DrivingVisionNews.com

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Editorial

4th DVN Lidar Conference: Live And In Person!

In 2019, we published a DVN Study about the lidar ecosystem: ***Automotive Lidar: Hype or Must-Have?***. The study's conclusion was twofold: lidar is a must for progressing driving automation, but also a hype item if we consider the investment, running into the hundreds of millions of Dollars or Euros, put into a giant variety of companies and technologies in an embryonic phase of the industry.

Two years on, to look through the relevant websites, newsletters, webinars, and conferences is to see that information about automotive lidar and driving automation is steadily growing; one might reasonably even say it's exploding. New performance records, rapid technology progress and breakthroughs, new coöperations, and other suchlike are announced every week in the lidar ecosystem. Superlatives—*furthest, most accurate, most reliable, cheapest, smallest*—abound in claims from the various companies.

In this dynamic environment, we at DVN are here to serve as a moderator in the discussion—just as we've been doing for over a decade in the vehicle lighting space. To that end, following on the smashingly successful virtual 3rd DVN Lidar Conference in 2020, we're excited to announce the 4th DVN Lidar Conference, this time as a live event in Frankfurt. We are hard at work to provide the lidar community with a grand opportunity to interact with customers, suppliers, colleagues, and researchers to sharpen the view of automotive lidar's future. Find details about the conference in this week's in-depth report. We all look forward to a successful conference and to seeing you in Frankfurt!

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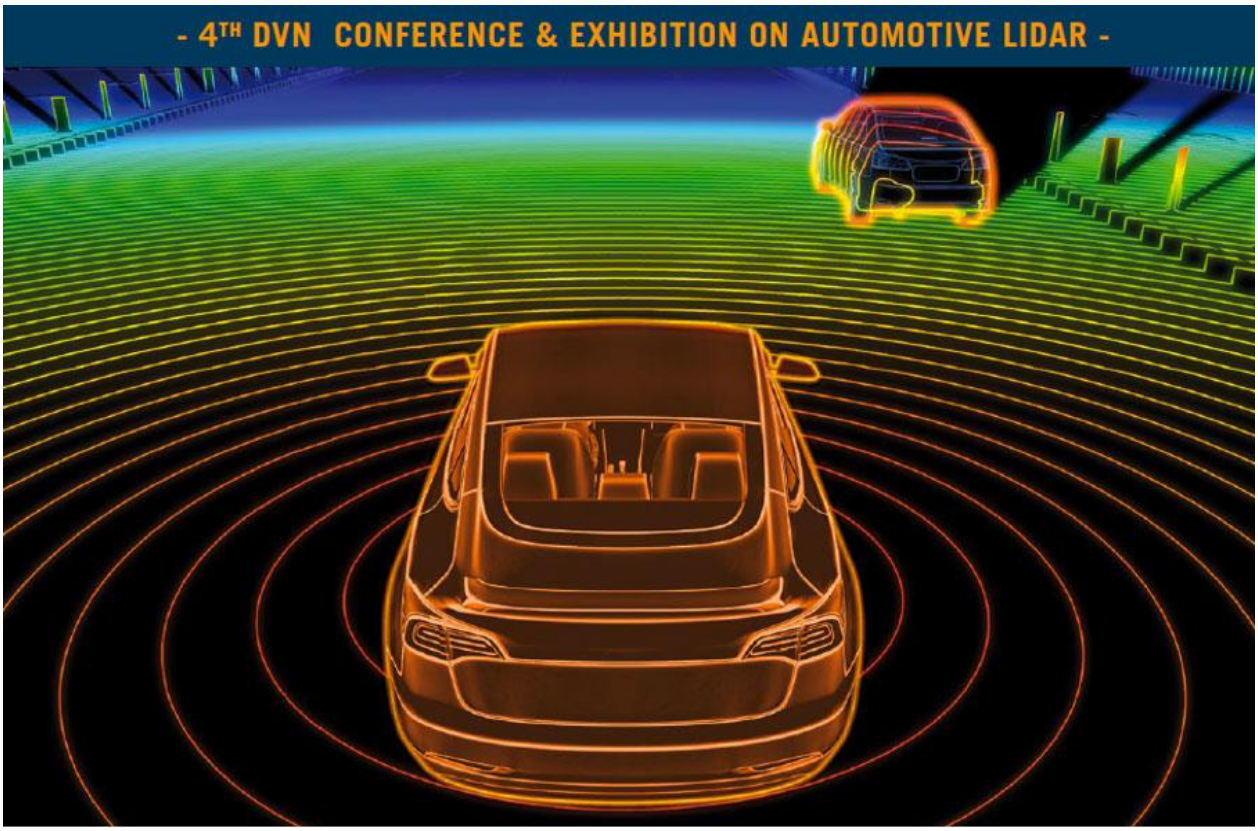
In Depth Lighting Technology

