



Editorial

DVN US Workshop: Coming Soon, Live From Novi!

The 23rd DVN Workshop—the 6th in America—is happening less than one month from now. Everyone on the DVN team is working dilligently to make it a success. It will be different from all 22 of the past events, for it will totally focus on safety; up to now DVN Workshops have been organised in terms of two lighting domains, design and safety technologies.

Why is this DVN Workshop different from all other DVN Workshops? Primarily because of the alarming trends with traffic deaths in America: 38,680 of them in 2020, up 7 per cent vs 2019, despite significantly less driving on account of the pandemic. The fatality rate hit 1.37 deaths per 100 million the worst rate since 2006. That's a trend in the wrong direction, and it seems to be gaining traction; in the second half of 2020, the number of deaths was up more than 13 per cent. It's a daunting problem in a challenging regulatory and cultural environment. DVN wants to contribute to reversing this wrong-way trend by facilitating discussion and adoption of effective solutions.

The workshop will start with presentations on the status of safety on the roads, with lectures by three experts from UMTRI, IIHS, and Mount Sinai-Icahn School of Medicine. Then, lighting managers from Audi, Volvo, GM, Ford, and Jaguar Land Rover will present their achievements on safety improvement. A very interesting safety-technology session will feature talks by experts from Marelli-AL, Valeo, Varroc Lighting Systems, Hella, and Koito-NAL. A special fourth session involves vehicle interiors, an increasingly important domain to enhance safety by dint of driver monitoring systems and other technology; there will be lectures from Ansys, Radiant Vision Systems, Grupo Antolin, Xperi, and Eyeris.

The fifth session, focusing on regulatory topics, will include lectures from top experts in lighting regulations and the science and technology behind them: Geoff Draper, Bart Terburg, David Puglisi, Joshua Schwab, John Bullough, Michael Flannagan, Rainer Neumann, Wolfgang Huhn, and Michael Larsen.

The two last sessions cover light source innovations and technology enablers for safety at night. Lecture topics will include status and trend reports on LED, OLED, matrix, and μ LED light sources from AMS Osram, Kyocera SLD Laser, Lumileds, Everlight, Samsung, TI, AML Systems, Docter Optics, Covestro, and LMT.

Travel restrictions will prevent some would-be participants attending in person, so we have arranged for online attendance in real time or in a replay mode to account for time zones, via our DVN US Workshop [online platform](#). And if you haven't yet registered, well, you'll want to [do so](#) while there's still space available!

Sincerely yours,



DVN CEO

In Depth Lighting Technology

DVN Workshop № 23 Live in Michigan, 21-22 September

**DVN WORKSHOP
21-22 SEPTEMBER 2021**

HYATT PLACE HOTEL, NOVI, MI

Social Cocktail • Meet & Greet Dinner
Conference • Expo

The 23rd DVN Workshop will be held in Novi, Michigan, on 21-22 September at the Hyatt Place Hotel, during Motor Bella, the new 6-day event replacing NAIAS. All prevailing Covid safety measures in effect in Michigan will be applied, and the conference and expo spaces will be safely laid out for hundreds of in-person attendees to benefit from the full docket of lectures, presentations, and exhibitions. Registered attendees who can't travel to Detroit will be catered for by online access to the complete event.

The rubric for the day-and-half conference is ***How to Save Lives in Nighttime Driving***, with the intent to describe and discuss how new technologies can contribute to increased safety.



The event will bring together around 250 participants, involved in lighting, vehicle interiors, and ADAS, from around the world—directors, managers, and experts. Among the 30 lectures on topics including driver monitoring, ADB, LED, microLED, lighting performance assessment, simulation, testing, measurements, and regulation, contributions are confirmed from regulators, researchers, Audi, Ford, GM, Jaguar Land Rover, Volvo; Hella, Koito/NAL, Marelli AL, Valeo, Varroc, Everlight, Lumileds, Nichia, Osram, Samsung, and Texas Instruments. Each presenter will bring their own perspective on recent safety-orientated trends in lighting and car interiors, in context of worsening traffic violence—deaths and injuries—on American roads.

Discussion panels and expo booths will bolster a consistent core strength of DVN Workshops: facilitating the exchange of ideas, research findings, and strategies among participants and attendees from all relevant sectors, all over the world—guiding, in turn,

strategic executive decisions concerning product and service roadmaps and political action plans.



