



Providing BAC Ltd with 'on-demand' virtual engineering expertise

Liverpool based and niche vehicle manufacturer Briggs Automotive Company Ltd (BAC) gains access to a novel technology solution developed by the Virtual Engineering Centre (VEC), developed through the VEC "expert on-demand" Engineering Cloud web portal and deployed to support the evaluation and understanding of vehicle attributes for the enhancement of the BAC vehicle development programme.

THE CHALLENGE

BAC Ltd, the developer of the road-legal single-seat supercar MONO, wanted to increase its flexibility and accessibility to computer-aided engineering (CAE) expertise, sophisticated software and computing resources to evolve vehicle attributes and gain a competitive market edge.

The VEC wanted to support BAC by offering 'on-demand' access to a virtual testing process which would help the manufacturer to confidently accelerate the adoption of new components and designs.

THE SOLUTION

The VEC developed an advanced and modularised workflow for assessing the bending and torsional stiffness of the MONO framework.

Using the developed VEC Engineering Cloud, different variants of potential chassis were created and set-up for structural analysis through single runs or design explorations, taking into account suggestions from CAD engineers as well as material specifications from the chassis supplier. The submission of Finite Element Analyses (FEA) to High Performance Computing facilities was a user-friendly one-click process. The powerful FE solver DYNAMIS from DTECH was used, providing various results, including formatting for VR environments, enabling the interpretation of the results in 1:1 scale. Remote virtual engineering testing was also enabled through the extensive and seamless access to the High Performance Computing (HPC) facilities of the Hartree Centre at the Science Technology Facilities Council (STFC), Daresbury Laboratory.

THE BENEFITS

The VEC provided BAC with a platform for collaboration throughout their supply chain and enabled them to co-design Engineering Services tailored to their needs using multidisciplinary expertise, high fidelity virtual prototypes and advanced workflows. This access to 'expertise on-demand' reduces design 'bottlenecks' and enables organisations such as BAC greater flexibility and speed to innovate their products. The VEC Engineering Cloud provides easy-to-use, non-expert access to HPC accessible from any internet-enabled computer/tablet or laptop and common access to software "on-demand", providing readily accessible resources beyond the existing capacity of an organisation.