



Editorial

Survey Responses Are In – Where From Here?

Guest Editorial by GTB President Geoff Draper

At the DVN 2020 Munich Workshop, I summarised the initial results of my survey of DVN and GTB experts on the hot topic of regulation of new lighting functions. I organised the survey because, honestly, I was surprised to read in the [DVN Report](#) on The Future of Exterior Lighting that *"The speed of lighting innovation is not synchronised with the speed of approval by regulatory bodies. Worldwide automakers and tier-1s expressed their severe concern about the speed of movement of regulation versus their investments necessary in innovations."* I did not share the industry scepticism and believed the situation was more positive. The small number of responses to the survey may be an indication that the majority of worldwide automakers and tier-1s are not sufficiently concerned to take time to contribute to the survey!

The regular DVN regulatory sessions were launched in 2012 and initially interest in the topic was low, despite many complaints from industry that regulations were blocking innovation. In the subsequent DVN Workshops, we discussed how we could facilitate innovation. We supported the progress of the simplification of the UN and Chinese regulations and we successfully engaged with senior regulators representing China, India, Japan, NHTSA, and UNECE, who personally spent their time to travel to join our workshops.

Good progress has been made—except in the USA—to reduce the regulatory burden for all stakeholders. GRE, the UNECE working party on lighting and signalling, is working to produce technology-neutral and performance-based requirements suitable for type-approval and self-certification systems. Sadly, the USA continues to sit out; NHTSA (alone) aren't engaging in this activity.

This week's In-Depth article is a synopsis of the responses to the survey of DVN and GTB experts. The outcome adds another perspective to the views recorded in the DVN Report. It reveals an understanding that not all of the industry's dreams of unfettered freedom to innovate can be realised, but certainly some regulations need to be amended to be more innovation-friendly. There is a proposal for GTB to lead the global lighting community to transparently engage industry experts and regulators because, as one respondent in the survey pointed out, effective "changes are not conceived behind closed doors".

It is encouraging that the survey reveals strong support for GTB as the unique NGO capable of building the necessary bridges with regulators. The results of the survey provide valuable input to the GTB process currently underway to develop strategy for the next decade. Even in these challenging times it is important that GTB be strongly supported by its members; it is clear that when the recovery does start, innovation will need good, supportive regulation. GTB is continuing to operate using WebEx meetings with good participation from its 18 national delegations and, for the sake of all stakeholders, I hope that this support continues.

Hopefully, you will find this synopsis helpful. I invite you to please share any comments that you may have [with DVN](#). My own dedicated [email channel](#) also remains open if you wish to privately share comments with me. Any comments I receive will be used to update my anonymised synopsis, as appropriate.

Despite the disappointingly sparse response to the survey, I sincerely appreciate the 35 experts who did take time to send me their comprehensive opinions.

A handwritten signature in blue ink, appearing to read 'G. Draper', is positioned above the typed name.

GEOFFREY DRAPER, [GTB](#) PRESIDENT

In Depth Lighting Technology

Innovation Leads; Regulation Lags



Special to DVN by GTB President Geoff Draper

Last December, DVN published my invitation for experts to participate in a confidential survey of opinions relating to the introduction of new lighting functions into regulations. The same invitation was also distributed to GTB experts. 35 responses were received from 7 automakers, 16 tier-1 and 10 tier-2 suppliers, and two testing services. Of these experts, 25 are associated with companies that contribute to both GTB and DVN activities.

This present report—also shared with GTB experts—provides a synopsis of the responses to the two main questions of the questionnaire:

- Do you agree, partly agree, or disagree with the following statement in the regulatory section of the DVN Report on The Future of Exterior Lighting

published on 23 July 2019?

"The speed of lighting innovation is not synchronised with the speed of regulatory approval. Worldwide automakers and tier-1 suppliers are severely concerned about the speed of regulatory evolution and its effect their innovation-related investments and activities."

• What actions should be undertaken by non-governmental organisations (NGOs) such as CLEPA (European Association of Automotive Suppliers), GTB (International Automotive Lighting and Light-Signalling Expert Group), IMMA (International Motorcycle Manufacturers Association), OICA (International Organization of Motor Vehicle Manufacturers), and SAE (Society of Automotive Engineers)?



Summary of Responses

Some of the wording in this synopsis may be difficult to read, for I have attempted to produce the synopsis of all the input received without substantially changing the text received; such changes might have altered the intended meanings of the individual contributors.

Regulatory Considerations

1. Generally, regulators have a conservative mindset. When they consider regulatory provisions for new functions, they are required to evaluate the consequences for road safety. Regulators do not just apply the conventional concept of safety, but need to look for potential wider implications. This is something for industry to consider. In particular, functions and technologies that will appear in the future cannot be considered with the same concept as before; for example technologies related to automatic driving. Lighting should not be considered for regulation in isolation; it is necessary to consider the laws and regulations relating to the whole vehicle, it is necessary to consider other vulnerable road users. Specifically, this has to be a performance-based approach.

2. The current reality is that manufacturers based in countries that strictly apply regulations are competing with manufacturers in countries where interpretation is much more flexible. The risk is that lighting innovation in mature markets, such as Europe/US/Japan, will be restricted and they are likely to become followers.