Six months after the Shanghai DVN Workshop, the DVN Workshop near Detroit in Novi, Michigan will be a real, live, face-to-face event with acclaimed speakers and around 20 expo booths.

Attendees will visit booths during the 30-minute breaks every two hours, as well as during lunchtime, the welcome cocktail hour, and dinnertime. Online attendees will also be invited to a video-visit of each exhibition booth during which the exhibitor will be interviewed. All attendees will have access to the replay VOD of the event for 2 full weeks.

Workshop Docket:

Opening by Hector Fratty

Keynote by Daniel Stern

Session 1: Status of Safety Situation on the Roads

- **UMTRI** Michael Flannagan (Research Associate Professor, Human Factors Division) *Understanding how darkness affects crash risk: Direct comparisons between dark and light conditions*
- **Mount Sinai-Icahn School of Medicine** John Bullough (Program Director, Light & Health Research Center) *Advances in Understanding the Safety Benefits of Adaptive Vehicle Lighting*
- **IIHS** Matthew Brumbelow (Senior Research Engineer) *The results are in: a first look at the real-world effect of the IIHS headlight ratings*

Session 2: OEMs' Contribution to Safety Improvement

- **Audi** Michael Hamm (Headlamp Development Manager) *Worldwide ADB Experience With Millions of Cars*
- **Volvo** Paul-Henri Matha (Exterior Lighting & Safety Technical Leader) *How Does Volvo Handle Exterior Lighting When We Speak About Safety*
- **GM** Michael Larsen (Exterior Lighting Technical Lead) *The Balance Between Seeing Light and Glare*
- **Ford** Luciani Lukacs (Global Core Exterior Lighting Supervisor) *Challenges of Implementing Exterior Lighting Features to Enhance Safety in a Global Market*
- **Jaguar Land Rover** Shammika Vickramasinghe (Body Engineering Group Leader & Domain Architect) *Lighting and Improving Safety*

Panel Discussion about «How to Save Lives in Nighttime Driving»

Session 3: Set Makers' Technology Achievements to Increase Safety

- **Marelli-AL** Ernst-Olaf Rosenhahn (Head of Lighting Innovation) *How the Headlamp Rating HSPR will Increase Nighttime Traffic Safety*
- **Valeo** John Orisich (Advanced Technology Manager) *lecture title TBD*
- **Varroc Lighting Systems** Luc Brisson (R&D Director) *Progress on Sensor Integration*

- **Hella** Pavel Ondryska (Head of Headlamp & Rear Lamp Development)
Digital Light – A Safer Way to Drive
- **Koito-NAL** Viren Merchant (Assistant General Manager)
“Spread of ADB and Contribution to Safety”

Session 4: Enhanced Safety by Driver Monitoring Systems

- **Ansys** Sen Zhang (Application Engineer) *In-Cabin Sensing Systems and Simulation With Ansys*
- **Radiant Vision Systems** Matt Scholz (Automotive Business Leader)
Driver Monitoring System Testing
- **Grupo Antolin** Enrique Jiménez (Business Development Executive) & Benjamin Chevallier (Innovation Manager) *Assisting Nighttime Driving With Driver and Occupant Monitoring Systems*
- **Xperi** Petronel Bigioi (Product CTO) *Next Generation Interior Sensing*
- **Eyeris** Modar Alaoui (CEO)
Sensor Fusion AI Enabled by Interior Scene Analysis & Modern Automotive AI Chips

Session 5: Regulations; Harmonisation of Technical Requirements for Adaptive Lighting

- **Geoff Draper** introduction
- **Bart Terburg** session moderator
- **GTB** Davide Puglisi (Secretary of GRE IWG-SLR)
Review of Stage 2 GRE Simplification of UN Regulations—Update on GTB activities
- **Ford** Joshua Schwab (Global Core Lighting Manager) *What do Vehicle Manufacturers Want in Terms of Harmonised Requirements for Adaptive Systems?*
- **Sapphire Technical Solutions** Michael Piscitelli (Owner)
How to Assess Real-World Performance of Adaptive Systems?
- **Mount Sinai-Icahn School of Medicine** John Bullough (Program Director, Light & Health Research Center) and **UMTRI** Michael Flannagan (Research Associate Professor, Human Factors Division) *Is a Subjective Assessment of Real-World Performance Such a Bad Thing?*
- **Varroc** Rainer Neumann (Lighting Director) *Summary of Experiences of Following the Practical Test for ADB (Assessment by an Inspector on Public Roads) As Defined in the UN Regulations*
- **Panel session** with Wolfgang Huhn, Michael Larsen, and Rainer Neumann; moderated by Bart Terburg: *How to Merge the Needs of Type Approval, Self Certification, and Other Mandatory Standards?*

