Tue, 30 May 2023
Weekly Newsletter

DVN
Lighting & ADAS

NEWSLETTER #805

Editorial

DVN Welcomes Paul-Henri Matha To The Team

Everyone on the DVN team is happy and proud to welcome Paul-Henri Matha onboard in august!
DVN President Jean-Claude Lebrun says "Paul-Henri Matha has acquired a great knowledge working with Renault, then Volvo, and with leading positions in the GTB. We are excited to work with a so experimented colleague in lighting and regulations. I welcome him in DVN with a great pleasure".

A decade and half from its start, DVN has become a great tech watch company with a dynamic and growing staff on three continents working in three activity areas: Lighting; Interior, and Lidar.

Each year, DVN brings you:

- in lighting: four Workshops; 10 Reports; 52 Newsletters,and one Study;
- in Interior: one Workshop; three Deep Dives; one Report, and 52 Newsletters;
- in Lidar: one Conference; three Deep Dives; 12 Newsletters, and four White Papers.


J.C.LEBRUN


H.FRATTY


W.HUHN

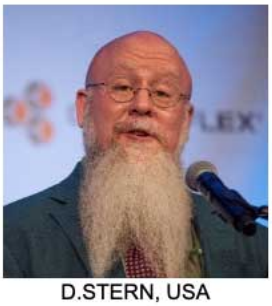

PH.AUMONT


ERIC AMIOT


C.ABOUAF


G.LEBRUN


CH.LAMEIRAS


D.STERN, USA


JEAN-PAUL RAVIER


GERD BAHNMUELLER


MICHAEL HAMM


EIICHI ONO,
JAPAN


ANN AI,
CHINA


JOHN COOPER,
US


CARSTEN BEFELEIN,
GE

Don't forget the [Tokyo DVN Workshop] coming soon on 6-7 June! That's just **one week** away, now, so if you haven't yet signed up, come and [register]. We're looking forward to seeing you then and there.

Sincerely yours,

In Depth Lighting Technology

DVN Interview: Paul-Henri Matha

Having studied engineering at Ecole des Mines Saint Etienne, Paul-Henri Matha started in the lighting field in 2002 as a Renault project manager, introducing that maker's first LED and microöptical rear lamps. In 2009, he pre-developed Renault's first full LED lamp; updated technical specifications for LED lamps, and developed the specification for a common LED headlamp driver. Few years later, he became General Manager for Exterior Lighting; Seats, and Safety Systems in Romania. His 100-engineer team worked for all brands of the Renault Group in Europe; Africa; South America, and India.

In 2015, Matha came back to France and took the position of Renault Lighting Expert. His main activities were on the predevelopment of low-cost full LED lamps, presented at

VISION 2018 for the Renault Clio, then shared on more than 10 vehicles, as well as predevelopment of Renault's first matrix headlamps.

In 2018 he joined Volvo cars in Torslanda, Sweden, for development of the pixel lamp on the Volvo XC40; the HD DLP lamp on the Polestar 3 and Volvo EX90, and the animated rear lighting on the Polestar 2 and Volvo C40 and V90.This year, at the Paris DVN Workshop, Matha was named DVN Lighting Person of the Decade. And now we welcome him to the DVN team!

DVN: What is your feeling on leaving a carmaker?

Paul-Henri Matha: First of all, I am very glad to join the DVN team! New challenge are coming in my life! But you are right, strange feeling. Like you, Hector, when you left Valeo after a long career. I have been working for 25 years in a company with more than 40,000 people, with a high number of engineers. So it will change my life for sure. I am not the first one who is facing this sort of challenge, so I am confident. Fewer colleagues, more partners. More possibilities and opportunities.

DVN: What do you expect arriving at DVN?

P-H.M.: Simply a new life to create. Like you have done, Hector, when you have created this jewel which is DVN after you retired from Valeo. New team, a lot of things to learn, and will try to give to the team my part of lighting knowledge and my numerous contacts, among R&D, legal and design colleagues, and friends. DVN has now a lot of partners, more than 240 if I am correct. I just know some of them; my first job will be to meet them. In a second step I will be able to give my inputs and ideas to develop new things. One of them may be to extend the Workshop to lighting stylists and designers if we see an interest, just an idea that came to me during last DVN Paris when we did a joined presentation with T. Jon Mayer, our Volvo cars exterior design chief. He was impressed by the conference and learnt so much.

DVN: You were a member of the VISION congress and now the president of VISION for 2024. What do you retain from being a member, and what is your strategy to improve the event?

