DrivingVisionNews.com

Tue, 8 February 2022 Weekly Newsletter NEWSLETTER #737

Editorial

Introduction: I'm Here To Support The DVN Community

by Gerd Bahnmueller, New DVN Advisor

Dear DVN members, newsletter readers, and all friends interested in lighting: hi! I'm back, and happy about that.

At the beginning of 2021 I retired after a 34-year career, 28 of which had me directly involved in vehicle lighting development. Now, after a year forming a beautiful life with completely different focus, I'm happy to be back in lighting to a deliberately-chosen extent. Lighting has been the centre and focus for half of my life, with incredible technological developments along the way.

But even more impressive during this time have been the people—coworkers, customers, and suppliers I got to know and work with. This worldwide lighting community was and is something special—maybe unique. Above all, the team and colleagues from Automotive Lighting, who supported and accompanied me for decades, are still in my thoughts and memories every day.

Therefore, I am now pleased to be able to contribute inside DVN as part of the lighting community, to keep this network alive and to show and support trends and technological developments in lighting. Right now there is a lot of uncertainty to where the journey is going. The pandemic, the rapid change to electromobility and evolution toward autonomous driving is setting new priorities and trends in vehicle lighting. High-definition light functions; fully illuminated grilles and panels; lidar; cameras;

OLEDs, and displaysare among the new lighting features; when and where will they come?

These findings and trends are the important basis for all experts and managers to take the right decisions and set the right course for the future. Being involved here, evaluating the various possibilities, scrutinising the influences and showing the resulting consequences and developments for the coming lighting products is a welcome link to my long lighting history. And this will really only be possible in a lively exchange with you, who work in this environment every day. DVN is now the opportunity to keep lighting as a part of my life and hopefully we will soon be able to meet personally at one of the next DVN events, which I've always enjoyed as a special highlight. Until then, I will support DVN with my expertise and am eager to work intensively with Hector, Wolfgang, and the team.

Gerd Bahnmueller, DVN advisor

In Depth Lighting Technology

Gerd Bahnmueller: Confident on Lighting's Bright Future

Gerd Bahnmueller joined the DVN team at the beginning of the year. This week, we present this interview to properly introduce him to the DVN community.

DVN: A year after leaving Marelli AL, how do you relate to vehicle lighting and how important is it to you?

Gerd Bahnmueller: I got into the depths of lighting technology by accident. My mechanical engineering studies were geared more towards my passion for IT and computers, and my first job and the first steps in my career also took place in IT. My first employer Bosch, as one of the top addresses in the automotive industry was also a conscious step. That I ended up in the lighting division and stayed there was my kismet. The task of CAD and CAM introduction and the mechanical engineering background led me directly to the responsibility for the optical and mechanical development of headlamps after six years' work. This then stuck with me for the rest of my professional life—another 28 years. In particular, the last six years as R&D Vice President at Automotive Lighting were very interesting and with many highlights such as the introduction of LED ADB, laser light, OLED in rear lamps, and DMD technology in headlamps. For those who don't know me yet, I've attached my resume in a nutshell.

So, it doesn't need many words that lighting technology was and always will be an important part of my life. I have already expressed in the editorial the special relationship and thanks to the people who have accompanied me both in the company and with my business partners.

After a year that I really enjoyed despite the pandemic's restrictions, I am happy to see some of these companions again so I can continue to contribute my expertise and follow the latest trends and developments up close.

DVN: How you see your role at DVN?

Gerd Bahnmueller: The DVN team, centredaround Hector, are doing an incredible job for more than 15 years now. I've long admired the enthusiasm and energy that drives Hector; I hope that drive stays with us in this form for a long time. Last year Wolfgang Huhn, whom I have known and respected for 30 years, also took on a leading role in DVN. In this environment I'm happy to be able to contribute as well. However, it is not my planning to get involved as intensively as Hector or Wolfgang are doing.

My first task is to work on a study with interviews and elaboration in close cooperation with the DVN team build by Hector Fratty, Wolfgang Huhn, Jean-Paul Ravier, and Philippe Aumont. With the support of Hector and Wolfgang, I would be happy to participate in the regularly published newsletters and to help organise the DVN Workshops that hopefully can take place again soon.

DVN: What topics do you reckon DVN should focus on?

Gerd Bahnmueller: DVN started with a clear focus on front and rear lighting. The extension to interior lighting and ADAS has already widened the view, with e.g. the Lidar Conferences. Especially the view on ADAS and the link of the traditional front and rear lamp systems with new sensors, displays, and new software architecture of future cars is of top importance to focus on.