Session 6 • Light Source Innovation

- **Lumileds** Michel Zwanenburg (Automotive VP) *Latest LED Light Source Solutions Driving Enhanced Safety For All*
- **Samsung** Joongkon Son (Automotive LED Sales-Marketing VP)
Lighting the Way: Monolithically Integrated LEDs for Road Safety
- **AMS Osram** Michael Godwin (Visible LED Products Director)
Latest LED Innovations That Make Night Driving Safer
- **Kyocera SLD Laser** John Peek (Senior Advisor) & Paul Rudy (CMO, SVP)
LaserLight, The All-In-One Proposition for Brightness, Styling, Sensing, Communication
- **Texas Instruments** Brandon Seizer (Product Marketing Engineer)
Improving Vehicle Visibility With Dynamic Projections

Session 7: Technology Enablers

• **AML Systems** Ludovic Toulisse (R&D Director) & Hassan Koulouh (Innovation Manager)

High Precision Headlamp Setting

• **Docter Optics** Hagen Schweitzer (Optical Design Manager)

Precision Molded Glass Lenses with Application to Automotive HD-Pixel Light Systems

• **Covestro** Paul Platte (Senior Marketing Manager)

Driving Ahead of the Curve: Visionary Monomaterial Headlamp Concept

• **LMT** Thomas Reiners (Chair GTB Task Force Vehicle Level Lighting Test Procedure)

Vehicle Lighting Performance Assessment System (VELAS): On-Vehicle Headlamp Goniophotometry for C-NCAP

The entire event will happen online in real time and VOD (video on-demand).
via our DVN US Workshop [online platform](#).



Registration



Agenda



Exhibitors



Main Stage



Community

Lighting News

Hella, Faurecia to "Combine Businesses to Grow"

LIGHTING NEWS



As we reported last week, Faurecia are buying out the 60 per cent stake currently held by Hella pool shareholders, and have announced a voluntary public tender offer to acquire the remaining Hella shares. The transaction's successful closing is subject to regulatory approvals, expected early next year. The pool shareholders of Hella will retain up to a 9 per cent stake in the listed parent company via a reverse shareholding, and a pool representative will join Faurecia's Board of Directors.

By combining their activities, Hella and Faurecia will become the 7th largest global automotive supplier. This opens up significant potential for further profitable growth. Hella and Faurecia today already are global market leaders in their respective fields. By combining their respective strengths, Hella and Faurecia aim to further expand their market position, particularly in key growth areas such as electric mobility; automated driving; and vehicle interior design, and to further strengthen their position across customers and regions.

Hella CEO Dr. Rolf Breidenbach calls the two companies "a very good fit. This especially applies to product range and market coverage. In addition, both partners place a high value on consequent customer orientation, operative excellence and technology leadership. Therefore, it is only logical that we join forces to drive the future of mobility together. With Faurecia at our side, we will have even more opportunities to do so than before".

Hella will contribute their strong portfolio in energy management; sensors, and actuators, and Faurecia will provide sophisticated hydrogen storage solutions and stacks systems. The conjoined companies also will create a global automated-driving technology leader with a broad range of products and systems.

Nissan Z: Latest Technologies to Streamline the Design

LIGHTING NEWS



Nissan Z-cars have an over-50-year heritage and global fanbase. Designers used the latest technologies to streamline the design of the newest Z. Up front, the LED headlamps have two half-circles that take their inspiration from the Japan market-only 240ZG of the 1970s, which fit naturally with the new Z's identity.

The tail lamps incorporate modern technology to provide a 3D effect.



Nissan decided to use lighting to create an obvious nod to the past and bring modern technologies to create a strong model signature

Next month, DVN will publish a report on the new concept and production vehicles launched and revealed these last four months, including the Nissan Z; don't miss it.

New Process to Revolutionize MicroLED Displays

LIGHTING NEWS



Researchers at ETRI, the Electronics and Telecommunications Research Institute in Korea, have devised a simplified, cost-reduced process and associated materials to create microLED displays. The team created 1-mm² microLEDs, which provide a more vivid display compared to LED and OLED displays. The new display has high luminous efficiency and could be used in a variety of fields.