4th DVN Automotive Lidar Conference: Live in Frankfurt
15–16 November, 2021



After a long period without face-to-face meetings, we're planning the exciting fourth DVN Lidar Conference as a live event again at the Dorint Hotel Main-Taunus Center in Frankfurt-Sulzbach. As with the previous DVN Lidar Conferences in 2018, 2019, and 2020, this one will cover the whole automotive lidar ecosystem. Automakers, tier-one suppliers, lidar suppliers, tier-two technology enablers, and researchers will present their latest progress in 30 oral presentations and around 20 expo booths.

Most of the relevant thinkers in the automotive sector share the opinion that for the foreseeable future lidar is the technology of choice to provide the necessary redundancy enabling the step from L^2 to L^3 driving automation. The DVN Lidar Conference gathers professionals from the automotive and lidar fields to illustrate and elucidate the latest innovations. It's a well-moderated open forum for discussion on the various aspects for automotive lidar. As usual at DVN Workshops and Conferences, there will be ample opportunities for networking.

The docket for the event includes sessions on applications; systems; technology enablers, and market and ecosystem.
In the ***applications*** session we expect presentations from automakers including Audi, BMW, Stellantis, and Volvo; and sensor integrators Koito, Marelli, Valeo, and ZKW.
The ***systems*** session will have contributions from lidar suppliers Blickfeld, Cepton,

Continental, Ibeo, Ouster, Velodyne and Xenomatix presenting their latest innovations.
This year's conference also has a very strong emphasis on ***technology enablers*** for the lidar systems, including methods to overcome application constraints and facilitate lidar system testing. Among the presenters in this session are 3M, Auer Lighting, Canatu, Dioptic, KSLD, Liangdao, Lumentum, Osram, Trioptic and research institutes Fraunhofer from Germany and LETI from France.
The ***market and ecosystem*** session will be particularly interesting. As an introduction, LeddarTech will share their views and outlook on the automotive lidar ecosystem. In two other talks, market research companies IHS and Yole Development will give insights into their projections for the automotive lidar market.

Our conference program will be completed by two keynote speeches, which will be delivered by Valeo and one other company (to be announced).

Another key element of the event is the adjacent exhibition. At least 15 participating organisations are already registered to show and discuss their latest products and services. That's most of the expo spaces already reserved; a few remain available.

The conference will start on Monday, 15 November at noon with a light welcome lunch, followed by the opening and the first keynote speech. The first day will end with a cocktail event and the conference dinner. We expect that this will be one of the first "live again" events, and we're sure all of you are looking forward to seeing your peers in person again—we certainly are! The second day on Tuesday, 16 November will start with a light breakfast and the second keynote speech. Several coffee breaks and an extended lunch period will give ample time to the conference attendees for networking and visiting the exhibition. Closing of the conference is planned around 17:30.

As in our pre-pandemic live conferences, we expect over 200 attendees and we sincerely invite you to be part of this engaging event. Reservations will be taken on a first-come basis.

If you need more information and or want to make your reservation already, please contact DVN's Salomon Berner at **sberner@drivingvisionnews.com**.

Lighting News

INITIATIVE Project: Light-Based AV Communications

LIGHTING NEWS

Hella have started what they're calling INITIATIVE, a new research project with Karlsruhe Institute of Technology, Fraunhofer Institute of Optronics, System Technologies and Image Exploitation, Würzburg Institute of Traffic Sciences, Saarland University and the companies Electric-Special Photronic Système. The research project, under way since this past April, will last three years; it is funded by the German Federal Ministry for Economic Affairs and Energy.

The main focus of the project is on the question of how communication between autonomous vehicles and other road users can be ensured with the aid of lighting technology—the basic lighting concepts for this are now being researched as part of the Initiative Project. Among other things, the researchers are investigating how an autonomous vehicle can use light-based systems to signal that it has detected a pedestrian or cyclist and that it is safe for them to cross the road. For example, the use of LED-based status indicators or displays on the vehicle body is conceivable. "The difficulty is essentially that the form of communication must be visible at all times of the day and night. It also must be easily and quickly understood by every road user. Such a uniform communication methodology does not exist yet. But it is a basic prerequisite for automated driving to become a reality," says Dr. Michael Kleinkes, responsible for Hella's global car body lighting product centre as well as for lighting technology development.
INITIATIVE will also investigate how the intentions of the persons involved can be recorded both inside the vehicle and in traffic scenarios with the aid of camera-based artificial intelligence and how they can be taken into account in communication.

