Case Study
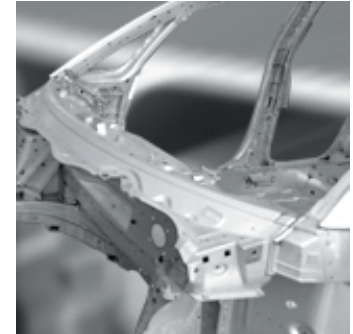
HyperWorks Improves Development Processes at Automotive Consultancy

Overview

csi entwicklungstechnik GmbH, a leading engineering service provider for the automotive industry has enhanced its simulation power with Altair's HyperWorks Suite. The company consolidated its CAE tools and now uses the large scale of HyperWorks, which offers a solution for almost every application needed in modern product development. csi will apply OptiStruct for optimization tasks, MotionView and MotionSolve for multi-body applications, and HyperMesh for pre-processing tasks. Additionally HyperShape/CATIA will be used for CAD integrated optimization and weight reduction.

Business Profile

New ideas, constructive discussions, innovative Solutions - established automotive OEMs and many automotive suppliers trust in the knowhow of csi entwicklungstechnik GmbH to develop entire interior and exterior systems, components, and subsystems. The development teams of csi develop future pointing solutions with the newest technologies. Specialized in product development processes of the automotive industry, the csi teams support all customers of the company also with project management. Their overall goal is a project transparency that gives insights into characteristics, costs, weight, quality and timeline of all phases of a project. For further information please visit: www.csi-online.de.

Challenge

Being an engineering service provider for the automotive industry, the csi engineers have to handle many different simulation tasks accompanying the whole development process from concept to start of production. Therefore many different simulation disciplines have to be addressed and handled by the engineers. It is crucial to work as much as possible within one CAE environment, since the data transfer within one environment is much easier, less error-prone, and less time consuming. This is even more important if the process chain builds on results from one application for others (i.e. the use of multibody simulation results as input for weight optimization, NVH or crash applications). Additionally, many customers request the use of a particular solver and therefore consulting engineers need a CAE environment with an open architecture, which can be adjusted and used within the existing IT landscape. Furthermore new trends for sustainable engineering and CO_2 reduction lead to a need for material savings and an intensive use of optimization technologies.

"It is our goal to handle customer development projects even more efficient and professional. Thanks to HyperWorks we are now able to consolidate our CAE tools, since HyperWorks, due to its unique licensing system, covers most of our relevant applications with one product family. This enhances our development processes and we as well as our customers will profit from it."

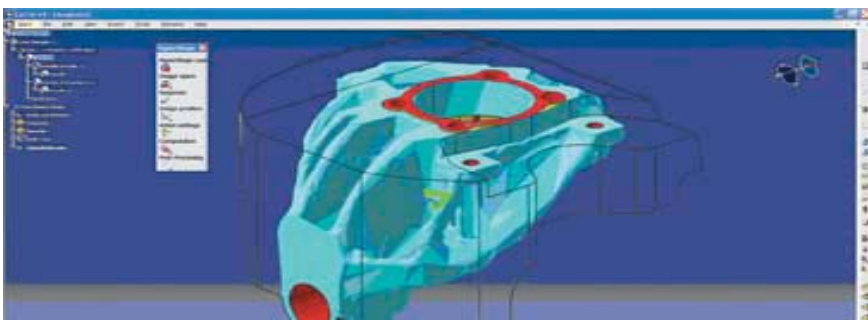*Steffen Boll, Managing Director of csi.*

Solution

Altair HyperWorks offers a flexible solution to address most of the needed simulation disciplines within one CAE environment. As an open system, HyperWorks can be used seamlessly with any external solver, offering the flexibility a service provider needs to fulfill the customers' requests.

With the offerings of the HyperWorks Enabled Community, csi engineers are able to use a broad bandwidth of additional CAE tools (i.e. CFD, molding simulations) at no additional costs. Additionally OptiStruct as well as the CATIA integrated HyperShape/CATIA software tools offer state of the art solutions for the optimization of any component, enabling material savings, lightweight design and support the use of new materials such as composites.

To handle multibody simulation tasks CSI uses MotionView and MotionSolve. Here the multi-body simulation of a windshield wiper.

Results/Benefits

HyperShape/CATIA helps to optimize the topology of a component

The HyperWorks Suite offers one product family for all simulation and analysis tasks that occur within the development process. All tools of the HyperWorks suite can be accessed with just one license and data transfer between different applications can be handled easily, since the user can stay within one CAE environment for all tasks.

The introduction of HyperWorks at csi helps to:

- Reduce development time
- Accelerate innovation
- Maximize the return on software investments
- Improve quality and robustness
- Fulfill all customer requirements