

Testing Scenarios with Even More Realism

The simulation solution CarMaker is extended by an interface with the traffic simulation PTV Vissim

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The simulation of real test scenarios that not only model the processes and actions of an individual vehicle but also other road users, the surroundings, mutual reactions as well as the multitude of related immediate impacts on the test vehicle is required to ensure comprehensive tests of functions and control units on the way to autonomous driving.

Traffic simulation with the simulation solutions of the CarMaker product family can now be complemented by an interface with the traffic simulation software PTV Vissim. The extended simulation environment created this way combines the realistic full-vehicle behavior, the versatile model integration options and the sensor modeling enabled by CarMaker with the traffic behavior model of PTV Vissim as well as the control of traffic lights and pedestrians it includes.

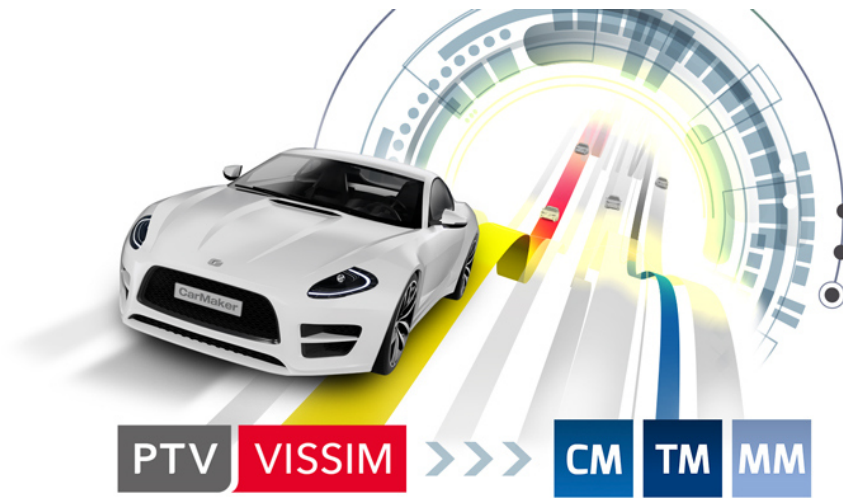
The interface enables a co-simulation of both programs which unites the possibilities of their core areas of application: Virtual test tracks including lane, line and road elevation profiles can be generated using the Scenario Editor in CarMaker and converted to the data format for PTV Vissim using a converter. The configuration of the traffic behavior and the traffic lights is subsequently carried out in PTV Vissim. The positions of the traffic objects (including cyclists and pedestrians) are transferred to CarMaker, enabling the virtual prototype to constantly interact with the modeled traffic objects in complex traffic scenarios. Research and development teams benefit from the information gained through this co-simulation for future adjustments to the vehicle.

Particularly the stochastic traffic option is especially suited to thoroughly test driver assistance and automated driving functions right up to their release with virtual test driving. “The versatile possibilities both programs offer enable the individual parameterization and reproducible simulation of complex scenarios,” explained Alexander Frings, Product Manager Engineering Services at IPG Automotive. In addition, variations of traffic density can be generated, for instance to analyze real driving emissions – a typical use case in the development of powertrain components. The open integration platform CarMaker moreover allows test

automation as well as the control of both programs and therefore the automated variation of parameters in PTV Vissim.

Find further information on the simulation solutions of the CarMaker product family at <https://ipg-automotive.com/products-services/simulation-software/>.

Image:



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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 and test new systems in a virtual whole vehicle.

IPG Automotive is an expert in the field of virtual development methods for the application areas of ADAS & Automated Driving, Powertrain and Vehicle Dynamics, committed to providing support to master the growing complexity in these domains. Together with its international clients 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 shares in 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 national offices in Braunschweig, Frankfurt and Munich as well as in China, France, Japan, Korea, Sweden, the UK and the USA.

Further information at www.ipg-automotive.com

Press contact

Katja Rische

IPG Automotive GmbH

Bannwaldallee 60

76185 Karlsruhe

Phone: +49 (721) 98520-209

Fax: +49 (721) 98520-99

E-mail: press@ipg-automotive.com

Press area: press.ipg-automotive.com