DrivingVisionNews.com

Tue, 14 December 2021 Weekly Newsletter NEWSLETTER #729

Editorial

Thank You GTB!

Below, in the In-Depth section, you will find the summary of the 131st GTB Session that had a participation of 80 experts attending live in Berlin and virtually from around the world.This summary provides me with an opportunity to share my conviction about the importance of GTB to innovation and its impact upon road safety.

GTB was created in Lucerne, 70 years ago in September 1951 and in May 2022 will reach the 70th anniversary of its first working meeting, held in Brussels. During its first 25 years, before the creation of GRE in 1977, GTB drafted all the UNECE lighting and light-signalling regulations that were directly adopted by WP29. After the creation of GRE, GTB has continued to be the main contributor to the evolution of the UN Regulations that has followed the rapidly increasing rate of lighting innovation. Thanks to its various presidents, its secretaries, and its members, GTB has strongly supported industry and regulators to exploit the high level of innovation and dramatically improve safety of nightime driving.

At this point I want to thank Geoff Draper for his great job at GTB, trying session after session to obtain agreements to drive projects to a regulation. As President from 2008 to 2020, and with the support of GTB Secretary Davide Puglisi and GTB Vice President Bart Terburg, he led the modernisation and reorganisation of the GTB committees and working groups to improve the quality of proposals to update the regulations and reduce the time to develop them for consideration at GRE.

I also want to thank Davide Puglisi, the Secretary General who is doing a great job leading GTB and also as the secretary of the highly important GRE Informal Group working on simplification and harmonisation of the technical requirements.

Additionally I congratulate and I thank the new GTB Administrative Committee, led by Valter Genone who took his position as President in January 2021, and supported by Bart Terburg recently re-elected as Vice President and Davide Puglisi. They have ensured that GTB has achieved a soft transition following Geoff's departure.
Finally, I appreciate the excellent work of Timo Kärkkäinen, GRE Chairman, as he masterfully leads GRE and its heavy work program via virtual and hybrid meetings through the pandemic.

When DVN readers not involved in regulatiory matters follow the summary below, they will probably be surprised by the apparently weak decisions. But semester after semester, meeting after meeting, the decisions resulting from the GTB democratic processes open the way to regulatory changes to facilitate innovations whilst aiming to avoid negative impact upon safety.

As Davide Puglisi has emphasised in his recent lectures, GTB can work as fast as the UN regulatory process will allow. Please, automotive industry leaders, help GTB to work efficiently by providing your active support, attending meetings, and facilitating decisions with high quality proposals instead of criticising GTB for being slow to act. The GTB job is difficult indeed, but its success is in your hands!

Sincerely yours

In Depth Lighting Technology

131st GTB session at Berlin + WebEx

From 15 to 19 November, GTB held its 131st plenary session in Berlin, Germany, with meetings of its General Assembly; Technical Steering Committee; Committee of Experts, and its Working Groups. It was a hybrid event to sidestep pandemic-related travel difficulties. 30 people attended in person from 10 delegations, and 50 people joined in via WebEx from the remaining GTB delegations.

Major topics and outcomes of the session

• Consolidated and updated versions of Regulation 48 (06 and 07 series) produced by the GTB Secretariat;
• Updated consolidations of all lighting UN Regulations will be produced and made available on the GTB website for all GTB members;
• GTB has adopted proposals to amend R48 to remove the minimum distance between the pair of front and rear position lamps; R65 to permit Category HT and X special warning lamps emitting light of different colours in the same way as category T, and R.E.5 for editorial corrections for usage of the term “lamp” and “light source”;
• Considered specific items and general topics that should be dealt with in Stage II / Step 2 of the simplification, focussed on installation matters, which will form the basis for GTB's input to the GRE-SLR sessions in 2022;
• Adopted a new meeting plan for 2022, subject to change according to the pandemic situation: a live/online hybrid first mini meeting in February for the working groups; a full in-person plenary session in June with a forum day open to GTB non-members, and an in-person second mini meeting in November for the working groups.