3. Some manufacturers do not understand that regulations have to be restrictive, to avoid solutions which can be legally approved but can lead to unsafe products. This is the case in the context of the type approval system, because once an approval is granted it is almost impossible to withdraw it and remove the product from the market.
4. Sometimes manufacturers are ahead in applying technological know-how using special national approvals and they risk not being able to conform with future regulations introducing the new technology. Sometimes regulators apply safety requirements that limit certain technologies to be exploited (e.g. by being design-restrictive, rather than focusing on performance; or costly because of sunset clauses in the regulations). Also, assessment procedures dictated by regulatory bodies can be complex and hence cost intensive. It often appears that the regulatory processes, especially changes in regulations, are not synchronised with the product life cycles that we see in the automotive market.
5. The leading manufacturers may hope for quick regulatory approval, but others who are carefully considering or are lagging behind the development, may not want it.
6. It should not be assumed that the regulations can be adapted as fast and flexibly as the innovations. As part of the innovation process, it is necessary to take existing regulations into consideration to determine how an invention can be introduced into the market. Sufficient studies of the real-world benefits and risks are needed before an innovation can be legalised. Therefore industry needs to be more efficient in respect to the time it takes to complete the necessary studies and share the results with the regulatory bodies.
7. There is a reluctance to implement UN and EU exemption procedures to allow new features onto the market whilst working on the adaptation of the regulations, probably due to "Dieselgate". It is important to avoid regulations which may open the way to a reduction in safety. There are instances where a regulation has been amended so that an OEM could introduce a function before it has been rigorously evaluated and additional corrective actions have subsequently been required.
8. Features offering benefits to user appeal and/or comfort without impairing safety cannot be implemented without changes to regulations. Many new functions are being proposed that are for marketing reasons and offer no safety. We must consider the needs of the public, the authorities, and common sense.

Actions to be Considered—How to work with Regulators

The points summarised below are based on opinions received from respondents to this survey. This is not a statement concerning procedures actually being followed by GTB, or of GTB's future intentions.

1. NGO's representing automakers and tier-1 and -2 suppliers should combine their resources to develop recommendations and plans for adaptation of the regulations and jointly approach the regulators.

2. The focus should be on GTB, as the unique NGO representing auto-lighting experts. It is a major advantage that GTB includes all stakeholders (vehicle manufacturers, system suppliers, light source manufacturers, testing laboratories, academia, and some regulators). GTB is consensus based, striving for the goal of developing a common understanding and improving road safety by updating regulations and standards to the latest technology status.

GTB should

- consider creating a focussed lighting community in each of its main regions (Asia, Europe and North America) to meet and gather input for the GTB committees to develop a common or harmonised understanding of the issues.
- develop closer coöperation and seek more meetings with the international regulatory bodies, particularly USA and China, to discuss and agree guidelines, show safety advantages with results of studies and independent research, and identify future potential of lighting innovations, as the basis for decision making.
- consider organising regular seminars to focus on innovation and high-tech development to aid the development of implementation plans to be presented to Regulators. Regulators, automakers, and suppliers should be openly invited because changes are not conceived behind closed doors.

Comments on the Outcomes of the Survey

This exercise has provided an interesting insight into the opinions associated with innovation, regulation, and the constant complaints that the updating of regulations to incorporate new functions is too slow.

I did not share the industry scepticism and believed that the situation was more positive. The small number of responses to the survey suggest to me that generally, the world's automakers and suppliers who are part of the DVN / GTB community are not particularly concerned. This was an opportunity for companies to explain their concerns and support my initiative to understand the real situation, but very few did so.

In my opinion the UN Regulations are innovation-friendly, but the lack of interest by the USA authorities is blocking innovation, even where there is a clear safety benefit. However, innovation will only be considered by regulators if it addresses safety issues.

China is not a signatory to the UN 1958 agreement, and operates its own GB mandatory standards system that presents problems for manufacturers wishing to market European technologies in China. Here the problem is one of synchronising the Chinese GB Standards with the progress of amendment of the technical requirements in the UN regulations. In principle the Chinese policy is to follow the UN technical requirements, but there is a time lag of at least five years between the publication of the revised GB standards.

Other countries not applying the UN 1958 agreement, such as South Korea and India, are generally following the amendments of the UN Regulations. However, as they incorporate the technical requirements into their own systems there are some administrative delays to be expected.

As I have been arguing for many years, if the world's automakers and suppliers want a level playing field, with common innovation-friendly technical requirements irrespective of the regulatory system that applies them, our global lighting family must work with one voice to positively engage with the regulators. This implies that:

- An initiative must be proposed at the UN World Forum in Geneva (WP.29 and GRE) under the UNECE1958 and 1998 agreements with particular focus on the participation of the USA and China.
- The objective will be that all administrations signatory to the 1958 or 1998 agreements commit to establishing common technical requirements developed by GRE and incorporating them into their type approval, certification, or self-certification systems.
- As indicated by this survey, GTB are well placed to introduce this initiative to WP.29 and provide the technical input to GRE but this can only succeed if GRE has the active support of the automakers and tier-1 suppliers.

Lighting News

Ecomotion: Startups Present Innovations In Virtual Conference



The banner features a collage of images including a colorful geometric pattern, a night cityscape, and a close-up of a car's interior. The central text reads "EcoMotion 2020" in a stylized font, with "Breaking Through Mobility Innovation" written below it. To the right, a blue banner displays "MAY 19, 2020" and a pink banner below it says "REGISTRATION IS OPEN!". At the bottom right, the website "www.EcoMotionWeek.com" is listed. The footer contains logos for the Fuel Choices and Smart Mobility Initiative, the Ministry of Economy and Industry, and the Israel Innovation Institute.

EcoMotion 2020
Breaking Through Mobility Innovation

MAY 19, 2020
REGISTRATION IS OPEN!
www.EcoMotionWeek.com

Fuel Choices and Smart Mobility Initiative | Ministry of Economy and Industry | ISRAEL INNOVATION INSTITUTE

EcoMotion is a JV of the Israeli Innovation Institute, the Smart Transportation Administration and the Ministry of Economy. They presented last week a one-day virtual event dedicated to innovation in smart mobility.

EcoMotion brings together young and experienced entrepreneurs, market leaders, international and local industry companies, technology-oriented people, policy makers, academic researchers, and investors. Here we highlight some of the participants innovating in fields relevant to the DVN community.

