DrivingVisionNews.com
Automotive lighting and driver assistance technologies

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Editorial

Next Tuesday! Join The 3rd DVN Lidar Conference!

Our last live, in-person DVN Workshop was in Munich this past January. Most of a year spent coping with Covid restrictions make it feel like that was years ago. A pity, but—like you—we're carrying on as best we can. In such a dynamic industry, networking is a perpetual must; it's grease for the wheels of innovation and collaboration.

Our next important event will be the 3rd DVN Automotive Lidar Conference on 17 November. This event will gather over 300 top worldwide experts in automotive lidar and lighting industry from over 100 different companies, from Europe, Japan, China and America as we look at the state of the art in vehicular lidar from every angle: applications, technology, components, and market outlook. Twenty-five speakers—all top specialists—will present their research and development, their findings and innovations. The speakers are from automakers, suppliers, lidar specialists, and stakeholders in the lidar ecosystem; take a look at this roster:
- Car makers **Volvo, Audi, PSA** and **Great Wall**
- Automotive tier 1 suppliers such as : **Valeo, ZKW, Koito, Continental** and **Marelli**.
Additionally - Material specialist **Covestro** and Lidar specialists such as : **IBEO, Xenomatix, Velodyne, Lumentum, Cepton, Leddartech, Ouster, Oqmented, Innoviz and SiLK**.

This lineup of speakers is practically guaranteed to bring broad, deep insights into the field of automotive lidar for all participants.

Registered participants will be able to join the live conference and presentations. And we've put together provisions for networking during the whole day of the online event, as

well as communication tools to connect all participants, including presenters.

For those who wish to showcase their work and innovations, we offer an attractive exposition package so that you can promote your company during the conference, including your own virtual booth—unlike the booths at an in-person event, the DVN virtual booths remain accessible for at least a week after the conference, so participants have every opportunity to peruse your presentations and promotions, even if they're pressed for time during the event itself.

Creating your own virtual booth is simple, and will not require any travel nor buildup and takedown. In these pandemic-struck times, it is a very cost-effective way to keep your company in the picture and to facilitate networking in this community of automotive experts and exucutives.

We look forward to welcoming you on 17 November—that's in just one week's time; don't miss out! If you haven't yet signed up, head over to the **registration page**. We'll see you there!

And last but not the least, **DVN Gold and Platinium members have only a few days left to upload their company page** on the DVN Community section of our DVN website,

This Company page allows you to introduce your business to the very focused DVN Community of Automotive Lighting, ADAS & Smart Interior, to promote your latest innovations through pictures or videos online, to give a contact name for networking, to create new partnerships or forge new Business relations.
DVN members who have not yet uploaded their company presentation are invited to at least upload their company Logo and their contact information asap!
For more information, contact Carine at carine@drivingvisionnews.com.

Sincerely yours

LEO METZEMAEKERS
DVN SENIOR ADVISOR

In Depth Lighting Technology

Next Tuesday: The 3rd DVN Lidar Online Conference

There have been more than 10 months of Covid restrictions since our last in-person Workshop in Munich. That puts a real crimp in things; in a dynamic field such as this what we work in, networking is essential to bring on innovation and collaboration. We've all had to reinvent ourselves. At DVN, we're busily working around the barriers to provide you with new ways of networking.

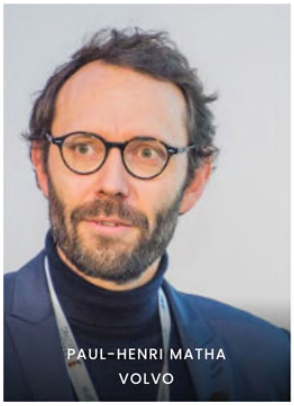
We carry on bringing you the weekly DVNews, as well as monthly and new quarterly reports, and we're organising online events. Following on the grand success of our online DVN-I Smart Interior Workshop two months ago, we're putting together the 3rd DVN Lidar Conference on 17 November, just one week from today.

