DrivingVisionNews.com

Tue, 19 October 2021 Weekly Newsletter NEWSLETTER #721

Editorial

Lidar Conference Ahead In Just Four Weeks

Time flies when you're having fun! That's how it's been in our preparations for the fourth DVN automotive lidar conference, to be held on 15-16 November. That's coming soon, and we've got a strong docket full of excellent speakers; take a look at this DVNewsletter's in-depth report for more detail.

Dr. Andreas Teuner, ZF's ADAS engineering VP, will open the conference with a keynote talking about the inclusion of lidar technology for L^{2-3} vehicle development, followed by a session on automotive lidar application with lectures from BMW, Ford, Volvo, Stellantis, Marelli-AL, ZKW, Koito, and Fraunhofer ILT. The session on the lidar market and ecosystem will feature lectures from VSI Labs, Leddartech, Yole, and

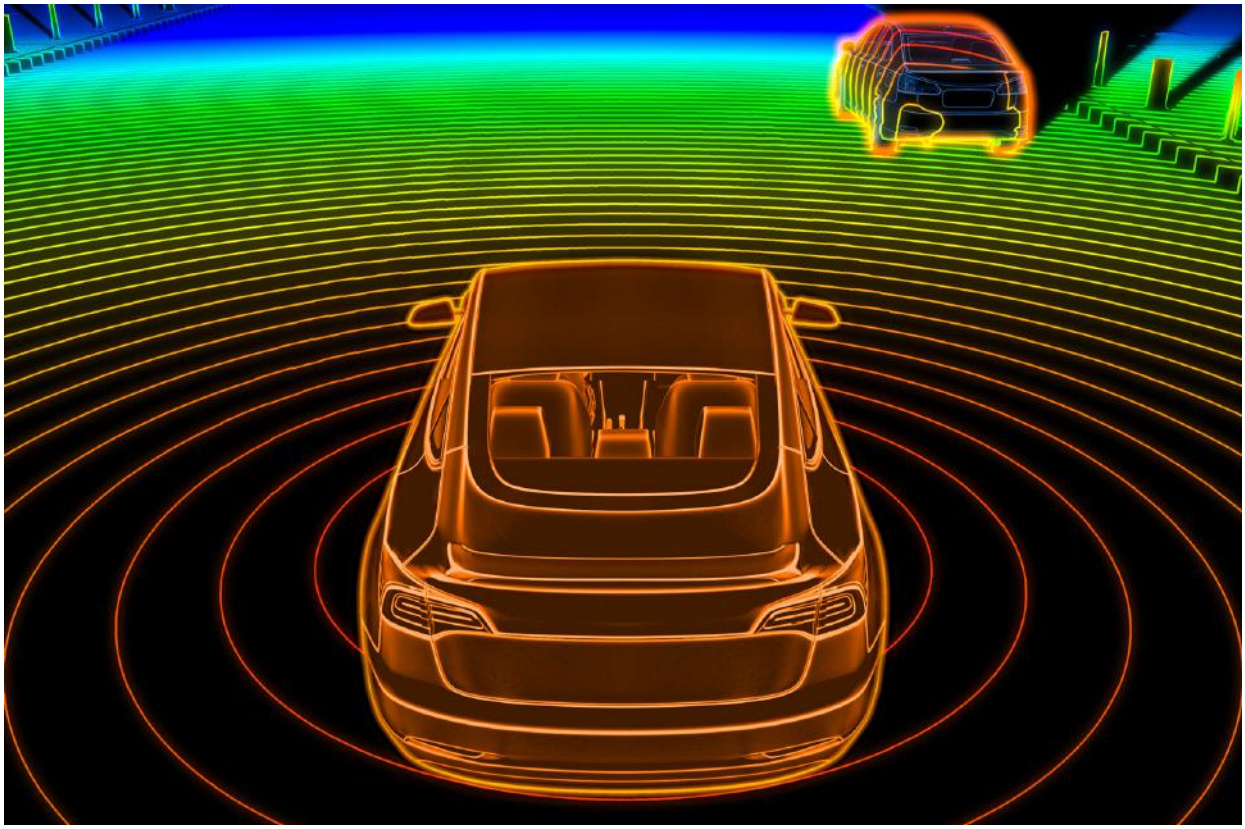
Carhs Training. The second day, after a keynote from Valeo's lidar business manager Clement Nouvel, a session on automotive lidar systems will include talks by experts from Cepton, Xenomatix, Ibeo, Blickfeld, Continental, Velodyne, Lumentum, and Liangdao. The final session will be dedicated to technology enablers, and there'll be a panel discussion with experts and executives brought together to discuss a challenging theme provided and moderated by DVN.

