



Ansys Collaborates with Sony Semiconductor Solutions to Advance Scenario-Based Perception Testing in Autonomous Vehicles

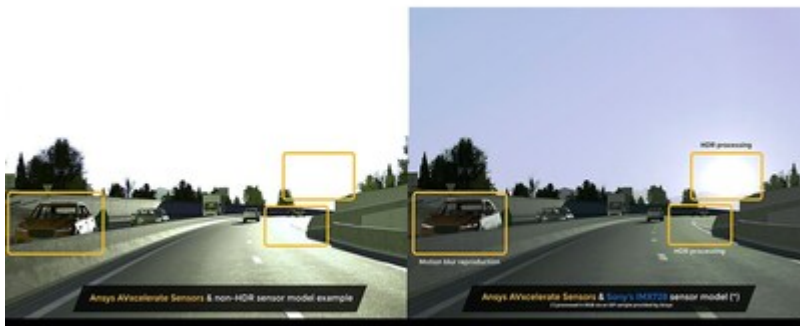
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Collaboration empowers OEMs and Tier 1 suppliers to reliably evaluate and verify performance of ADAS/AV functionality in all weather and lighting conditions

/ Key Highlights

- [Ansys AVxcelerate Sensors™](#) autonomous vehicle (AV) sensor simulation software provides real-time multispectral camera simulation for scenario-based perception testing
- Leveraging both AVxcelerate Sensors and Sony's high dynamic range (HDR) Image Sensor Model, OEMs can test advanced driver assistance systems (ADAS) and AV functions, accounting for sensor behavior in diverse driving scenarios including low light, nighttime, rain, snow, and fog
- Real-time perception feedback significantly accelerates road testing requirements in a virtual environment, enhancing AV safety validation and lowering development costs

PITTSBURGH, Dec. 19, 2024 /PRNewswire/ -- [Ansys](#) (NASDAQ: ANSS) is collaborating with Sony Semiconductor Solutions Corporation (Sony) to improve perception system validation in ADAS/AVs. Ansys AVxcelerate Sensors provides real-time multispectral lighting simulation capabilities, enabling thorough evaluation of different lighting scenarios and weather conditions including rain, snow, and fog. By using Ansys simulation, OEMs and Tier 1 suppliers can expedite and validate thousands of on-road driving hours in less time.



ADAS and AV systems rely on camera, radar, and LiDAR sensor-based perception systems to accurately evaluate the environmental surroundings and conditions that inform navigational decisions. Without reliable validation of these systems, OEMs and Tier 1 suppliers risk increased safety issues, heightened regulatory challenges, and reduced trust. Ansys and Sony address these factors by enabling a high-fidelity simulation of camera sensors — improving performance, mitigating risk, and accelerating development times to streamline safety compliance.

The AVxcelerate Sensors platform generates a virtual environment with varied lighting, weather, and material conditions to simulate how light travels through the environment, the camera lens, and then hits the imager. Coupled with Sony's sensor model, this simulation can reproduce pixel characteristics, signal processing functions, and system functions of Sony's HDR imager with extreme predictive accuracy. This simulation model enables users to conduct robust, scenario-based testing — with either pre-defined inputs or real-time feedback — for Sony's HDR imager-based perception systems, improving accuracy, reliability, and safety in ADAS and AV applications.

To minimize on-road testing, combined simulations can inject images into advanced Software-on-Chip perception systems. Simultaneously, an electronic control unit, used to control functions like engine management and transmission, is integrated into this simulated environment to test its performance. This approach ensures the entire simulation process, from sensors to processing chips, is accurate and reliable.

"Achieving full autonomy involves OEMs working with leading technology providers like Ansys to enhance the accuracy of the integrated tools used to validate AV systems," said Tomoki Seita, general manager, automotive business division, Sony Semiconductor Solutions Corporation. "Through this collaboration, customers can confidently verify their systems using highly reproducible, predictively accurate simulations. This is especially useful for OEMs and Tier 1 suppliers that run actual camera simulations to verify recognition algorithms and vehicle control software."

In addition, the AVxcelerate platform is compatible with many customer-specific simulation toolchains, including open-source or other commercial simulators, is highly scalable, and is cloud-enabled for improved computational power and broad accessibility. This workflow allows designers to generate realistic images to assess performance before the sensor is assembled or generate a virtual training dataset at scale.

"Meeting safety compliance is a top priority for our OEM customers, but it is incredibly difficult to achieve due to the number of scenarios that need to be tested," said Shane Emswiler, senior vice president of products at Ansys. "Ansys offers a breadth of multiphysics simulation solutions to make AVs

safer and more reliable while accelerating the development process. With AVxcelerate Sensors, users can replicate on-road decision-making in a high-fidelity virtual environment, enhancing predictive accuracy and transforming the way companies design and test AVs."

[Visit Ansys during CES 2025](#) at the Las Vegas Convention Center, West Hall, Booth #6400 to learn more about Ansys' automotive solutions.

/ About Ansys

Our Mission: Powering Innovation that Drives Human Advancement™

When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality with Ansys simulation. For more than 50 years, Ansys software has enabled innovators across industries to push boundaries by using the predictive power of simulation. From sustainable transportation to advanced semiconductors, from satellite systems to life-saving medical devices, the next great leaps in human advancement will be powered by Ansys.

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