Main subjects and results of the Working Group meetings

WG Front Lighting devoted most of its time to discussing how to improve the proposal for driver assistance projections (recently adopted by GRE) on the basis of the comments made by the CPs (contracting parties). Debate centred round how to reintroduce the possibility for transforming the projections—a function not accepted by GRE—without causing disturbance or distraction for other road users. Special sessions

on driver assistance projections with interested GRE CPs may be organised in early 2022 to draft a proposal.

WG Installation discussed many items, including:
• Improvements to the definition of lamps in the shape of band or strip, to provide a simpler and technologically neutral definition. A task force on this subject has been established, to merge the different proposals presented for the next meeting;
• Flashing side marker lamps, to clarify the present requirements, also allowing for more flexibility. An agreement on the technical aspects was reached, on which a new proposal will be prepared for the next meeting;
• Ideas on reduction of power consumption: research studies on suitable solutions will be launched in the near future under the supervision of WG SVP and WG S;
• GTB Input to SLR Stage 2, Step 2 : will be maintained in the agenda for all 2022 meetings. The need for an improvement of the "apparent surface" definition, as prerequisite to the simplification discussion, and the intention to take this opportunity to also harmonise the requirements worldwide.

WG Safety and Visual Performance reviewed the user's guide for the Headlamp Safety Performance Rating (HSPR) and the associated software developed by the TU Darmstadt. This work was mainly based on the CIE TC 4-45 standard CIE S021/E:2011 "*Vehicle Headlighting Systems Photometric Performance - Method of Assessment*", updated by adding the evaluation method for ADB systems and a more suitable calculation method. The final version of the software will be made available to GTB by the end of January 2022 for review and comments. After GTB approval, the HSPR will be distributed outside GTB to promote this new comprehensive rating system.

WG Signal Lighting was mainly focussed on the definition of the necessary studies to support the introduction of the signalling projections. At the last GRE session, a presentation to introduce the subject was made (doc. GRE-85-38) and comments were received by CPs. It will be important to clarify that such projections are not intended to tell other road users how to behave but to increase the awareness of the existing signalisation to increase safety, especially for vulnerable road users.

TF Lighting and Visibility for Sensors reviewed the environmental and human-related external influences affecting sensors, causing a potential loss of their performance. The objective is to determine how sensors are affected by external influences, what is happening to their performance and define a way to guarantee a good level of the performance.

Next GTB Sessions (unless COVID new emergency situation will force us to change)**:**

7-10 February 2022	GTB Intermediate WG session, **Torino, Italy** (hybrid session)
3-17 June 2022	GTB 132nd session – **Stockholm, Sweden** (in person session)
November 2022	GTB Intermediate WG session, **The Hague, Netherlands** (in person)
2023	GTB 133rd session – **USA**
2023 / 2024	GTB 134th session – **Austria**

More information can be had on the **GTB website**.

Lighting News

Audi A8 Lights Lettering in DMD, LED, OLED

LIGHTING NEWS

The Digital Matrix LED headlamps in the new Audi A8 use 1.3-megapixel DMD technology, allowing for a polyvalent, morphing beam controllable with utmost precision. Among the new functions unlocked by this level of resolution: lane and orientation lights for highways. These are a carpet of light that illuminates the driver's own lane particularly brightly, making it easier to stay within the lines especially in difficult road construction sites.

The enhanced A8 comes with digital OLED rear lights as a standard feature. When ordering the car, there are two rear light signatures to choose from (plus a third on the S8). When the "dynamic" Audi Drive Select mode is chosen, the lights change to a wider signature that is only available in that mode.

In conjunction with the assistance systems, the digital OLED rear lights have a proximity indication feature: if another vehicle comes within two metres of a stationary A8 from behind, all the OLED segments are activated. Additional functions include dynamic turn signals, and Welcome and Farewell animated-light displays.

Newest Oslon is Brightest On the Market: AMS Osram

LIGHTING NEWS

AMS Osram say their newest Oslon Black Flat X headlamp LED is the brightest available from anyone.

