

Space drives e-mobility

May 21 2013



ESA BIC Bavaria's start-up Modelon's libraries is used by Swedish car manufacturer Volvo to perform research into new safety systems. Credit: Modelon

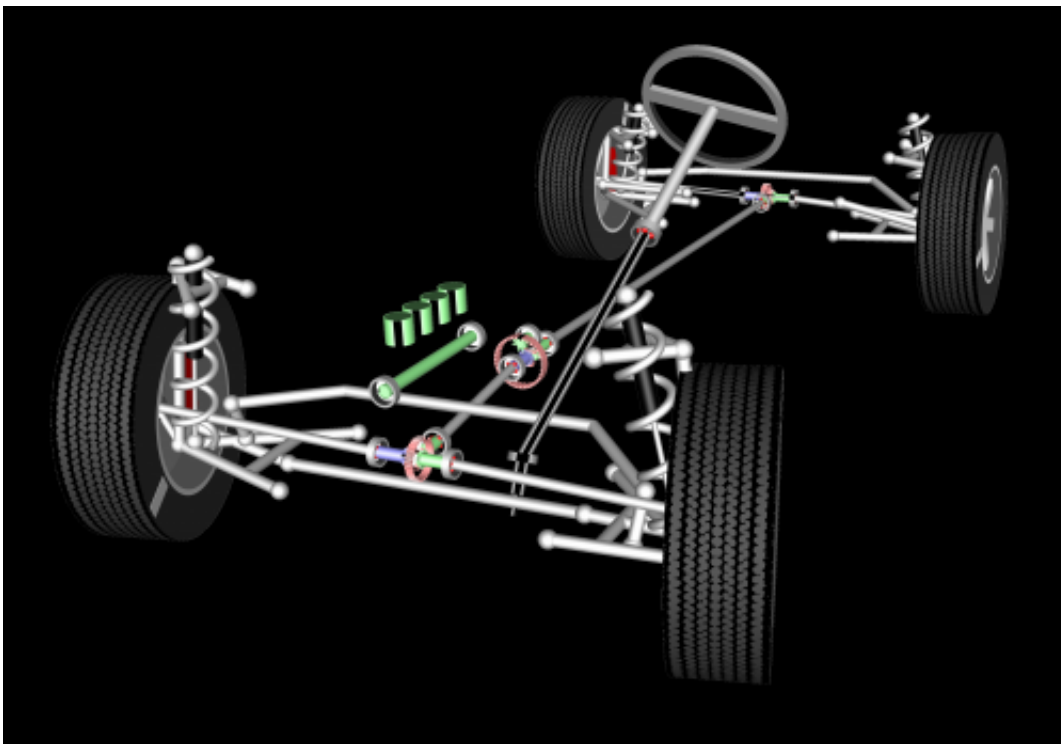
An ESA business incubation start-up company is helping major car manufacturers to develop electric vehicle concepts and improve safety systems by turning ideas quickly into virtual prototypes.

Foreseeing products by modelling and simulations can provide big jump-starts for companies," explains Johannes Gerl, founder and CEO of German start-up company Modelon GmbH.

They reduce their development efforts by saving on the number of [prototypes](#). In addition, they often reduce the time to market."

Supported during their start-up phase by ESA Business Incubation Centre Bavaria, their Modelica simulation libraries are now used by industry in several countries for modelling the behaviour of complex automotive and energy systems.

The company's simulation approach has been used by car manufacturers to develop a wide range of novel e-mobility designs such as more efficient hybrid and electric automobiles.



Modelon Vehicle Dynamics Library. Credit: Modelon

Customers include major car manufacturers

Engineers at Japan's Toyota company use Modelon's simulation libraries in developing novel e-mobility vehicle concepts such as their i-Real for easy city transportation and short commuting.



Toyota concept vehicle i-Real looks like an armchair on wheels with a recliner to provide stability. It is controlled by two joysticks, but driving can easily be done by just one hand. Designed for city centre personal mobility, i-Real has a top speed of 30 km/h. Credit: Toyota

Small, electric and lightweight, i-Real is almost an armchair controlled by two joysticks.

Toyota modelled, simulated and optimised it with Modelon's Vehicle Dynamic libraries.

Another customer is Sweden's Volvo. Here, engineers use Modelon's libraries for improving [car safety](#) systems. Real-life testing using physical prototypes is time-consuming, expensive and often unsafe for the test drivers.

"If you can represent the vehicle behaviour with a mathematical model, you have a great platform for active safety system development," said Per Ola Fuxin, Manager, Active Safety Functions at Volvo Cars.

Complete [vehicle](#) models can be created from construction data and physical tests, and the results can be validated against similar real-life test cases.

"The overall aim is to help our customers save money by using virtual [simulation](#) methods and save the number of real prototypes, thereby reduce the development effort," says Magnus Gäfvert, CEO Modelon AB.

More information: [Modelon](#)

Provided by European Space Agency

Citation: Space drives e-mobility (2013, May 21) retrieved 10 April 2024 from <https://phys.org/news/2013-05-space-e-mobility.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.