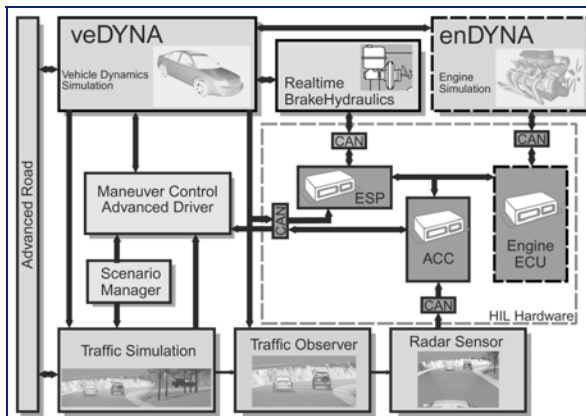


## Applications

The veDYNA Traffic Environment is the versatile traffic simulation tool for the development and test of driver assistance systems under reproducible conditions in the laboratory. Environmental information from physical sensors can be fed in by model interfaces for typical sensor types:

- Function development for driver assistance systems, e.g. lane departure warning, adaptive cruise control, lane change aid, collision warning and brake assist
- Real-time simulation for test and verification of ECU software in software-in-the-loop setups
- Fast and cost-effective testing of functional ECU prototypes and sensors by means of hardware-in-the-loop simulation
- Pre-calibration of control devices on the hardware-in-the-loop simulator
- Integrated test of networking active and passive safety systems
- Virtual test drives and animation in the driving simulator



**Example Setup of a HiL Testing Environment for Networking Controllers**

## Simulation Framework

The traffic module supplements the veDYNA simulation framework by a virtual traffic environment and sensor models to pick up environmental information.

- **Traffic Model**  
Virtual traffic environment with configurable fellow cars and static obstacles.
- **Sensor Model**  
Configurable real-time capable models of different sensor types.
- **Models for Driver Assistance Systems**  
Software emulation of typical advanced driver assistance systems for integrated controller tests.
- **Traffic Scenario Manager**  
Easy-to-use graphical user interface for configuring traffic scenarios and sensor settings.
- **Run-Time Animation**  
Run-time animation of traffic scenes with comfortable operation.
- **Ready-to-Use Examples**  
Pre-defined simulation models and data sets for typical test manoeuvres and traffic scenarios.
- **Documentation and Online-Help**  
Comprehensive documentation, context-sensitive and printable.
- **Based on Matlab/Simulink**  
Open Matlab/Simulink implementation for model based design and rapid controller prototyping.
- **All major Real-Time Platforms Supported**  
RTW code generation for PC executables and all major real-time targets.



**Models of Various Sensor Types to Sensor Fellow Cars and Obstacles**

## Features at a Glance

### Traffic Model

- Up to 16 fellow cars with fully configurable size and animation properties from passenger cars to heavy trucks.
- Configurable driving task for each fellow car.
- Up to 64 static obstacles with fully configurable position, size and animation properties.
- Frequent traffic through reappearing fellow cars.

### Sensor Model

- Up to 8 sensors for the detection of fellow cars and obstacles.
- Different sensor types available.
- Configurable field of view, range, resolution and output.

### Models for Driver Assistance Systems

- Software emulation of ACC controller for distance and speed control.
- Models for typical driver assistance systems, e.g. lane departure warning, blind spot detection, lane change aid, collision warning and intelligent light systems, available on request.

### Traffic Scenario Manager

- Graphical traffic editor for configuration of sensors, obstacles and fellow cars including driving task.
- Dynamic path planning of fellow cars.
- Script-based scenario configuration possible.

### Run-Time Animation

- Run-time animation of traffic scenes including visualisation of sensor ranges on all supported PC- and real-time platforms with the 3D-animation tool DYNAanimation.
- Various displays to highlight characteristic vehicle and traffic states.
- Programmable ActiveX interface
- Powerful options for impressive presentations of results.

### Ready-to-Use Examples

- Standard manoeuvres for the vehicle-under-test already preconfigured.
- Pre-defined scenarios for typical traffic situations and driving tasks of the fellow cars, e.g. following the heading vehicle, triggered speed changes or cutting-in of the heading car.

### Documentation and Online-Help

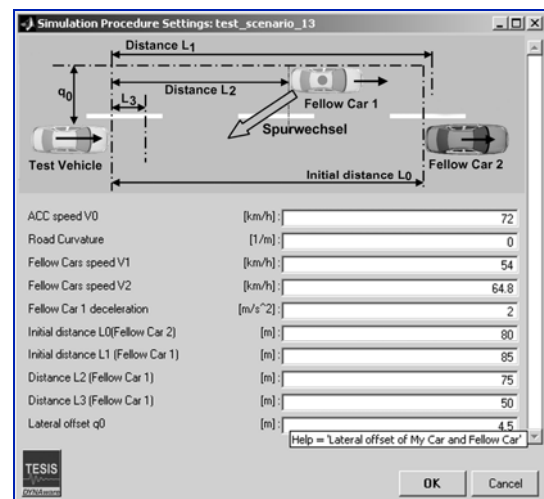
- User manual
- Printable documents
- Context-sensitive online-help

### Based on Matlab/Simulink

- Matlab interface for external data assignment and script-based simulation control. Many options for automated test runs as well as programmed pre- and postprocessing.
- Standard Simulink interface for user-defined model extension and integration of control functions.

### All major Real-Time Platforms Supported

- ADI, dSPACE, ETAS, Mathworks xPC, National Instruments, Opal-RT. Other targets available on request.



Traffic Scenario Manager

All DYNAware products are continuously being enhanced and improved according to requirements of our customers. A team of specialists is available to help you realise individual and specific solutions. Get more information at <http://www.tesis-dynaware.com>. Write an e-mail to [tesis.dynaware@tesis.de](mailto:tesis.dynaware@tesis.de) or call us: +49 89 74 73 77-0.

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