Adasky develop and manufacture intelligent, high-resolution thermal sensing systems (LWIR) for automated vehicle safety and perception applications as well as smart city roadway solutions.

Autotalks, a V2X chipset leader, help reduce collisions and improve mobility with their global V2X solution, supporting both DSRC and C-V2X.

BrightWay introduced the world's first automotive gated camera for ultimate vehicle vision in any dark condition, including night, rain, fog, snow, and glare.

Cognata are a leading global supplier of large-scale automotive simulation for ADAS and autonomous vehicles.

Eye-Net Protect is a cellular-based V2X solution that can save lives and reduce the rate of accidents.

Foresight, a subsidiary of Magna BSP, design, develop, and commercialise 3D, multi-camera-based ADAS.

Ihead develop precipitation sensors for automatic control of windscreen wipers. Their product is a rain sensor for attachment to a windshield to detect raindrops, snow, and frost on the surface of the glass.

Innoviz are a leading provider of high-performance, solid-state lidar sensors and perception software that enable the mass production of autonomous vehicles. **Innoviz** is the first automotive-grade, solid-state lidar provider to be selected by a major automaker (BMW) for the mass-production of Level 3-5 autonomous vehicles.

Lidwave have developed affordable 3D sensors from a novel physical solution.

Jungo Connectivity offer CoDriver, an innovative camera-based driver monitoring solution using state-of-the-art deep learning, machine learning, and computer vision algorithms

Maradin offer proprietary MEMS-based scanning solutions serving as core for HUDs, exterior and interior lighting systems, laser headlamps, and lidar systems.

Opsys' scanning lidar technology is based on integrated VCSEL 2D arrays and single-chip SPAD backplanes for a scanning, fully addressable matrix lidar with no moving parts.

Newsight Imaging, who recently entered a collaboration pact with ZKW, develop CMOS image sensor-based chips for high-volume manufacture of visual safety solutions such as a pulsed lidar system for ADAS and AV.

Oryx Vision develop solid-state depth-vision solutions for AVs. Oryx's depth sensor can detect tiny objects 150 metres away, works well in the dark, and isn't blinded by the sun or extreme weather.

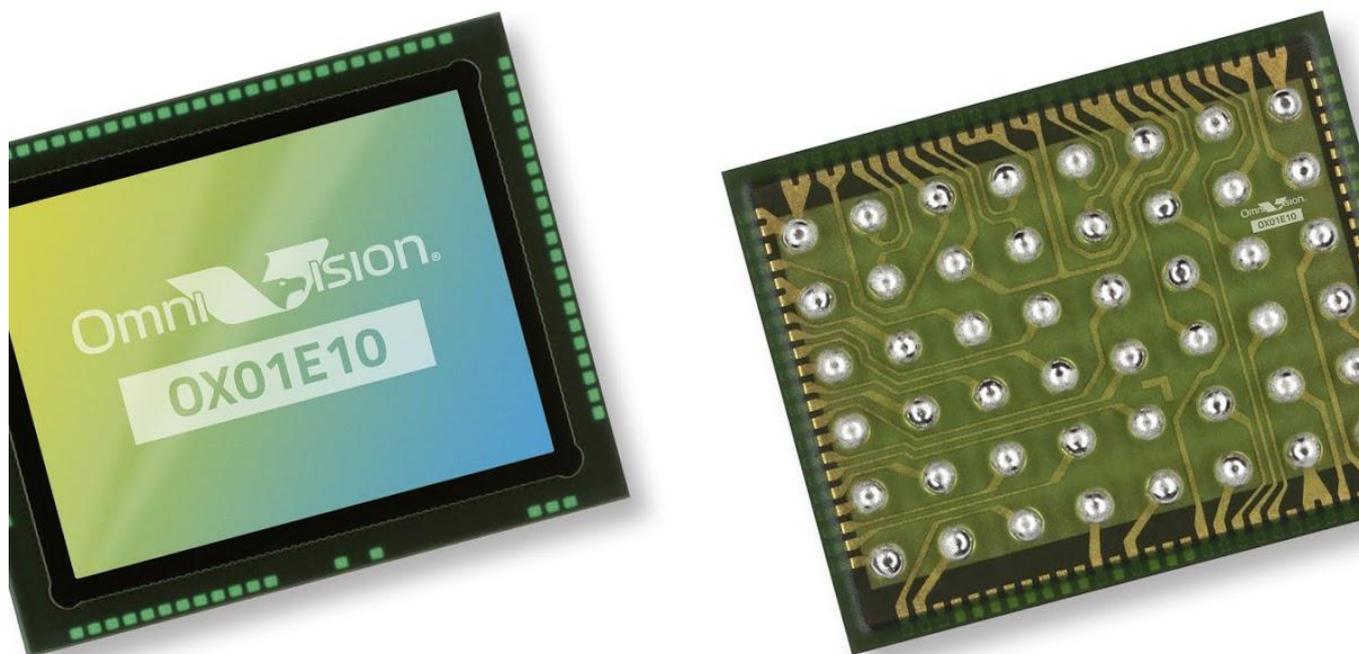
Ride Vision offer an ADAS for motorbikes, fusing computer vision and deep learning algorithms to predict and alert on upcoming collisions, without disturbing riders' focus.

Tactile Mobility provide tactile sensing and data by leveraging vehicles' embedded sensors to collect real-time data to feel the road under their tires.

Trieye have a camera that can see in common low visibility scenarios—fog, nighttime, haze, dust and other suchlike—with a unique semiconductor design for mass fabrication of short wave infrared (SWIR) CMOS-based sensors.

VayaVision technology enables 3D sensing and cognition providing lidar-comparable data quality at camera-comparable cost.