The Covid pandemic is not over, of course, and all safety precautions and provisions will be in place as a matter of top priority. Registration is now **open**, and we look forward to welcoming you at an inspiring, exciting, lively, and safe conference in Frankfurt.

Sincerely yours,

In Depth Lighting Technology

DVN Lidar Conference: Live and In Person in 4 Weeks!



The DVN team are excited to announce the 2021 Lidar Conference as a good old-fashioned 100 per cent live event! It will take place on 15-16 November with as few pandemic-related restrictions as possible. Our intent is an event to equal the networking opportunities brought to the lidar community during our 2018 and 2019 Lidar Conferences; this year's location is once again the well-known Dorint Hotel in Frankfurt Sulzbach.

DVN LIDAR CONFERENCE: FRANKFURT, 2019

Here is the draft docket, with information about the various sessions:

Day 1: Monday 15 November

Opening of conference; keynote speech 1

Dr. Andreas Teuner, ZF ADAS engineering VP, on the inclusion of lidar technology for L^{2-3} vehicle development.

Session 1: Automotive Lidar Applications I

Automakers will share their views on what it takes to implement lidar in a vehicle, and their thoughts and cost/benefit perspectives on if and why lidar has to be added to a car. Tier-1 system integrators will describe their innovations and thoughts on how lidar can best be integrated in vehicles. Presentations are expected from **BMW, Ford, Volvo, and Marelli-AL** followed by Q&A.
Example:
Frederic Chave, Marelli's ADAS sensor product and business development director, will present *Versatile Use of Lidar Modules into Smart Corner and Grille.*

Session 2: Automotive Lidar Applications II

Automakers and tier-1 system integrators will describe their perspectives and innovations on lidar integration in vehicles. Lectures are confirmed by **Stellantis, ZKW, Koito, and Fraunhofer ILT**, followed by Q&A.
Examples:
ZKW's Autonomous Driving Technology Manager Georg Pitterle, will present *Challenges of Lidar Integration, About Thermal, Cleaning, and Lens Issues*
Koito's Lidar Manager Akinori Ito will present *Impact of LiDAR Performance Degradation Caused by Outer Factors on Headlight* Lens

Session 3: Market and Ecosystem

This session will address drivers and scenarios on the evolution of the lidar market in value and volume. Special focus will also be given to partnerships and special promotion of lidar to propel the market. Lectures are confirmed by **VSI Labs, Leddartech, Yole, and Carhs Training** followed by Q&A. Examples:
• LeddarTech's President and CEO Frantz Saintellemy will give a presentation on *Why Flexible Platforms Are Required For Future ADAS/AD Deployments;*
• Yole's Market and Technology Senior Analyst Pierrick Boulay will discuss his view on
Lidar Technology Roadmaps;
• Ralf Reuter, who is Marketing and Operations Director of Carhs Training, will discuss *NCAP Roadmaps Regarding the Assessment of Accident Avoidance Systems.*

Panel Discussion I

The first panel discussion will bring experts and executives together to discuss a challenging theme provided and moderated by DVN. Audience participation will be facilitated and encouraged!

