



Modelon

SOLUTIONS FOR MODEL-BASED AUTOMOTIVE SYSTEMS DESIGN

ABOUT MODELON:

Modelon provides software solutions and expert services to organizations that use model-based simulation tools to design and develop technical systems. Modelon's Library Suite, Creator Suite, and Deployment Suite are leading products available in the market today for modeling, simulation and optimization. Our products enable companies to focus on delivering a unified picture of product system interaction and performance – from product concept to operation.

Modelon is an industry leader in model-based systems engineering with a goal of advancing open-standard technologies, allowing customers to leverage their tools of choice and share models throughout the product development cycle. Today, we serve a clientele base across a wide range of industry sectors which include some of the largest companies in the world.



Modelon Library Suite
Powered by Modelica



Modelon Creator Suite



Modelon Deployment Suite
Powered by FMI

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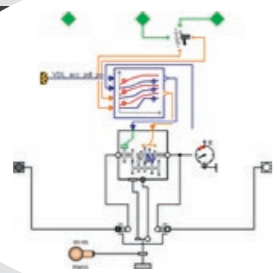
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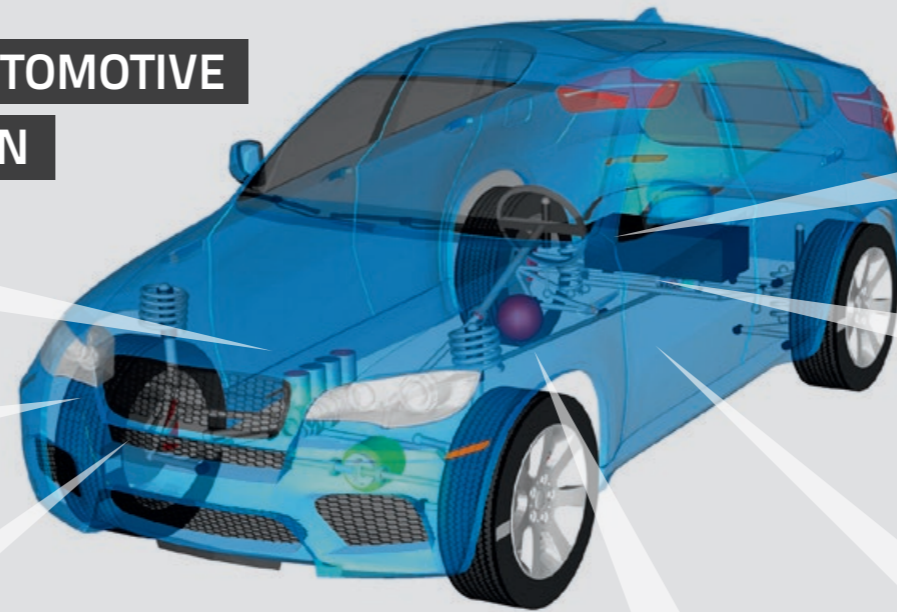


TRANSMISSION

Efficiency
Launch
Driveability
Shift performance
Noise
Comfort

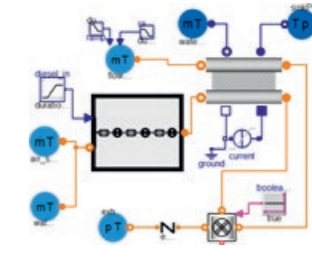


INTEGRATED AUTOMOTIVE SYSTEMS DESIGN



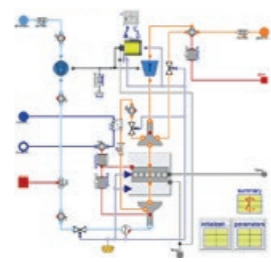
FUEL CELL

PEMFC systems
Reformation
Reactor
Temperature control



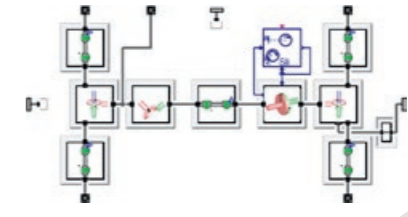
ENGINE

Air path management
Engine controls
After treatment
Comfort vibration
Start-stop
Downsizing



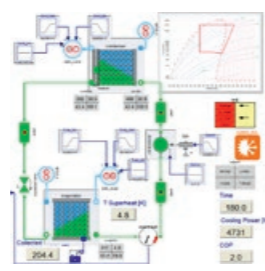
DRIVELINE

Driveability
Torque control
Vibration



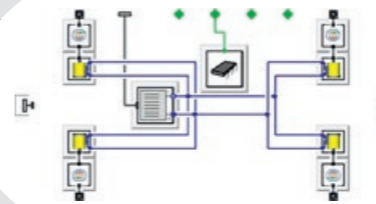
THERMAL MANAGEMENT

Cold start and thermal warmup
Cooling circuits
Air conditioning
Powertrain cooling
Hybrid system cooling
Heat exchanger stacking
Thermal performance limits