Automotive Image Sensor Optimised For Low Light



OmniVision Technologies have expanded their Nyxel NIR technology into the automotive market with their new 2.5 megapixel OX03A2S image sensor designed for exterior imaging applications that operate in low- to no-ambient-light conditions within 2 metres of the vehicle.

Automotive cameras using the OX03A2S will require less illumination, thus reducing materials cost and overall power consumption. Additionally, this sensor has a 1/2.44" optical format and comes in an unusually small a-CSP package to keep cameras out of sight and improve styling.

While this RGB-IR sensor is primarily intended for day and night machine vision applications, it can also provide viewable IR-enhanced RGB images during daytime conditions. Nyxel technology also enhances RGB image captures in bright conditions by improving sensitivity. This provides automotive designers with the flexibility to display a high quality, NIR-enhanced, viewable RGB image during the day, and a high quality machine-vision image in both day and night environments. This new OX03A2S image sensor is available now, and is AEC-Q100 Grade 2 certified.

Curved LED Screen Brings Crashing Waves to Seoul



Massive waves appear to crash in what looks like a giant tank—but it's actually a giant LED video screen wrapping round the SMTown Coex Artium building in South Korea. The huge wave animation, which can be [seen online](#), is created by d'strict, a digital technology company based there in South Korea, bringing a vivid wave image into the Seoul city center.

The curved LED screen is 80 metres wide and 20 tall. Samsung installed the video wall as the façade of SMTown Coex Artium in March 2018.

The digital billboard is part of the project by Korea International Trade Association and Gangnam District aiming to develop a Korean version of Times Square, named the K-pop Square. So far, six large outdoor LED screens have been installed in the area.

Apart from presenting digital artworks, the LED screens show public content, K-pop videos, and advertisements.

Hella Strengthens Liquidity With New Credit Line



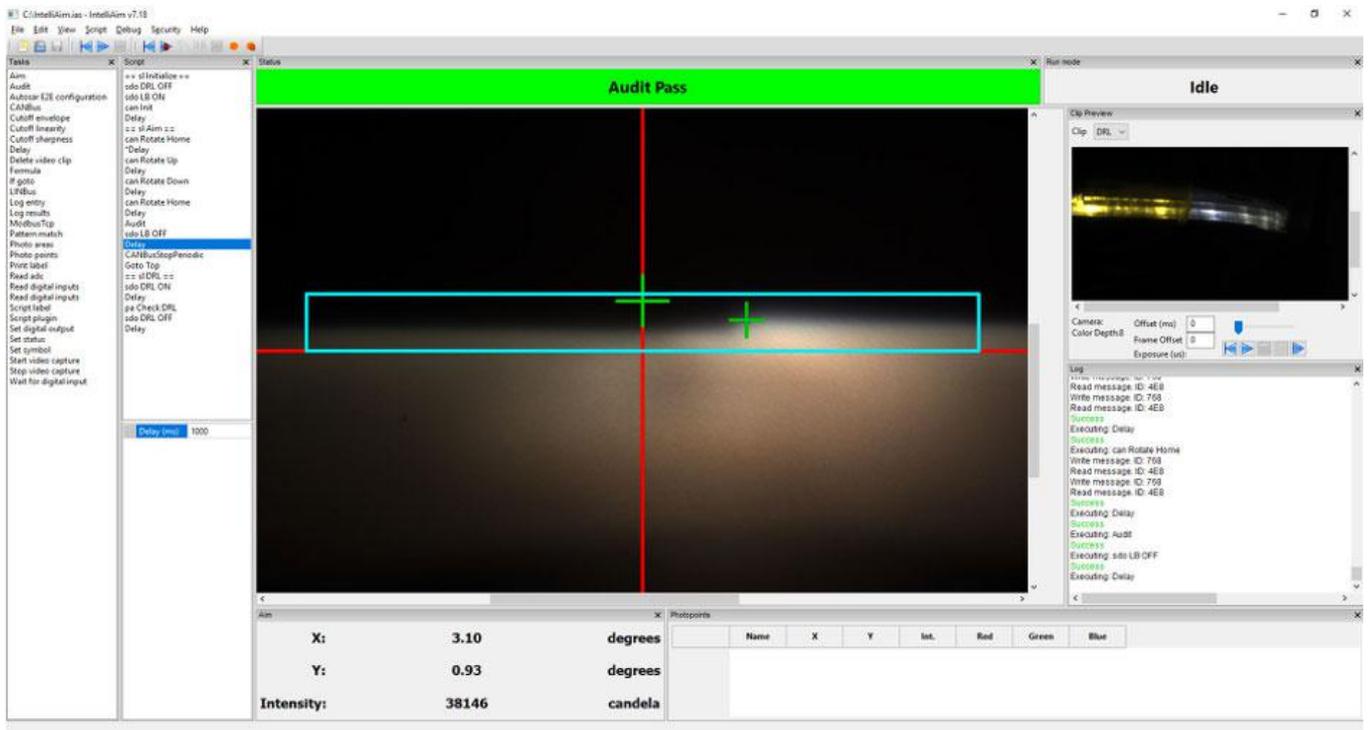
Technology with Vision

Hella have concluded a new syndicated credit line of over €500m with a term until June 2022 and an option to extend the term by one year. With the new credit line, the company are strengthening their liquidity and rating. The new credit, being made available by seven financial institutions from the existing core banking group, was completed within a few weeks.

"In view of the high level of uncertainty caused by the worldwide COVID-19 pandemic and the resulting consequences for the global automotive industry, we have created the new credit facility as an additional precautionary measure despite the company's good liquidity situation," said Hella CFO Bernard Schäferbarthold. "We have thus further strengthened our financial flexibility and security and, with a financial cushion of now around €2bn in total, we are well positioned to successfully meet possible market challenges resulting from the COVID-19 pandemic."

