



Dongfeng Motor Corporation validates the Fengshen S30 with Virtual Performance Suite

Featuring
PAM-CRASH

THE CHALLENGE

- Succeed in developing the Dongfeng Fengshen S30 car model, the first passenger car designed and developed by Dongfeng Motor Corporation.
- Overreach high safety requirement demanded by China's National forced regulations.
- Use simulation for the entire development process and validate the model with simulation.

THE STORY

"We used Virtual Performance Suite for a number of crash and safety simulation analyses with PAM-CRASH to develop the Dongfeng Fengshen S30. We found and solved many problems. PAM-CRASH is a good crash and safety simulation tool, which guarantees finishing the design work in time. We are planning to use it widely in new product developments."

Dr. Chen Gan, Deputy Chief Engineer, Dongfeng Motor Corporation.

THE BENEFITS

- Use Virtual Prototyping to reduce time to market.
- Optimize the Product Development Cycle by decreasing the total number of physical tests; thus strongly reducing development costs.
- Benefit from a single simulation model to run all performance tests: make a common analysis to avoid repeating work.

Dongfeng Motor Corporation is one of the three giant auto makers in China. Its main businesses include passenger vehicles, commercial vehicles, engine, auto parts & components, and equipment.

With about a 14% share China's Automotive market in 2008, Dongfeng Motor Corporation ranks respectively twentieth in the Top 500 domestic enterprises and fifth in the Top 500 domestic manufacturers in China.



A TECHNICAL CENTER ENCOURAGING GREEN DEVELOPMENT

Dongfeng Motor Corporation Technical Center develops new products in the field of Green energy. It contributes considerably to mixed fuel car and electric commercial vehicle research and development. The Technical Center is acknowledged as the national class corporation technical center by several prestigious Chinese National Organisms: National Development and Reform Commission, Ministry of Finance, General Administration of Customs and State Administration of Taxation.

Today, the Technical Center has more than 800 employees and several departments including Chief engineering, design, trial-manufacturing, testing, development management, integration. Full car tests are held including engine, chassis, trims, instruments, lighting and electrical appliances, as well as nonmetal parts.

Prior to these physical tests, the Technical Center uses Virtual Prototyping with PAM-CRASH, ESI's structural crash analysis application, included in Virtual Performance Suite.

REDUCING TIME TO MARKET WITH VIRTUAL PROTOTYPING

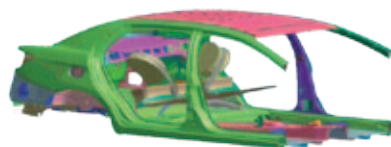
During the Product Development Cycle of its new car model, the Dongfeng Fengshen S30, Dongfeng Motor Corporation used PAM-CRASH to validate a virtual car model before building a real physical prototype.

PAM-CRASH was widely used by the development team to test several aspects of the whole car model. Engineers started analyzing the component structure strength as well as entire car strength and stiffness.

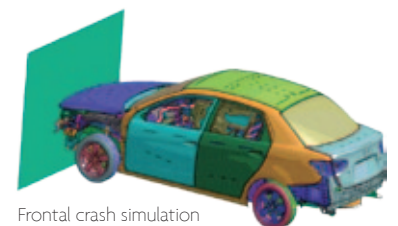
The occupant restraint system integration was tested using PAM-SAFE, the complementary ESI application dedicated to safety analysis, also included in Virtual Performance Suite.

Using Virtual Performance Suite allowed Dongfeng Motor Corporation to validate with simulation the Dongfeng Fengshen S30 prototype before manufacturing a physical prototype to pass the certification test.

By saving cost and time during the Product Development Cycle, Dongfeng Motor Corporation met its performance targets and was able to deliver its first self-designed car model to the market at the right time.



Body-In-White simulation



Frontal crash simulation

BRINGING STRONG COMPETITIVE ADVANTAGES

Virtual Performance Suite gave a strong competitive advantage to Dongfeng Motor Corporation. Indeed, considering itself a new comer in the car construction market, Dongfeng Motor Corporation was able to overcome its lack of experience, since a lot of work was done with simulation trials during the development phase.

Besides, PAM-CRASH is an intuitive dedicated application providing engineers with highly accurate results.

"The analysis engineers love PAM-CRASH. It is becoming the reference analysis tool of the crash simulation platform"

Dr. Chen Gan, Deputy Chief Engineer at Dongfeng Motor Corporation

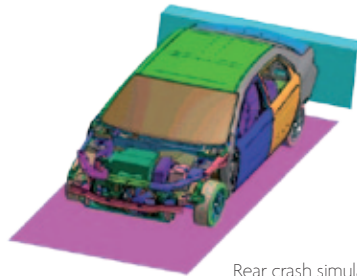
OUTSTANDING RESULTS OBTAINED

PAM-CRASH takes into account the whole structure of the car model, adopting the same parameters for each component and assembling the model in a modular manner. Then it assembles a basic car model to crash and perform tests.

Used by several crash analysis engineers from different specialties, this basic car model became the starting point of the whole crash analysis. For instance, the side crash engineers set up seat, airbag and dummy for side crash testing and performed the side crash. In the meantime, engineers divided the basic model, loaded seat belt anchors and improved the local model.

Through strict job analysis, the Dongfeng Fengshen S30 solved the defects early in the Product Development Cycle, passed successfully the National forced regulations, and ensured the development tasks were done favorably.

"We are pleased to find PAM-CRASH plays an important role in the development work of Dongfeng Fengshen S30", said Mrs. Grace Cui, General Manager at ESI China. "We will support Dongfeng Motor Corporation to continue to gain from their use of Virtual Performance Suite in their development work."



Rear crash simulation



Side crash simulation

To find out more on ESI's Virtual Performance Suite, visit: www.esi-group.com/virtual-performance-suite

ABOUT DONGFENG MOTOR CORPORATION

Founded in 1969, Dongfeng Motor Corporation is one of the three giant auto makers in China. Its main businesses include passenger vehicles, commercial vehicles, engine, auto parts & components, and equipment. Through over 40 years of development, a set of R&D and manufacturing facilities have been established as well as an extensive distribution and after-sales network, which unfolds a business display of footed in Hubei while radiating the whole nation. Dongfeng Motor Corporation's headquarters is based in Wuhan and the major business facilities are located in Shiyuan, Xiangfan and Guangzhou. www.dfmc.com.cn

ABOUT ESI GROUP

ESI is a world-leading supplier and pioneer of digital simulation software for prototyping and manufacturing processes that take into account the physics of materials. ESI has developed an extensive suite of coherent, industry-oriented applications to realistically simulate a product's behavior during testing, to fine-tune manufacturing processes in accordance with desired product performance, and to evaluate the environment's impact on product performance. ESI's products represent a unique collaborative and open environment for Simulation-Based Design, enabling virtual prototypes to be improved in a continuous and collaborative manner while eliminating the need for physical prototypes during product development. The company employs over 750 high-level specialists worldwide covering more than 30 countries. ESI Group is listed in compartment C of NYSE Euronext Paris. For further information, visit www.esi-group.com.



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