



ZF enhances the development of torsional vibration dampers by using SimulationX.

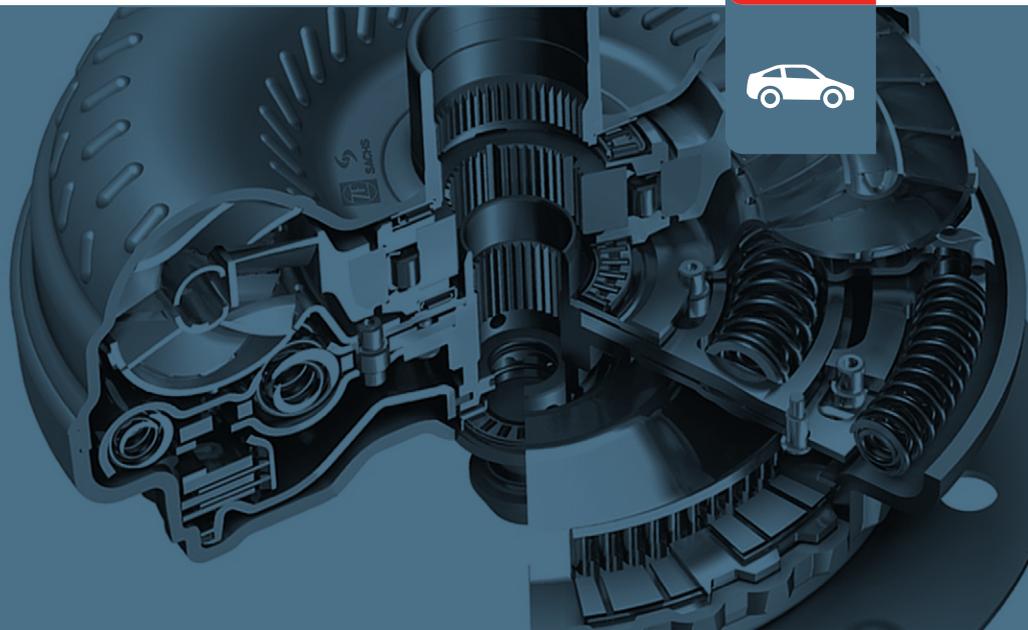
ZF is a worldwide leading automotive supplier for driveline and chassis technology with 117 production sites in 26 countries. The ZF Group has a global workforce of about 70,000 employees of which 30,000 are working outside of Germany. In 2010 ZF generated €12.9bn in revenue and is one of the top ten automotive suppliers in the world.

Founded in 1915, the company focussed on transmissions for airships and vehicles. Today the group's product range comprises transmissions, powertrain modules and steering systems, chassis components, entire axle systems and modules. Every year more than 5% of the total revenue flew back into research and development. R&D investments in 2011 will amount to approx. €740m.



»By using SimulationX, we achieve reliable simulation models of powertrains. With these models we are able to optimize the NVH functionality of our products.«

Michael Triebel, Head of Calculation/Simulation
Powertrain Modules, ZF Friedrichshafen AG



Challenge Simulating powertrains

In order to analyze and optimize powertrains of passenger cars and commercial vehicles, ZF was looking for a CAE tool that could build both simple and complex powertrain models quickly. Simulating load alterations and engine starts as well as integrating functions of the engine control unit were part of the overall task.

Solution SimulationX Professional Edition

SimulationX permits modeling of multiphysics powertrains in a short time. The type designer compiles a library for different powertrain modules, e.g. dual mass flywheels, torque converters and electric drives. The variant wizard is used for automated analyses and the evaluation of parameter changes.

Benefits Avoiding "trial and error"

By using SimulationX for a target-oriented optimization of powertrain modules, engineers can optimize torsional dampers already during the concept phase, thus saving time and costs even before building a prototype. By simulating dynamic behavior, both function and life time of powertrain modules can be tested on a virtual basis.