We view it as a core task to facilitate good, real networking—Covid or no Covid. So in organising these online events we make provisions for chats among attendees, and we optimise the virtual exhibitions. At the Smart Interior Workshop we saw tremendous interest in the virtual expo booths with their cornucopia of pictures, videos, and other enticing show-and-tell. To stay visible and avoid getting disconnected and losing momentum, exhibitors had a terrific opportunity for ongoing online networking and to communicate on their innovations, research findings, product launches, and a wide array of other important messages to the 300 attendees.

We're grateful to have received great feedback from attendees of that event, and we're using that feedback to make the Lidar Online Conference even better. It will be an all-around look at the state of the art in vehicular lidar considering applications, components, technology, and market outlook; this conference will gather the automotive lidar realm's top thinkers, makers, and deciders from automakers, integrators, producers, and research facilities.

DR. GUNNAR JUERGENS, CONTINENTAL

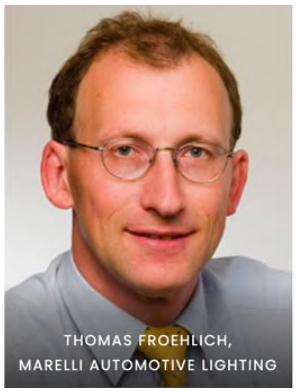
Continental Advanced Lidar Solutions VP Dr. Gunnar Juergens will open the event with a keynote on the entry of lidar technology into the automotive mainstream.



The first session will focus on automakers' lidar applications with talks by Volvo's Paul-Henri Matha, PSA's Matthieu Dabek, Audi's Wolfgang Huhn, Great Wall Motors, and LiangDao's Yang Ji.

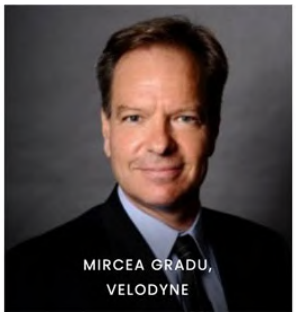
The second session, chaired by Stephan Berlitz from Audi, will feature speakers from integrators—Marelli AL's Thomas Fröhlich, Koito's Teruaki Torii, and ZKW's Georg Pitterle.

STEPHAN BERLITZ, AUDI
(SESSION CHAIR)



Two sessions will be devoted to lidar sensors with lectures by Osram OS' Stefan Mergl, Dioptic's Dr. Niklas Andermahr, OQmented's Dr. Ulrich Hofmann, Lumentum's Thomas Sommer, Jenoptik's Hagen Schweitzer, and Fraunhofer IMS' Jennifer Ruskowski.

The two last sessions will centre around technologies, featuring presentations by Cepton's Mitch Hourtienne, Valeo's Dr. Hassan Moussa, IBEO's Mario Brumm, Leddartech's Franz Saintellemy, Ouster's Raffi Mardirosian, Xenomatix's Filip Geuens, Innoviz's Anna Michilin, and SiLK's Ralf Muenster.



Mircea Gradu, SVP at Velodyne Lidar and SAE international 2018 President will make a keynote on market and technology trends in lidar for robotic vehicles. And Yole Développement's Pierrick Boulay will close the workshop with information on the vehicle lidar market's trends and outlooks.

Alongside the presentations, the event will also allow participants to learn about the latest innovations, findings, concepts, and products of fifteen exhibitors—presented, pictured, and described along with company contact information. The virtual expo and the video recordings of the event's sessions will be accessible for a full week after the event.
300 attendees will be present and will have the opportunity to visit your virtual booth, which will also be described in the DVN Report on the conference, sent out to 3,500 lighting and ADAS makers from 300 companies. Please contact Salomon Berner, Email: sberner@drivingvisionnews.com for more information about exhibition.

Lighting News

Audi: Stephane Berlitz replaces Wolfgang Huhn

LIGHTING NEWS

Stephan Berlitz is now at the head of Audi department *Development Lighting and Vision Systems*. Since November 1st, he replaces Wolfgang Huhn at the head of the department for more than two decades.