Social cocktail and welcome dinner

Day 2: Tuesday 16 November

Opening of the second day: keynote speech 2

by Clement Nouvel, Valeo's Lidar Business Line Manager

Session 4: Automotive Lidar Systems I

Lidar suppliers will present their latest developments, roadmaps, and market experience.
Lectures are confirmed by **Cepton, Xenomatix, Ibeo, and Blickfeld**, followed by Q&A.
Examples:

• Ibeo's Global Operations Director Mario Brumm will propound on *How Solid-State Sensors Are Making Automated Driving Suitable for Mass Production*.
• Xenomatix's CEO Filip Geuens will give a presentation about some real-life challenges of lidar: *How to Assure a Clear View for Solid-State Lidar.*

Session 5: Automotive Lidar Systems II

More Lidar suppliers and specialists will define and describe their innovations and efforts. Lectures are confirmed by **Continental, Velodyne, Lumentum, and Liangdao,** followed by Q&A.
For instance:
• Lumentum's 3d Sensing Product Line Manager Matt Everett will give a talk on *High-Power VCSEL Arrays for Next-Generation Lidar Systems.*

Session 6: Technology Enablers I

Specialist companies in the field of optics, light sources, measurement systems, and materials will present their latest developments. Lectures are confirmed by **Auer Lighting, Canatu, KSLD & University of Strathclyde,** and **Osram**,followed by Q&A.
A sample of the docket:
• Auer Lighting's Senior Sales Director Christian Passlick will describe his company's work on *Multilayer Coatings Enabling Advanced Sensor Solutions*;
• Canatu CEO Juha Kokkonen will present a new transparent heater technology: *CNB Heaters as a Key Enabler of Anti-Weather Safe Autonomous Driving*;
• KSLD Business Development Director Josip Kovacevic and University of Strathclyde LiFi Research Director Harald Hass will present about *LaserLight, the All-In-One Enabler for Ranging, Lidar and High Speed LiFi*, and
• Osram Opto Semiconductors Senior Lidar Expert Clemens Hofmann will describe *Lidar System Advantages Using 905-nm Lasers With Wavelength Stability Technology.*

Session 7: Technology Enablers II

More optical, light source, metrology, and materials specialists will present their latest developments, with lectures confirmed by **Dioptic, Fraunhofer IMS, Trioptics,** and **3M**, followed by Q&A.
• Dioptic's Inspection Systems Division Head Niklas Andermahr will describe his company's perspective on *Optical Quality Testing of Lidar Sensors;*
• Fraunhofer IMS' Mobility Head Jennifer Ruskowski will give a talk about the *Future of Flash Lidar Components and Embedded KI for Lidar;*
• Trioptics' Automation Manager Dirk Seebaum's presentation will describe *Solutions*

for Optical Alignment in Mass Production, and
• Jonah Shaver, a 3M Senior Development Engineer, will discuss 3M's latest progress about

Considerations for Lidar Operations in Inclement Weather Conditions.

In the first two sessions, automakers and tier-1 suppliers will give their views on the application roadmaps of lidar sensors and will discuss the opportunities of this technology for ADAS and autonomous driving. A special topic will be integration of sensors in body components like headlamps and roof structures.

Session three has a special focus on the lidar ecosystem's development and on expectations on lidar market developments and will highlight safety aspects required by future NCAP evolution. An adjacent panel discussion will highlight key questions and involve the audience.

In sessions four and five, leading lidar suppliers will present their experience with automotive lidar and address their challenges and expectations for the next five years until real L^3 autonomous driving will become reality.

Sessions six and seven will address technologies to support the reliability of lidar systems under realistic conditions like snow, ice, rain, sandblasts, high humidity, exhaust fumes, and suchlike. This year's conference throws a strong light on component technologies which can enable lidar system suppliers to overcome or manage obstacles like these.

Another very important topic in this context, of course, is testing of lidar systems under various use cases, conditions, and applications with the ultimate goal to reach a common standard.