Marelli, Motherson in Smart Lit Parts Pact

LIGHTING NEWS

SYLVAIN DUBOIS (L) · VIVEK CHAAND SEHGAL · ERMANNO FERRARI · LAKSH VAAMAN SEHGAL (R)

Marelli Automotive Lighting and Samvardhana Motherson Automotive Systems Group (SMRP) have signed a memorandum of understanding to explore new technological partnership focused on smart illuminated exterior body parts, which are expected to become a growing trend in the future of mobility, with increased uptake of ADAS and AV in the coming years.

In the frame of the agreement, SMRP will contribute strong expertise in the production of big plastic automotive parts through their operating subsidiaries, while Marelli will bring extensive knowledge in vehicle lighting and sensor integration. The collaboration will focus on smart illuminated front grilles and bumpers, as well as on illuminated rear ends, illuminated fenders, and illuminated rocker panels.

Alongside the lighting systems, smart illuminated grilles and bumpers are expected to host a number of ADAS sensors such as lidars, radars, and cameras, as well as communication provisions to display or project messages—thus making them also a tool for sensing and V2X communication.

Both partners expect to further build on an existing longstanding relationship, which was started in 2008 through a JV to manufacture vehicle lighting and related products at four plants in India.

Valeo Safety Innovations at IAA

LIGHTING NEWS

2021 has already been a historic year for mobility, marking the launch of the first car in the world to reach L^3 autonomy with the aid of Valeo's lidar technology and sensors.

Valeo will present an autonomous parking system (Automated Valet Parking) developed in collaboration with BMW, which allows a car to park itself in a parking lot;

the Valeo Drive4U L^4 autonomous car, which will drive in automated mode on open roads in and outside the city of Munich (equipped exclusively with series-production Valeo sensors—lidars, cameras, radars, ultrasonic sensors). This prototype vehicle can handle urban and suburban traffic, traffic jams, intersections, traffic circles, traffic lights, pedestrian crossings and road works.

Lighting systems are also a powerful driver of improved road safety**.** Valeo's new smart lighting systems are becoming valuable driving assistance features. These headlamps can trace the shape of the road and indicate upcoming turns in the driver's field of vision, making driving at night or in the rain safe and easy. The rear lamps, connected to the vehicle's cameras and surroundings via the 5G network, signal hazards by displaying safety messages visible to all road users.

Corning, Mobis in AR-HUD Pact

LIGHTING NEWS

Corning's curved-mirror solutions are now key components in a new AR-HUD (augmented reality head-up display) system by Hyundai Mobis, which equips the 2021 Hyundai Ioniq 5 electric crossover.

“High-quality mirrors are key components in the Mobis HUD system. They help drivers clearly view critical safety information, which is projected 7.5m onto the road in front of drivers,” says Hyundai Mobis VP YoungHoon Han. “Our longtime collaboration with Corning has made it possible for us to launch an AR HUD with a large field of view and sharp imaging".

Compared with traditional technologies, Corning mirrors enable a larger total display area across the windshield with a projection distance five times greater. “As automotive experiences are becoming more connected, immersive, and interactive, drivers are demanding the most advanced features—such as augmented reality—in their vehicles”, says Corning Automotive Glass Solutions VP and General Manager Mike Kunigonis, explaining why Hyundai Mobis designed Corning's Curved Mirror technology into their next generation of AR-HUDs.

HUDs use mirrors to project driving information normally viewed on the instrument cluster—such as navigation and speed—onto the windshield, directly in the driver’s line of sight. AR-HUDs advance this technology by essentially turning the windshield into an immersive display screen, projecting large and dynamic images onto the road. For HUDs to achieve this level of interactivity and immersion, the systems require high-quality mirrors. Corning have leveraged their industry-leading glass science and optical physics expertise to enable these new experiences with Hyundai Mobis. Through the joint industrialisation effort, Hyundai Mobis have unveiled a series of new AR HUD systems using Corning Curved Mirror Solutions to meet automakers’ performance and reliability requirements at scale.

Hella Boast Big Growth

LIGHTING NEWS

Hella significantly increased sales and margins; their numbers are in the upper range of its forecasts. In the past fiscal year, they increased sales and earnings significantly compared to the previous year, which was weak due to the pandemic. Between June 2020 and the end of May 2021, sales amounted to €6.5bn (versus €5.7bn a year earlier).

