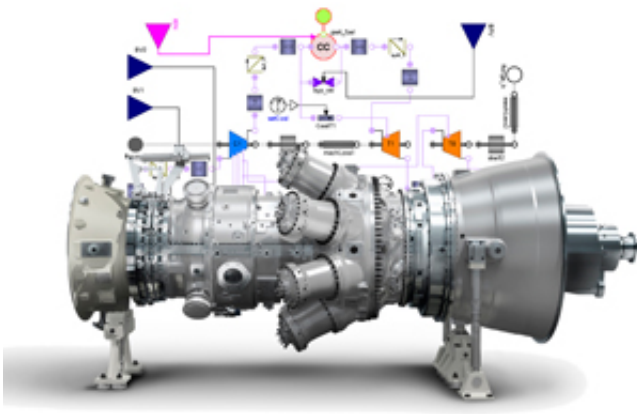


Future vehicles will be virtually tested before the first prototype is built

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Future cars and trucks will be tested in a virtual environment long before the first vehicle prototype is built. UMIT Research Lab at Umeå University plays a key part when the vehicle manufacturers Scania and Volvo Cars and the simulation companies Algoryx Simulation and Modelon join forces to develop technology for the next generation of vehicle system simulators.

A modern vehicle is composed of a variety of hardware and software components, each one being very complex. The interaction between the components, the operator and the surroundings is crucial for [vehicle fuel](#)

[efficiency](#), manoeuvrability and safety. This creates a need to be able to test the proposed vehicle characteristics at an early stage and detect possible system failures long before the first vehicle prototype is built.

To meet this need, the three-year project Virtual Truck & Bus was awarded a grant of SEK 10 million from the Swedish Energy Agency, through the Strategic Vehicle Research and Innovation programme, in addition to SEK 26 million invested by the industry. The goal is to develop technology and methodology for full-system simulation early in the product development cycle. The project builds on technologies developed at UMIT Research Lab within the VINNOVA-funded project Simovate.

Umeå University's part of the project has been awarded SEK 5.3 million. The UMIT Research Lab participants include researcher Claude Lacoursière and project coordinator Mats Johansson.

"A major problem with the current simulation techniques is that they are locked into different software and data formats based on different types of mathematics. This makes it difficult to link the components into usable full-system simulators. This hampers the development. But now we have a new solution in sight with solid mathematical foundation and generic software", says Claude Lacoursière.

"Keeping the [vehicle](#) models up to date and with the appropriate fidelity is a major challenge for companies. It is also a research area we touch in the project", says Mats Johansson.

Provided by Umea University

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