Press release

CarMaker 16.0 Streamlines Virtual Vehicle Development

New release combines credible sensor and NCAP simulation, native integration for software-defined vehicle development as well as stronger support for open, reusable workflows

Karlsruhe, November 19, 2026 – With the release 16.0 of the CarMaker product family, IPG Automotive expands its simulation solution for virtual vehicle development. The release strengthens sensor and ADAS validation, software integration, open standards and new steering simulation capabilities. A more consistent workflow reduces setup effort and increases the credibility and reusability of virtual test driving.

CarMaker 16.0 significantly expands **support for ASAM OpenSCENARIO XML**. Full storyboard support and a dedicated mode in the Scenario Editor simplify the execution, creation and editing of standard-compliant scenarios and improve interoperability with dedicated scenario creation tools such as MathWorks RoadRunner. Together with **enhanced OpenDRIVE and OpenMATERIAL support**, this facilitates the exchange and reuse of scenarios, roads and 3D assets.

The release also places particular emphasis on **sensor and safety validation**. The new 4active NCAP Digital Twin Package add-on combines ISO 19206-compliant geometry, validated material properties and realistic sensor signatures for camera, radar, lidar and ultrasonic simulation. Digital twins that correspond to physical proving ground targets support consistent validation from simulation to physical testing, including **NCAP and UNECE** use cases.

Building on these capabilities, CarMaker 16.0 extends the options for proprietary sensor concepts. The generic GPU ray tracing sensor provides scene interaction data for custom processing models in closed-loop simulation, while a new FMCW radar model adds configurable chirps, MIMO schemes and 3D processing to the Physical Sensor Models add-on. Improvements to the **Ground Truth Sensor** model support dependable execution, such as integrating the sensor into vehicle control models and revising line detection in certain edge cases.

The release also advances software integration: Native SIL Kit integration enables direct connections to distributed software ecosystems without additional gateways. Restbus simulation for CAN, CAN FD and Ethernet, combined with centralized configuration, reduces integration effort across environments.

Additional improvements make software integration more secure and reusable: Encryption protects exchanged restbus artifacts, referenced network configurations facilitate reuse and CAN FD diagnostics over UDS support current ECUs and test benches.

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A new **modular steering framework** broadens vehicle modeling by supporting all wheels and axles of vehicles and trailers. Separate plant and controller models provide a configurable architecture for different platforms.

“CarMaker 16.0 addresses the interfaces that make virtual development scalable: credible sensor data, software integration and open, reusable standards. By reducing friction between models, software and test environments, it helps development teams obtain reliable results earlier and use them consistently,” says Alexander Frings, Director Product Management at IPG Automotive.

3209 characters (including spaces)

Images



The new release 16.0 of the CarMaker product family combines sensor and ADAS validation, software integration, open standard interfaces and steering simulation for virtual vehicle development.

Image: IPG Automotive GmbH

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About IPG Automotive GmbH

As a global leader in virtual test driving technology, IPG Automotive develops innovative simulation solutions for vehicle development. Designed for seamless use, the software and hardware products can be applied throughout the entire development process, from proof-of-concept to validation and release. The company's virtual prototyping technology facilitates the automotive systems engineering approach, allowing users to develop, test and validate new systems in a virtual whole vehicle.

IPG Automotive is an expert in the field of virtual development methods for the application areas of Autonomous Vehicles, ADAS, Powertrain and Vehicle Dynamics, committed to providing support to master the growing complexity in these domains. Together with its international customers and partners, the company is pioneering simulation technology that is increasing the efficiency of development processes.

By taking real test driving into the virtual world as a complement to on-road testing, IPG Automotive contributes significantly to technical progress and helps shaping the mobility of tomorrow with regard to comfort, safety, economic efficiency and environmental friendliness.

In addition to the company headquarters in Karlsruhe, Germany, IPG Automotive provides innovative development services to its customers and partners at the Germany-based offices in Braunschweig, Frankfurt, Ingolstadt, Munich and Stuttgart as well as in China, France, India, Japan, Korea, Sweden, the UK and the USA.

Further information at www.ipg-automotive.com/press

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