A panel discussion about the challenges of lidar systems in their automotive real-world applications and ways forward to come to a common solution for such issues will close the second day.

As you can see from the docket, there will be ample time for individual communication and networking during the coffee breaks, lunches and especially the social cocktail and dinner as a highlight on the first day.

Expo booths adjacent to the conference will provide an ideal composite venue for showcasing innovations and development work by a variety of companies.

NETWORKING AT AN EXPO BOOTH, 2019 DVN LIDAR CONFERENCE

Here's a matrix of corporate-sponsor participants already engaged:

The DVN team are really looking forward to this live event with the lidar community again and we will do our best to make it a remarkable, thrilling event for all of us, to the maximum degree possible!

Lighting News

Encouraging Worldwide Harmonisation of Technical Requirements
Invitation to join a new Worldwide Association

LIGHTING NEWS

by Geoff Draper, Independent Consultant and DVN Senior Regulatory Advisor

In the 25 May 2021 edition of the DVNewsletter, I explained my plan to create national and regional interest groups to contribute to develop a consensus to work on worldwide harmonised technical requirements. My vision is to develop this consensus and then approach the governmental regulatory authorities and the interested NGOs, with information, to encourage the start of a new discussion at the UN World Forum (WP.29) in Geneva.

During this year, I have explained my initiative at the following events:

4 June 2021	Auto Lamp Industry Development Forum (ALE) in Shanghai, China
17 June 2021	International Forum of Automotive Lighting (IFAL) in Shanghai, China
22 September 2021	DVN Workshop Regulatory Session in Novi MI, USA
30 September 2021	Symposium on International Automotive Technology (SIAT), India

In my presentations I concluded that it is very difficult to reach a consensus on the approach to the worldwide harmonisation and synchronisation of the technical requirements because:

Everyone is waiting for **Someone** to make the first move!!!

NGOs following their democratic processes struggle to reach a consensus on the approach to harmonisation; without a consensus they cannot propose new harmonisation initiatives to WP.29 or GRE. Governmental representatives fear that they will work to introduce harmonised requirements into their national systems, but NGOs will ultimately oppose.

It's **Now** or **Never!!**

I strongly believe that the worldwide automotive lighting community must come together to make a strong case for technical harmonisation to be achieved by a pragmatic approach that overcomes the political barriers. This is an urgent matter; it's really now or never!

Decision to Create an Association

I have carefully considered the organisational and legal implications of leading a forum of international experts and stakeholders and concluded that the correct approach would be to create an independent association. Therefore, I have decided to launch an unincorporated association to be known as the **"International Automotive Lighting Regulatory Harmonisation Forum (IRHF)"**

Formalities

Under UK Legislation there is no requirement to register an unincorporated association. Individual members are personally responsible to ensure that they carry out their activities according to the laws applicable in their country of residence.

Members shall agree on the organisational structure and operating rules of the unincorporated association and they are required to sign and confirm their acceptance of the rules and their personal responsibilities.

Objectives of the Association and how it will Operate

My proposal for the objectives of the association, and how they will be achieved can be found **HERE.** The broad objectives are to:

PROVIDE the possibility to informally share the conclusions of the forum with NGO's and the UN World Forum (WP29). *This will be done by the creation of an independent association with clear operating rules.*

REACH OUT to the worldwide automotive lighting community. *The association will be open to any interested expert working in the field of automotive lighting and agreeing to comply with the membership rules*

ENCOURAGE experts to contribute by avoiding unnecessary bureaucracy and avoiding any membership fees. *This will be achieved by encouraging an exchange of information between individuals sharing their own experience and opinions, with all activities being done via email, social media and teleconference. The complications of time zones, language and operating costs will be avoided.*

Important Factors

NO CONFLICT between IRHF and the stakeholders working to harmonise vehicle regulations under the umbrella of the UNECE World Forum (WP.29).

