

Virtual test driving made easy

Version 5.0 of the CarMaker product family and its many new features

Release 5.0 is now available for the CarMaker, TruckMaker and MotorcycleMaker products offered by the Karlsruhe-based company IPG Automotive. These software products are used to carry out virtual test scenarios, allowing the functions of software algorithms, control units as well as entire vehicles to be tested and optimized at an early stage. In particular, CarMaker 5.0 makes it easier to fulfill the stringent test requirements for advanced driver assistance systems. And the benefits do not stop there – the new version now also features a significant increase in functions in the areas of vehicle dynamics and powertrain.



Figure 1: Euro NCAP-compliant test scenario for emergency brake assistant in CarMaker 5.0

The software solutions CarMaker, TruckMaker and MotorcycleMaker are designed for virtual test driving in the areas of vehicle dynamics, advanced driver assistance systems and powertrain. They help users to create virtual test scenarios from the real world, down to the very last detail, allowing them to test new functions, control units and entire vehicle components. With this approach, a large number of test scenarios can be automated, carried out in a reproducible manner and evaluated, sometimes saving considerable time and money during the development process. Version 5.0 has been on the market since June 2015.

Table 1: CarMaker release 5.0 – Features and functions at a glance

- Optimized visualizations in IPGMovie
- New, highly segmented powertrain for setting up virtual prototypes: Easy to operate and set parameters, features open interfaces for integrating external models/model components
- IPGRoad 5.0
- New brake models (segmentation into mechanical and hydraulic models, ECUs), separate controller and system unit; regenerative braking
- Improved driver model: IPGDriver 6.5
- Greatly increased test automation options with TestManager (easy to define and analyze criteria and create diagrams)
- Euro NCAP test runs available in the standard version of CarMaker
- Customized tire selection using the tire data set generator
- CarMaker/Office as a 32-bit and 64-bit application (including Matlab/Simulink support for 32-bit and 64-bit)

With more variants and more interaction between systems, the volume of required tests has been increasing continuously – virtual test driving will help you to manage this extra workload. Maneuver and event-based testing with the CarMaker product family is the key to efficient development at all stages of the process. Virtual scenarios allow the user to obtain automated and reproducible test results. This means that errors can be rectified at an early stage and systems can become more developed. Release 5.0 allows systems to be tested with a higher level of efficiency as it contains new technological foundations (e.g. cubic interpolation of IPGRoad), is integrated with newly developed features (such as the tire data set

generator for automated generation of tire data sets) and includes an increased number of available models (e.g. model classes in ModelManager). Furthermore, visualization in IPGMovie is now even more realistic and includes many more elements.

Since the launch of the CarMaker product in 1998, various automotive manufacturers and suppliers as well as research institutes and universities have been working with virtual test driving. The available features offer a wide range of tools for model-based testing in all phases of the development process. Here, technical innovations (e.g. ESP, parking assistance) are just as important as social trends, which are reflected in technological developments (such as electric mobility, highly automated driving functions and man-machine interfaces, including head-up displays for enhancing ride comfort and safety).

IPG Automotive GmbH

IPG Automotive GmbH is a leading global supplier of simulation software, test systems, hardware and engineering services for the automotive and supply industry. The company helps its customers to tackle technological challenges associated with safety, comfort, agility and consumption – providing cutting-edge solutions for all stages of the development process. In addition to conventional vehicle dynamics simulation, open integration and testing platforms CarMaker, TruckMaker and MotorcycleMaker open up a wide range of applications for model, software and hardware-in-the-loop simulation.

Your editorial contact

Katharina Brömel | IPG Automotive GmbH | Tel.: +49 721 98520-39 | Email: katharina.broemel@ipg.de
 Press area: <http://ipg.de/en/news/press/>

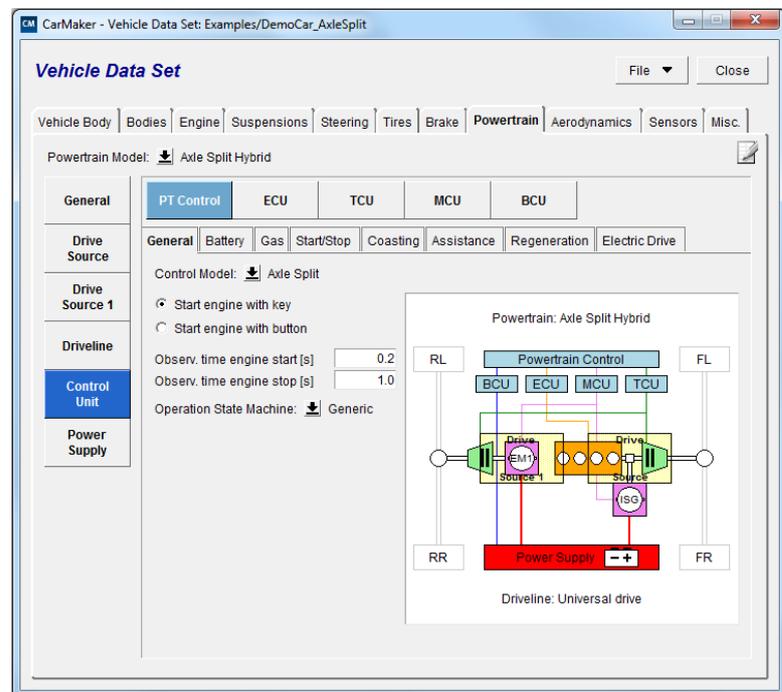


Figure 2: Screenshot from CarMaker 5.0 in the area powertrain