«Stephan Berlitz was my co-worker since nearly all my professional life. I know his way to work and his creativity and new ideas. He is the ideal successor as head of lighting in Audi. His way of leading people is cooperative full of respect to his staff and his colleagues. I an sure Audi lighting continues creating Innovations for heart and brain under his leadership» Wolfgang Huhn said.

DVN asked few questions to Stephan Berlitz

DVN : First congratulations, you have now the seat of Wolfgang who has done with your help wonderful achievements during the last decades at Audi. What is your feeling: proudness or awareness of new responsibilities?
Stephan Berlitz : Thank You, actually I had a lot of different thoughts and feelings in my mind, but mainly I have been very happy to get the chance to continue working on Audi lighting and to work together with this great team. The positive chances and possibilities are predominating my feelings for this new job.

DVN : Could you introduce yourself, education, career, and family for readers they don't know you enough ?
Stephan Berlitz : My first contact with lighting was actually already during my electrical engineering studies at the Technical University of Munich. I worked from 1987 to 1989 as a working student for light measurement in a research institute. From 1989 I worked as a working student in the BMW light tunnel and was operating the new photo goniometer. The lighting engineer that employed me was Wolfgang Huhn. In 1993 I finished my studies with the diploma thesis on "variable light distributions for automotive". In 1994 I started at Reitter & Schefenacker, now known as Odelo, as a tail light developer. Working for a supplier all around the world as project leader, resident engineer and finally program manager was a highly informative experience. In 2001 Wolfgang asked me to follow him to Audi and to take over the job of developing lighting innovations at Audi. And then we had two really successful decades together, bringing really game changing innovations to market, like LED DRL, LED front lights, Matrix light, dynamic direction indicator, laser lights, OLED, Digital Matrix light and many more fascinating lighting ideas.

Outside the job, my family is the perfect surrounding to rest my mind. My wonderful wife, by the way we live together even longer than I know Wolfgang, manages our family with heartiness. We have four children, one son and three daughters, all studying, except the youngest; she will finish school next year. Therefore, there is plenty of distraction and fun and revitalisation.

DVN : What were your first reactions after your nomination?
Stephan Berlitz : I was really thrilled, and in the evening my wife and me clinked glasses. Since then there have been a lot of discussions and decisions, and also a lot of pleasure with my new responsibility.

DVN : You were been working with Wolfgang for around two decades. What do you retain on relationship and achievements?
Stephan Berlitz: Two decades at Audi and more than one decade before. We have quite the same mind-set about values and respect, and Wolfgang was always supporting my innovation ideas. He pushed innovations personally, also with his unbelievable network inside and outside Audi. We had plenty of successful projects, lots of fun while working and while celebrating successes. In addition, Wolfgang lives for lighting and I am more than thankful that he will continue developing our lighting community within GTB and DVN.

DVN: Have you already in mind some targets for the future in your new position?
Stephan Berlitz : There are a lot of changes within the automotive industry, within the Volkswagen group and within Audi. My main target is to optimize our small lighting department in a more functional orientated organisation, so that we can realise our innovation roadmap.

My team really burns for lighting and together with my well-known colleagues Michael Hamm and Michael Kruppa we will develop fascinating front and rear lamps. Within Audi my colleague Konrad Schneider supports me with a very efficient project management team and last but not least Cesar Muntada and his lighting designers are unbelievable creative, You can look forward to surprising new Audi lights.

DVN : You have done great achievements in innovations at Audi where lighting is the DNA of the brand ? Who will replace you at this position?
Stephan Berlitz : My position will be replaced internally, but I can promise you that I will maintain our innovation spirit.

Best wishes of a great success, seeing you in the next DVN workshops.

Todd Morgan, the new CTO of Lumax

LIGHTING NEWS

Todd Morgan (photo) has been appointed Chief Technology and Innovation Officer of India-based vehicle lighting supplier Lumax Industries. Working from Czechia, Todd will assume full global responsibility for Lumax's product development activities and take charge to accelerate the effort in the field of innovative lighting technology for the company. He will report directly to Lumax CEO Vineet Sahni.