IRHF WILL concentrate on arguments to encourage a new approach to harmonisation and identify priorities, but will not work to develop proposals to amend the detailed technical requirements.

IRHF WILL NOT be able to join the meetings of WP.29 and GRE but I foresee the possibility to present the arguments developed by IRHF to WP29 as an invited guest.

COMMITMENT: I am volunteering to lead IRHF without financial reward but, after the interest and the membership is established, there will be a democratic vote to approve the operating rules and elect the Chair, Vice Chair, and Secretary,

Interested to become a member of this forum?

Please find the Membership Application instructions here

I warmly welcome you to our forum and look forward to working with you to remove the regulatory barriers to automotive lighting innovation and improved traffic safety.

IIHS: Top-rated Headlights Linked to Lower Nighttime Crash Rates

LIGHTING NEWS

MATTHEW BRUMBELOW GAVE A LECTURE ON «FIRST LOOK AT THE REAL-WORLD EFFECT OF THE IIHS HEADLIGHT RATINGS" AT THE DVN US WS LAST MONTH

A study by IIHS, the Insurance Institute for Highway Safety found that headlights that score higher in a rating program are linked to lower nighttime crash rates.
The study released last week found that nighttime crash rates/km are about 20% lower for vehicles with headlights that score "good" in the IIHS rating compared to those with "good" ratings.

The study, which evaluated 44,000 single-vehicle crashes that occurred in the dark, also found that, compared to poorly rated headlights, good-quality lights reduced the rate of incidents in which the driver was injured. High-rated headlights also reduced towing crashes and pedestrian crashes by about 25% compared to low-rated crashes, according to the study.
"Driving at night is three times more risky than driving during the day," said Matthew Brumbelow, senior research engineer at IIHS, who conducted the study. "This is the first study to document how many headlights that provide better lighting can help. "

IIHS said the study underscores the need for stricter federal headlight regulations. The federal safety standard, which hasn't been updated significantly since 1968, specifies the brightness levels of headlights at different angles, but does not take into account how they are intended when installed in a vehicle said the institute. It also ignores new technologies such as adaptive cornering headlights that can change direction when the vehicle is in motion.

Vehicles must have "good" or "acceptable" headlights as standard equipment to be eligible for the IIHS Top Safety Pick + award. Headlights rated "good" or "acceptable" may be optional equipment for the Top Safety Pick award.
To date, the institute said it has evaluated around 1,000 headlight systems, which has allowed Brumbelow to examine how headlights of different wattages affect crash rates.
"Our prices have been a great motivation for automakers to improve their headlights," said Brumbelow. "Now, with our new study, we have confirmation that these improvements save lives. "

20th VDI ELIV (Electronics in Vehicles) Congress and Exhibition this Week: Lighting Involved

LIGHTING NEWS

The 20th International congress and exhibition, held on 20-21 October, will gather decision-makers and experts in the automotive electronics and software industry. The main Topics are: Software Technologies, Automated Driving, AI -Self-Learning Vehicles, E-Mobility & E-Vehicles, and Electronics Innovation.

The opening Speech will be done by Dr. Rolf Zöller, Director Smart Connected Vehicle Porsche AG, on: *Automotive defined Digitalization – Perspectives towards tomorrow*
Then, Dr. Karl-Thomas Neumann, former CEO of Continental AG, Volkswagen China and Adam Opel Panel long Path of the Automotive Industry will talk on: *From Hardware to Software, Cloud and Services*
The third part of the beginning will be dedicated to a Discussion *on Operating Systems for Cars – Can OEMs regain Independence from IT-Giants?*

In the Electronics Innovation part, 2 interesting lectures :

Dr. Michael Kruppa, Head of Light Innovations and Functions Development at AUDI will present the ***Digital light for digital life*** from 4 topics :
• Light based Car2X Communication
• Light innovations for autonomous cars
• Driver-centric safety supported by light
• New car architecture supporting highly functional digital light

Dr. Wolfgang Huhn, Senior Advisor, at Driving Vision News, will present ***Adaptive Driving Beam – The next mandatory Safety System*****?** from 3 topics :
• LEDs as headlamp light source enable low-cost glare free main beams
• Multi-Purpose Cameras, already standard equipment
• Safety benefit during night driving, extremely high

More information about this congress in the next newsletter.

