Suppliers and vehicle manufacturers save time and costs:

Ibeo presents new ibeo.Reference system solution for validating vehicle sensors for ADAS and AD applications

Hamburg, May 18, 2021 - Hamburg-based automotive LiDAR specialist Ibeo Automotive Systems GmbH has developed a new automated total solution for the validation of sensors necessary for ADAS and autonomous driving. The ibeo.Reference toolchain also automates and specifies the manual data labeling-process, which is conventionally very personnel- and time-intensive, and thus ensures considerable time and cost savings with consistently high performance. Almost all conventional sensor systems can be referenced. With the ibeo.Reference system, Ibeo is responding to the high demand on the OEM and Tier 1 side in the race for ever more powerful systems.

Today and in the future, automated driver assistance systems (ADAS) and autonomous driving systems (AD) must be validated in a complex process before they ultimately can be installed in the vehicle, ready for series production. Regardless of the technology of the sensor system (camera, radar, or LiDAR), reference data is required for each system and must be compared with the data acquired during the test process. Ibeo’s recording system is installed on the vehicle alongside the manufacturer’s prototype system and records data in parallel. Furthermore, it can also be used to create scenarios for ADAS or AD algorithm-development.

The recorded data collected in validation drives can be in the low-to-mid thousands of hours. And for every hour of test driving, manual evaluation results in up to 300 hours of labeling activity – a Sisyphean task that is not only tedious and costly but may also be inaccurate in various areas. "Manual reconciliation of this data is currently a time-consuming and cost-intensive factor in many new developments," says Philip Neitzel, product manager at ibeo.Reference. To classify the large amounts of data recorded,
the industry traditionally uses outsourced service providers. In many cases, hundreds of employees manually evaluate every meter of road to determine whether the sensor being tested has detected cars, people, lane markings or guard rails, for example, to reconcile the data.

The ibeo Validation Bundle in Ibeo's new toolchain tackles this task: "As part of the ibeo Validation Bundle, we offer an automated overall solution in the form of the ibeo Auto Annotation Software, which algorithmically generates reference data from the incoming data. If required, these can then be manually processed to produce ground-truth data, i.e. data that fully represent the vehicle environment in a realistic manner. In this way, we are solving one of the main challenges we currently face on the way to a series product," Neitzel continues.

**Hardware and software from a single source**

With the new ibeo.Reference toolchain, the user receives all of the necessary building blocks for sensor validation from a single source:

- The recording system, consisting of hardware and software, for running in the reference data, which now also supports selected third-party LiDAR sensors for the first time

- ibeo Auto Annotation as scalable, cloud-compatible software for automated creation of labeled reference data

- Editors for further processing of reference data to ground-truth data

"It was very important for us to offer a complete system that covers almost all challenges on the customer side in terms of how the LiDAR components can be combined, and that is regularly expanded technically. In this way, we help our customers to develop faster, more precisely and more cost-effectively and thus come a great deal closer to the overall vision of fully automated mobility," concludes Neitzel.
The ibeo. Reference toolchain is available now. In addition, Ibeo offers a test license, which can be requested at support@ibeo-as.com.

About Ibeo

Ibeo Automotive Systems GmbH has established itself as a global technology leader for LiDAR sensors (English acronym for Light Detection And Ranging) and the associated products and software tools. This technology is used as an assistance system in cars and in the field of autonomous driving. It is Ibeo’s goal to reinvent mobility by enabling cars to become cooperative partners in the driving process, so making transportation safer. In total, Ibeo employs more than 400 people at its sites in Hamburg (Germany), Eindhoven (Netherlands) and Detroit (USA). Since 2016, the automotive supplier ZF Friedrichshafen AG has held a 40 percent share in Ibeo: initially via Zukunft Ventures GmbH, and since 2019 via ZF Automotive Germany GmbH, a wholly owned subsidiary of ZF. Ibeo celebrated its 20th anniversary in 2018.

For further information, visit: www.ibeo-as.com.

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