Morgan joins Lumax with more than 30 years' automotive experience with roles in manufacturing and product development in Japan, France and Czechia at Ford, Visteon, and most recently as Senior Vice President of Product Development at Varroc Lighting Systems.
He holds an engineering degree from Purdue University in Indiana, USA.

Lumax will benefit greatly from his leadership, as they work to develop innovative products and expand their customer base around the world.

Myotek are FCA Value Optimization Finalist

LIGHTING NEWS

FCA bestow their Value Optimization Award on suppliers who bring great value to the automaker's technical cost reduction efforts. This year, Myotek are a top-3 finalist for the award. Their top-3 position, out of a pool of over 7,000 candidates, reflects Myotek's relentless drive to serve as an exemplary technological leader in the art, science, technology, and technique of supplying the world's automakers with cost-effective innovative lighting.

Myotek LED fog lamp: OE on FCA's Ram Truck

Myotek are award-winning specialists in the engineering, design, optimization, and manufacture of OE exterior lighting. They have over three decades' experience, with a business model focused on small lamps and a central focus on innovation, performance, and quality. They are committed to the affordable supply of new technology and revolutionary LED lighting. Myotek's design, engineering and sales work is done in North America; their manufacturing facilities are in the USA and Asia—the LED fog lamp shown here, original equipment on FCA's Ram pickup trucks, is made in America.

Electronics enabling full Dynamic Effects for Rear Lights

LIGHTING NEWS

During our December 21st DVN online workshop Jatin Thaker, Senior Director Lighting at Elmos, will explain how electronics play a major role in enabling Full Dynamic Effects for LED rear lights using bus-based semiconductor architectures.

JATIN THAKER, ELMOS

Dynamic rear lighting applications have seen a strong push towards individual LED control based design elements. While both centralized and local control unit architectures are equally used today for styling, customization, dynamic animation and displays, special considerations are necessary for defining such system architectures that support adequate resolution and fulfil OEM requirements. Electronics play a major role in enabling such architectures by addressing various technical challenges especially associated with light control using bus-based architectures to unlock full dynamic effects for rear lighting. This presentation attempts to cover the implications on such rear lighting systems requirements for electronics hardware design, scalability aspects, communication

protocol, on-chip software intelligence and functional safety considerations in addressing these challenges.

