest lighting technology. This proves again that we have to show our technology to the press, the public and the car customers again and again. It's worth it.

«Headlight becomes a projector, rear light a display. Both approaches should not only increase safety when driving at night, but also make brand more recognizable.

Digitization in headlights began years ago with matrix LEDs. The high beam is generated by 1/2 dozen individually controllable LEDs.

More than 140 vehicle models from various manufacturers, including those in the volume segment, are now on the road with matrix LED headlights.

«The next level of innovation is only available at Premium Brands, and only in a few models there.

Instead of individual LEDs, micromirrors provide any variable light distribution. The focus is on a chip DMD that is currently only manufactured by Texas Instruments. Around 1.3 million mirrors, each about 8µm in size, are housed in an area the size of a thumbnail. Each mirror can be controlled separately by an electrostatic field via the chip attached underneath.

«When the driver opens the door, it rains stars or lines and rings merge. However, these animations last exactly three seconds, this duration is compatible with the approval regulations. Assistive functions, which are made possible by the fine light distribution, are more important. Mercedes relies on warnings that appear on the road, among other things. If a red traffic light or a stop sign is approached too quickly, a white triangle appears on the lane - provided the camera behind the windshield has correctly captured the situation. «A carpet of light that both Audi and Mercedes roll out when driving on the motorway at night is helpful. The Stuttgart-based company designed it as a field the size of its own vehicle, which in motorway construction sites - and only there - marks its own position in the lane. Audi, on the other hand, illuminates its entire lane brighter than the rest and shows its own position in it as arrows, the distance between which corresponds exactly to the dimension from outside mirror to outside mirror.

Car of the Year Finalists Revealed

LIGHTING NEWS



EVs dominate the finalist rolls for the 2022 version of Europe's Car of the Year award. There's just one combustion-engine car on the list, the Peugeot 308. The award, to be announced on 28 February, will go to the Cupra Born; Ford Mustang Mach-E; Hyundai Ioniq 5; Kia EV6; Peugeot 308; Renault Mégane e-Tech, or Škoda Enyaq.

The finalists were picked out from nominations by 61 motoring journalists in 23 European countries, and the next stage in early 2022 is a series of comparative road tests.



CUPRA BORN



FORD MUSTANG MACH-E



ŠKODA ENYAQ



HYUNDAI IONIQ 5



KIA EV6



PEUGEOT 308



RENAULT MÉGANE E-TECH ELECTRIC

Just about as interesting are the cars that didn't make the cut: the Nissan Qashqai, Mercedes C-Class, Tesla Model Y, and BMW's i4/4 Series.

BMW XM e-SUV to Launch in Late '22

LIGHTING NEWS



The production version of BMW's XM will be launched late next year, and its prominently-nosed new front end could preview others to be fielded by BMW. The front lights are configured as two modules, with the DRLs located in the upper one and the headlamps in the lower one.

The very large kidney-shaped grille sits between the headlamps and tapers toward the outer edges, producing a near-octagonal outline. M-style double bars within the grille add to the perception of width. Contour lighting sets off the grille.

At the rear, slim I-shaped rear lights extend almost the width of the vehicle. The lights are completely black when not active, and light up in a uniform band of red when switched on.

The visual highlight of the cabin is the headliner with its three-dimensional prism structure. A combination of indirect and direct lighting produces a relief-like structure. The ambient lighting can be activated in the three BMW M colors: blue, cyan, and red.

Genesis G90 Struts its Stuff With New Lights

LIGHTING NEWS



The top-of-the-range Genesis presents the brand's design identity as a set of super-slim, duo-linear lamps up front. In back, there's a full-width duo-linear lamp set as well.

The headlamps feature the finest of fine-line designs ever fielded by Genesis, and the technical solution is interesting: they did it by intercrossing the DRL lens with the low beam and leveraging MLA (micro-lens array) technology.

The duo-linear rear combination lamps are tied together by a light band spanning the deck lid.

New Peugeot 308 has Full-LED Headlamps

LIGHTING NEWS



The newly-launched Peugeot 308 bears full-LED headlamps from Marelli AL in both the mainstream and GT versions of the car.

They're not the same lamps, though: the mainstream variant uses reflector optics, while the GT version has very slim projectors, which provide a matrix light distribution, fully automated and controlled in cooperation with the vehicle's camera. The 15-segment matrix beam serves up ADB functionality for maximum comfort and safety.

Ceres, Covestro Expand Holographic Display Collaboration

LIGHTING NEWS



Ceres Holographics and Covestro have deepened their cooperative efforts around Ceres' HoloFlekt films for automotive display systems.