A new adhesive material facilitates the new core process of simultaneous transfer and bonding. As its name suggests, it combines transfer and bonding into one process. When a homogenised laser is applied to the film, microLEDs can be attached in seconds. The new materials can be attached with additional microLEDs, such as for defective pixel repair, a task which cannot be accomplished with available technology.

The key to the new process is applying the homogenized laser to a large area and heating only part of the attached piece to mount microLEDs to the display panel substrate. Materials for the new technique were developed independently, and the team believe their process can be further simplified for manufacturing.

Grivory Polyamide Cuts Headlamp Bracket Mass

LIGHTING NEWS



A one-piece headlamp bracket developed by Jaguar Land Rover and made of Grivory GVL-4H, a semi-crystalline polyamide, reduce the mass of the assembly by 45 per cent. The new brackets replace previous made of aluminum and stamped steel in Jaguar models including as the all-electric I-PACE.

The elimination of post-processing time for the metal components reduces manufacturing costs by 30 per cent. The long-fibre reinforced Grivory GVL-4H enables metal replacement thanks to its high notched impact strength, and thus higher energy absorption in a crash. The one-piece injection-moulded part allows rapid assembly due to the elimination of components, and also maintains dimensional stability during the high-temperature paint oven process. With the aid of simulation calculations, the component was adapted optimally to the available installation space.

Grivory GVL-4H is based on a combination of a heat stabilised semi-crystalline polyamide with a partially aromatic polyamide and 40% long glass fibres. It offers high strength over a wide temperature range, high heat distortion temperatures, low moisture absorption, and good dimensional stability.

Hella Boast Big Bump in Sales, Earnings

LIGHTING NEWS



Last Wednesday, Hella presented their annual report for fiscal year 2020/2021 (June 2020 to May 2021), and it contains sunny news: sales increased by 13 per cent to €6.5bn, while EBIT more than doubled to €510m. CEO Dr. Rolf Breidenbach says "The past fiscal year was characterised by numerous challenges and efforts. Nevertheless, we have stood our ground well even in this challenging environment and closed the year successfully overall. Above all, we have largely made up for the economic consequences of the pandemic and at the same time acquired a lot of new business for the future on the basis of our innovative product portfolio".

Sales in the Automotive segment rose by 12 per cent to €5.5bn, outperforming the global automotive market which grew by only 10 per cent. Sales growth was driven primarily by high demand for innovative lighting and electronics solutions. The segment's EBIT (earnings before interest and taxes) improved to €393m as a result of increased production volumes and ongoing cost management.

Sales in the Aftermarket segment grew by 7 per cent to €504m, on good sales performance of the independent aftermarket business in Europe. Segment EBIT improved to €68m. The main factors behind the improvement in earnings were higher business shares with software licences, cost-saving measures and further efficiency improvements in the logistics chain.

Special Applications recorded strong business with agricultural machinery manufacturers, with sales growth of 13 per cent to €359m. The main driver here was the strong business development with agricultural machinery manufacturers. In addition to rising overall demand, new series launches and the switch to LED lighting.

For the current fiscal year 2021/2022 (June 2021 to May 2022), Hella expect currency and portfolio-adjusted sales between around €6.6bn and 6.9bn, and an adjusted EBIT margin of approximately 8 per cent.

Driver Assistance News

LightWare: World's Smallest Scanning MicroLidar

DRIVER ASSISTANCE NEWS



LightWare Lidar, based in the U.S., are now shipping what they say is the smallest and lightest scanning lidar on the market.

LightWare's SF45 weighs just 59 grams. CEO Philip Constantie says the SF45 "democratizes machine perception, bringing vision, safety and practicality to even the smallest unmanned systems. Machines don't have 3D perception, so they can't make sense of unexpected obstacles. Our mission is to save the world's machines one microLidar™ at a time".

To complement the SF45, LightWare make a family of microLidar™ sensors such as the tiny SF000/B (only 8 g). Data from these sensors allow drones a safe take-off and precision landing, to hold position near an object being inspected or closely follow terrain without flying into trees.

Ways to Improve the Vision of AVs in Bad Weather

Extract from AI Trends Editor

DRIVER ASSISTANCE NEWS



To help autonomous cars navigate safely in the rain and other inclement weather, researchers are looking into a new type of radar.