Compact Work Lamps From Hella

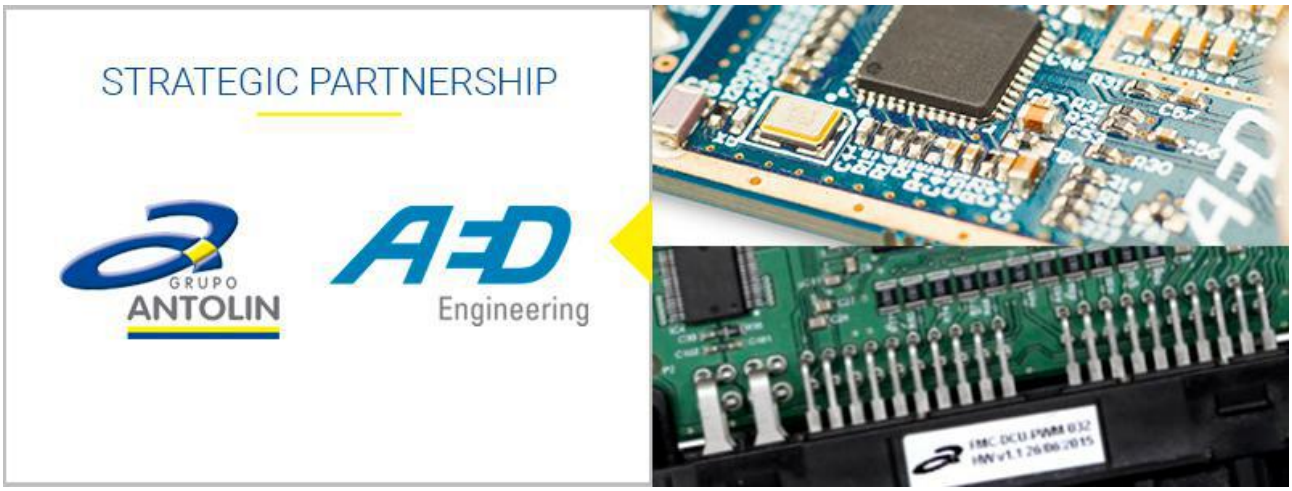
LIGHTING NEWS

Hella are launching a new series of work lamps with what they call the Flat Mounting Solution (FMS). It's a compact, low-profile LED work lamp that can be mounted directly on the vehicle wall. The FMS lamps come from Hella's Austrian plant, and they're available with a black, white, or red housing. The base version provides 1,200 lumens; a premium version offers 2,500. The reflector is developed in such a way that the light is directed downwards towards the ground. This avoids glare and ensures a homogeneous illumination of the work area.

Thanks to its flat design, the FMS is ideal for mounting positions with limited space. And because work lamps are frequently exposed to extreme conditions, the FMS lamps have a CoroSafe coating for improved corrosion resistance.

Antolin, AED in New Partnership

LIGHTING NEWS



Grupo Antolin are boosting their electronics business with the signature of a new partnership with AED Engineering, a provider of electric and electronic engineering services, and the creation of a dedicated unit. They also have opened an R&D centre in China focusing on electronics and other technologies.

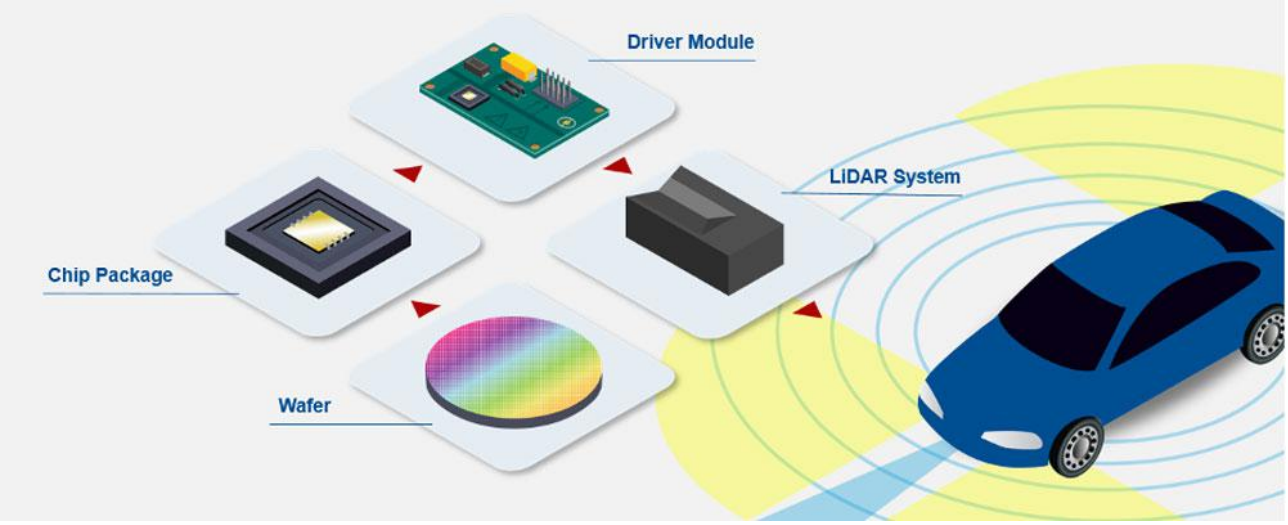
The agreement strengthens Antolin's new Electronic Systems Business Unit, a key factor in consolidating the company as a global provider of technological solutions for automotive interiors.
With Antolin's support, AED will continue with their own expansion plans and the development of an advanced engineering hub in Murcia, Spain, the aim of which is to establish an industry benchmark in the country.

Grupo Antolin develop smart dynamic lighting for vehicle interiors. They're developing dynamic interior lighting incorporating smart LEDs to offer diverse functional scenarios to transmit information to the driver from the vehicle itself or the surroundings. In this way, light can report on the driving mode in hybrid vehicles, the charge level in an EV's battery, send warning alerts including blind spot detection, lane change assist, and exit guidance, and more.

