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Vector Informatik and Solectrix unveil integrated camera data replay solution for ADAS testing

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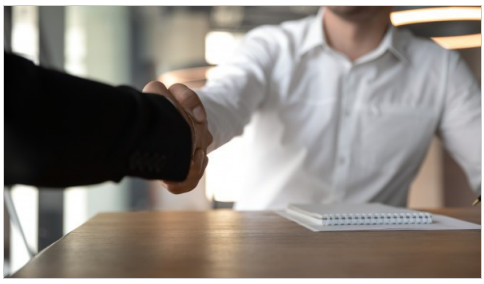
The modular toolset synchronizes real and virtual camera data, enabling testing and continuous validation of ADAS and automated driving systems



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Vector Informatik and Solectrix are jointly introducing a data replay solution aimed at realistic and reproducible testing of camera-based driver assistance and automated driving functions. The solution is designed to enable development and test teams to efficiently and transparently validate state-of-the-art advanced driver assistance systems and automated driving functions. To achieve this, Vector contributes its simulation and test tools CANoe and DYNA4 for vehicle communication, remaining bus simulation, and virtual driving scenarios, while Solectrix provides its expertise in embedded vision along with its high-performance video capture and replay system proFRAME.

The full integration of CANoe, DYNA4 and proFRAME provides an end-to-end development and test solution that enables precise, synchronized and reproducible playback of camera data from real and virtual scenarios. This allows development teams to run identical test scenarios across different software versions, detect regressions at an early stage, and analyze complex or rare traffic situations in a targeted way. As a result, test effort is reduced, comparability of results is improved, and development cycles are shortened.

For the first time, virtual driving scenarios can be output in real time as camera streams while simultaneous camera I²C emulation is performed. This enables precise validation of the environment model generated by data fusion and the ADAS/automated driving functions based on it on the electronic control unit (ECU) without the use of a physical vehicle. Additional test scenarios, including targeted fault simulation through manipulation of video or I²C data, allow boundary and failure scenarios to be investigated in a controlled manner and support focused validation of safety-critical ADAS and automated driving functions.

Overall, users gain a modular, extensible toolset that combines reproducible testing, flexible data sources and comprehensive simulation capabilities within a consistent, end-to-end approach. This integrated setup is intended to create transparency and efficiency in the development process and to form the foundation for continuous validation of advanced ADAS and automated driving systems.

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