P-H.M: VISION enlarged my lighting scope with a better knowledge of the community among universities; industries, and authorities. When you start working in this field, you have just a limited view and knowledge. You need to learn, and participation to this sort of congress is one of the best way to learn, more efficient than most of the trainings.

To improve the congress, we are thinking of enlarging the scope of ADAS, while keeping the best assets of the congress that are the night demos and the legal session with authorities. Participating in the congress provides you a very clear picture of the main innovations that will come, the main legal discussion that are on going and the possibility to meet most of the stakeholders like automakers; setmakers; light sources suppliers; semiconductor industries; test equipment suppliers; software providers, and test houses. I hope I will succeed in this new task for me. I have to federate our organisation and scientific committee and motivate more people to come. We have a target of 1,000 visitors.

DVN: You made more than 20 lectures since 2012, at ISAL; VISION; DVN Workshops; IQPC; ALE; IFAL, and Autosens. What do you retain from this experience?

P-H.M: Doing lectures during external conference is always a challenge. You need time to prepare, that is not so easy in our daily activity. But you learn a lot. You develop your soft skills that you are using every day. One of my best learning is perhaps the need to simplify what you want to explain. This is valid for external and internal presentation. You must be clear, and do not put too much on the slides—especially if you talk after lunch time!

After a talk, you can open a debate, discuss with people interested in your topic and increase your relations in the field you presented which is important for you and for your company.
Conclusion is that it is fruitful, I see a direct benefit. That is why I did a lot.

DVN: You are very active in GTB, where you co-chair the strategy working group and chair the installation working group; and in the SAE lighting group. What are your thoughts about that?

P-H.M: This activity is part of my mission profile as technical leader in Volvo cars, who produce and sell vehicles in America, Europe, and Asia. You need a very good knowledge of the regulation. For that, you must be part of GTB; SAE, and other groups like OICA. No choice. You have today so many evolutions in regulation that you need to be part of the rule making activity, especially if your company want to sell advanced technology that is requesting the last update of the technology. I recommend to all automakers and setmakers to be parts of these organisations.

P.H. Matha and Z. Arce-Dominguez with Bosse Alfredsson at recent Heroes event

DVN: What difference on project management do you see between the premium (Volvo) and the generalist (Renault) sectors of the industry?

P-H.M: You do not really focus on the same goals.
In Renault you focus more on affordable technology and European market, always thinking about safety and performance. The Renault Laguna and Megane were two of the first cars with 5-star EuroNCAP ratings.

In Volvo, you want the best technology for the best safety rating (EuroNCAP, China NCAP, IIHS…). You need the best suppliers and you need the skills to develop this technology. You must also secure that what you are doing is compliant in all market, and not thinking only about Europe. You must think more about diversity management to avoid developing totally different techniques for Europe and USA.

DVN: What did you learn from Volvo about sustainability in lighting?

P-H.M: Volvo is a Scandinavian company, and sustainability is part of the DNA of Sweden, so this approach is part of Volvo. The company promoted many initiatives to reduce CO_2 emission during development; component building, and component usage. It is not only for marketing purpose, it is part of the company purpose itself. One of the main challenge we have is to reduce use-phase CO_2 consumption, that is to say, watts during daytime and nighttime.

DVN: What is the greatest achievement you are personally proud of?

P-H.M: Teambuilding and team knowledge learning. A nice lamp, everybody will forget it after 10 years. But people's knowledge will not disappear. I taught lighting knowledge to colleagues now working for Nio; JLR; Polestar; Nissan, Human Horizon…we are still discussing when we meet at a congress like DVN; Vision, or ISAL. I have still some good connections with Guyancourt and Bucharest engineers. This is my main asset and achievement. That is also why I think joining DVN is a good evolution for my career, because I will continue this achievement.

I am also very proud of the award DVN gave me in January. A sort of recognition of my work at Volvo Cars; GTB; VISION; ISAL, and previously Renault Group.

DVN: What are the strengths to succeed the new challenges in front of you?

P-H.M: I am still young, I am 46! (laughs). I have some ideas and good connections with automakers and setmakers; tier-2 suppliers; GTB; OICA; SAE, and other associations in Europe; America; China; India; Korea, and Japan. I have still the willingness to learn and discover new technology. These are my best assets. Good challenge for a mid-career time.
I hope you will support me. To succeed I need you, DVN members!

And last but not the least, thank you Hector and Jean Claude for your trust.

Lighting News

New Lighting Tech on New VW Touareg

LIGHTING NEWS

Volkswagen are upgrading their third-generation Touareg, not least in lighting. There are new HD LED matrix headlamps with more than 38,000 interactive LEDs to project a light carpet exactly onto the driving lane and illuminate the road more precisely than ever before.