Driver Assistance News

AV Measurement Tech from Instrument Systems

DRIVER ASSISTANCE NEWS



To meet customer and safety requirements for lidar systems, a variety of highly accurate and precise optical tests have to be performed at several stages along the lidar production value chain.

Light measurement tech specialists Instrument Systems are a provider of customised solutions for factory-calibrated, and traceable optical measurement systems for all lidar production stages. This includes wafer level or chip package characterisation as well as testing of driver modules and integrated lidar.

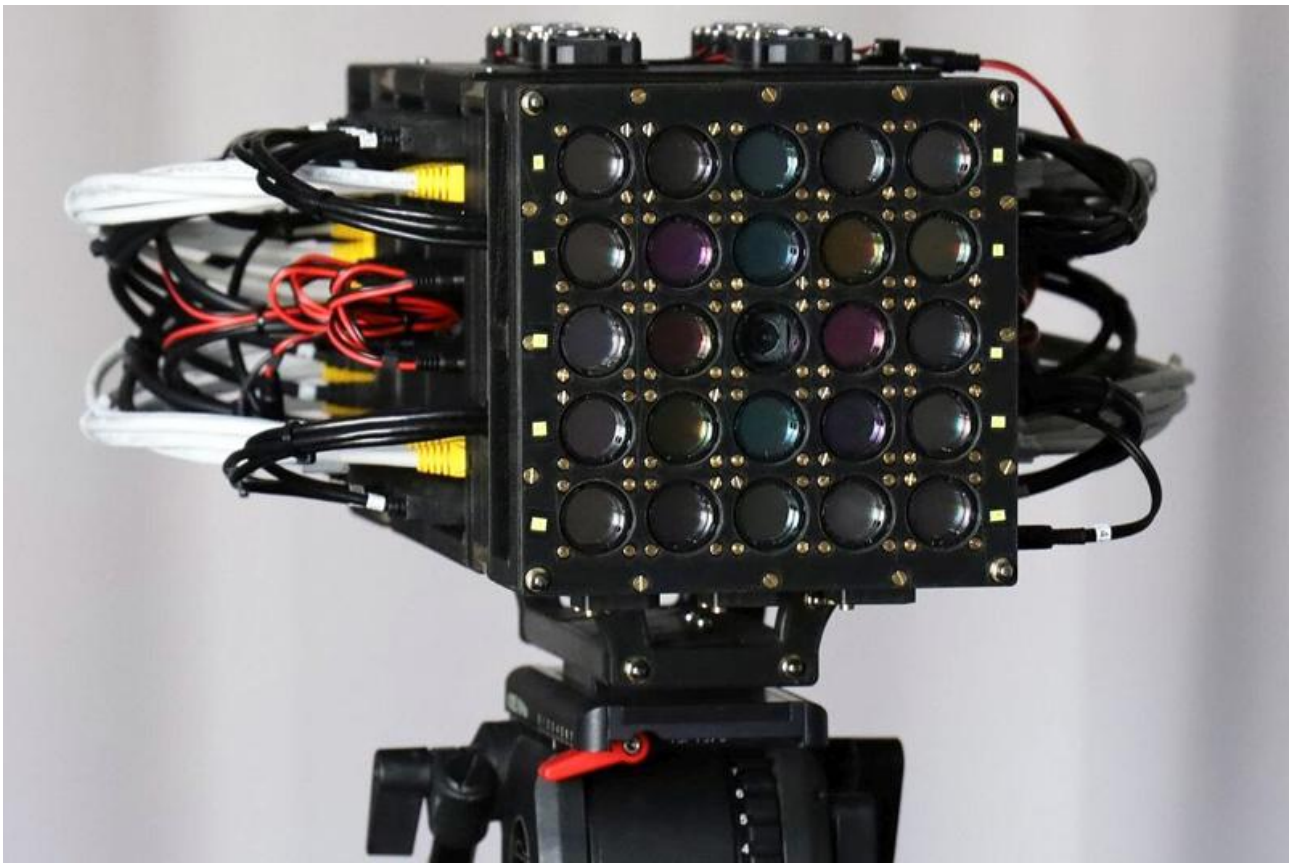
A wide array of testing scenarios includes nanosecond pulse testing of individual laser diodes or VCSEL arrays, and comprehensive far-field radiation pattern analysis of integrated devices.
As a camera-based system specially designed for the near-field analysis of VCSELs, the VTC 4000 enables fast, accurate 2D characterisation of a VCSEL array at wafer or chip level with respect to radiant power, positions, divergence and peak wavelength for each individual emitter.