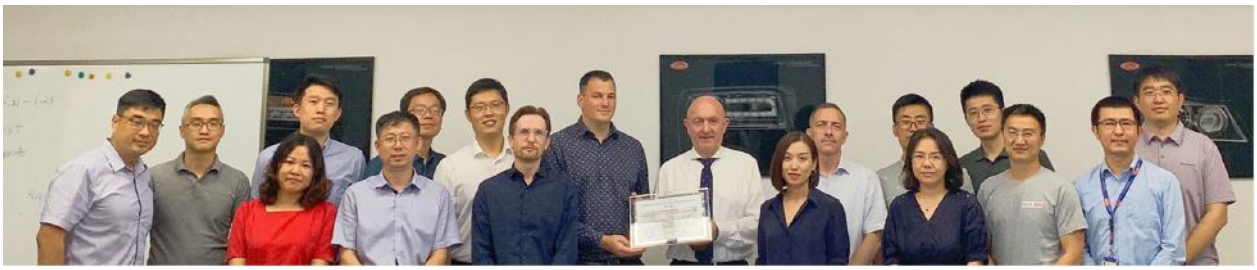
EBIT(earnings before interest and taxes), adjusted for special effects, rose from €227m to €510m. The corresponding margin doubled from 4 to 8 per cent.

With the provisional figures, Hella are in the upper range of their own forecasts. The company have also continued to perform better than the overall market, and intend to present the complete figures on 19 August.

CEO Dr. Rolf Breidenbach says "The last fiscal year was marked by numerous challenges. Alongside mastering the impact of the global Covid-19 pandemic, we experienced significant resource bottlenecks in the global supply and logistics chains in the course of the year that had a perceptibly negative effect on our business. The situation will most likely remain unchanged in the current fiscal year".

ZKW Win Two GM Awards

LIGHTING NEWS



The ZKW sites in Wieselburg and Dalian (China) received GM's Supplier Quality Excellence Award for their performance as a reliable automotive supplier. The awards honour the high level of delivery reliability that ZKW offer General Motors. Despite numerous restrictions due to the pandemic, ZKW fulfilled their delivery contracts with GM on time, reliably, and with high quality. ZKW CEO Oliver Schubert says "In these turbulent times, we are particularly proud of these awards. They honour our everyday efforts for our customers worldwide".

ZKW have been supplying General Motors with lighting products for many years. Due to the pandemic, the prize—which ZKW were receiving for the ninth time in a row—was awarded digitally via a videoconference. GM are an important client served by ZKW from all of their international locations. Multiple projects for new front lighting systems to be used in future GM vehicle models are currently in development.

Meanwhile, the Chinese ZKW plant in Dalian received the GM Supplier Quality Excellence Award for the first time. The local team of the lighting system manufacturer ensured an on-time supply of qualified components, despite pandemic-related restrictions. In doing so, ZKW met General Motors' strict quality standards, and even exceeded BIQS Level 5 Standards. Due to this positive collaboration, GM have already assigned four more new projects to ZKW Dalian.

Driver Assistance News

dSPACE Support Cepton Lidar Simulation

DRIVER ASSISTANCE NEWS

Cepton and Dspacehave agreed to collaborate. The partnership will enable dSPACE to integrate new lidar sensors from Cepton into theirsimulation tool chain at an early stage. This will enable customers to accelerate the development of vehicles with Cepton lidars.

The goal of the collaboration is to provide high-fidelity simulation models that can be used in all phases of development, from early model-in-the-loop analyses to hardware-in-the-loop scenarios.

Since shortly after the unveiling of Cepton's Nova, a miniature lidar sensor, the collaboration has enabled the early deployment of a simulation solution. Customers can use it to simulate the Nova scan pattern and replicate the communication protocol to inject the synthetic point cloud directly into a device under test. Nova's specific combination of a wide horizontal and vertical field of view in a compact form factor enables detailed object and obstacle detection, free space estimation and collision-free autonomous navigation for robots and vehicles.

The two companies started their collaboration with an initial proof of concept using the Cepton Vista-P60, which highlights the dense field-of-view coverage of the Cepton MMT lidars.
The dSPACE simulation environment provides a detailed sensor model and environment simulation that engineers can use to test and validate their perception stack. With this simulation tool chain, engineers can explore different sensor models and configurations, as well as placement options in the vehicle.

FLIR Integration into Teledyne is Ahead of Schedule

DRIVER ASSISTANCE NEWS

Teledyne Technologies say their integration of thermal imaging experts FLIR Systems is proceeding faster than expected. Teledyne, who bought FLIR two months ago, said in their latest quarterly results that annual cost-savings of USD $80m associated with the deal will now be delivered by the end of next year, two years ahead of schedule.