Now we have to evaluate and support the trends and requirements for the rapid shift towards battery driven electronic vehicles. Beside the technology we have to look at power consumption, styling, animation, and other features like arrangement and illuminated parts and features.

Also, regulations are always a challenging topic. On some applications there are quite different interpretation of existing regulations visible. Here DVN could give helpful support in keeping the overview for the lighting community.

DVN: Will the pandemic influence the lighting business?

Gerd Bahnmueller: It influences the entire industry. Lockdowns and the shortage of components—especially microcontrollers—are omnipresent, including the lighting business. Especially tier-1 suppliers are suffering more if volumes are dropping and materiel prices are increasing.

The most significant change that will remain after the pandemic is in the way we work together. Meetings with personal presence are replaced by virtual meetings via telepresence by members working full- or part-time in home offices. Daily contact with lively informal exchange will not be an integral part of future working life. This poses another challenge to the development and commercialisation of innovations. However, I am confident that the next generation, already raised in the digital age, will do this more easily and better than we (our generation) can imagine.

Also, inside DVN we have to consider this trend in organising our future workshops; we must continue to offer virtual access. But in my point of view we have to keep especially the personal contacts.

Overall I’m very confident for a bright future in lighting.

Gerd Bahnmueller’s CV in bullet points:

• 1982-1987: studies in mechanical engineering at TU Stuttgart

• 1987-1992: Bosch in Reutlingen, starting as engineer technical IT, later section manager and head of technical IT department

• 1993-1998: Bosch in Reutlingen, head of engineering department optics and mechanical design2020. Development and market introduction 1st and 2nd generation HID

• 1999-2020: Automotive Lighting in Reutlingen: head of engineering centre Reutlingen/Brotterode/Jihlava; front lighting R&D director; vice president of R&D. Development of Bi-Xenon; ADB modules, ECUs, and software; first LED headlamps and ECUs; laser headlamps; DMD-headlamps including ECUs and software, and OLED rear lamps.

Lighting News

Hella CEO Breidenbach Resigns

LIGHTING NEWS

Faurecia completed their majority takeover of Hella and have held an 80.6% stake since the end of January.

Following the Faurecia takeover, Rolf Breidenbach has announced his resignation as head of Hella, with effect from this summer; the manager and the shareholders' committee mutually agreed on the end of the his contract on June 30. His successor is to be determined soon.

Breidenbach, who has been in the captain's chair for over 18 years, says "With Faurecia as Hella's new majority shareholder, the path to a successful future has now been paved".

Night Vision System in New Opel Grandland

LIGHTING NEWS

The new Grandland is the first-ever Opel model to feature a night vision system, which, together with Opel's IntelliLux 84-LED ADB headlighting system, helps drivers spot people and animals sooner than they otherwise could.

The camera-based night vision system is well hidden in the car's front end, and an **online video** gives a quick show-and-tell about it.

The infrared camera concealed under the Opel "vizor" powers the system, which lets drivers detect people and animals up to 100 metres ahead, based on their temperature difference from the surroundings. As soon as the camera detects the pedestrian, cyclist, or animal, it shows their position in the twelve-inch Driver Info Center. The obstacle is highlighted in colour, clearly distinguished from the surroundings.

Hella FlatLight: Innovative Microoptics Technology

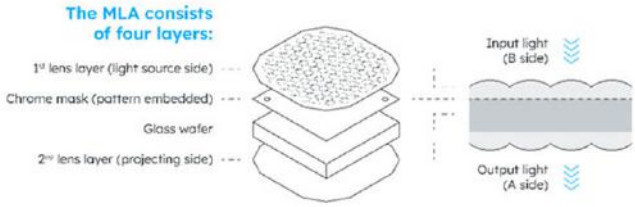
LIGHTING NEWS

The OLED-fighting Hella FlatLight consists of a light guide with a microstructure and additional optical lenses placed in front of the light guide with different micro- and diffuser optics. By matching the microstructures to the light guide there is an amplification effect to the passage of light.
At the same time, the light is concentrated forward giving the much-desired increase in intensity. This results in a guaranteed uniform illumination of the surface from all viewing angles. Higher output power enables the implementation of high-intensity signal functions such as brake lights and direction indicators.