Self-driving vehicles can have trouble “seeing” in the rain or fog, with the car’s sensors potentially blocked by snow, ice or torrential downpours, and their ability to “read” road signs and road markings impaired.

A California university’s autonomous driving research team is working on a new way to improve the imaging capability of existing radar sensors, so they more accurately predict the shape and size of objects in an autonomous car’s view. The team places two radar sensors on the hood of the car, enabling the system to see more space and detail than a single radar sensor. The team conducted tests to compare their system’s performance on clear days and nights, and then with foggy weather simulation, to a lidar-based system. The result was the radar plus lidar system performed better than the lidar-alone system.

Veoneer to Enter Talks with Qualcomm

DRIVER ASSISTANCE NEWS



Automotive technology company Veoneer's board of directors have determined that Qualcomm's acquisition proposal is a "Superior Proposal", as defined under the terms of Veoneer's merger agreement with Magna.

As a result of the Board's determination, Veoneer may under the terms of the merger agreement engage in discussions with Qualcomm based on the Qualcomm Proposal.

The merger agreement remains in full force and effect, and the board of directors of Veoneer has not withdrawn or modified its recommendation that the stockholders of Veoneer vote in favor of the approval of the merger and related transactions.

Under the terms of the merger agreement, prior to the receipt of the stockholder approval of the transaction, Veoneer may terminate the merger agreement to enter into a transaction based on a competing proposal such as Qualcomm's. Any such action would require that the competing proposal, after completion of any diligence and negotiation of transaction agreements, provide final, actual terms for a transaction that the Veoneer board of directors determines to be a superior proposal to the one set forth in the Magna merger agreement, and that Veoneer comply with certain notice and other requirements set forth in the Merger Agreement, including the payment to Magna or its designee of a termination fee of USD \$110m.

Europeans Pull Together in AV Safety Push

DRIVER ASSISTANCE NEWS



European companies including Audi, chipmakers NXP and Arm, the automotive software company of VW Group called CARIAD, the Fraunhofer Institute, the British software firm Five AI, and the Swedish Royal Institute of Technology are coöperating to address AV research. Their mission is to propose a guide to vehicle architecture that can handle the industry's autonomous technology goal.

"*The Autonomous*" was created in 2019 by TTTech Auto. It has members in working groups that are tasked with developing recommendations for a safe system architecture for AVs. The groups' output will consist of technical documents that will include recommendations, best practices, guidelines, reference architectures and specifications.

The principle of these global safety references is not written in stone, says The Autonomous chairman Ricky Hudi (photo)—who is also TTTech Auto Co-Founder—but are recommendations that AV developers can "put their own flavour" on top of. "You see how complex it is to bring AV on the road. You have to take care of the safety, avoid and mitigate drift, you have to cover all the costs, and you have to drive regulation and standardisation," says Hudi. "You have a lot of aspects around safety, but safety is the key. Once you have a proper design of a safety reference, it's much easier to convince the regulators and legislators, as opposed to doing it the other way around. That's why even the biggest companies considered joining the initiative."

A conference, "The Autonomous" will take place in Vienna on September 29th with the

participation of very high level speakers and attendees from the ADAS world. DVN will attend and report on this important event.

Beyond the technical tasks the working group is focused on, the organisation could also help foster agreement on the issue of crafting a common nomenclature around autonomous driving features. That would eliminate confusion in the industry about what system capabilities and limitations really mean.

Xenomatrix, Septentrio in Lidar System Pact

DRIVER ASSISTANCE NEWS



Septentrio, a provider of high-precision GNSS/INS positioning solutions, and Xenomatrix, who make solid-state lidar technology for autonomous applications and road management solutions, are starting a partnership enabling high-quality lidar solutions. Xenomatrix will be using the compact and robust GNSS/INS receiver from Septentrio, AsteRx SBI3 Pro+, to provide millimetre-accurate analysis of pavement conditions using global positioning coordinates.

