# Continental and AEye Join NVIDIA DRIVE Sim Sensor Ecosystem, Providing Rich Capabilities for AV Development

The companies' long-range lidar is now supported in DRIVE Sim, delivering intelligent sensing technology using a physically based simulation platform.

Author: Katie Burke

Autonomous vehicle sensors require the same rigorous testing and validation as the car itself, and one simulation platform is up to the task.

Global tier-1 supplier Continental and software-defined lidar maker AEye announced this week at NVIDIA GTC that they will migrate their intelligent lidar sensor model into NVIDIA DRIVE Sim . The companies are the latest to join the extensive ecosystem of sensor makers using NVIDIA's end-to-end, cloud-based simulation platform for technology development.

Continental offers a full suite of cameras, radars and ultrasonic sensors, as well as its recently launched short-range flash lidar, some of which are incorporated into the NVIDIA Hyperion autonomous-vehicle development platform.

Last year, Continental and AEye announced a collaboration in which the tier-1 supplier would use the lidar maker's software-defined architecture to produce a long-range sensor. Now, the companies are contributing this sensor model to DRIVE Sim, helping to bring their vision to the industry.

DRIVE Sim is built on the NVIDIA Omniverse platform for connecting and building custom 3D pipelines, providing physically based digital twin environments to develop and validate autonomous vehicles. DRIVE Sim is open and modular — users can create their own extensions or choose from a rich library of sensor plugins from ecosystem partners.

In addition to providing sensor models, partners use the platform to validate their own sensor architectures.

By joining this rich community of DRIVE Sim users, Continental and AEye can now rapidly simulate edge cases in varying environments to test and validate lidar performance.

AEye and Continental are creating HRL 131, a high-performance, long-range lidar for both passenger cars and commercial vehicles that's software configurable and can adapt to various driving environments.

The lidar incorporates dynamic performance modes where the laser scan pattern adapts for any automated driving application, including highway driving or dense urban environments in all weather conditions, including direct sun, night, rain, snow, fog, dust and smoke. It features a range of more than 300 meters for detecting vehicles and 200 meters for detecting pedestrians, and is slated for mass production in 2024.

With DRIVE Sim, developers can recreate obstacles with their exact physical properties and place them in complex highway environments. They can determine which lidar performance modes are suitable for the chosen application based on uncertainties experienced in a particular scenario.

Once identified and tuned, performance modes can be activated on the fly using external cues such as speed, location or even vehicle pitch, which can change with loading conditions, tire-pressure variations and suspension modes.

The ability to simulate performance characteristics of a software-defined lidar model adds even greater flexibility to DRIVE Sim, further accelerating robust autonomous vehicle development.

‘’With the scalability and accuracy of NVIDIA DRIVE Sim, we’re able to validate our long-range lidar technology efficiently,’’ said Gunnar Juergens, head of product line, lidar, at Continental. ‘’It’s a robust tool for the industry to train, test and validate safe self-driving solutions’’

Original URL: https://blogs.nvidia.com/blog/2022/09/22/continental-aeye-drive-sim-sensor-ecosystem/