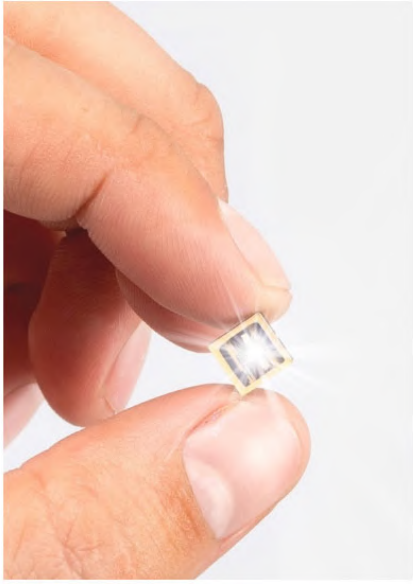
Tesla Steps Toe In ADB Water At Last

LIGHTING NEWS

Notoriously cocksure Tesla CEO Elon Musk likes to brag that his cars are technologically superior and years ahead of all others. As proof, he proudly tweeted last week that the Berlin-built Tesla Model Y has adaptive driving beam capability. This new feature means the Model Y joins numerous models equipped with matrix ADB headlamps by numerous makers throughout the world (except the United States, where ADB remains illegal). A photo was proudly tweeted showing a Model Y projecting a word recognisable as "TESLA" on a wall.

KSLD to Show Fibre, Laser Lighting Tech at LightFair

LIGHTING NEWS



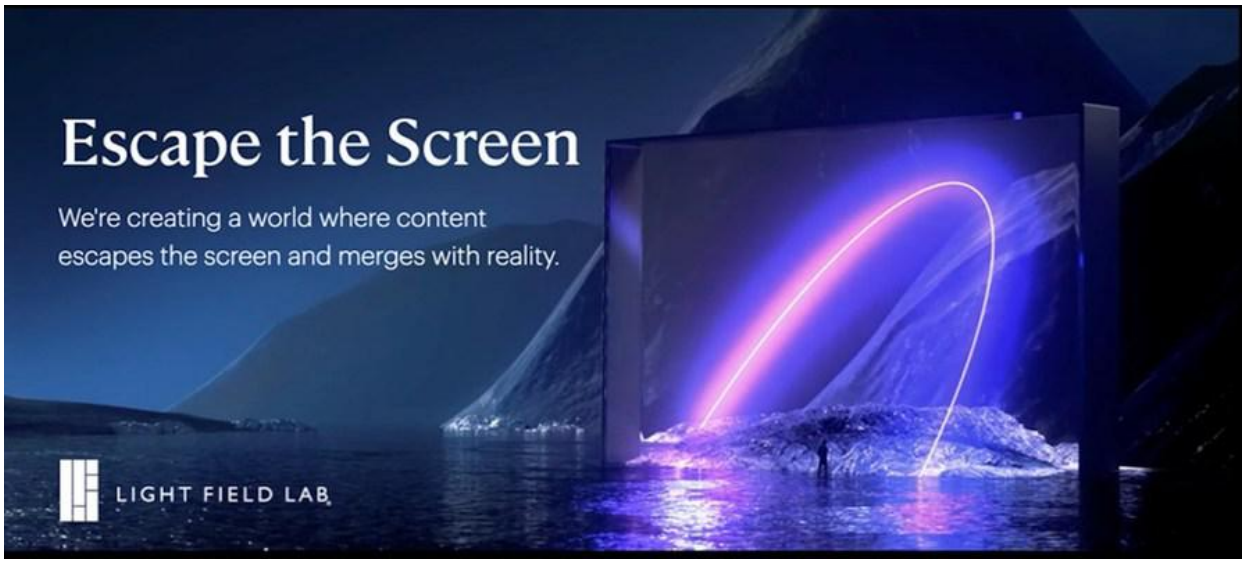
Kyocera SLD Laser will showcase their high-brightness fibre lighting technology and LaserLight products— more than 10 times brighter than LEDs—at LightFair International in New York at the end of this month. The company's LaserLight Fiber modules efficiently deliver brilliant illumination from thin, flexible fibre optics from either an end-emitting transport configuration, or a lateral-emission setup highly uniform over the length of the fibre. These sources provide lighting designers unmatched design freedom for ultra-thin styling possibilities and enable specialty pendant lights, accent lighting, pole lighting.

