Altair | ProductDesign

case study

OPEL

Improving Design Productivity through Automation

Automotive OEMs around the world face issues including reducing computer aided engineering (CAE) cycle times that result from a growing number of car variants, a rising volume of data and tremendous competitive pressure. In response, OPEL identified the design process of engine mount systems as a candidate for a process automation solution. As an objective, NVH engineers had to be able to generate input decks even without detailed load case information. Knowledge had to be captured and re-used in a standardized workflow. Automatic optimization and robustness analysis of the mount parameters had to be integrated into the process to quickly improve final product quality.

solution

The customized automation solution “Engine Mount Studio” was developed by Altair ProductDesign’s process automation team for OPEL, using HyperWorks’ modular automation framework. Engine Mount Studio guides the engineer through the process of data collection and management; analysis setup and run; post-processing and parameter optimization. The user enters desired load case combinations and vehicle variants, as well as properties of the mount. Within the optimization module, parameters like mount positions and properties can be optimized. The solution is used in production in midsized and small car projects by CAE and test engineers.

result

The project successfully captured Opel’s design best practices and automated many of the standard processes. This allowed Opel to ensure better product quality through integration of automatic optimization and robustness methods as well as improving overall productivity of its CAE process.

“This ML-Studio process automation solution with HyperWorks improves the quality of our NVH process and the productivity of our team a lot.”
Dr. Dietmar Jennewein, Team Manager NVH, Adam Opel AG