

TruckSim[®]

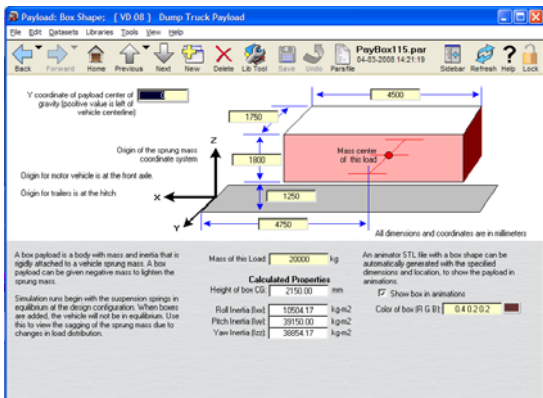
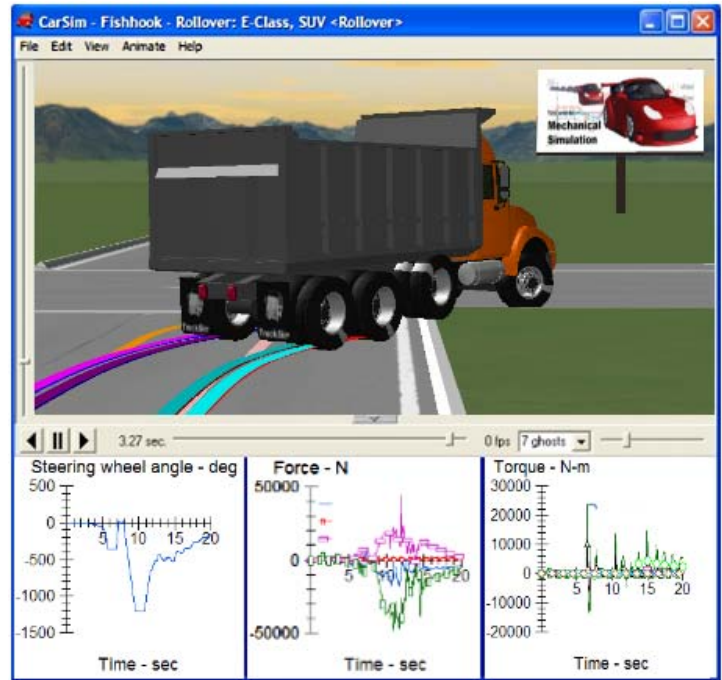
Mechanical Simulation Corporation

**WORLD'S MOST TRUSTED VEHICLE
SIMULATION PLATFORM FOR
DYNAMICS, PERFORMANCE, AND
DEVELOPMENT**

Mechanical Simulation Corporation develops the most accurate and computationally efficient methods for simulating the dynamic performance of cars, trucks, motorcycles, and a wide range of specialty vehicles.

After more than thirty years research and development, and millions of validation hours by vehicle manufacturers around the world – Mechanical Simulation's suite of car, truck, and motorcycle products are now the accepted tools used by vehicle dynamics and vehicle control engineers.

In an environment of limited resources and compressed design and testing cycles, Mechanical Simulation has designed a streamlined user interface and system architecture that optimizes productivity while providing the tools for engineers to seamlessly integrate their own design technologies – shortening time to market and significantly reducing the need for physical testing.



MODULAR AND OPEN ARCHITECTURE

You don't have to be a vehicle dynamics expert to use TruckSim – a growing field of engineers are using TruckSim's architecture as a platform to integrate and test their own adaptive vehicle sub-systems.

Customer provided technology can directly integrate with Mechanical Simulation's highly accurate and stable vehicle model. Therefore, engineers can focus on algorithm design – not on writing custom testing code that provides limited test conditions.

