simulations driven by engineering excellence

Predictive maintenance of Aircraft Engines

Using a Digital Twin for Predictive Maintenance of Aircraft Engines

Digital twins are increasingly playing a crucial role in the industry. They provide a universal platform to manage, control and monitor machines, systems or individual products throughout their entire lifecycle. The resulting benefits, for example in the field of predictive maintenance, can only be as good as the underlying data and models.

To optimize maintenance intervals according to demand and to manage them for individual aircraft, a digital twin based on CFD and FEM Simulations was created and validated for our client, Lufthansa Technik AG.

The following steps were carried out to create the digital twin

- Setting up of the simulation workflow in ANSYS® CFX and ANSYS® Mechanical
- Organization of the simulations using optiSLang
- Creation of the field metamodel with Statistics-on-Structures
- Providing of data for further evaluations

By using the digital twin, flight data can be analyzed within seconds with very high accuracy. This provides reliable data in the shortest possible time, which can be used for the predictive maintenance of aircraft engines as well as for the creation of demand-based maintenance contracts.

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We accelerate our customers‘ innovations through virtual simulations and precise calculations of physical and technical requirements. We transform our results into practical solutions that enable our customers to achieve excellence in engineering technology.

Dr. Frank Brehmer,
Managing Director ITB

Our services

- **Component Strength Analysis**
- **CAD Construction**
- **Component Verification**
- **Electrothermal Simulation**
- **Flow Simulation**
- **Light Simulation**

Are you planning your next project and want more security from our expertise? Then get in touch with us:

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