The ~5mm overall thickness of the module shows a flat structure, which allows an individual positioning in the rear combination lamp. The front surface of the module can be masked with different decorations, painted, or laminated. The implementation with microoptics (FlatLight µMX) is only one possibility to build the rear combination lamp. Depending on the customer's wishes and requirements, other technologies can also be used, such as nanoparticles. These enable, for example, three-dimensionally curved optical elements that can follow a vehicle contour even better and thus lead, among other things, to a reduction in installation space and weight savings.

AMS Osram's New Projected-Light Effects

LIGHTING NEWS



MLA TECHNOLOGY

Projected light is the latest optical effect to be used to brand a car's interaction with the driver. LEDs and micro-lenses project light patterns on to the road, producing effects such as the 'welcome light carpet'. AMS Osram are developing the next generation of the technology: semi-dynamic light projection, opening up new creative possibilities to car makers.
These tiny projected lighting systems consist of a micro-lens array, shown here, through which light from an LED is projected via a collimator to concentrate the LED's light output on the lens assembly.

Until now, the technology has only been capable of projecting static images onto the image plane. Osram's latest developments enable semi-dynamic projected lighting; a segmented micro-lens array works in combination with four collimators split by an optical separator, with four independently steerable LED light sources.

The precision and miniaturisation possible when producing wafer-level optics is extraordinary: optic-to-optic alignment is of the scale of ±5 µm, and optics-to-mechanics alignment is ±30 µm. The extreme precision of this fabrication process ensures very high fidelity in reproduction of the specified lens shapes, to produce a sharp, focussed projected image.

Projected lighting technology gives automakers unprecedent potential to improve the safety, convenience, appearance, personality and functionality of the car's lighting, as the pictured examples show.

Projected lighting also has important safety applications. Signals projected on to the road from wing mirrors, turn indicators, or rear lamps can provide pedestrians, cyclists and other road users with a highly visible indication of the driver's intentions.

Faurecia's Hella Acquisition to Boost EV-AV Biz

LIGHTING NEWS

Hella's new controlling owners Faurecia are actively seeking to bolster their presence in electrification and self-driving technology. Faurecia themselves make seating; interiors, and cockpit components, as well as electronics via their Clarion subsidiary. They feel the Hella buy will better position them to sell electric mobility products and automated driving services to the industry.

Faurecia CEO Patrick Koller says the newly-enlarged combined company will seek to generate €33bn in revenue by 2025, a forecast representing “a significant leverage”.

The deal comes as automotive suppliers position themselves to take advantage of industry mega-trends such as electrification, connectivity and autonomous driving, by spinning off or selling "noncore" assets. The Faurecia-Hella conglomeration has created the world's 7th-largest automotive supplier.

In their news release on February 7th, they said that the combined company will be known as Forvia, but Faurecia and Hella will continue to operate as two separate legal entities, and will sell products under each brand name.
They also explained that “the Forvia name combines the words "forward" and "via," and is about the movement and the necessary agility as well as the newly combined group's commitment, confidence and action."

Driver Assistance News

IIHS to Publish Nighttime AEB Ratings

DRIVER ASSISTANCE NEWS

Automatic emergency braking systems, found in nearly 90 per cent of 2021 vehicle models, decrease the odds of a pedestrian crash by about one third on well-lit roads, according to a new IIHS study. But the systems don't seem to help much at night, when pedestrian crash rates need the most improvement. To nudge the development of nighttime-capable AEB systems, IIHS will release a new nighttime test and rating system for AEB systems this year, which will become part of the criteria for the 2023 Top Safety Pick and Top Safety Pick+

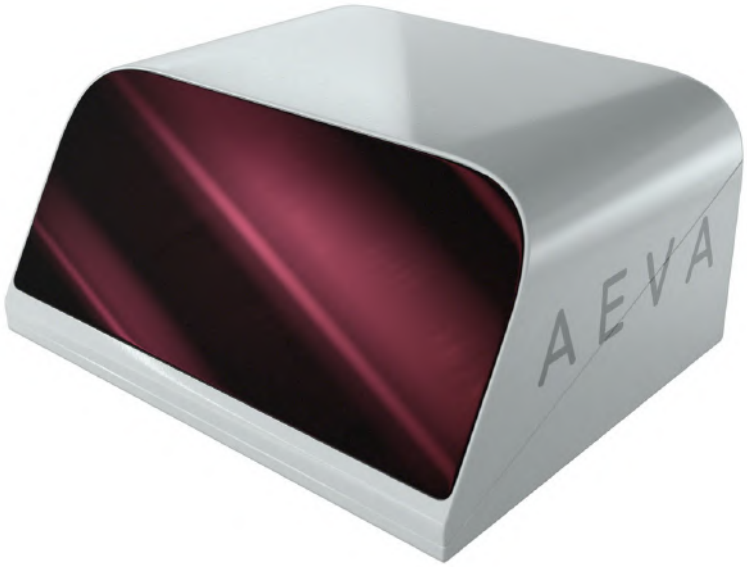
IIHS vice president of research Jessica Cicchino told *Automotive News* "Most pedestrian crashes happen during the day, but the issue is that most fatalities have been in the dark". Cicchino led a group that looked at nearly 1,500 police-reported crashes and compared the reports for identical vehicles with and without AEB.

