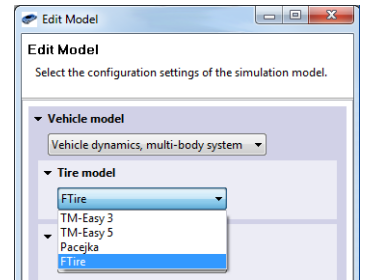


## FTire Integration in DYNA4 Vehicle Simulation Environment

DYNA4 as real-time vehicle simulation environment offers a number of handling tire models. In some cases, a high resolution contact patch and tire forces are desired. For such applications the FTire model has been made available in DYNA4. This allows for high accuracy NVH simulations to be performed while making use of DYNA4's framework features, precise vehicle dynamics, and extendable axle models. Engineers get a powerful tool to work on ECU development and vehicle components.



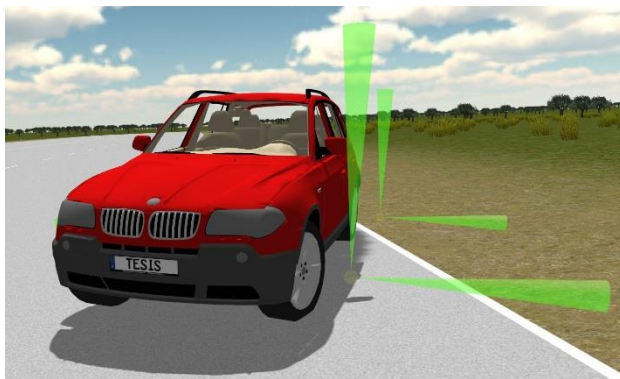
## Flexible Simulation Environment

### Model Repository

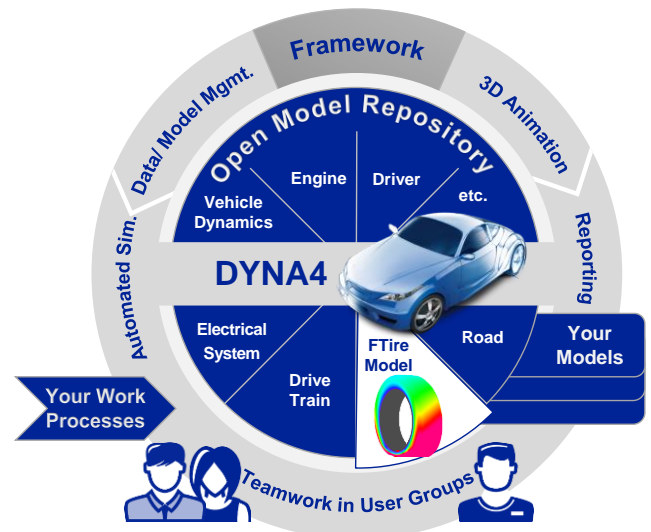
- Proven models for vehicle system simulation with a track record of applications in design, testing, calibration, and verification of vehicle control systems (e.g., ABS, ESP, 4WD control systems, active front steering in SIL and HIL setups).
- Real-time capable multibody axle models, with hard-point definition for detailed analysis of the axle design, offer an adequate level of detail together with the FTire model. DYNA4 comes with a library of common suspension types including bushings and up to 30 DoF per axle.
- Large choice of component models make development of different model configurations easy (e.g., conventional drivetrain and its hybrid drivetrain variant).
- TESIS DYNAware's proven real-time model library can be extended as required by your own models.

### Open and flexible simulation framework

- Consistent management of models, data, simulation scenarios, and results in every process step
- Provides useful tools for automated simulation and visualization
- Allows flexible adaptation to your work processes
- Interfaces to various test automation, version control systems, and MBS simulation tools
- HIL platform-independent: supports all major platforms



Simulation of NHTSA Fishhook maneuver with FTire model



## Applications

Combining DYNA4 with FTire provides a virtual environment for the development and testing of a variety of vehicle control functions, e.g.

- rollover protection
- traction control
- power steering control

## Benefits

- Seamless integration of FTire in DYNA4
  - Consistent use of the vehicle and tire model
  - Easy definition of driving maneuvers
- Transparent variant handling
- Combining FTire with the DYNA4 MBS axle models enable fast simulations with the appropriate level of detail
- Vehicle models can be easily extended and adapted

We are looking forward to discuss your needs and applications. Do not hesitate to contact us:

## Contact and further information

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