



Velodyne and Ansys Team Up to Transform Autonomous Vehicle Safety

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Ansys speeds lidar development to enhance autonomous driving hazard recognition

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Ansys_High_fidelity_Camera_simulation

/ Key Highlights

- **Ansys and Velodyne are developing highly accurate physics-based models of Velodyne's lidar sensor to detect and track driving hazards**
- **The collaboration accelerates the integration of Velodyne's sensor into autonomous vehicles (AV) to help make roads safer**

[Velodyne](#) and [Ansys](#) (NASDAQ: ANSS) are developing software models of next-generation automotive lidar sensors to provide substantially improved hazard identification capabilities for highly advanced AVs. The collaboration incorporates Velodyne's lidar design into Ansys' virtual sensor suite and expedites automakers' integration of Velodyne's sensor into AVs — delivering industry-leading driving safety and a drastically faster path to market.

One of the challenges facing many advanced driver assistance systems (ADAS) is the robustness of the system to dependably test and recognize potentially dangerous edge case scenarios. To manage these anomalies, AVs require lidar as a redundant detection technology that effectively locates and tracks objects across an incredibly wide range of operational situations. However, to be validated as reliable, lidar sensors must perform countless miles of exhaustive physical testing, which radically increases the development cost of the system.

Velodyne is collaborating with Ansys to integrate an encrypted 'black box' physics-based lidar sensor model into [Ansys® VRXPERIENCE™](#), a next-gen, real-time interactive driving simulator that models, evaluates and validates lidar designs within a highly realistic virtual environment. This end-to-end capability empowers engineers to rapidly model countless edge case driving scenarios across millions of miles and substantially reduce physical tests. As OEMs integrate Velodyne's lidar into their ADAS portfolio, VRXPERIENCE will reduce development costs by enhancing lidar placement within AVs and validating AV performance.

"Ansys VRXPERIENCE supports faster development and deployment of ADAS solutions using Velodyne's lidar by providing a fully immersive environment to test and improve hazard identification capabilities," said Anand Gopalan, CEO at Velodyne Lidar. "Velodyne's focus on safety aligns with Ansys strengths in enabling informed design decisions. Our collaboration helps engineers virtually run their ADAS applications in challenging roadway conditions so they can build solutions that achieve safe navigation and collision avoidance."

"As part of Ansys' AV ecosystem, Velodyne is helping to define the landscape of safe autonomous driving. Velodyne's leading-edge automotive lidar greatly increases the safety and reliability of ADAS, powering highly intelligent AVs that improve decision making across many complex edge case scenarios," said Prith Banerjee, chief technology officer at Ansys. "Using VRXPERIENCE, OEMs will validate the lidar's software stack and have full access to a validated sensor model, while preserving Velodyne's IP. This will enable Velodyne to rapidly and cost-effectively design trailblazing lidar sensors and significantly speed delivery to market."

On April 20th and 21st, Velodyne will present "How Lidar Sensors, Software and Simulation Advance Autonomous Applications" at Simulation World 2021. The presentation will be available live and on demand. To register, please visit: <https://www.simulationworld.com/>.

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