In addition to the market-leading output of 460 lm at 1 A, the 1-chip variant is especially compact at just 3.75 × 3.75 mm. The special QFN platform simplifies thermal management, as well; heat sinks can be significantly reduced in size or even eliminated. The Oslon Black Flat X family's leadframe package also achieves a lower thermal resistance (R_{th}) than competing ceramic packages. Together with a special TiO_2 encapsulation, the black package of the LEDs delivers high contrasts of 1:200. Furthermore, the new LEDs give very homogeneous colour over a wide angular range. The Oslon Black Flat X family will start with a 1- and a 2-chip version; additional multi-chip versions will be added in mid-2022.

EOI Pioneer Expand in Michigan

LIGHTING NEWS

Michigan Governor Gretchen Whitmer joined a group of business, state, and local officials to celebrate the expansion of EOI Pioneer's operations in the village of Dundee, thanking the automotive electronics manufacturer for investing in Michigan. The project is expected to generate a total capital investment of USD $14m and create up to 195 new jobs with support from the Michigan Strategic Fund.

EOI Pioneer are a subsidiary of Excellence Optoelectronics, a Taiwan-based manufacturer of LED light sources and electronics assemblies for the automotive industry. EOI are seeing substantial growth in their global automotive business, and so created EOI Pioneer to begin manufacturing in North America.

The company plan to establish new manufacturing operations in an existing building at their facility in Dundee. The manufacturing area will be converted to electrostatic discharge and temperature- and humidity-controlled cleanrooms for a cutting-edge electronics manufacturing process to fulfill the rapidly growing automotive electronics demand.

EOI Chair and President Fanny Huang (photo, in centre with Gov. Whitmer) said "It's our goal to become one of the pioneers of innovative light sources in automotive industry, to create value to our customers, and to make a big contribution to the world."

Toyoda Gosei's Colourful New Interior LEDs

LIGHTING NEWS

Toyoda Gosei have developed full-colour LED lamps particularly well suited for vehicle interiors. Their hue can be changed freely from among 64 colours to suit the user's mood, and respond in various other ways to individual preferences.

Previous LED vehicle interior lamps produced slight differences in colour in different locations, but the new light achieves full colour with red, green, and blue LEDs in a single unit. At the same time, colour variance is minimised by incorporating an electronic component that controls the amount of light. This contributes to creating the colour the user desires in the vehicle space. These lamps are already in serial application on the new Lexus NX.

Faraday Future Pick HSL as Exterior Lighting Supplier

LIGHTING NEWS

Faraday Future Intelligent Electric have picked HSL as the lead exterior lighting supplier for their FF 91 luxury EV. The rear of the FF 91 will bear a 3D crystalline array with each individual LED being programmable, enabling customised lighting animations that can be uploaded to the vehicle at any time, with preset animations available at launch. Page Beermann, Faraday Future's design director, says “The exterior lights play a key role in the vehicle’s overall aesthetic, which is why we partnered with a distinguished supplier that has deep experience in premium exterior lighting. Details such as the FF 91’s rear 3D crystal-like array tend to be one of the last things finished in a car development program, but is one of the first things customers notice".

HSL CTO Mirko Bonvecchio says "Outfitting the FF 91 with our premium and innovative exterior lighting ensures its unique position among top luxury vehicles. The future forward design and the possible personalization of the lighting design is outstanding".

Faraday Future, *established in May 2014, are a global shared intelligent mobility ecosystem; internet and technology; AI product; software, and user-ecosystem company headquartered in Los Angeles, California. Since inception, they have implemented numerous innovations relating to their products, technology, business model, profit model, user ecosystem, and governance structure.*

HSL *supply intelligent lighting systems and high-performance components for leading exclusive car brands worldwide. With agile manufacturing, HSL enable fast market entries with a strong focus on individualisation and technical perfection. With automotive veterans expert in every facet of exterior lighting, HSL will work with FF throughout the production process to ensure a premium and innovative exterior lighting display.*

Clarience Buy LED Autolamps

LIGHTING NEWS

Clarience Technologies—corporate parent of Truck-Lite, Road Ready Advanced Telematics, and ECCO Safety Systems—now have acquired LED Autolamps, an Australian-based provider of commercial truck, trailer, and off-highway LED lighting solutions sold in Australia, New Zealand and Europe. Clarience say the purchase will bolster their presence outside North America just as electric and autonomous technologies begin to transform the global commercial transportation industry.