Ceres-finished HoloFlekt films are used in new kinds of holographic optical element-enabled displays in automotive, aviation, and public transport markets. The two companies' joint efforts will focus on customising Covestro's Bayfol HX photopolymer together with the Ceres mastering and replication technology that enables production of the finished HoloFlekt functional films.

Ceres Holographics design and manufacture holograms and holographic optical elements for optical systems in augmented-reality head-up displays; holographic transparent displays, and holographic lighting systems.

Driver Assistance News

Suppliers Prepare for Lidar Boom

DRIVER ASSISTANCE NEWS



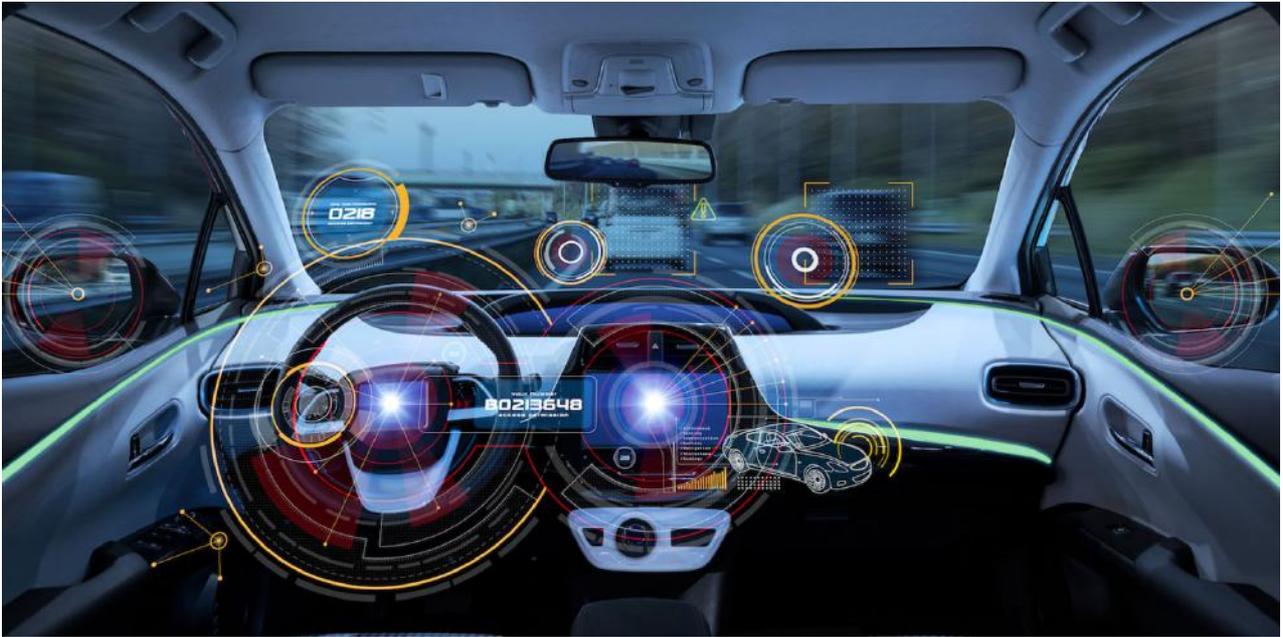
Valeo, Continental, Velodyne, Luminar, and numerous other suppliers are gearing up for rapid acceleration in demand for lidar sensors for increasingly autonomous cars. The demand surge is expected to pick up steam around 2025, says Valeo chief technology officer Geoffrey Bouquot. His company have just introduced their third generation of lidar sensor systems, which are slated for commercialisation starting in 2024. They'll boast a twelvefold improvement in resolution, triple the range — able to see objects over 200 metres away — and a viewing angle 2.5 × that of Valeo's present lidar sensors. Bouquot says the lidar market could quadruple between 2025 and 2030, eventually hitting €50bn world wide.

Audi introduced lidar in their A8 in 2018 as part of a planned L³ capability that has so far not been activated, and Volvo plan to put Luminar's lidar system in the XC90 replacement due for launch next year.

The suppliers standing to ride the lidar wave include Valeo; Continental; Bosch; Veoneer; Velodyne; Luminar, and Innoviz. At the same time, Waymo and fellow autonomous mobility companies Argo AI (Ford, VW) and Cruise (GM) are developing their own lidar systems. Continental showed a new generation of scanning lidar this autumn. Also planned for SOP in 2024, it can see objects 300 m away, according to Continental.

