Continental Presents Entire Ecosystem of High-end Automotive Light Solutions

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Near-field projection based on laser beam scanning technology offers maximum flexibility for dynamic projections

- Innovative software solution enables automatic leveling in low-beam mode

- New control units offer more flexibility for different requirement complexities

- Jean-François Tarabbia:

> We provide our customers with a real value-add for their lighting solutions

Shanghai, China, April 11, 2025. High-end light solutions and their contribution to better safety and improved driver experience will be at the forefront of Continental's presentation at Auto Shanghai from April 23 to May 2, 2025, in China. The technology company will showcase its full range of scalable automotive light solutions, from low-cost options like the Headlamp Control Module (HCM) Air control unit to high-performant software functions like automatic leveling of the low-beam mode, to unique premium solutions like the new near-field projection based on laser beam scanning (LBS). The technology significantly expands the possibilities of current projection methods through colors, a higher depth of field, and a better resolution.

> We offer our customers a full ecosystem of high-end automotive light solutions," says Jean-François Tarabbia, Head of Architecture and Networking Solutions at Continental. "From single actuators to full digital solutions including E/E integration and software, we provide a real value-add.

New laser-based technology expands options for near-field projections

With the LBS technology, Continental has developed an innovative, flexible and efficient light solution that further expands and improves the generation of full-dynamic projections in direct vicinity of the vehicle. With high resolution and a focus-free depth of field, it can project high-precision images or information like navigation guidance, safety alerts, and personalized driver messages onto the ground – even in color (RGB). Its high projection clarity, fast response speed, and stable display performance on different surfaces sets it apart from other technologies used for near-field projections. OEMs also benefit from the system's integration flexibility: only 40 x 50 x 30 mm in size, the LBS modules have a small footprint and can easily be integrated at every corner of the vehicle.

> Our commitment to Vision Zero means that we do not just want to improve safety for the people inside, but also for those around the car," explains Maximilian Austerer, Head of Innovations Light Solutions at Continental. "With the input of our customers, we have improved our existing system for near-field projection so that we can increase safety around the vehicle and reduce the number of accidents involving injuries even more.

Innovative software solution enables new functions

In addition to the hardware, Continental also provides the necessary Software as a Product (SaaP) for the smooth integration of new functions into vehicle light systems. For example, the sensor-fusion-based Automatic Leveling function for head lamps, legally required for all new car type registrations in Europe from 2027, enables manufacturers to reduce the number of ECUs and sensors in a car. The aim is to ensure that drivers have the maximum possible illumination distance in low-beam mode without glaring other traffic participants. For that, the Continental software algorithm with sensor-fusion technology evaluates acceleration and gyroscopic data to generate a control signal for the headlamp aiming corresponding with the vehicle pitch. By using the signals of already installed inertial sensors, the software-only solution can be provided at less weight, wiring effort, and costs. However, Continental also offers a stand-alone solution with a separate Automatic Leveling ECU that comes with its own suitable inertial measurement unit.

New control units for more flexibility and less weight

In addition to actuators and innovative software functions, Continental will also present various lighting control units. The HCM Air, for example, optimizes thermal design and offers more flexible channel configurations, thereby further enhancing lightweight construction and reducing system costs. It utilizes Continental's self-developed LED driver chip Celsius that meets fail-safe requirements across various application scenarios, achieves a power conversion efficiency of over 90%, enhances thermal dissipation capabilities, and offers configurable step-up/step-down modes as well as constant current/constant voltage modes.

For more sophisticated requirements, Continental offers the new Central Light Computer (CLC), an intelligent hub for advanced automotive lighting that processes vehicle signals like light requests or sensor data to control basic and high-definition light actuators, interactive social displays, dynamic interior ambient light actuators, and near-field projectors. Integrated software drivers enable seamless communication with fixed firmware Edge LCUs (Light Control Units). In combination with light-relevant software algorithms and software-less edge nodes, the CLC delivers scalable, premium light control, ensuring future-ready solutions for a holistic light experience.

Continental at Auto Shanghai 2025

Continental will showcase its cutting-edge technologies in the five focus areas of Software-defined Vehicles, Autonomous, Safe, Exciting, and Sustainable mobility at its booth #2BC009, Hall 2.2 at the National Exhibition and Convention Center (NECC), Shanghai, China, from April 23 to May 2, 2025.

Head of External Communications

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