Clarience CEO Brian Kupchella says "The changes happening in commercial transportation today are driving our customers to think and act globally and we must respond. LED Autolamps helps us serve this growing base of global customers with the technologies and support, where and when they need it".

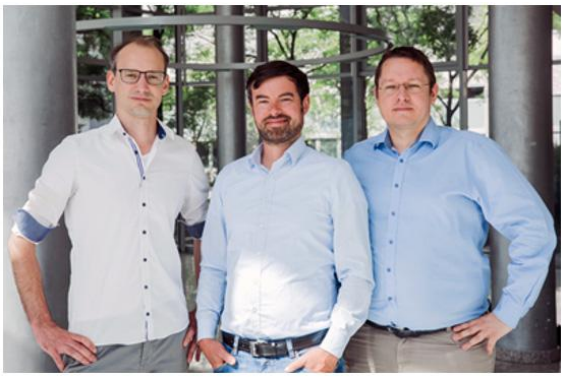
And LED Autolamps managing director Tony Ottobre says "Becoming a Clarience Technologies company allows us to join the forces with Truck-Lite and many other well-respected brands to bring new technologies and sales opportunities for both companies to market".

Driver Assistance News

Blickfeld Extend Funding, Shows 360° Concept

DRIVER ASSISTANCE NEWS

360° vision



Petit, Müller, Wojtech

Blickfeld—Founded by Mathias Müller, Florian Petit, and Rolf Wojtech in 2017—develop lidar sensors and perception software to provide high-resolution 3D environmental information enabling applications spanning autonomous transportation and mobility, through to smart cities, and industry.
The company have now announced extension of their Series A funding to USD $31m after attracting investment by New Future Capital, a private equity firm that provides growth capital. All existing investors also participated in the funding round.

Since the last funding round, Blickfeld have taken significant steps in launching products to market, including series production of their 3D-lidar sensors, Cube 1 and Cube Range 1, for multiple industrial applications. Furthermore, the company have executed multiple large-scale rollout projects. In addition to the company's current resellers in 13 countries including Germany, Canada, China, and Japan, the new financing round will support the opening of offices in the US and Asia. Early next year, Blickfeld will bring out new perception software technology with features including object detection, classification, tracking, and counting. Fields of application for this new product include industry, smart traffic, and security.

At CES 2022, Blickfeld plan to present a concept for seamless, almost invisible embedding of lidar sensors in automobiles. The concept is to reconcile technology and aesthetics. Blickeld's approach uses specially designed Vision Mini sensors to achieve seamless integration and aesthetically pleasing integration into the vehicle at multiple mounting positions such as front and rear lamps and sideview mirrors. By fusing the lidar signals, the arrangement enables full all-round visibility and thus represents an important building block on the road to safe driver-assisted and autonomous mobility.

World-First: Valeo G2 Lidar for L3 in New S-Class

DRIVER ASSISTANCE NEWS

The Mercedes-Benz S-Class is the first car in the world to be equipped with Valeo's 2nd-generation Scala lidar, which will support the S-Class' Level-3 autonomous driving capabilities. The car will be able to drive in conditionally automated mode under controlled conditions, such as on the highway and in dense traffic (currently possible up to a limit of 60 km/h). In conditionally automated mode, the vehicle takes full control of the driving, meaning the driver can temporarily take their attention off the road ahead. During highway journeys, conditionally automated mode gives the driver time to relax or focus on tasks other than driving. Authorized activities will include making calls, surfing the web, or reading emails all via the vehicle's infotainment system.