Kyocera SLD Laser launched their LaserLight illumination products last year and are now ramping production with products deployed into headlights on the road globally.

Kyocera SLD Laser are commercializing a new generation of gallium nitride based laser light sources for automotive, mobility, specialty lighting, and consumer applications. Kyocera Corporation, SLD's parent company, produce fine ceramic. By combining these engineered materials with metals and integrating them with other technologies, Kyocera has become a leading supplier of industrial and automotive components, semiconductor packages, and electronic devices.

SolidLight: The Highest Resolution Holographic Display

LIGHTING NEWS



Light Field Lab last week, announced SolidLight™, which they say is the highest resolution holographic display platform ever designed. Light Field Lab's technologies combine unprecedented size, resolution, and density to project objects that accurately move, refract, and reflect in physical space. The directly emissive modular SolidLight Surfaces form dense converging wavefronts with billions of pixels of photonic resolution.
Untethered to gear, SolidLight enables viewers to experience digital objects in the physical world that "escape the screen" and are indistinguishable from reality. A demonstration of the holographic content generated by a SolidLight Surface display can now be seen in the form of a **video** showing a colourful, seemingly live-action chameleon made entirely of photons.

LFL CEO Jon Karafin says "SolidLight is unlike anything you have experienced before. It's only after you reach out to touch a SolidLight object that you realise it's not actually there. SolidLight redefines what is perceived as real, reshaping visual communications, audience engagement and customer experiences forever".

Light Field Lab aim to disrupt the world of flat images. Light Field Lab's roadmap of technologies begins with SolidLight holographic displays to seamlessly merge real and virtual worlds together.

Driver Assistance News

Lucid Say They'll Be First in USA With Lidar

DRIVER ASSISTANCE NEWS

Lucid, an EV startup based in California, say their Air BEV will be the first production car available in the states with lidar. The startup automaker will provide the system as standard equipment to enable a variety of ADAS features.

Lucid's system of cameras, radar and lidar, called DreamDrive Pro, will make the Air capable of self-parking; give it an assistant for driving on the freeway, and another for moving at low speed in the city circulation. The vehicle's interior includes an infrared camera that tracks head position and gaze, while steering wheel pressure sensors detect if a driver is incapacitated and, in an emergency, bring the vehicle to a safe stop.

Buyers are expected to begin receiving their Airs this year.

To Lidar…Or Not to Lidar

DRIVER ASSISTANCE NEWS

Automakers have placed more emphasis on sensors and corresponding software to improve vehicle safety while increasing their bottom line with higher margin software revenues. These technologies also serve as a stepping stone to autonomous driving.

But the industry is divided on the best technology to use.
Tesla deleted radar from their cars in a cost-cutting move; Tesla cars now come with a purely camera-based driver assistance system, and that company's unfiltered-speaking CEO Elon Musk has said lidar "is for losers". Most of the rest of the industry and its ecosystem of researchers disagree, though, and fatal crashes involving poorly-self-driven Teslas have drawn the attention of regulators and lawmakers.