And the screen-based VTC 2400 far-field camera analyses the 3D radiant intensity distribution as well as the emission characteristics of a VCSEL array or laser chip. In addition, the far-field emission characteristics of chips or lidar systems can be investigated with high-performance goniometers (LGS and AMS series). Driving and testing of VCSEL packages with pulse durations down to 1 ns is possible with Instrument Systems' PVT systems, which can quantify absolute power, optical spectrum, and LIV characteristics for a large range of pulse durations and duty cycles.

Instrument Systems' appealing blend of premium German quality and deep, broad application-orientated expertise in light measurement has for over 30 years fuelled the company's speciality in high-quality spectroradiometers, imaging colourimeters, and innovative display measurement systems.

Smart’ Camera with High Spatial Resolution

DRIVER ASSISTANCE NEWS



PROTOTYPE OF THE HIGH-RESOLUTION MULTI-SPECTRAL CAMERA.

A team of researchers at the Friedrich-Alexander-University (FAU), Germany, has developed an intelligent camera that achieves not only high spatial and temporal but also spectral resolution.

The high-resolution multi-spectral camera combines all three resolutions, spatial, temporal and spectral, in a cost-efficient solution.
The researchers connected several inexpensive standard cameras with various spectral filters to form a multi-spectral camera array.
At the same time, the new camera is greatly superior to existing systems in terms of its spatial, temporal and spectral resolution. As the surroundings are recorded by several “eyes” as is the case with human sight, the system also provides a precise indication of depth. This means that the system not only precisely determines the color and certain material properties of objects it captures, but also the distance between them and the camera.
Autonomous driving is a potential application for these new intelligent cameras. “A whole range of solutions to various problems has now opened up thanks to our new technology,” said Seiler. “In the infrared range, for example, we can differentiate between real people and signposts using the thermal signature. For night driving, we can detect animals crossing the road with sufficient warning.”

Aeva to go public via $2.1b SPAC merger

DRIVER ASSISTANCE NEWS

Aeva, founded by two former Apple engineers, is a lidar start-up headquartered in Mountain View, California, and supported by Porsche SE. Through private equity investor Ahmed Fattouh, the company is currently in the process of merging with InterPrivate Acquisition Corp., and it is expected that after the transaction, the market valued at $2.1 billion will be completed in early 2021.

Interestingly, Aeva did not choose the IPO method of many start-ups, but went public through public SPAC (Special Purpose *Acquisition* Company) mergers. In terms of business capabilities, Aeva is also the third lidar start-up after Velodyne and Luminar to attract attention.

In the emerging autonomous driving industry, many people believe that lidar is indispensable. Previously, Velodyne led the development of the lidar industry for a long time and provided many manufacturers with their own products.
However, in recent years, dozens of start-ups have emerged on the market that are grabbing share with Velodyne, and they have their own advantages in technology and business methods.

Aeva founders Soroush Salehian and Mina Rezk announced that they have developed the so-called "4D lidar" technology, which is characterized by instant ranging and preventing interference from the sun or other sensors, while FMCW technology can realize sensing with lower power.

ZF Expand Polish Camera Production in New Plant

DRIVER ASSISTANCE NEWS

ZF are expanding their manufacturing footprint for ADAS technologies with the launch of their new electronics plant in Częstochowa, Poland. The new facility and its 100 employees have initiated series production of the company's innovative S-Cam 4.8 cameras.
The Częstochowa facility is the first ZF "greenfield" automotive electronics site in Eastern Europe. It produces advanced electronic components for light vehicles, helping enhance driver and passenger safety, including S-Cam 4.8 cameras, the first-ever monocular cameras to offer the capability of a 100-degree horizontal field of view.

