UK consortium to deliver world's first truly green passenger carrying airline services using hydrogen fuel cell technology

Demonstrating that sustainable propulsion technology has a clear route to market, the Cranfield Aerospace Solutions-led consortium's technology programme will accelerate the journey to zero-emissions, passenger-carrying service.

Cranfield, Bedfordshire (UK), 30th March 2021: Cranfield Aerospace Solutions (CAeS) - the UK SME leading the Project Fresson consortium - announces it will exploit recent advances in hydrogen fuel cell technology to develop a commercially viable, retrofit powertrain solution for the nine-passenger Britten-Norman Islander aircraft.

Following a rigorous assessment of hydrogen technology innovators, CAeS is delighted to welcome Ricardo UK Ltd and Innovatus Technologies Ltd to the Fresson consortium. Ricardo UK Ltd brings expertise in fuel cell system development and Innovatus Technologies Ltd brings their innovative **S**cottish **Hy**drogen **F**uel **T**ank (SHyFT) technology.

"We are proud to join the Cranfield Aerospace Solutions consortium to play our part in helping to reduce the carbon footprint for commercial air passengers. We are already working on hydrogen and fuel cell technology, providing clean efficient solutions which reduce carbon and noxious emissions across a wide range of sectors. Our work for the Fresson consortium will enable us to consolidate and grow our hydrogen fuel cell and propulsion capability, so that Ricardo can achieve its ambition of becoming a world-leader in hydrogen and fuel cell services and solutions and help accelerate net zero transportation."

Steve Dyke
Managing Director
Ricardo Automotive and Industrial EMEA Division

Innovatus Technologies Ltd leads the field in next generation ultralightweight hydrogen tank design exploiting patented cellular core composite techniques. This is critical to the successful integration and exploitation of hydrogen fuel cell power systems in applications across aerospace, automotive, industrial, and marine sectors.

"We are proud in being selected to join the Cranfield Aerospace Solutions, 'Project Fresson', consortium. Our unique and innovative SHyFT solution is game-changing in bringing zero carbon fuel cell energy to commercial reality in the transport sector. Project Fresson showcases important Scottish innovation and next generation hydrogen tank manufacturing in the UK."

Ruan Swart
Chief Executive Officer
Innovatus Technologies Ltd

Project Fresson will deliver an emissions-free (zero CO_2), hydrogen-fuel-cell-powered flying demonstrator by September 2022. Having completed a comprehensive evaluation of technologies and configurations for sustainable aircraft propulsion, the Fresson team concluded that hydrogen fuel cell technology is the optimum solution to meet environmental, regulatory and operational requirements for this size of aircraft, enabling zero carbon emissions and reducing operating costs. This has presented the Fresson consortium, which includes Britten Norman and Cranfield University, with an opportunity to deliver an enhanced technology programme that surpasses the original demonstrator concept.

"This is incredibly important for the Project Fresson Team but also for everyone else around the world interested in zero emissions flight. This project can deliver the world's first truly "green" passenger carrying airline services. The whole team is proud of what Project Fresson has achieved so far and excited about what is to come. I am very thankful for the support of the ATI and our investors for making this groundbreaking work a reality."

Paul Hutton
Chief Executive Officer
Cranfield Aerospace Solutions

"Covid-19 has caused the biggest crisis in aviation's history. It's important that, as the sector builds back better, it does so with sustainability at its heart. Project Fresson is more than just a technology demonstrator; it has one focus above all others: real operational and commercial viability."

Jenny Kavanagh
Chief Strategy Officer
Cranfield Aerospace Solutions

Project Fresson is supported by the ATI Programme, a joint Government and industry investment to maintain and grow the UK's competitive position in civil aerospace design and manufacture. The programme, delivered through a partnership between the Aerospace Technology Institute (ATI), Department for Business, Energy & Industrial Strategy (BEIS) and Innovate UK, addresses technology, capability and supply chain challenges.

As a result of these changes, there is now no longer a need for the Rolls-Royce element of the aircraft programme. It is therefore Rolls-Royce's intention to withdraw from Project Fresson and the consortium is going through the necessary steps for this to happen. We thank Rolls-Royce for its contribution to Project Fresson and wish its team well. Rolls-Royce will continue to actively research the use of hydrogen in aviation and this decision in no way reflects its overall view of hydrogen as a potential technology.

To follow the progress of Project Fresson, check out our new microsite: www.projectfresson.uk or follow on Twitter @projectfresson.

Cranfield Aerospace Solutions (CAeS) – An aerospace market leader in rapid prototyping of new aerospace concepts, modifications to existing aerospace platforms and integration of cutting-edge technologies to meet the most challenging issues facing the industry today. CAeS is the wholly owned commercial arm of Cranfield University.

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