The optional new IQ.Light HD LED matrix headlamps offer a high-performance glare-free high beam (ADB); the interactive LEDs make sure that the masking area for oncoming traffic and vehicles driving in front is more precise than ever before.

The rear lights are new, too; now there's a continuous horizontal LED strip for the taillight clusters and a Volkswagen logo illuminated in red. For the first time this feature has been included on a Volkswagen model in Germany; previously, the illuminated brand logo was permitted only in markets such as China and the USA.

New launches in China

LIGHTING NEWS

Here's the latest batch of new vehicle launches to keep you up to date:

BYD Yangwang U8

The U8—the first model of BYD's high-end Yangwang brand—has opened for pre-sale, starting at more then €100,000. The U8 bears the Yangwang brand family-style design "Gate of Time and Space", integrating the sense of futurism and technology into the design of the whole car, and the overall shape is avant-garde and tough. It will be available in seven body colours: dragonstone green (gloss or matte); sandstone green (gloss or matte); moonlight silver; fluorite white, and obsidian black.

Human Horizon’s HiPhi Y

Human Horizon recently announced their third model, the HiPhi Y 560-km endurance version, will first be delivered this July. The car is positioned as a high-tech luxury SUV priced lower than the X and Z models, yet providing the luxurious space and unique entry and exit experience of the X with the second-generation NT intelligent wing door. Luxury touches include full-width light strips and specially-shaped headlamps.

Wuling's Baojun Yunduo

Wuling Motors' first pure electric SUV, the Baojun Yep, was officially released recently, and Baojun are working on another new car: the Yunduo, a pure-EV to be launched in August.

The Yunduo adopts a rounded style as a whole, and the front lighting system reminds a bit of the first-generation Fiat Multipla, with its two-level front lights. In the Yunduo, the upper layer is an LED daytime running light strip, and the lower layer is a high- and low-beam integrated headlight system. The rear lights have the obligatory full-width red light bar connecting small taillights. There's silver trim at the bottom of the rear bumper, and rear fog lights in the centre.

Geely Galaxy L7

Geely's first plug-in hybrid model, the Galaxy L7 is to be priced in the C¥150,000 to 200,000 range.

With a Galaxy Ripple aesthetic design, the front face adopts a closed grille design, and the full width daytime running lights are slightly fierce.

Audi China: A New Lighting Design Trend

LIGHTING NEWS

CHEN QIONG
LIGHTING SYSTEM R&D

MANU MÜLLER
EXTERIOR DESIGN

Audi are working to create a premium customer experience driven by brand-defining æsthetics and brand-specific driving pleasure.

Audi China VP of R&D Michael Hofmann says, "Driven by technological innovation, Audi is setting a new benchmark in the premium automotive segment by further developing and localizing our advanced technology, including by creating premium new products, a new premium ecosystem, and more infotainment, digitalization and connectivity innovations for users in China."

Lighting at Audi stands for a symbiosis of technology, design, safety, and customer experience. For the China market, Audi's lighting technology has always fulfilled the brand's commitment of making cars in China, for China, by adapting German technology to the preferences and desires of Chinese consumers. A perfect example of this is the SAIC Audi Q6, the brand's first global mass-produced vehicle equipped with a rear quattro projection brake light which projects a silhouette of the word "quattro" onto the rear tail window, creating a distinctively personalized visual touch.
When Audi introduced this advanced lighting technology to the Chinese market, not only did it elevate the Audi driving experience, it also sparked a new lighting design trend across the country's automotive industry.

Tech Vlogger Warns of EV Brake Light Flaw

LIGHTING NEWS

Popular American vlogger Alec Watson, known online as Tech Connections, is **calling urgent attention** to what he identifies as a major safety hazard caused by lax American vehicle lighting regulations. The issue: under Motor Vehicle Safety Standard № 108, a vehicle's stop lights are required to light *when the service brakes are applied*. That doesn't help, Watson points out, when a vehicle is being deliberately slowed by something other than disc or drum brakes—like an EV's regenerative braking, for example.

In the video, Watson demonstrates the defect with scientific accuracy and precision, and compares the rest-of-world UN Regulation 13, which used to *prohibit* regenerative braking from activating the stop lights but now *requires* it, to the American regulations which say nothing on the subject, thus leaving it up to automakers to decide how the stop lights on any given vehicle will work.