Before the new syndicated credit facility was concluded, Hella already had cash and cash equivalents of around €1bn, and at the beginning of this past April had drawn down an existing credit facility of €450m for precautionary reasons.

Dajac's IntelliAim Update Released



U.S.-based vehicle lamp aiming and validation solution provider Dajac's IntelliAim product, previously [described](#) in DVN, has been updated and improved.

Video clip functionality has been added to validate features that are time dependent, such as lighting animations. Once captured, the video clip can be fed into any script and will be treated as if the video were being generated, live, by the camera.

There's a new motor upgrade option, as well. Dajac say in almost all cases, IntelliAim's standard brush-type DC motor control provides sufficiently precise lamp alignment. But sometimes tighter control is needed—and now Modbus TCP-controlled stepper motors make it possible.

Driver Assistance News

GM's 'Ultra Cruise' to Combat Tesla's Autopilot



GM are developing a new semi-autonomous driving system that's internally being referred to as "Ultra Cruise", a city-street-capable evolution of their current Super Cruise system that can operate on highways.

Being able to operate on city streets, as well as expanded motorway capabilities such as lane changing and negotiating exit ramps, would better position GM's technology against Tesla's Autopilot driver-assist system.

Tesla released the first version of Autopilot in 2015. GM launched Super Cruise two years later, and have been much more conservative than Tesla in rolling out technology of this nature. Unlike Autopilot, Super Cruise is limited to the limited-access freeways in the U.S. and Canada—more than 320,000 kilometres' worth—that have been mapped with high-definition lidar technology to assist the on-board system of cameras, radars and sensors. It also uses

facial recognition to identify whether the driver is paying attention so there's no need for drivers to touch the steering wheel while the system is operating.

GM announced plans earlier this year to expand Super Cruise to 22 vehicles by 2023, including ten models by next year.

Tesla Pedestrian Death Lawsuit Could Slow AD Innovation

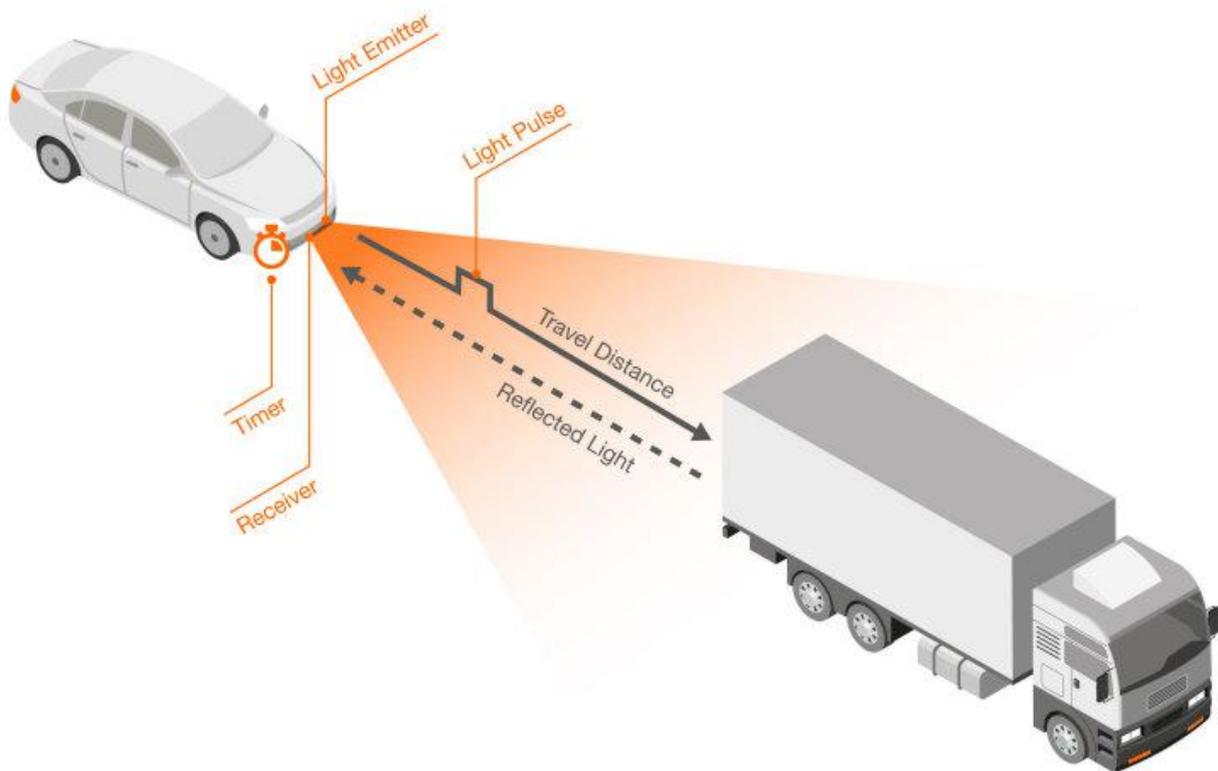


There's been a lawsuit filed against Tesla Motors in California, alleging that a Tesla car with Autopilot engaged killed a pedestrian two years ago—perhaps the first pedestrian fatality directly linkable to a Tesla running on Autopilot. In a long analysis in "Forbes",

AI and machine learning expert Lance Eliot [describes](#) the implications, interpretations, and potential ripple effects of this lawsuit (and philosophy and messaging not only of Tesla but of the automaker's notoriously scornful CEO Elon Musk) on AD and AV development beyond Tesla's own sphere.

Among other aspects, Eliot looks at the upshot of Musk's disdain for lidar in ADAS and AVs, particularly with regard to incidents like the alleged one at the centre of the lawsuit.

