

Automotive Testing and Traffic Simulation

The microscopic traffic simulation PTV Vissim has proven itself for many years as a development tool in automotive engineering. It enables you to build up a responsive digital test environment for vehicles of all kinds. The software provides realistic, reactive, and behavior model-based surrounding traffic to enable closed-loop testing in extensive virtual test drives.

The traffic scene evolves dynamically based on the interactions of road users with each other and with the traffic network to enable exploratory testing without the need to predefine specific scenarios. The microscopic simulation allows for full reproducibility of a specific test drive or infinite, automatically generated variations of it.



Use Cases

Powertrain Development and Testing

Go beyond standard test cycles or a simple replay of a load profile: Stop-and-go traffic with frequent acceleration and braking, driving up a hill, narrow curves, or speeding on a highway – Vissim Automotive allows you to simulate situations like these in a dynamic virtual testing environment, to reproduce them, and to repeat them with changing variables. Such tests are essential in the powertrain development to ensure that your components and your control strategy provide the highest real-world value to your customers.

PTV Vissim Automotive can be integrated with different XiL set-ups and thus supports Model in the Loop (MiL), Software in the Loop (SiL), as well as Hardware in the Loop (HiL) testing.

Development of ADAS and AV Software

With Vissim Automotive, you can develop, test, validate, and optimize functionalities of Advanced Driver Assistance Systems (ADAS) and Automated Vehicle (AV) functions. The software creates realistic surrounding traffic that can be coupled with detailed vehicle simulation tools from third-party providers. Vissim Automotive has interfaces to all major industry solutions, e.g. IPG CarMaker, Virtual Test Drive, dSpace ASM, and Simcenter PreScan, enabling comprehensive co-simulations that take all aspects of vehicle interactions into account. The dynamic traffic environment will challenge the functionality of your system under test. You can easily increase the aggressiveness of the surrounding traffic or add driver errors to provide more challenging situations in your virtual test drive.

PTV Vissim Automotive can further be used for virtual scenario mining through an explorative search for challenging test situations for your driving function.

Your Benefits of Using PTV Vissim Automotive

30+ Years of Experience



Decades of research and continuous development with customers

Reactive Traffic



PTV Vissim traffic continuously interacts with the system under test

Speed of Virtual Development



Parallel computing and test automation for fastest possible results

Connectivity



Interfaces to leading vehicle simulation programs & option for scripting (e.g. Python)

Flexibility



Extensive parameterization and calibration options for worldwide applicability

Scientifically Proven



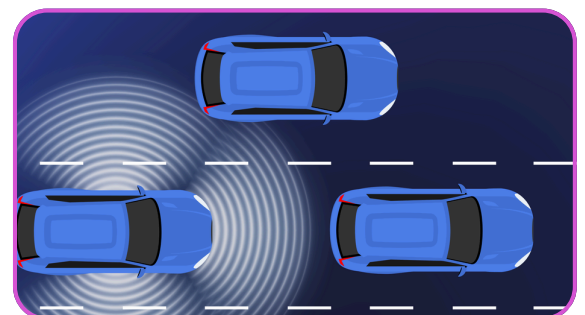
Based on scientifically developed and worldwide-leading car following models

Features

- Easy Driving Behavior Set-Up
- OpenDRIVE Support
- Behavior Model for Automated Driving
- Simple Generation of Surrounding Traffic
- Parallel Computing
- High Calculation Frequency
- Driver Model Interface for Linux Kernel
- Import of Elevation Data



Easy driving behavior set-up



AV Behavior Model

Get in Touch

If you want to work with traffic simulation in the automotive development, PTV Vissim is your go to. Get in touch and let's find out, how PTV software will support you.