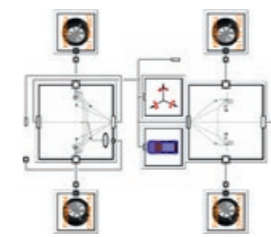
ELECTRIC PROPULSION

Hybrid powertrain
Battery management
Motors & Power electronics
Driveability



CHASSIS

Handling
Ride
Driveability
Active safety
Motorsports



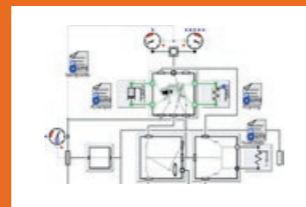
ARCHITECTURES



CONFIGURATIONS



PARAMETERIZATIONS

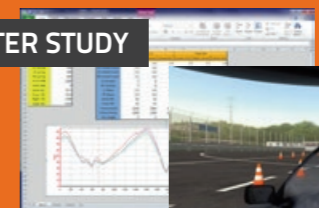


USE CASES

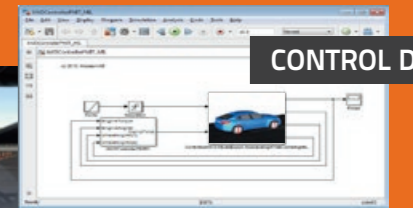


MODEL DEPLOYMENT

PARAMETER STUDY



CONTROL DESIGN

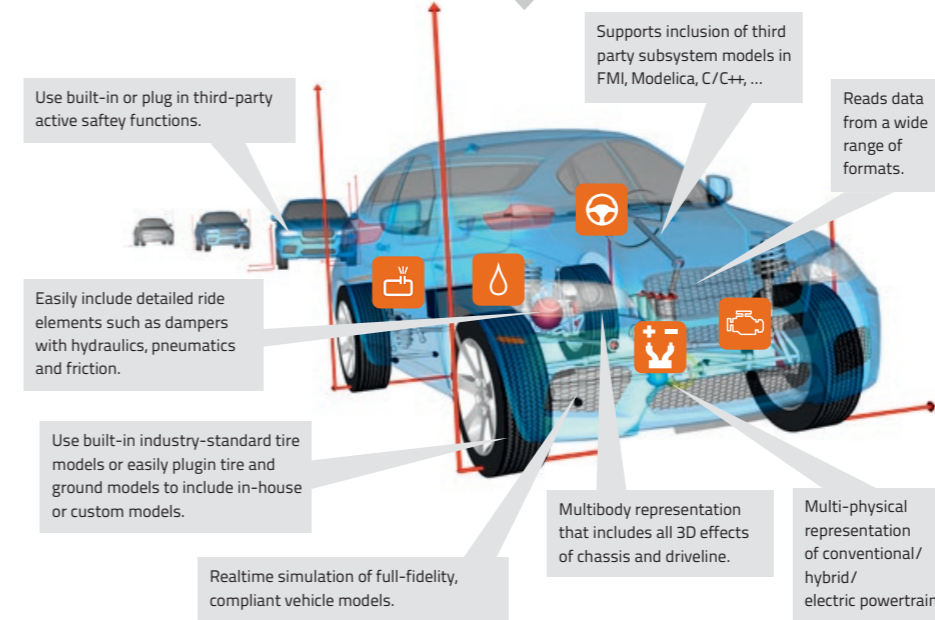
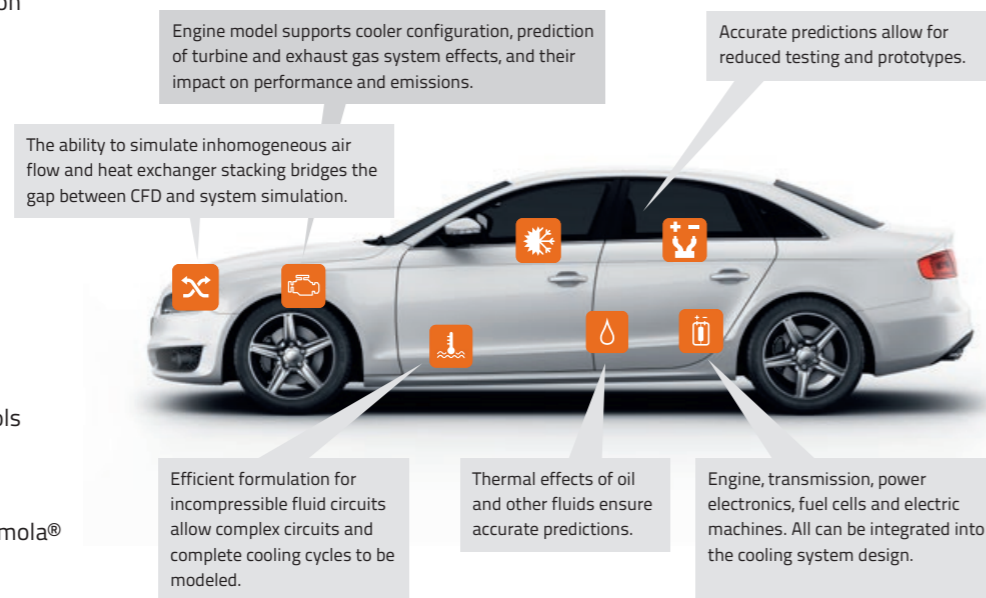


DRIVER-IN-THE-LOOP



SERVICES & SOLUTIONS

- Systems design and optimization
- Powertrain matching
- Thermal system design and sizing
- Hybrid and all electric system development
- Multi-disciplinary optimization
- Vehicle total energy management
- Drivability
- Active safety
- Autonomous driving and controls
- Toolchain integration
- X-in-the-loop development
- Training of Modelica®, FMI®, Dymola® and libraries
- On-site workshop



MODELICA AND FMI TOOLS

- FMI Toolbox for MATLAB®/Simulink®
- FMI Add-in for Excel®
- OPTIMICA® Compiler Toolkit

MODELICA LIBRARIES

- Hydraulics Library
- Pneumatics Library
- Electrification Library
- Liquid Cooling Library
- Vapor Cycle Library
- Fuel Cell Library
- Heat Exchange Library
- Air Conditioning Library
- Vehicle Dynamics Library
- Engine Dynamics Library