Leading car manufacturers will also use the cameras produced in Częstochowa in advanced, semi-automated driving convenience functions like Highway Driving and Traffic Jam Assist. The innovative S-Cam 4.8 recently launched from the U.S. plant at Marshall, Illinois, and is also launching across several models this year from the ZF electronics facility in Anting, China.

With a total area of 12,000 m^2, the plant includes production halls, offices, meeting rooms, test areas, and warehousing of materials; ZF are targeting further growth and hiring at the facility.

"The establishment of our ZF Electronics Engineering Center in Częstochowa laid the foundation for this state-of-the-art facility," said Krzysztof Gablankowski, Director of the

new plant. "Two years after the start of construction, we can boast a modern plant, where components for next generation mobility are produced".

Lumentum: Auto Applications Drive VCSEL Sales

DRIVER ASSISTANCE NEWS

Photonics company Lumentum have posted sales of USD $452m in their latest quarter. With
CEO Alan Lowe promising to continue investing heavily in R&D, the company's innovation pipeline looks to be flowing well.
"We have multi-year product and technology roadmaps aligned with our consumer electronics customers," Lowe told investors discussing the latest financial results, suggesting that higher levels of photonic integration would enable sub-screen 3D cameras.

While larger and higher-density VCSEL arrays for improved 3D imaging and new lasers are in development for the consumer electronics sector, it appears that automotive applications, both inside and outside the cabin, may soon present major opportunities for VCSELs and 3D sensing.
Lowe noted that Lumentum's VCSEL arrays "have completed AEC automotive qualification through a module partner, and we expect initial deployments of these products to be for automobile in-cabin applications".

On top of the opportunity in driver monitoring systems, the Lowe said Lumentum also are now sampling high-power VCSEL arrays for qualification in external lidar systems for ADAS and AC, and shipping VCSEL-based sensors in volume for facial recognition systems in payment kiosks.

Lumentum produce high-performance commercial lasers for automobiles, consumer appliances, semiconductor chips, mobile phones, tablets, and PCs. They are a leader in providing diode lasers for high-volume 3D sensing applications in the gaming and PC markets, and are now driving the technology to enable adoption in mobile devices and other next-generation applications.

London Taxi Electric Van Starts Production

DRIVER ASSISTANCE NEWS

LEVC—the London Electric Vehicle Company, makers of the iconic London taxi—have started production of their new VN5 electric van.
It's the company's first electric van model and the first expansion of the company's product range beyond the one taxi model. The new van is designed, engineered, and manufactured at LEVC's award-winning production plant in Ansty, Coventry, the UK's only dedicated electric vehicle factory.

The model's designation follows the pattern set by the company's TX taxicab models. Here, VN means "van", and the 5 represent the volume of the cargo area, 5m³.

With its distinctive design, lightweight aluminium construction, and eCity technology, the VN5 also now shares the LEVC's flexible production line with TX. LEVC CEO Joerg Hofmann called the production start "an historic moment for our iconic company as we launch a second product line and continue our growth strategy to become a leading commercial vehicle OE".

General News

Chinese Car Market Carries On Growing

GENERAL NEWS

The Chinese car market also saw double-digit growth in October, according to preliminary calculations by the China Association of Automobile Manufacturers (CAAM), sales to dealers rose by more than 11% compared to the previous year.

The world's largest car market is thus building on the recent strong, mostly double-digit growth. In September, wholesale sales had increased by 13%. In the first few months of the year, car sales fell significantly due to the pandemic.

The manufacturer association CAAM also include heavy commercial vehicles in their statistics, and measure the sales of manufacturers to dealers. According to the PCA data, sales in September increased by 7.4% to 1.94 million vehicles.

The Covid-19 pandemic brought economic life to a standstill in China early in the year, but the car factories started up again earlier than in Europe and North America.