

VI-grade releases v19.0 product suite

Major release of real-time software (VI-CarRealTime and VI-Driver), vertical products (VI-Automotive, VI-Motorcycle, VI-Aircraft) and driving simulation solutions (VI-DriveSim) bring to customers better flexibility, an improved user experience and support of real-time applications for more advanced components.

Marburg, May XX, 2019 – VI-grade today announced the release of v19.0 of its software product suite. The release includes major product features and several usability enhancements in the following products: VI-CarRealTime and VI-Driver (real-time software); VI-DriveSim (driving simulation solutions); and VI-Automotive, VI-Motorcycle, VI-Aircraft (vertical products).

Selected new features of VI-CarRealTime v19.0 include:

- Investigation Mode:
 - Automatic model variant response module
 - Allows to easily execute a given plan of experiments
 - Define model parameters values and range
 - Select events or scenario to be tested
 - Define the metric to be monitored
 - Automatically generate the related reports
- Model improvements:
 - New engine mount layout options (bushings on body chassis, torque rods)
 - Vehicle chassis flexibility with body-on-frame architecture
 - New demo vehicles
 - SUV crossover
 - Pick-up truck
 - Improved driveline modelling options, to specify e.g. gear shifting maps or specific inertias.
 - Design time scaling factors for suspension elements (dampers, springs, bumpers...)
- Tire Models
 - CD Tire RealTime

- Available for handling maneuvers
 - FTire 2019-1
 - acc & /hil versions integration
 - Improved computational efficiency
 - TameTire 5.1
 - MF-Tyre/MF-Swift 7.3
 - MegaRide
 - AdheRide/ThermoRide models integration
 - Realtime capable version available
- Adams Car Interface: new properties export added
 - Frequency bushing
 - Rack & pinion (Pfeffer model)
 - Suspension auxiliary longitudinal dynamics identification
- Vehicle Performance modules
 - VI-SpeedGen can optionally consider the suspension travel while predicting the limit speed profile computation
 - (For motorsport applications): Aerodynamic balance and electric motors regeneration state can be parametrized on the on-track position
- Miscellaneous
 - VI-CarRealTime solver now able to produce additional output signals:
 - Roll center height for all full vehicle simulations
 - ABS & TCS activity
 - Possibility to configure multiple solver plugins
 - Scriptable (python) custom post-processing
 - VI-CarRealTime SDK now includes an executable able to perform simulations with forced “Save&Restore” operation

Selected new features of VI-DriveSim v19.0 include:

- VI-DriveSim environment opened to 3rd party vehicle solvers
 - Protocol documentation
 - Template for Matlab/Simulink
- Input File management
 - VI-CarRealTime model input files can be used for different experiments:

- Override road data file
 - Redefine vehicle initial position/orientation
- Possible to inherit the lap sensor directly from the road file (explicit reference to a drd file still supported for special cases)
- Steering feedback
 - Support of angle tracking control mode in addition to the regular torque tracking mode
- Body Feedback
 - Active belts systems with independent left/right actuators now supported by the graphical interface

“I’m very impressed with the new DOE expansion (Investigation Mode) of VI-CarRealTime v19. For us it will be one of the most significant updates VI-CarRealTime has introduced over the past releases” – said one of the customers participating to the VI-CarRealTime v19 beta program.

The new releases, developed on top of Adams2018, are available on the completely revamped VI-grade download area at the link: https://www.vi-grade.com/en/reserved_area/software_download. A complete list of new features and enhancements can be found in the Release Notes documents available for download at the same link.

About VI-grade

VI-grade is the leading provider of best-in-class software products and services for advanced applications in the field of system-level simulation. Along with a network of selected partners, VI-grade also provides revolutionary turnkey solutions for static and dynamic driving simulation.

Established in 2005, VI-grade delivers innovative solutions for streamlining the development process from concept to sign-off in the transportation industry, and there mainly in the automotive, aerospace, motorcycle, motorsports and railway sectors. With its office locations in Germany, Switzerland, Italy, UK, Japan, China, and the USA and a worldwide channel network of more than 20 trusted partners, VI-grade is a dynamic and growing company with a highly skilled technical team.

The collage features a central sketch of a car with red outlines, overlaid with a person's face. Surrounding these are numerous physics and engineering diagrams and formulas:

- Top Left:** A diagram of a container with particles, labeled 'a)', 'b)', and 'c)', with arrows indicating a process. Below it is the formula $P = \frac{N}{V} kT$.
- Top Center:** A diagram of a container with particles, labeled 'a)', 'b)', and 'c)', with arrows indicating a process. Below it is the formula $S = k \log W$.
- Top Right:** A diagram of a container with particles, labeled 'a)', 'b)', and 'c)', with arrows indicating a process. Below it is the formula $P = \frac{N}{V} kT$.
- Middle Left:** A diagram of a car with red outlines, labeled 'a)', 'b)', and 'c)', with arrows indicating a process. Below it is the formula $P = \frac{N}{V} kT$.
- Middle Right:** A diagram of a car with red outlines, labeled 'a)', 'b)', and 'c)', with arrows indicating a process. Below it is the formula $P = \frac{N}{V} kT$.
- Bottom Left:** A diagram of a car with red outlines, labeled 'a)', 'b)', and 'c)', with arrows indicating a process. Below it is the formula $P = \frac{N}{V} kT$.
- Bottom Center:** A diagram of a car with red outlines, labeled 'a)', 'b)', and 'c)', with arrows indicating a process. Below it is the formula $P = \frac{N}{V} kT$.
- Bottom Right:** A diagram of a car with red outlines, labeled 'a)', 'b)', and 'c)', with arrows indicating a process. Below it is the formula $P = \frac{N}{V} kT$.

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