Osram, LeddarTech in Lidar Platform Pact

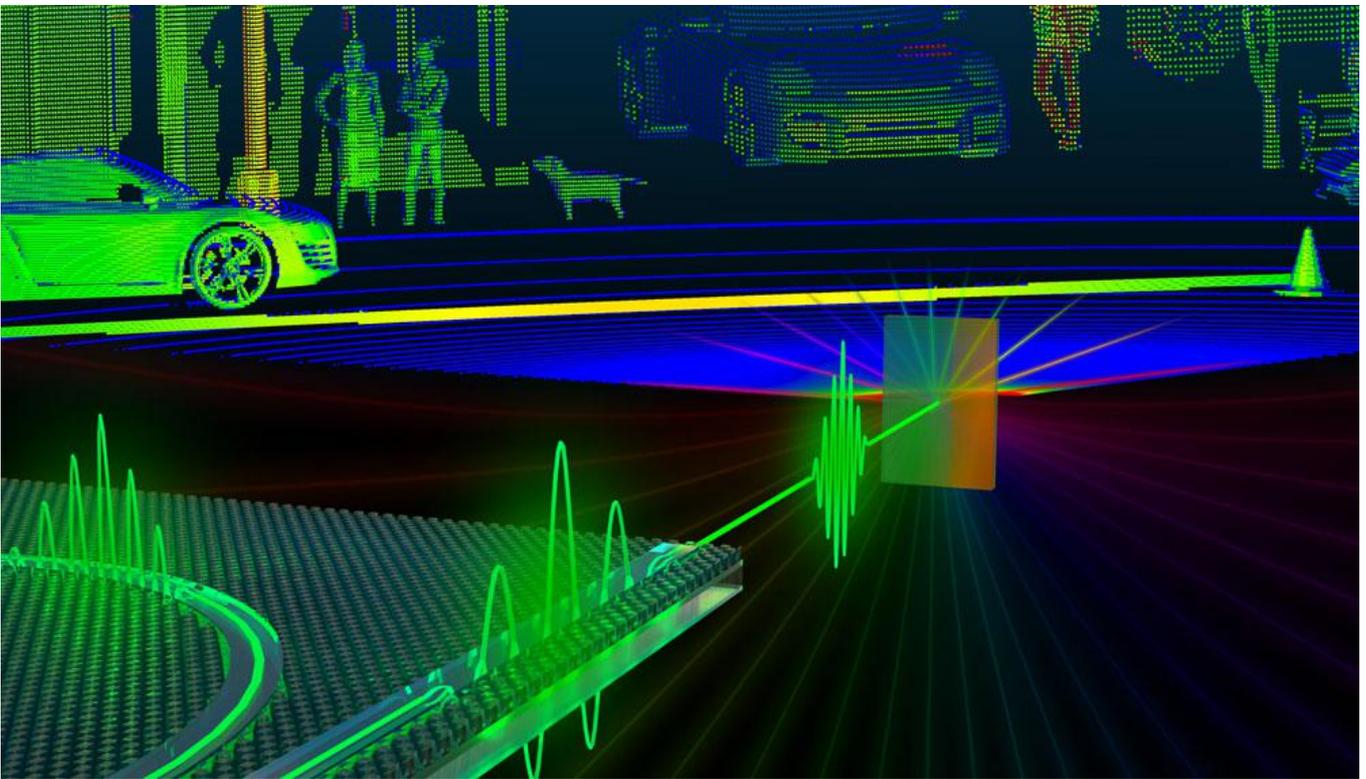


Canadian lidar technology developer LeddarTech have been working with their investor Osram on the "Percept" lidar platform; Osram are developing their first flexible solid state lidar, focusing on mid- to long-range sensing and targeting the automotive mass market.

The Percept lidar will comprise Osram's laser emitters and LeddarTech's processing software. Osram aim to develop a lidar with the measuring approach of ToF. The platform will serve long- and mid-range applications alike, just by changing optics and software. Osram say the 905nm EEL based Percept platform will allow affordable pricing due to high integration.

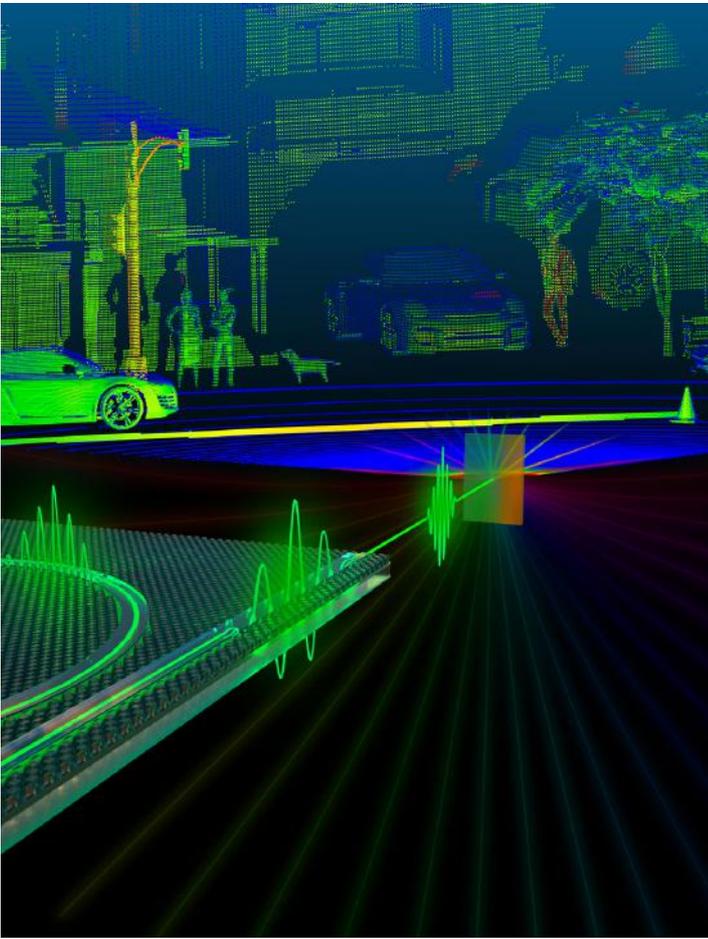
Osram bought a 25.1% stake in LeddarTech in 2017.

