CarMaker

Virtual development and testing of passenger cars and light-duty vehicles

Virtually test the vehicle of the future today with our simulation solution CarMaker. We have designed CarMaker specifically for the development and testing of passenger cars and light-duty vehicles. CarMaker offers you a key advantage: You can transfer real test scenarios including the entire environment into the virtual world with a high level of detail.
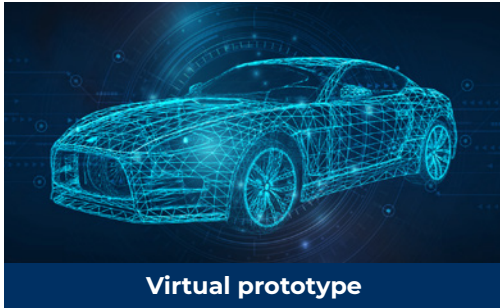
Our software supports you in making your development processes more agile. In accordance with the automotive systems engineering approach, virtual test driving with CarMaker enables the seamless development, calibration, test and validation of entire systems in the whole vehicle within highly realistic scenarios.

Implement test scenarios for the application areas of ADAS and automated driving, powertrain and vehicle dynamics with our open integration and test platform. A variety of supported standards and interfaces also ensures the smooth integration into your existing tool landscapes.

CarMaker offers you a high-performance, real-time capable vehicle model including all subcomponents, enabling you to quickly and easily build your virtual prototypes already during early stages of the development process (MIL, SIL). The combination of the virtual prototype with an adaptive driver model, a comprehensive traffic model and a detailed road model makes automated and reproducible tests possible early on. A well-structured user interface guarantees easy parameterization. In addition, CarMaker is ideally suited for hardware-in-the-loop (HIL) tests on component and large integration test benches as well as for use in real vehicles (VIL). All this ensures that you can use CarMaker according to your individual test requirements in every stage of the development process.

Our virtual test driving package comes complete with the right tools for visualization, test automation and data analysis. At any time during the simulation, the 3D visualization tool MovieNX, the data analysis tool IPGControl and the virtual dashboard Instruments deliver detailed and reliable information on all essential parameters, data and models of your test scenario. This way you are always on top of your virtual test runs! The automation tool Test Manager guarantees a smooth, stable and automated test process for seamless use in the areas MIL, SIL, HIL and VIL, and enables the parallel execution of test catalogs on high-performance computing clusters and in the cloud. Complete thousands of test miles over night – with CarMaker!
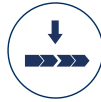
Virtual prototype

3D visualization

Scalability

Data analysis and evaluation

Interfaces and standards

Your benefits at a glance

High reliability
Proven solution with countless industry references and success stories

Efficient process integration
Open integration platform with many supported standards and interfaces

End-to-end workflows
Merger of simulation assets and tools to create and execute end-to-end development workflows

Superior performance
Fast C/C++-based simulation core with highly efficient simulation models

Reduction in physical testing
Highly realistic virtual test driving environment reduced exensive and time-consuming physical testing

Great usability
Intuitive GUI and numerous product examples to build upon

Seamless reusability
Seamless run of reliable and repeatable simulation and reuse of scenarios across development stages from MIL, SIL, HIL to VIL

Easy and rapid scalability
Scalable simulation environment with reference designs and working examples for HPC and cloud-based applications – ideal for CI/CD/CT

Find more information on the features of our simulation solution CarMaker on our website.

IPG Automotive GmbH
Bannwaldallee 60
76185 Karlsruhe
Tel.: +49 721 98520 0

ipg-automotive.com