

HVE

HVE - Human Vehicle Environment

ist eine Softwareumgebung zur Simulation von Verkehrsunfällen der amerikanischen Fa. [EDC](#). Ursprung der Software sind die Quellcodes von [CRASH](#) und [SMAC](#).



Inhaltsverzeichnis

- [1 Bestandteile](#)
- [2 Lizenzierung](#)
- [3 Weitere Funktionalitäten](#)
- [4 SAE Papers](#)
- [5 Programme zur Unfallanalyse](#)

Bestandteile

- EDCRASH (**E**ngineering **D**ynamics **C**orporation **R**econstruction of **A**ccident **S**peeds on the **H**ighway)
- EDSMAC4 (**E**ngineering **D**ynamics **S**imulation **M**odel of **A**utomobile **C**ollisions)
- EDVSM (**E**ngineering **D**ynamics **V**ehicle **S**imulation **M**odel)
- EDVDS (**E**ngineering **D**ynamics **V**ehicle **D**ynamics **S**imulator)
 - SIMON (**S**imulation **M**odel **N**on-linear)
- DyMESH (**D**ynamic **M**echanical **S**hell)
- EDGEN (**E**ngineering **D**ynamics Corporation **G**ENERal Analysis Tool)
- EDHIS (**E**ngineering **D**ynamics **H**uman **I**mpact **S**imulator)
- GATB (**G**raphical **A**rticulated **T**otal **B**ody)
- EDVDB-3D (**E**ngineering **D**ynamics **V**ehicle **D**ata **B**ase - 3D)

Lizenzierung

Die Software wird per Hardware-Dongle "EDKEY" geschützt. Es gibt 3 Versionen der HVE, wobei der Nutzer die benötigten Bestandteile auswählen kann:

- HVE (3D-Funktionalität)
- HVE-2D
- HVE-CSI (**C**rash **S**ite **I**nvigator) - eine abgespeckte Version extra für die Polizei nur mit EDCRASH und EDSMAC (d.h. maximal 2 Fahrzeuge simulierbar)

Weitere Funktionalitäten

- Brake Designer
- Tire Blow-out Model
- ABS Simulation Model
- Automatic Transmission Model

- Driver Model, Path Follower
- Electronic Stability Systems Model
- Steer Degree of Freedom Model
- Hydroplaning Model
- Enhanced Tire-Terrain Models

SAE Papers

- [Day, T.](#); Hargens, R.: Differences Between EDCRASH and CRASH3. SAE Technical Paper [SAE:850253](#), 1985
- Day, T.; Hargens, R.: An Overview of the Way EDCRASH Computes [Delta-V](#). SAE Technical Paper [SAE:870045](#), 1987
- Day, T.; Hargens, R.: An Overview of the Way EDSMAC Computes Delta-V. SAE Technical Paper [SAE:880069](#), 1988
- Day, T.; Hargens, R.: Further Validation of EDCRASH Using the [RICSAC](#) Staged Collisions. SAE Technical Paper [SAE:890740](#), 1989
- Day, T.; Hargens, R.: Further Validation of EDSMAC Using the RICSAC Staged Collisions. SAE Technical Paper [SAE:900102](#), 1990
- Day, T.: An Overview of the HVE Developer's Toolkit. SAE Technical Paper [SAE:940923](#), 1994
- Day, T.: An Overview of the HVE Vehicle Model. SAE Technical Paper [SAE:950308](#), 1995
- Day, T.: An Overview of the HVE Human Model. SAE Technical Paper [SAE:950659](#), 1995
- Grimes, W.: Programming FORTRAN Applications for HVE. SAE Technical Paper [SAE:960889](#), 1996
- Day, T.: Differences Between EDVDS and Phase 4. SAE Technical Paper [SAE:1999-01-0103](#), 1999
- York, A.; Day, T.: The DyMesh Method for Three-Dimensional Multi-Vehicle Collision Simulation. SAE Technical Paper [SAE:1999-01-0104](#), 1999
- [Fay, R.](#); [Robinette, R.](#); [Scott, J.](#); [Fay, P.](#): PC-Crash and HVE, an Overview of Similarities and Differences. SAE Technical Paper [SAE:2001-01-0505](#), 2001
- Day, T.; Roberts, S.; York, A.: SIMON: A New Vehicle Simulation Model for Vehicle Design and Safety Research. SAE Technical Paper [SAE:2001-01-0503](#), 2001
- Day, T.: Validation of the SIMON Model for Vehicle Handling and Collision Simulation - Comparison of Results with Experiments and Other Models. SAE Technical Paper [SAE:2004-01-1207](#), 2004

Programme zur Unfallanalyse

- [Analyzer Pro](#)
- [Carat](#)
- [CRASH](#)
- HVE
- [PC-Crash](#)
- [REC-TEC](#)
- [SMAC](#)
- [Virtual Crash](#)