After noting the night-blindness of today's AEB systems, IIHS created a nighttime track test, looking at eight small utility vehicles with AEB systems made by eight different suppliers. The vehicles were tested twice, with low beams and high beams. While high beams performed better, the difference in headlight quality did not significantly affect the vehicle's performance, Cicchino said.

The vehicles used a variety of AEB systems with single or dual cameras, single camera with radar, or radar-only. The Toyota C-HR and Ford Bronco Sport, which use a combination of cameras and radar, were the best performers in both tests. But other vehicles with this system, such as the Honda CR-V, performed relatively poorly. IIHS are working to discover what drives the difference in performance.

Aeva Claim World First: 4D Lidar With Cameralike Clarity

DRIVER ASSISTANCE NEWS



Aeva have launched their Aeries II 4D lidar sensor to enable what they are calling “the next wave of autonomy across applications in automotive, industrial and beyond”. Based on the supplier's FMCW technology and the first lidar-on-chip module design, the sensor detects the fourth dimension of instantaneous velocity for each point scanned, in addition to its 3D position.
Aeva’s 4D Perception software enables new features like 4D localisation and “Ultra Resolution”, a cameralike image they say has up to 20 times the resolution of other lidar sensors.

LeddarTech Secure $140m in Series D Financing

DRIVER ASSISTANCE NEWS

LeddarTech have announced a successful financing round with an investment of USD $140m, which comprises a Series D first close of $116m and debt facility of $24m. This investment will accelerate the development and commercialisation of LeddarTech solutions. In addition, LeddarTech will use the funds to augment engineering resources to meet the demands from global automaker and tier-1 and -2 customers actively engaged with the company for sensor fusion and perception sensing solutions.

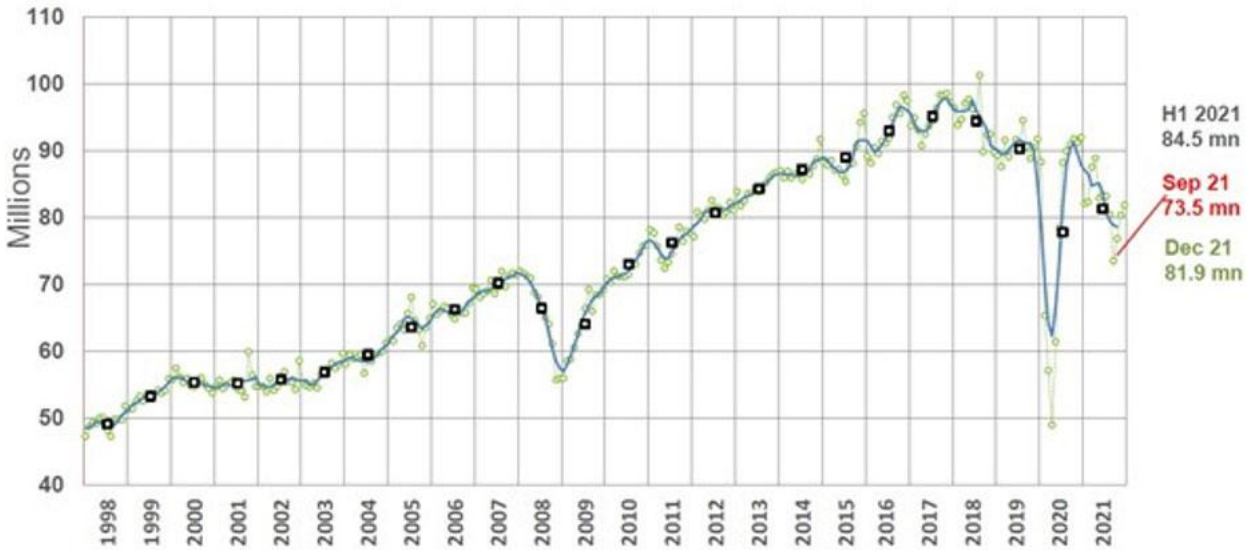
CEO Charles Boulanger says “The success of this round is a testament to the growth and industry recognition LeddarTech has achieved. I am delighted to welcome FS Investors as our most recent investors, who bring vast experience and expertise in the deep tech sector".

