

Hybrid with dSPACE

Research institutes and industry working on alternative propulsion systems are increasingly turning to dSPACE tools, which have long been used for developing conventional drives. A variety of products are involved, from MicroAutoBox to networked systems of several hardware-in-the-loop (HIL) simulators. To show the wide range of different uses the tools are put to, here is a selection of customer projects:

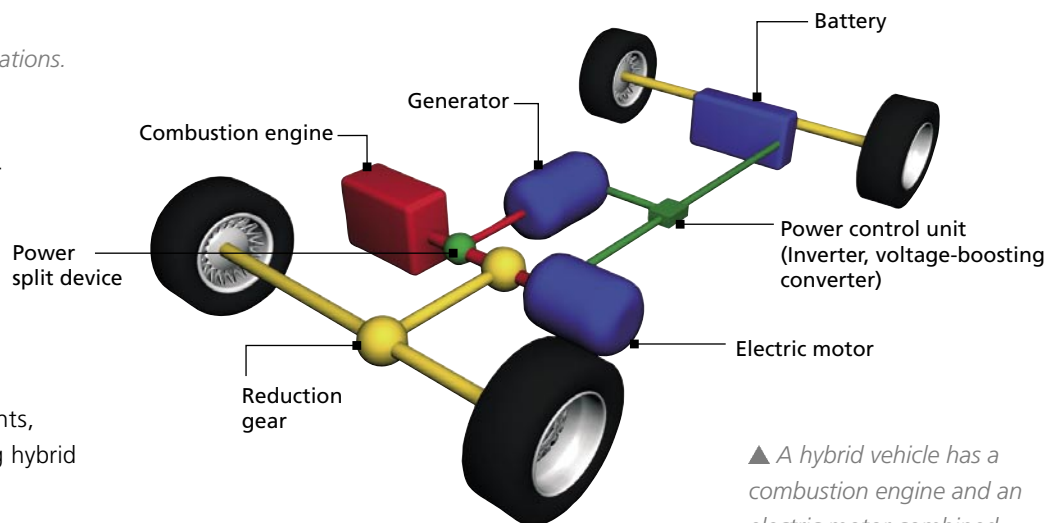
- **Testing and developing hybrid drives**
- **A variety of dSPACE products used**
- **Excerpt from customer list**

Company	Application	dSPACE Product
General Motors	Network testing of ECUs for IC engines, electric motors, and high-voltage electrical systems in hybrid vehicles	Networked hardware-in-the-loop simulators
DaimlerChrysler AG	Developing a hybrid system	Two hardware-in-the-loop simulators
DaimlerChrysler AG	Generating code for an ECU controlling the electric motor of a hybrid truck	TargetLink
General Motors	Hybrid drives	Two networked hardware-in-the-loop simulators
ZF Sachs AG	Testing and developing drive components for hybrid drives	Hardware-in-the-loop simulator
Hyundai Motor Company	Developing a control algorithm for an ECU in a hybrid vehicle	MicroAutoBox
FEV Motorentechnik GmbH	Developing and testing optimization strategies for start-up and acceleration	Hardware-in-the-loop simulator
University of Munich	Optimizing energy management for a parallel hybrid drive concept	AutoBox with modular hardware
Ford	Verifying embedded controller software for a vehicle system controller (VSC) for the Ford Escape Hybrid and other hybrid electrical vehicles (HEVs)	Hardware-in-the-loop system

▲ *Some examples of hybrid applications.*

FEV Motorentechnik's hybrid application is described more fully on page 14 of this issue.

For more details of dSPACE's new DS5202 FPGA Base Board, see page 19. This new dSPACE board can adapt to varying requirements, so it is ideally suited to simulating hybrid applications.



▲ *A hybrid vehicle has a combustion engine and an electric motor combined.*