**The use of CFD in the design of a 1,000mph car: BLOODHOUND SSC, an engineering adventure**

The BLOODHOUND Supersonic Car, launched by Richard Noble and Andy Green in October 2008 is set to take the land speed record into a whole new speed regime. The team, including researchers from Swansea University at its heart, plans to take a manned vehicle to 1000mph by 2016, increasing the current Land Speed Record (763mph) by over 30%. This target presents the team with massive scientific and engineering challenges, not least of which being how the car will stay attached to the ground at these speeds. The CFD (computational fluid dynamics) research team at The College of Engineering has been working on answering these questions, and predicting the overall aerodynamic behaviour of such a vehicle. This presentation will consider how these challenges have been overcome in designing BLOODHOUND SSC and what has been learnt about the use of CFD in the industrial design cycle.
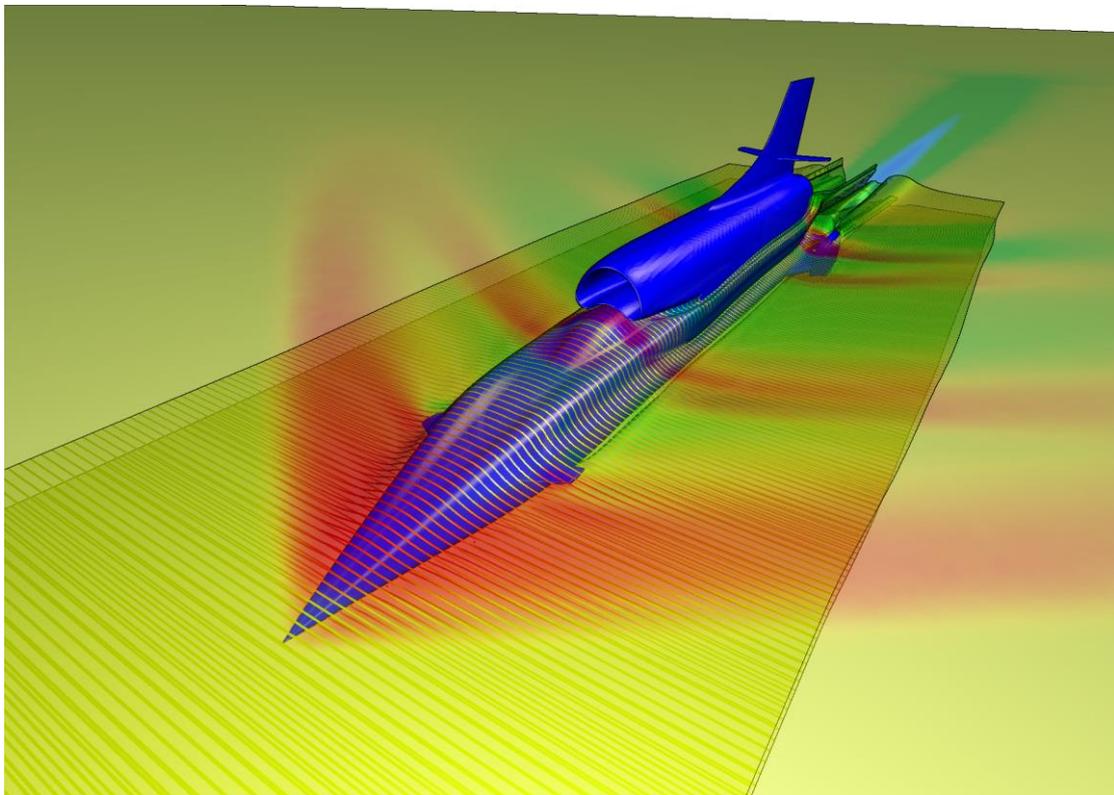
CFD flow visualisation over the final design configuration of BLOODHOUND SSC

Dr Ben Evans profile

Dr Evans studied Aerospace and Aerothermal Engineering at Jesus College, Cambridge graduating in 2004. After graduating, he immediately began a PhD in Computational Fluid Dynamics at Swansea University which was completed in October 2008. In his PhD research he focussed on computational solutions to problems in the field of molecular gas dynamics and was conducted under the supervision of Prof Ken Morgan.

Dr Evans began working as a research assistant under the supervision of Prof Oubay Hassan in the summer of 2007. His post-doctoral research was on the development of unstructured mesh techniques for high speed flows with particular application to the BLOODHOUND supersonic car. Since 2011 he has been working as a Lecturer in Aerospace Engineering at Swansea University's College of Engineering with research in high speed flow modelling and aerodynamic optimisation methods.