



Incorporating novel technology to enhance performance

Carbon Air, a University of Salford spin-out company, focuses on the development of new noise-proofing, audio and air spring technologies to Automotive, HGV, Architectural and Rail markets.

The company's expertise lies in a unique capacity to characterise the behaviour of a range of materials with unusual properties, particularly in their ability make small spaces behave like larger ones.

THE CHALLENGE

Carbon Air approached the VEC to help with the development of their novel technology using virtual engineering tools to evaluate product design. The VEC created a number of virtual prototypes of ground vehicles, encapsulating the experimental measurements on the performance of their innovative air-springs. Several modelling techniques were investigated for the behaviour of suspensions using multi-body dynamics. The virtual prototypes were then interrogated through the simulation of over 1000 different cases.

THE SOLUTION

Through the use of virtual prototypes and the ability to run multiple simulations, it was proven through this project that the novel technology deployed, demonstrated a superior product performance in ride comfort and vehicle holding in comparison with a typical air-spring.

The findings from this project have been used to support strategies for leveraging product performance and new patented innovations. The project has also provided support material to attract technology funders to support the continued development of this product.

THE BENEFITS

"The location of the VEC on the Daresbury campus and the work provided has already resulted in a new business and job being created. The business plan for the company assumes additional staff will be employed in the near future."

- John Coakley, Director for Carbon Air