Founded in 2007, LeddarTech have become a comprehensive end-to-end environmental sensing company by enabling customers to solve critical sensing, fusion and perception challenges across the entire value chain. The company offers cost-effective and scalable solutions such as LeddarVision, a raw-data sensor fusion and perception platform that generates a comprehensive 3D environmental model with multi-sensor configurations to support L^{2+} to L^{5} full autonomy. The company are responsible for several innovations in cutting-edge automotive and mobility remote-sensing applications, with over 100 patented technologies enhancing ADAS and AS capabilities.

General News

Turbulence in New-Vehicle Market

GENERAL NEWS



Overall, light vehicle sales are forecast to increase in 2022 to 85 million, managing director Pete Kelly said Tuesday during LMC's annual sales and production forecast event. Europe sales will increase by 7% to 18 million; North America 6% to 19 million, and China 5% to 27 million.

Compared to pre-pandemic levels in 2019, production will be down 12% in the first quarter; 5% in the second, and flat in the third quarter. A rebound will gather force in the fourth quarter, when it could rise by 4% compared with 2019.

In China, total new vehicle sales last year increased by 4% to 26 million, with car sales rising by 6% to 21 million units and commercial vehicle sales down by almost 7% at 5 million units.
Electrified vehicles comprising mainly electric and hybrid-powered vehicles, surged by 157% to a record 3.5 million last year.

American Traffic Deaths Up in 2021: NHTSA

GENERAL NEWS

NHTSA say traffic deaths rose 12 per cent in the first nine months of 2021 to 31,720, the highest number killed on U.S. roads in that period since 2006, according to the agency's initial estimate. The numbers suggest the U.S. surpassed 40,000 traffic deaths in 2021 for the first time since 2007.

NHTSA said 38 states were projected to have increases in traffic deaths in the first nine months, while two states were unchanged and 10 states and Washington D.C., were projected to have decreases. Idaho led all states with a 36 per cent increase.

In an interview, Transportation Secretary Pete Buttigieg ("*BOOT-edge-edge*") said he wants to see a "mentality shift" away from traffic deaths as acceptable. "The country has just become used to it. We've just come to assume or expect that it's inevitable," Buttigieg told Reuters. "We would never tolerate 40,000 deaths in aircraft in the United States or from food poisoning at restaurants or in subways." Last week, Buttigieg outlined the department's new National Roadway Safety Strategy. He wants to encourage designing safer roads and safer vehicles and is embracing Vision Zero—the idea that the United States could eventually eliminate all traffic deaths.

NHTSA plan to write rules to require automatic emergency braking technologies on new passenger vehicles and heavy trucks. A fine idea, though audits of NHTSA, going back more than a decade, have **consistently found** the agency structurally unable to bring regulatory plans to fruition.

Hasco Magna eDrive on VW MEB Platform

GENERAL NEWS

Magna continue their growth in electrification with secondary eDrive systems reaching roads in Asia, Europe and North America on Volkswagen's MEB platform. The Hasco Magna Electric Drive Systems Co.(HME) team in China have started high-volume serial production of secondary eDrive systems for the Volkswagen ID.4 electric crossover, one of the automaker's vehicles on the MEB platform.
The system was designed using Magna's fully integrated, modular and scalable building block approach, resulting in a cost-efficient and highly advanced product that meets the various demands for global application. It is one of many eDrive products in Magna's portfolio that covers power ranges up to 250 kW for all vehicle types.

Hasco are a comprehensive and professional automotive parts system supplier covering more than 40 business areas. The company have 28 directly-invested subsidiaries, many of which have more than 30 years' history. There are 465 R&D, manufacturing and service bases and over 120,000 employees around the globe.

Magna, one of the world's largest suppliers in the automotive space, are a mobility technology company with a global, entrepreneurial-minded team of 154,000 employees and an organisational structure designed to innovate like a startup. The global network includes 347 manufacturing operations and 90 product development, engineering and sales centres spanning 28 countries.