

World's most established vehicle simulation platform enables accelerated engineering throughout the complete product design process

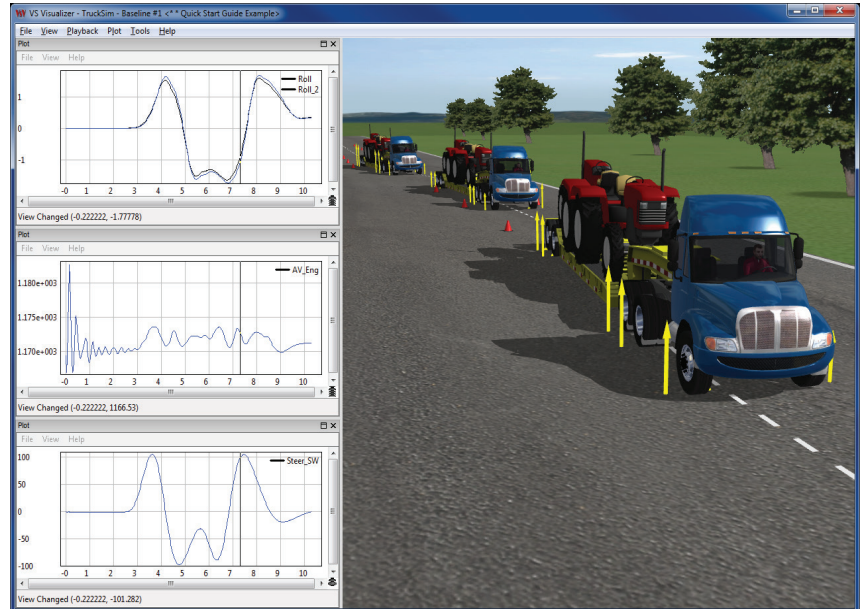
TruckSim delivers the most accurate, detailed, and efficient methods for simulating the performance of multi-axle commercial and military vehicles. With more than twenty years of real-world validation, TruckSim is universally the preferred tool for analyzing vehicle dynamics, developing active controllers, calculating a truck's performance characteristics, and engineering next generation active safety systems.

With manufacturers facing compressed product development cycles, TruckSim provides an intuitive set of tools for engineers to quickly evaluate complete vehicles, truck sub-components, and active controllers in complex driving environments.

TruckSim keeps up to date with emerging trends in the industry with frequent updates that include features such as: sensors and traffic vehicles for developing active safety systems, interfaces to 3rd party powertrain simulation tools, and Performance Based Standards.

TruckSim Applications

- Electronic Stability Control
- ABS Braking
- Off Tracking Analysis
- Active Suspension
- Autonomous Driving
- Anti-roll Controls
- Performance Based Standards
- Anti-sway Controls
- Alternate Powertrains
- Driver Alertness Technologies
- Roadway Engineering
- Lane Departure Warnings
- Fuel Economy Studies
- Active Braking
- Vehicle to Vehicle Communications



TruckSim's Intuitive Visualization and Plotting Tools

High Fidelity Vehicle Models: TruckSim includes math models for over eighteen vehicle configurations that include several single-unit trucks and a diverse range of tractor-trailer combinations with multiple trailers, dollies, and axle configurations. If you require a truck configuration that is not included, Mechanical Simulation can develop a custom vehicle model based on your specifications. Optional features in the math models add degrees of freedom to handle flexible trailer frames, and flexible powertrain mounts.

Modular Vehicle Definition: truck sub-systems are defined with parameters and tables that can be obtained from published data, engineering tools, and test rigs. When data is not available, you can use the real-world data provided in sample TruckSim datasets. TruckSim's modular, parameter-based design approach lets you modify parameters and run simulations any time during the design cycle.

Truck Performance Metrics: TruckSim provides open-loop and closed loop driver models with advanced features to help engineers quickly discover a truck's limit capabilities or its optimal path through a complex maneuver. These technologies are demanded by manufactures who must certify compliance with worldwide ISO and ECE stability control regulations.

VS Commands: this powerful scripting language provides tools to Automatically control test runs, extend vehicle models, and sequence complex driving maneuvers. Using this powerful language is often used to extend the capabilities of TruckSim without requiring Simulink or TruckSim's API.

Top Reasons Engineers Select TruckSim

- TruckSim is a standalone application. It does not require any other software to perform simulations.
- TruckSim has a standard interface to MATLAB/Simulink.
- TruckSim is used extensively by a majority of the largest commercial vehicle OEMs and suppliers.
- TruckSim allows users to build complex scenarios and test event sequences.
- TruckSim can scale from:
 - Software-in-the-loop to
 - Model-in-the-loop to
 - Hardware-in-the-loop to
 - Driver-in-the-loop
- TruckSim has an intuitive user interface and powerful analysis tools.
- TruckSim supports vehicle sensors and interactive traffic for V2V and ADAS development.
- TruckSim includes numerous example vehicles, roads, and procedures to assist first time users.
- TruckSim is the easiest and most productive vehicle simulation tool on the market.
- CarSim, TruckSim, and BikeSim have over 3,500 active users around the world at OEMs, suppliers, and leading universities.



High fidelity math models and detailed 3D road geometry



Sensor feature for developing active safety systems

DATA DRIVEN PRODUCT DESIGN

From conception to product launch—TruckSim provides sophisticated tools to streamline your design, engineering, and testing processes. With TruckSim you can quickly transition between product development tasks by reusing vehicle parameters and test procedures implemented in previous steps.

TruckSim supports industry standard engineering tools which allow you to add your own technologies into your simulation environment. TruckSim's support for industry standard HIL platforms allows you to choose the hardware that is best for your real time application—without locking you into expensive, unproven hardware/software combinations.

TruckSim is an economical tool for engineers who use multiple software tools and must produce results quickly. TruckSim features an intuitive user interface, online help, and a complete set of example vehicles, 3D roads, and documented test procedures and plots.

Included Data Sets

- 15 example test vehicles
- 25 roads and test tracks
- 75+ test runs with comprehensive design notes

Engineering Tools

- Interactive 3D Visualizer
- Engineering plots/scope
- Spectrum analyzer
- Linear Analysis

Integration Technologies

- Microsoft COM API
- Excel import and export

Control Development Support

- MATLAB/Simulink
- LabVIEW
- ASCET
- Visual Studio

TruckSim RT Supported HIL Platforms

- dSPACE
- National Instruments
- Opal-RT
- ETAS
- Fujitsu-TEN
- A&D RT-Linux

Tire Models

- Combined slip
- Extended shear with camber
- Pacejka 5.2
- MF-Tyre
- MF-Swift (optional)
- COSIN FTire (optional)

VS Commands

- Powerful scripting language
- Automate complex driving maneuvers
- Create variables and imports
- Add differential equations

Visualization Features

- Data driven heads-up-display
- Synchronized plotting
- Driver mirrors/multiple cameras
- Tracking camera
- Overlay compare of multiple tests
- Ghost vehicle path
- Photo realistic, user defined driving environments—trees, buildings, signs, textured roads.
- Tire skid marks and tracks
- Sounds—engine, wind, and tire

Optional TruckSim Features

- Frame Twist
- Sensors
- AVL Cruise Interface
- Powertrain Mount Model
- Performance Based Standards
- Driving Simulators