“As more advanced driving features are added, it will become more and more important to ensure that drivers are alert, especially when the vehicle is helping to drive and is not in full ownership of the driver. driving functionality, ”said Andrew Grant, analyst at BloombergNEF. “High-end vehicles have better margins, so there is room for manufacturers to add lidar and make a profit on the vehicle."

Much more information will be given during the DVN Lidar Conference on 15-16 November in Frankfurt.

RoboSense Wins PACE 2021 Automotive News Award

DRIVER ASSISTANCE NEWS

RoboSense was named the Automotive News 2021 PACE Award winner at the online awards ceremony on September 30. The company was awarded for RS-LIDAR-M1 (M1), its MEMS lidar and the world's first mass-produced second-generation solid-state lidar.

The system generates an accurate and reliable 3D point cloud that improves perceptual redundancy and safety, and enables intelligent vehicles to have a safer and more comfortable driver-passenger experience.
Based on its second generation lidar technology, M1 has an exclusive intelligent feature called "GAZE" which dynamically improves resolution or frame rate depending on the environment. RoboSense's patented MEMS technology with modular design and integrated system architecture delivers high reliability and performance in a compact design. With its reduced number of components, it offers more potential for lower cost upgrades in the future."

RoboSense is one of the world's leading suppliers of intelligent lidar sensor systems. Comprising LiDAR sensors. The company's mission is to innovate in exceptional hardware and artificial intelligence capabilities to create intelligent solutions that enable robots, including vehicles.

Rohm's 75-Watt Lidar Laser Diode

DRIVER ASSISTANCE NEWS

Rohm Semiconductor have developed a high optical output laser diode, the RLD90QZW3, for lidar systems in applications such as automated industrial vehicle guidance.

In recent years, lidar has been increasingly adopted in a wide range of applications that need to be automated to precisely measure distance and for spatial recognition. For such market trends, there is a need to improve the performance of laser diodes when used as light sources to increase detection distance and accuracy, while reducing power consumption.

Rohm say their technology achieves narrower emission width, for a longer range and higher accuracy in lidar applications. In 2019, Rohm released the RLD90QZW5 25W laser diode that has been adopted primarily in the consumer electronics sector. Now this new product expands applicability in the industrial sector by providing higher optical output. It is a 75-watt infrared laser diode designed for used in distance measurement and spatial recognition in 3D ToF systems.

General News

Toyota says Worst is Over

GENERAL NEWS

Toyota will cut global production for the third time next month as the pandemic and global auto microchip shortage continues to bite, but the impact will not be as painful as before and Japan's largest automaker is finally seeing signs of recovery on the horizon.
“I think we are in the worst time,” said Kazunari Kumakura, head of global purchasing.

Toyota will produce between 850,000 and 900,000 vehicles worldwide in November, the company said. The total represents a reduction of 15% Toyota's revised production plan in November to produce 1 million vehicles during the month.
But even with the cut, the reduced production level is still an all-time high for November, Toyota noted. In August, Toyota raised the November monthly target to 1 million units in an attempt to make up for previous setbacks.

Kumakura predicted that Toyota's production will pick up from December, and he said Toyota will do everything possible to make up for the lost volume later in the fiscal year ending March 31, 2022. Despite the pinched production, Toyota maintained its global production target for the year at 9 million units.

European sales plunge 25% in September amid shortage of chips

GENERAL NEWS

European passenger car registrations fell 25% in September, as a shortage of microchips squeezed the supply of vehicles to dealers.
New car sales reached 973,000 in the European Union, UK and EFTA markets, the lowest for the month since 1995, according to data from industry association ACEA.

After three consecutive declines, sales in Europe have fallen in more months than they have increased this year. Market research now expects sales to be down this year after the optimism of early 2021, when ACEA predicted growth of around 10%.
"We currently predict that this year will not eclipse the desperately weak result of 2020," LMC Automotive said in a report. “Our assumption is that supply issues will be with us throughout the next year and will continue to undermine the link between the drivers of positive underlying demand and vehicle sales no.