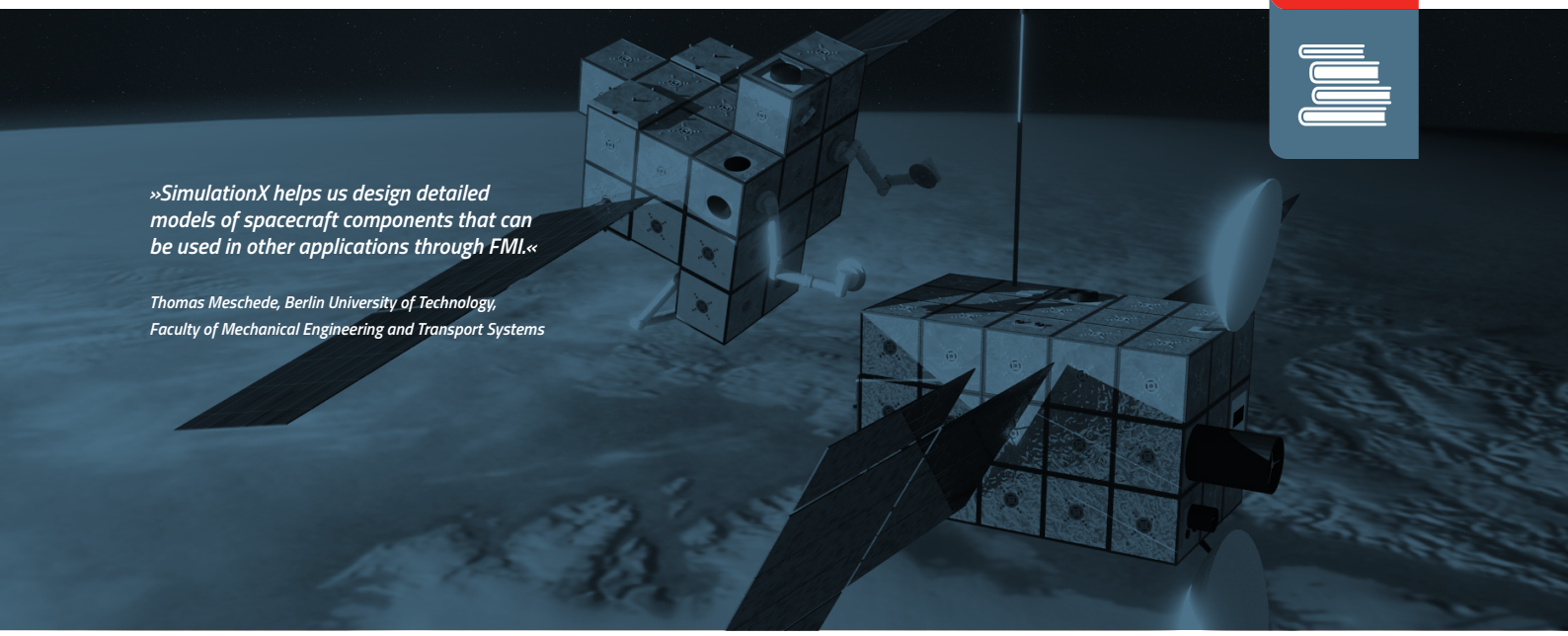
The Berlin University of Technology uses SimulationX to design and optimize modular satellite systems

The Berlin University of Technology (TU Berlin) is the largest of the four public universities in Berlin with almost 32,000 students across 90 disciplines. Together with its predecessors, the TU Berlin is also one of the oldest technical universities in Germany.

As part of the iBOSS project with the aim of modularizing future satellite systems, the Berlin University of Technology works on the development of cheaper and more maintenance friendly spacecrafts. SimulationX supports this process through multiphysics simulation of the system structure and controller layout.



»SimulationX helps us design detailed models of spacecraft components that can be used in other applications through FMI.«

Thomas Meschede, Berlin University of Technology, Faculty of Mechanical Engineering and Transport Systems

Challenge

Modular satellite systems

Until now, outdated or defective satellites used to be replaced as a whole. In order to reduce costs and waste, the idea is to replace only affected components in the future. This modular approach, however, requires a completely new development from scratch.

Solution

Multiphysics system simulation

All satellite systems with their components including power supply and communication are modeled in SimulationX as a modular structure with mechanical, electrical and thermal connections. The controller layout for the entire system can then be designed and tested accordingly.

Benefits

Faster and better adaptability

The computer-aided design process improves the development of complex satellites and helps shorten implementation cycles for a specific mission avoiding time-consuming and expensive custom solutions.

ESI ITI GmbH | Schweriner Straße 1 | 01067 Dresden, Germany | T +49 (0) 351.260 50 - 0 | F +49 (0) 351.260 50 -155 | info.iti@esi-group.com

Doc. Vers.: 01/2015