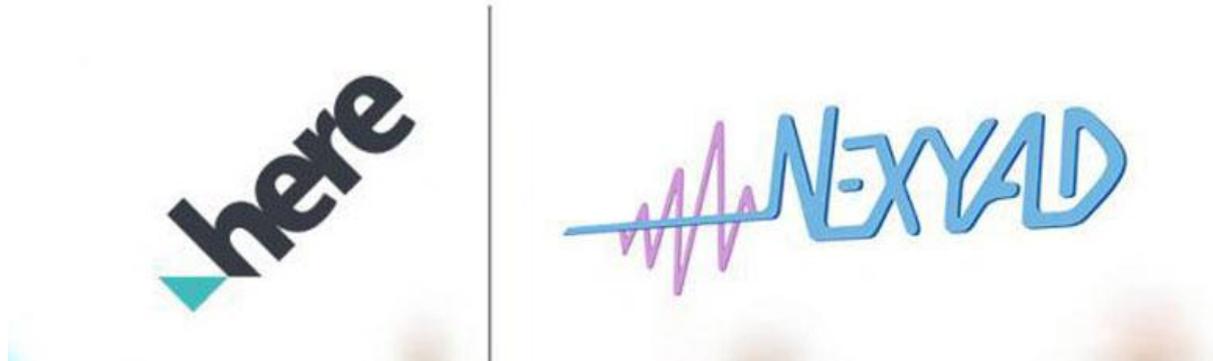
Septentrio's GNSS/INS will be a part of Xenomatrix's road lidar called XenoTrack, which has been the solution of choice for road surveyors and road management companies. Since early 2020, this road scanning solution is also used for large-scale digitisation and characterisation of roads. Customers for such data require centimetre precision for the localisation of road defects, and millimetre precision for the sizing of the defects. When measuring among road sections, all measurement data must be stitched together to create a complete and correct model, excluding drift and missing data. The combination of a very productive, lane-wide road scanner from Xenomatrix and precise and reliable GNSS/IMU from Septentrio allows for creating such accurate road models.

XenoTrack is a short-range lidar system, based on Xenomatrix's multibeam technology that emits 3000 laser beams simultaneously, projected on the road. Every detected laser spot returns a 3D data point. All these points are acquired at the same time to create a geometrical model of the road surface, without the influence of the motion from the vehicle. This is repeated up to 60 times per second, resulting in a dense point cloud from which various road characteristics can be derived, such as IRI, waviness, rutting, and potholes.

Septentrio and Xenomatrix aim to pair their technologies in the continuing pursuit of safer ADAS solutions. XenoLidar-X, Xenomatrix's lidar, is designed for advanced ADAS applications, and Septentrio's high-precision GNSS receiver can optimise vehicle perception in localisation and SLAM applications.

Nexyad, Here Tech to Improve Road Safety with AI

DRIVER ASSISTANCE NEWS



Nexyad and Here Technologies are now working together to apply cognitive artificial intelligence (AI) to road safety. The alliance combines the intelligence of Nexyad's real-time data aggregation platform with the real-time accuracy of Here's maps.

The Nexyad aggregated data platform uses cognitive AI to combine extensive data sources in a vehicle in real time. It then interprets the data to assess whether a certain driving behaviour is appropriate given the surrounding context. Nexyad's assessment, which can be delivered to a driver via a mobile phone, can be calculated from four sets of data only: Here map, global navigation satellite system (GNSS), electronic horizon and acceleration. The platform is also scalable and can aggregate data from advanced driving assistant systems (ADAS) sensors to include camera, radar and lidar, weather (visibility and temperature), and traffic data

Nexyad's real-time data aggregation platform provides two output values 20 times every second: the lack of caution of the driver and the maximum speed recommended given the road conditions – legal speed limit, road roughness, topography of the road, weather, and traffic. Nexyad bases its analysis on several thousand road accident reports, using a set of rules from modern hybrid AI, which includes knowledge-based systems, deep learning, neural gas, PAC (possibly approximatively correct) learning, game theory, reinforcement learning, possibility theory and fuzzy logic.

By recommending a 'maximum cautious speed' based on real-time data that is context-specific to every single vehicle, driver and driving environment, Nexyad's approach goes much further than the European requirement for vehicles to be aware of the legal speed limit on each road segment (Intelligent Speed Assist). Nexyad's safety coach called SafetyNex acts as a true co-pilot for the driver as it provides real-time guidance, to anticipate possible emergency situations ahead that may lead to an accident. This proactive coaching activates while driving and has been demonstrated to reduce accident rates by at least 25 per cent.

General News

BMW iX in Romania, next to Most Powerful Laser

GENERAL NEWS



The BMW iX, as a special model to shape the way the company moves forward in EVs, is bound to become the technology flagship. To mark the local launch of the new model, facilities were rented in the building hosting the world's most powerful laser—in Romania, a few miles away from Bucharest, with a measured power of 10 PW (petawatts; 1 PW equals 10 million billion watts).

