

High temperature brushless motor for driving jet liner engine actuator

UC consulting project undertaken by: EPECentre

Commissioned by: Héroux-Devtek, Spain

Principal Investigator: Dr Richard Strahan

The Nacelle cowl NExt generation Opening System (NNEOS) is a European funded project to develop an electromechanical actuator to open and close the nacelle cowls of new generation Ultra High Bypass Ratio (UHBR) jet-liner engines, and keep the cowls open during maintenance tasks. The actuator development is being coordinated by Héroux-Devtek, Spain. Temperature constraints are a significant challenge in the development of the NNEOS equipment, which faces the challenge to withstand operating temperatures as high as 250 °C. This required the design of a new motor to meet this and other demanding requirements. UC's EPECentre designed, built, and tested a prototype brushless motor to meet this challenge. Construction and testing was undertaken in the Power Electronics Lab. The motor project was successfully completed in February 2023.



The scale of the UltraFan® demo engines

Proving a new engine architecture, technologies and materials

Scalable across aircraft requiring ~25-110kIbs thrust