It's difficult to reconcile this with NHTSA's long-and-often-stated policy of making regulations performance-based and technology-neutral; regulatory control of this issue meeting that description would call for requiring the stop lamps to illuminate whenever the vehicle's deliberate deceleration exceeds a particular threshold, regardless of what mechanism is creating the deceleration. That's what the UN Regulation calls for, as does the SAE standard for stop lights.

Driver Assistance News

Hyundai's L4 AV Starts Road Testing in Shanghai

DRIVER ASSISTANCE NEWS

Hyundai's China Prospective Digital R&D Centre, equipped with L^4 AVs, has passed its evaluation and been approved in Shanghai, opening the phased test of the automaker's autonomous driving localisation in China.

After obtaining the licence, Hyundai's AVs will carry out public road tests of intelligent connected vehicles in designated areas of Shanghai, as well as more open, comprehensive and complex scenario tests.

The AVs are reportedly based on the development of Hyundai's Mintu New Energy Vehicle, and the L^4 AD system is developed by the Chinese R&D team.

These AVs are equipped with seven lidars; five millimetre-wave radars, and eight cameras. The maximum detection distance of the whole system can reach 250 m. It can perceive pedestrians, vehicles and other obstacles all around the body in real time; process environmental information such as vehicles; traffic lights; road sign markings, etc, and make and enact timely and effective prediction of traffic participants' movement. It is a system of on-board decision-making and path-planning accordingly, complete with automatic acceleration; deceleration; steering, and other controls, so as to realise automatic following; pedestrian avoidance; automatic lane change, and other functions.

Leaked Data Exposes Tesla AD Failures, Hush-Up Policies

DRIVER ASSISTANCE NEWS

A Tesla employee leaked over a hundred gigabytes of company data to German business newspaper Handelsblatt. The leaked data includes thousands of accounts from Europe; North America, and Asia, spanning 2015 to 2022, of troubles with Tesla's standard 'Autopilot' and optional-at-extra-cost 'Full Self-Driving' L^2 driver-assist suites.

Over 2,400 reports involve sudden unintended acceleration; more than 1,500 describe braking problems including unwarranted deceleration or stopping—such as what caused a multi-car pile-up in the United States last Autumn, shortly after Elon Musk decided to give all Tesla drivers access to beta-level 'Full Self-Driving' software.

Handelsblatt, whose staff methodically scrutinised the data, says the data trove includes information on over 1,000 crashes linked to brake problems, and over 3,000 instances of customers reporting safety concerns with their Teslas' driver assists.

The leaked data includes damning accounts of how Tesla respond to these kinds of problems: they put nothing in writing if they can possibly avoid it. An **article in Ars Technica** translates and pulls quotes from the Handelsblatt coverage, and Handelsblatt's Chief Editor has written a remarkable explanation—translated to English **here**—of why his newspaper chose to publish the data (complete with a description of how Tesla behaved in reaction to the newspaper's receiving the data).

General News

GM's New Software Division

GENERAL NEWS

General Motors will create a new division dedicated to software. It will bring together three units which until now were distinct within the company: operating systems; information and digital technologies, and digital services.

Software is at the heart of new vehicles. The creation of this division is indeed the concrete illustration of the plan of GM (and many other manufacturers), which consists of developing software in-house and launching services, applications, and monetisable on-board digital functionalities. Often offered as a subscription, these solutions, whether ADAS or infotainment systems, can generate recurring revenue and thus increase the maker's profits.

"We have entered the next phase of our technology transformation, focused on rapidly scaling new electric vehicle models and our Ultifi software platform", General Motors CEO Mary Barra said in a press release.

Meanwhile, Renault are preparing for the software-defined-vehicle era with Qualcomm processors; Google software (the Car OS, the Cloud and the Digital Twin), and Valeo, with whom they are co-developing an electric motor without rare earths, planned for 2027.

Renault & Valeo: Software Defined Vehicle

GENERAL NEWS

Renault CTO Leborgne (L), Valeo CEO Périllat (R)

Renault and Valeo will expand their collaboration to software-defined vehicles (SDV). The two companies intend to jointly develop the electrical and electronic architecture of the next generations of Renault Group vehicles.

Valeo will supply Renault with electrical and electronic components, notably a high-performance computer, as well as on-board application software such as parking assistance. Renault say Valeo engineers will work closely with the Renault Software Factory teams on software development near the carmaker's sites in Guyancourt; Toulouse, and Sophia-Antipolis.

The SDV concept reduces the number of computers to switch to a centralised electronic architecture, making it possible to update vehicles remotely and integrate new functionalities without hardware modification.

The announcement of expanded collaboration was made at the gala organised by Valeo for the company's 100th birthday, at the Atelier des Lumieres.