New Study Uses FMCW Lidar for Long-Range 3D Sensing



Researchers at the lab of Tobias Kippenberg at Ecole Polytechnique Federale de Lausanne have found a new way to implement a parallel FMCW lidar engine by using integrated nonlinear photonic circuitry. They coupled a single FMCW laser into a silicon-nitride planar microresonator, where the continuous wave laser light is converted into a stable optical pulse train due to the double balance of dispersion, nonlinearity, cavity pumping and loss. The study has been published in Nature.

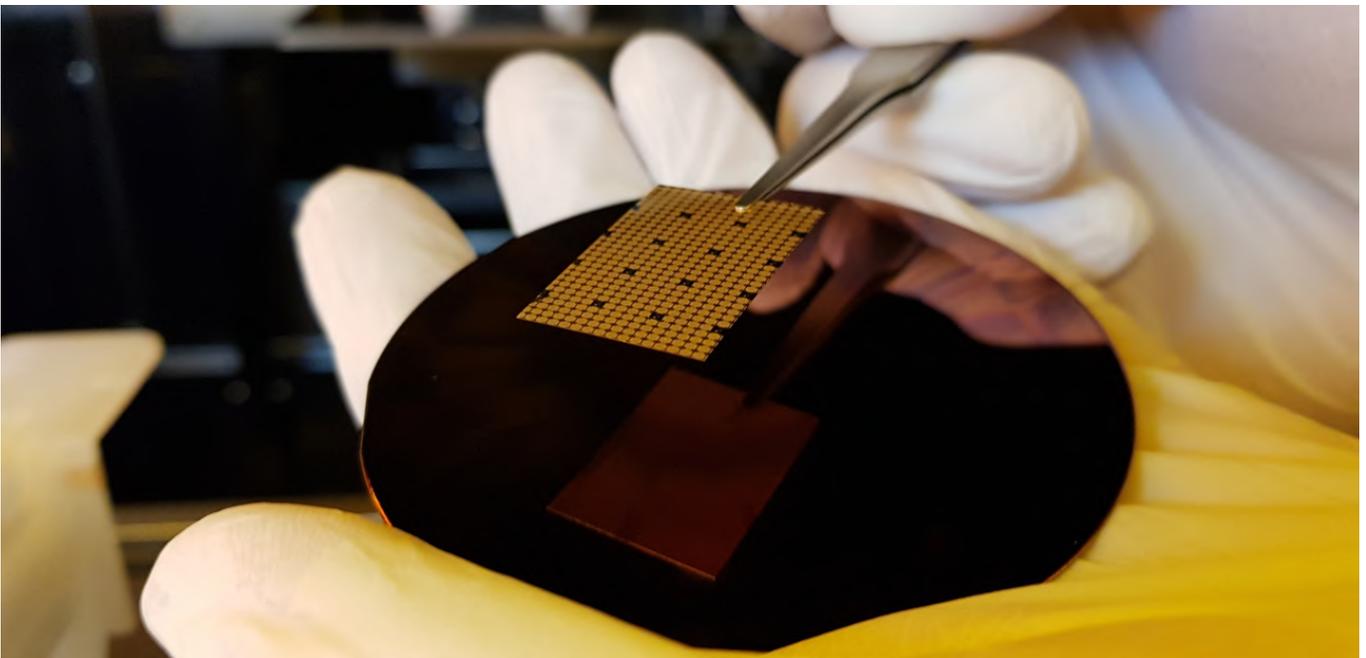
Coherent laser ranging, also known as FMCW lidar, emits linear optical frequency chirps. Heterodyne mixing with a replica of the emitted laser light maps the target distance to a radio frequency. Coherent detection has many inherent advantages such as enhanced distance resolution, direct velocity detection via the Doppler effect, and imperviousness to sunlight glare and interference. But the technical complexity of precisely controlling narrow-linewidth frequency-agile lasers has so far prevented the successful parallelization of FMCW Lidar.



"Surprisingly, the formation of the dissipative Kerr soliton does not only persist when the pump laser is chirped, but transfers the chirp faithfully to all the generated comb teeth," says Johann Riemensberger, postdoc in Kippenberg's lab and first author of the study. The small size of the microresonator means that the comb teeth are spaced 100 GHz apart, which is enough to separate them using standard diffraction optics. Because each comb tooth inherits the linear chirping of the pump laser, it was possible to create 30 independent FMCW lidar channels in the microresonator.

Each channel is capable to measure distance and velocity of a target simultaneously, while the spectral separation of the different channels makes the device immune to channel crosstalk, as well as a natural fit for co-integration with recently deployed optical phased arrays based on photonic integrated optical grating emitters. This work paves a way for future widespread application of coherent lidar in autonomous vehicle applications.

\$8m Investment for Korean Lidar Startup



Korean lidar sensor startup SOS LAB has secured series A+ investment totalling USD \$8m, starting from a lead investment by the Korea Development Bank, bringing the company's total capital raised so far to \$14m. Despite a decline in general economic activities due to COVID-19, SOS LAB successfully attracted the investment and have now unveiled their plans for the commercialisation of lidar.

SOS LAB have a MOU with ON Semiconductor; the two companies aim to enhance lidar technology commercialisation in the automotive and smart factory markets.