Nexyad to Build AV Demonstrator Car

DRIVER ASSISTANCE NEWS



Nexyad's AI module, called VisiNex, is catching the attention of automakers for its ability to discern every impediment to visibility and its cause, whether it be fog, rain, snow, or dust on cameras—very important for cars with cameras in unwiped areas, such as Tesla. The intent is to build and bolster trust in camera perception, in real time, so sensor fusion can be fully leveraged; all while improving vision-based deep learning in bad weather and occluded-visibility conditions.

Nexyad expect their module to be built into series-production vehicles—cars, trucks, and motorcycles—starting soon. To hasten that day, they're building a demonstrator call they call Dreamotor1, which integrates technologies coming from a wide variety of startups and SMEs.

SafetyNex is now featured through current integrations for automakers in Europe and partnership with map provider Here Technologies. This cognitive AI brings three functions: safety score; safety coach (digital co-pilot), and preventive ACC. It aggregates in real time all available data (static and dynamic descriptors of driving behaviour and context), and it calculates 20 times per second:

- a level of caution in driving behaviour regarding context;
- a level of risk, defined as lack of caution, and
- a setpoint maximum speed to guarantee contextually cautious driving behaviour.

Blickfeld to Show All-Round Lidar Vision Concept

DRIVER ASSISTANCE NEWS



At CES 2022, Blickfeld plan to present a concept for seamless, almost invisible embedding of lidar sensors in automobiles. The concept is meant to reconcile technology and aesthetics.

Blickfeld want to use their Vision Mini sensors to achieve seamless integration and aesthetically pleasing integration into the vehicle at multiple mounting positions such as headlamps, rear lamps, and sideview mirrors.

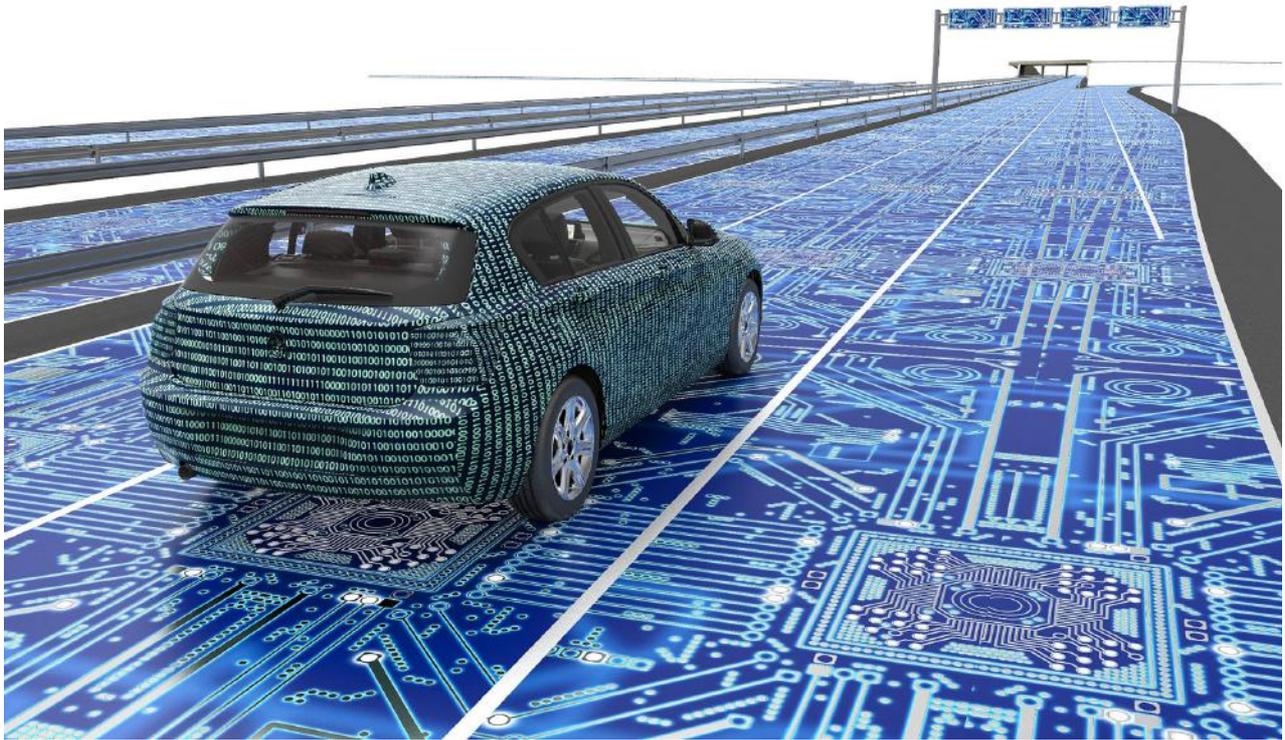
Such an arrangement enables all-round visibility, a core necessity for safe driver-assisted and autonomous mobility.