Key architecture features:

- **Modular Vehicle Definition:** each vehicle sub-system is defined with discrete properties and performance tables. By overwriting a small set of variables, any sub-system can be replaced, modified, or enhanced. A further benefit: this modular approach lets you run simulations any time during the design cycle – other simulation tools can only be used after the entire vehicle has been designed.
- **Application Programming Interface (API)** allows access to Mechanical Simulation's vehicle models with a wide range of 3rd party design tools. Commonly used tools include, Simulink, LabVIEW, ASCET, and Visual Studio.
- **VehicleSim (VS) Commands** scripting language lets you automatically control test runs, test parameters, and model auxiliary sensors.
- **Hardware in the Loop (HIL)** solutions for all popular real time computing platforms.

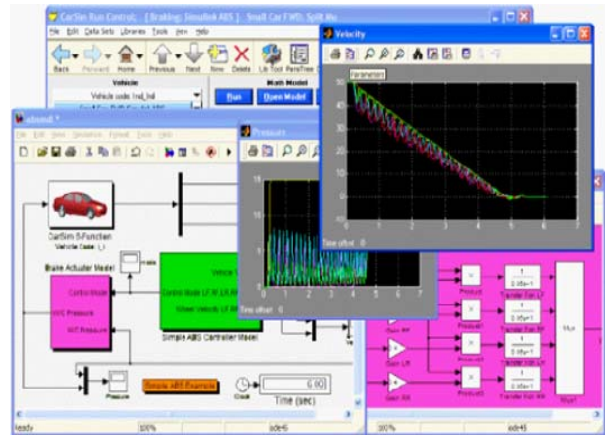
INTEGRATE YOUR OWN TECHNOLOGY

- **ABS Braking**
- **Electronic Stability Control**
- **Off Tracking Analysis**
- **Active Suspension**
- **Autonomous Vehicles**
- **Airbag Deployment**
- **Rollover Studies**
- **Anti-sway Control**
- **Lane Departure**
- **Fleet Conformity**
- **Tire Performance**
- **Alternate Powertrains**
- **Driver Alert Technologies**
- **Driving Simulators and more...**

TruckSim—Heavy Duty Features

Light and heavy duty truck and trailer manufacturers face an ever changing business and regulatory climate requiring companies to dedicate valuable resources to testing and compliance issues. With large numbers of build-to-order configurations, it is impossible to physically test every configuration.

To help you manage this task, TruckSim accurately simulates trucks equipped with a wide variety of axle, suspension, tire, brake, steering, payload, and trailer configurations. From initial product conception to control algorithm development and all the way to product launch—TruckSim provides sophisticated tools that have proven to compress and optimize your design, development, and testing procedures. Additionally, if you are working on non-traditional vehicle configurations, Mechanical Simulation can build custom vehicle solvers.



A discussion of TruckSim is not complete without highlighting the software's ease-of-use and workflow optimization features. Unlike complex tools requiring steep learning curves and expensive consulting services, TruckSim is designed for engineers who use multiple software packages and must be able to produce results within minutes. To solve these issues, the software features a streamlined user interface, an extensive on-line help system, and a complete set of example vehicles, 3D roads, and test procedures that demonstrate all TruckSim features.



Product Highlights

Bundled Data Sets

- 15 example test vehicles
- 12 roads and test tracks
- 75+ test runs—complete with comprehensive design notes

Engineering Tools

- Interactive 3D animator
- Engineering plots—select from over 1000 parameters
- Spectrum Analyzer

Integration Technologies

- Microsoft COM API
- Excel import and export

Third Party Support

- Simulink
- LabVIEW
- ASCET
- Visual Studio

HIL Platforms

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

Tire Models

- Combined Slip
- External shear with camber
- Pacejka 5.2
- MF-Tyre

VehicleSim (VS) Commands

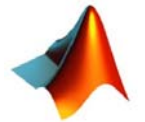
- Powerful built-in scripting language
- Automate complex driving maneuvers
- Create new variables

Optional TruckSim Modules

- Frame Twist
- Real-time HIL
- Driving Simulators

Animator Features

- Interactive 3D animations
- Tracking camera
- Export for use in Power-Point presentations
- Overlay runs to compare multiple tests
- Ghost vehicle path
- Realistic user-defined environments—trees, buildings, signs, textured roads.
- Tire skid marks and tracks
- Sounds—engine noise and tire squeal



BikeSim

CarSim

TruckSim

SuspensionSim