

Hyundai Mobis launches large-scale simulator platform to accelerate software-defined vehicle validation

17-Apr-2026 09:08 GMT

IHS Markit

S&P Global

Supply Chain and Technology, Automotive

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Hyundai Mobis has established an evaluation and validation system that collects real-world driving data and replicates various driving scenarios in the lab using simulators directly connected to electronic control units (ECUs). This system automates data management and integrates it with simulators to perform large-scale validation more quickly and efficiently. It is expected to strengthen software-defined vehicle (SDV) competitiveness and gain momentum in global order acquisition through the advancement of core autonomous driving sensor and software validation.



Source: Getty Images/metamorworks

The company announced that the system enables repeated testing of ECUs for SDVs and autonomous driving by linking data obtained from actual road tests with data management solutions and simulators. This approach addresses the growing need for extensive evaluation and validation as automotive software becomes more sophisticated, especially amid global research and development competition in autonomous driving and advanced driver assistance system technologies. Global automakers are requiring suppliers to provide data-based validation results spanning tens of thousands of hours before adopting various core auto components for SDVs, a process that would normally take years of real-world test driving.

The new platform connects multiple simulators in parallel, reflecting various validation scenarios, and can drastically reduce evaluation and validation time. Hyundai Mobis plans to expand this platform to connect up to 60 simulators, which will enable the company to perform 10,000 hours' worth of evaluation and validation in just one week. The system is based on data collected under various conditions in real-world driving and parking environments via sensors mounted on test vehicles. It can replicate scenarios such as nighttime driving, rainy conditions and unexpected incidents that are difficult to reproduce in reality by integrating them with simulations in a virtual environment. By combining real-world and virtual data in an optimal ratio, the company expects to comprehensively evaluate the recognition performance and stability of autonomous driving systems and ADAS.

Hyundai Mobis plans to use this system to comprehensively validate the performance and reliability of algorithms for autonomous driving sensors such as radar, cameras, lidar and ultrasonic sensors, as well as various ECUs. By proactively establishing this evaluation and validation system capable of managing large-scale sensor data in a one-stop manner, the company expects to strengthen its technological competitiveness for SDV advancement and gain further momentum for more aggressive global order acquisition activities. Hyundai Mobis plans to continuously enhance this evaluation and validation system through data integration and collaboration with major global research hubs.

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