In addition, SOS LAB have built partnerships with automakers and electronic component manufacturers for the development of lidar, and are expressing strong confidence about the commercialisation of car lidar sensors next year. That would be an expansion of their present lidar activities, which include supplying security-lidar to customers like the Busan Port Authority in South Korea and targeting a wider range of applications in security, robotics, industry, and smart city.

General News

Aston Martin's Palmer said to step down as CEO



ANDY PALMER

Aston Martin CEO Andy Palmer left the automaker as part of a management shake-up, the *Financial Times* reported, citing people with knowledge of the move.

The company named today 25 May, Tobias Moers, CEO of Mercedes-AMG, as Palmer's replacement..

Daimler owns a 5% stake in Aston Martin and supplies the automaker with Mercedes-AMG engines.

Palmer joined Aston Martin in 2014 after working for Nissan for 25 years, rising to become chief planning officer and a key lieutenant of former Nissan Chairman Carlos Ghosn.

Aston Martin's shares have fallen by more than 90% since its initial public offering in 2018 as the company was hit by oversupply to its dealerships, and a global slowdown among luxury buyers.

The automaker booked a \$146 million loss in the first three months, in part because factories and dealerships were forced to closed due to coronavirus. Aston Martin said in a statement that it is reviewing its management team and will make an announcement when appropriate.

Japanese Makers to Keep Spending on Advanced Tech



AKIO TOYODA

Toyota, Honda, and Mazda all intend to keep stoking their heavy spending on costly next-generation technologies, even as the COVID-19 pandemic inflicts financial pain on them.

Toyota saw net income tumble 86% in 1Q20, but President Akio Toyoda (photo) said it would be shortsighted to try for short-term savings by cutting back on funding advanced research. "I sense that there seems to be much talk about a V-shaped turnaround," Toyoda said at his company's earnings announcement, held virtually over Zoom. "By deciding to stop various things, an individual company can turn its results around. "It bothers me that such action often seems to be praised," he said. "That's not right. This is how I feel."

Honda's results included a net loss, but reserves are holding up and the company are keeping their focus on the long-run game of autonomous,

electrified, and connected vehicles "To survive, we will continue to invest in the next-generation technologies at all cost," Honda CEO Takahiro Hachigo said last week while announcing his company's loss. "We have no intention of scaling it down".

Mazda—despite a net loss of USD \$188m in 1Q20 and a 20% slump in global sales—still plan to carry on funding innovation. Senior Managing Executive Officer Akira Koga says the company "will not relent in our investment in development and facility for our future growth, we will continue and step it up."

Exec Wants to Bring 'Stability' to Audi R&D



HANS JOACHIM ROTHENPIELER

Extract of an article from Automotive News Europe

Audi's rise in the 2010s coincided with a companywide commitment to provide, as the brand's motto states, *Vorsprung durch Technik* ("progress through technology"). But Audi has had three CEOs and five R&D chiefs in less than a decade. Now comes Board Member for Technical Development Hans-Joachim Rothenpieler, and he wants to calm the turmoil.

In an interview with Automotive News Europe, Rothernpieler shared some thoughts we find particularly compelling:

"Constant turnover is tremendously problematic and negative, particularly when it comes to engineering. This has come to an end. I have been in my position for more than a year and expect to be here for a long time, with the aim of restoring stability and continuity to Audi's technical development with a clear strategy and sustainable decisions.

"The euphoria in the auto industry around Level 3 has subsided substantially. We are still having an extensive dialogue with the authorities regarding the complete approval of these functions. Currently, there is no legal framework for Level 3 automated driving and it is not possible to homologate such functions anywhere in the world in a series production car. We still believe in automated driving technology and we were the first to develop this kind of functionality for a series introduction.

"My personal view is that China is a significant driving force in the field of automated driving technology. Audi is working closely in this area with local partners and authorities. As is the case everywhere, a comprehensive approach involving all stakeholders is necessary for automated driving."

Israel is Global Hub for Transport Tech: Former Opel CEO



KARL -THOMAS NEUMANN

In Germany, Karl-Thomas Neumann sees a country basing its next-generation mobility culture around traditional cars. In Israel, he sees one formulating future plans around a variety of transportation modes.

The longtime automotive executive lamented Germany's lack of vision and praised Israel's efforts during remarks at the virtual EcoMotion mobility tech conference.

"In Germany, we believe mobility is cars, and we think we have to protect the auto industry and the notion that you own your own car", he said. "There's no city in Germany with a strong vision of getting rid of cars and creating the next level of mobility and transportation".

Neumann—former CEO at Continental, Opel, and Volkswagen China—has been paying close attention to the startup ecosystem and mobility technology emerging from Tel Aviv. He believes Israel has emerged as a global hot spot for transport technology, thanks to the country's combination of an educated work force, entrepreneurial culture, and access to funding.

Tel Aviv is "creating a test bed and a place where you can demonstrate these technologies, and becoming a model for other cities in the world," he said. "That enables startups to do things here they cannot do in other places. That's really important for setting a good base for automotive and mobility startups".

Porsche to Put Israeli AI Tech in Future Cars



Tactile Mobility's technology lets cars "feel" the road by gathering real-time data from non-visual sensors, turning it into actionable information.

Porsche will incorporate technology from the Haifa-based startup in future vehicles, the companies announced at the eighth annual EcoMotion Conference.

Tactile CEO Amit Nisenbaum said, "We are very proud to announce that we will embed our software in Porsche vehicles in order to make them smarter, more enjoyable to drive and safer to drive".

Tactile Mobility's technology can analyse data from a car's sensors and use artificial intelligence to improve the vehicle's performance. The real-time data provides actionable information such as road quality and tire traction. Porsche does not plan to use the technology to create a self-driving car, but rather to serve as an aid to drivers.