The building itself bristles with technology. The temperature is finely tuned using 1,080 heat pumps, while the flatness of where the lasers rest is ensured by a concrete floor that weighs 120,000 tons, sitting on 1,000 dampers and specially-designed springs.

The car was actually unveiled to the select few who had the honour of participating in this event in the exact same room where a laser impulse measuring 10 PW of power was recorded for the first time. To make sure everything fit into place, the car was displayed using a laser show, with various images being projected on it, in a bold display of craft and ingenuity. Even the headlamps of the iX featured laser light. The light show was designed locally and featured elements found on the ambient lights offered on the BMW iX as well as the graphic representation of the BMW Intelligent Personal Assistant.

EV registrations in US: Tesla Model Y Leading the Charge

GENERAL NEWS



Tesla's Model Y accounted for most of the growth in U.S. EV registrations in H1-2021, which more than doubled from the same point in 2020. The California EV maker registered 82,000 Model Y compact crossovers through June, up from 10,000 in H1-2020, according to data gathered by Experian. The model accounted for 38 per cent of all EVs registered in the first half, and its year-to-date increase of more than 70,000 registrations represented 62 per cent of total EV growth during that span.

Tesla Model Y	Tesla Model 3	Chevrolet Bolt	Ford Mustang	Nissan Leaf	VW ID.4	Porschr Taycan	Audi e-Tron	Hyundai Kona	Kia Niro
81,000	57,000	20,000	11,000	8000	6,000	5,000	5,000	5,000	3,000

SOURCE EXPERIAN

Experian data shows 214,000 EVs were registered nationwide during the first half of 2021, up from 98,000 at the same point a year earlier. Model Y's dominance in the growing EV market comes even as other automakers invest in their electric offerings and come to market with new models, including in popular crossover segments. Tesla's competitors continue to eat into its market share, even as the brand still dominates the EV segmentTesla accounted for 66 per cent of all EV registrations in the first half, compared with about i n 80% first half of 2020.

More than 100 EV models are planned for sale in the U.S. over the next few years. Caldwell said the arrival of new electric crossovers, as well as upcoming electric pickups such as the Ford F-150 Lightning, will challenge Tesla's dominance in the EV market.

Latest auto output cuts caused by the chip shortage

GENERAL NEWS



Toyota, GM, Ford, VW, Audi, all said production would be crimped in the coming weeks due to a shortfall in semiconductors. The global shortage of microchips continues to bedevil the auto industry, with several companies announcing production cuts this week.

- Toyota which previously had weathered the crisis without major setbacks said it will slash global output by 40% in September. In North America, Toyota said its factories will lose up to 170,000 through September.
- General Motors will idle its plant that builds the Chevrolet Bolt EV and added downtime at crossover and sedan plants.
- Ford pickup plant down for a week. The Kansas City assembly plant will be down for a week and the automaker's plant in Cologne, Germany will temporarily suspend output.
- Volkswagen will restart its plant in Wolfsburg with just one shift this week, as it resumes following the traditional summer break.
- Audi will extend its summer break by one week at its two factories in Germany.

Great Wall Signed deal to Acquire Daimler's Brazilian Plant

GENERAL NEWS



Great Wall, a major private Chinese light-vehicle manufacturer looking to expand globally, signed an agreement with Daimler to purchase the German automaker's factory in Brazil.

Under the deal inked last week, Great Wall will acquire land, buildings, machinery and equipment at the manufacturing site in Iracemapolis in the southeast Brazilian state of Sao Paulo, but not employees, the company said.

Great Wall expects to complete the deal and start retooling the plant toward the end of the year. After the renovation, the factory will have annual capacity of 100,000 vehicles and employ nearly 2,000 people, the company added.

Daimler said in December it would end car production in Brazil by shutting down the factory that had produced Mercedes-Benz luxury vehicles since 2016.

Mercedes opened the factory when Brazilian industrial policy forced several automakers to open plants if they wanted to sell large volumes of vehicles locally, leading to overcapacity. Daimler said in December that a drop in luxury vehicle sales during the COVID-19 pandemic made it unsustainable to keep the factory open.

Great Wall, headquartered in the north China city of Baoding, operates nine assembly plants in China. It also produces vehicles in Russia and Thailand.

In the first seven months, it delivered 710,000 sedans, crossovers, SUVs and pickups globally, a jump of 50% from the same period last year.