Teledyne's executive chairman Robert Mehrabian says "significant corporate overhead, consultants and other third-party service providers" have already been eliminated from the FLIR cost-base. With the company's existing digital imaging business also enjoying a 17 per cent year-on-year rise in sales, total revenues in the June quarter came in at a record-breaking $1.12bn, boosted by just over $300m attributable to what is now called Teledyne FLIR.

Now that the FLIR merger is complete, digital imaging has become Teledyne's single largest business unit, with sales accounting for more than half of total company revenues. With the addition of FLIR, Teledyne can address a vast number of applications with sensors operating across most of the infrared and visible spectrum. The company also offer large-scale foundry services for both MEMS and CCD production, alongside longstanding expertise in mercury cadmium telluride (MCT) sensors used at longer infrared wavelengths.

General News

LG, Magna Launch Electric Drive JV

GENERAL NEWS

Having taken over Veoneer, Magna now are announcing a new JV with LG Electronics. With the new company, to be called LG Magna e-Powertrain, both parent companies hope to gain traction in e-mobility.

The JV, based in Incheon, Korea, unifies Magna's strong position in electric powertrain systems and automotive manufacturing with LG's expertise in component development for e-motors and inverters. Announcing LG Magna e-Powertrain's executive team marks a key milestone for the joint venture company, which will develop and produce e-motors, inverters and on-board chargers as well as, for certain automakers, related e-drive systems.

The design, engineering and manufacturing synergies created by LG Magna e-Powertrain is expected to enable both companies to quickly react to market trends and capitalise on the growing global shift toward vehicle electrification. The JV will develop powertrain components that offer automakers a scalable portfolio from complete solutions enabling electrification and functionality to integrating intelligent operating software and controls in new e-drive systems.

The parent companies already announced the leadership team of the new JV. Leading the company will be CEO Cheong Won-suk, a 20-year LG veteran who was most recently vice president and head of the LG Vehicle component Solutions Company's Green Business. Prior to LG, Cheong spent nearly a decade with Daewoo Motors R&D.

Top Sellers in Europe: 2021 So Far

GENERAL NEWS

Through the first half of this year, the VW Golf is № 1 with a volume of 126,551, extending its lead over Europe's previous overall leader, the Peugeot 208, to 12,370 from 3,670 units in May. The Golf rose to the top despite increasing sales 5.7 per cent during the period compared with a 34 percent gain for the 208.

Rounding out the top five were the Yaris (111,383, up 52 per cent); Renault Clio (110,641, down 7 per cent), and Corsa (108,540, up 36 per cent).

Sales, H1-2021 (× 1,000):

VW Golf	Peugeot 208	Toyota Yaris	Renault Clio	Opel Corsa	Peugeot 2008	VW Tiguan	VW T-Roc	Fiat 500	Citroen C3
126	114	111	110	108	107	107	105	95	95

DATA: JATO DYNAMICS

EVs Must Be Affordable: Stellantis CEO

GENERAL NEWS

Stellantis CEO Carlos Tavares is optimistic about the eventual outcome for his newly-formed auto megamaker, with lofty goals as Stellantis switch to electric vehicles and phase out internal-combustion engines in less than a decade.

“The automotive market is very competitive. There is pressure on pricing, inflation from new regulation. These are squeezing the margins, of course,” he says last week at online event hosted by the Automotive Press Association in Detroit. Tavares is particularly worried about affordability for consumers. Affordability is already an issue, and it’s only going to get worse when the auto industry switches to electric vehicles, Tavares says. Including the necessary investment in new technology, he estimates EVs will cost an additional 40% to build, compared with vehicles with internal-combustion engines, and that’s far too much to pass along to consumers."We don’t want to disconnect with the middle classes,” Tavares says. “If we want to stay affordable while building a new electric technology that’s 40 per cent more expensive, then we have to work harder on the cost reduction.”

Cost reduction was a big part of the rationale for the merger, consummated this past January, that created Stellantis—the world’s № 4 automaker by production volume—out of the former Peugeot S.A. and Fiat Chrysler Automobiles N.V. “This is exactly the reason we created Stellantis,” Tavares says. The merged companies can eliminate redundant costs, share product platforms, spread costs for development and parts over a much bigger volume and, importantly, generate more innovation based on a diverse workforce, he says.

Tesla Income Jumps on Record Deliveries

GENERAL NEWS

Last week, Tesla posted their largest-ever quarterly profit, USD $1.14bn, as they delivered a record number of vehicles in the second quarter. Revenue during the quarter nearly doubled to $11.9bn, with automotive gross margins hitting 28 per cent.

Tesla delivered 201,304 vehicles in the quarter, up 120% from the same period a year earlier.