The world's subject matter experts—not including Elon Musk—all agree L3 automation can only be achieved using lidar technology combined with a series of sensors. Valeo's lidar is the first series-produced laser scanner in the world to equip vehicles already on the market and to meet the demanding specifications of the automotive market, especially in terms of reliability. It offers unique perception capabilities in various situations and all weather conditions, scanning the area in front of the vehicle 25 times every second. The device also combines a long detection range of over 200 metres, with a broad field of vision. More than 150,000 units have been produced since it was launched in 2017. Valeo's enhanced-performance, second-generation lidar hit the market this year.

The S-Class will also be the first car in the world to be equipped with Valeo's new lidar cleaning system. There's a de-icing feature, which works by heating the telescopic nozzle that sprays the cleaning fluid. The front of the lidar is cleaned by spraying a curtain of liquid across its entire surface, rather than just spraying from a single point, as with a traditional nozzle.

Mobileye Being Groomed for New Stock Offering

DRIVER ASSISTANCE NEWS

Mobileye are being readied for spinoff as a separate company via a public stock offering planned for the middle of next year. Owner Intel say they expect to retain a majority stake in Mobileye following the new stock offering, and for the two companies to continue as strategic collaborators.

Earlier this year, the Mobileye division of Intel shipped their 100 millionth EyeQ SoC. Intel CEO Pat Gelsinger noted that Mobileye "achieved record revenue year-over-year, with 2021 gains expected to be more than 40 per cent higher than 2020".

Since Intel bought Mobileye, the latter company's annual chip shipments, revenues, and employee headcount have all nearly trebled. Intel say their global reach; diversified supply chain; global manufacturing network, and expertise in both radar and lidar technologies will poise Mobileye for ongoing collaborative success.

Sony Technology Day Features Advanced Auto Lidar

DRIVER ASSISTANCE NEWS

Sony Technology Day was an online event to exhibit various Sony Group technologies. Eight of them, this year, under the theme of *technology that inspires emotion*, that connect the various businesses of the Sony Group and support the evolution of the company.
One was concerning Contribution to People, Society and the Earth with "Stacked SPAD depth sensor for automotive lidar" - enabling high-precision detection from the particles of light.

Sony introduced sensors that detect the distance to surrounding objects with high accuracy by capturing low levels of light energy. The sensors consist mainly of three elements: SPAD (Single Photon Avalanche Diode) pixels that capture light and convert it into electrical signals, Cu-Cu connections that transmit those signals, and logic chips which contain circuits that derive distance measurements from the signal. By using strengths cultivated in the development of Sony's CMOS image sensors, the sensors make fast, precise distance measurement from short to long distances with a single compact chip. the Sony Group aims to support a safe and secure mobility society by contributing to the evolution of automotive lidar for detection and recognition, as explained in an **online video**.

General News

Peugeot Will Be an EV Brand in Europe by '30

GENERAL NEWS

Peugeot CEO Linda Jackson says by 2030, all new Peugeot models released in Europe will be electric—though combustion-engine models will still be produced for markets outside Europe.

Peugeot's target date—like that of several other automakers—is before that of the EU's proposal to mandate only zero-emissions vehicles be sold in the bloc by 2035.

Other Stellantis brands have already pledged to launch only electric models, including DS (2026), and Opel (2028). CEO Carlos Tavares has said Stellantis are targetting more than 70 per cent of sales in Europe and more than 40 per cent in the U.S. to be low-emissions vehicles, either battery or hybrid electric, by 2030.

Stellantis Target Software Revenue Stream

GENERAL NEWS

Stellantis plan to generate around €4bn in additional annual revenues by 2026 and around €20bn by 2030 from software-enabled product offerings and subscriptions. The automaker say they expect to have 34 million connected vehicles in service by 2030 (up from 12 million now), and to deploy three new technological platforms powered by artificial intelligence: STLA Brain, STLA SmartCockpit, and STLA AutoDrive. Stellantis are extending existing partnerships with Apple's assembly partner Foxconn and Alphabet's Waymo self-driving unit to build the three new tech platforms by 2024.

The company also are planning to boost their number of software engineers to 4,500, excluding through partnerships, with a hiring push and a dedicated academy to retrain staff members.

By 2030, more than a fifth of automotive revenue will be software-derived, according to consultancy Capgemini.