Compared to radars and cameras, lidar sensors offer a more precise, 3D perception of every detail in the environment and are therefore a central component of active safety systems in vehicles. That's the view of virtually every supplier and automaker, though notoriously churlish Tesla CEO Elon Musk has asserted that lidar is "a fool's errand" and that anyone relying on it is "doomed".

Automakers must be able to offer individual designs clearly distinguishable from those of their competitors. The seamless integration concept presented therefore pays particular attention to the possibility of emphasising brand-specific characteristics through thoughtful arrangement of the individual elements. The sensors have been elegantly integrated into the vehicle together with lighting elements in an almost invisible manner, eliminating awkwardly protuberant roof-mounted sensors.

Panasonic Depend on Ansys Digital Simulation

DRIVER ASSISTANCE NEWS



Using model-intensive simulation and systems engineering solutions from Ansys, Panasonic Automotive have developed a standard relating to the safety of electrical and electronic systems in vehicles. This collaboration made it possible to develop a systemic approach based on models for the entire safety lifecycle.

Continuous improvement of the passenger experience increases the number and complexity of in-vehicle systems, such as ADAS. These interconnected systems are critical for safety, which is why manufacturers must meet increasingly demanding standards to demonstrate the integrity of their products. However, identifying all the risks and analyzing the many possible scenarios using traditional tools is complicated and time consuming.

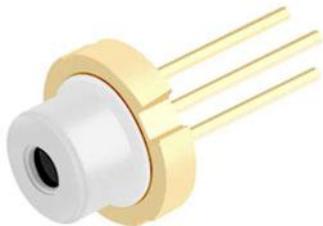
Panasonic have integrated the Ansys Medini Analyse solution to streamline functional safety analysis for their eCockpit digital cockpit concept. Panasonic Automotive chief technology officer Andrew Poliak says "We believe mobility innovations will constantly evolve in a world defined by systems and software, which is why it is essential to have an effective process dedicated to functional safety".

AMS Osram's New IR Laser for Lidar

DRIVER ASSISTANCE NEWS



AMS Osram, a leader in the development and production of infrared pulse lasers for lidar systems, are now launching their new SPL TL90AT03 for applications such as industrial automation, site levelling, and invisible traffic monitoring.



The new infrared laser diode was specifically developed for short pulses of between 5 and 100 nanoseconds. The laser achieves an optical output of 65 w from an aperture of 110 μm at a forward current of 20 A, corresponding to an outstanding efficiency of about 34 per cent.

General News

Hella Report Droop in FQ2 Figures

GENERAL NEWS



Hella's figures for the second fiscal quarter are out, and the supplier have adjusted their outlook for the current fiscal year 2021-'22. Currency and portfolio-adjusted sales in the second quarter, September-November 2021, declined by around 13 per cent to €1.5bn due to choked supplies of semiconductors and other components. The EBIT margin fell to around 4 per cent as a result of rising materials and logistics costs and increased production inefficiencies due to the bottleneck situation. Based on June-November 2021, group sales adjusted for currency and portfolio effects will thus decrease by approximately 3 per cent to—preliminarily—around €3bn, and the adjusted EBIT margin will be approximately 5 per cent versus last year's 8.7 per cent.

CEO Dr. Rolf Breidenbach (photo) says "Despite our good order situation and market positioning, the bottlenecks in the global supply and logistics chains are having a greater impact on our sales and earnings development than expected at the beginning of the second quarter. Nevertheless, this segment continued to develop clearly better than the global automotive market, showing a significant outperformance in the first half of the year. Our two other segments, aftermarket and special applications, equally showed a pleasing development and once again proved to be an additional anchor of stability".

In view of the business performance to date, the expected lack of market recovery in the second half of the year, and increasing cost burdens, Hella have further lowered their sales and earnings forecasts for the current fiscal year; they now expect currency and portfolio-adjusted sales in the range of €5.9bn to €6.2bn and an EBIT margin adjusted for structural and portfolio effects of 3.5 to 5 per cent, trimmed down from the previous estimate of 5 to 7 per cent.