

UK company offering a patented wing seal technology, seeks pilot manufacturing partner to develop new solution for sealing of laminar flow aerodynamic surfaces in aircraft wings and wind turbine blades

Summary

Profile type	Company's country	POD reference
Technology offer	United Kingdom	TOGB20250306019
Profile status	Type of partnership	Targeted countries
PUBLISHED	Commercial agreement with technical assistance	• World
Contact Person	Term of validity	Last update
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General Information

Short summary

The UK engineering company is developing a solution for the sealing of laminar flow aerodynamic surfaces in aircraft wings and wind turbine blades. It removes the need for application of sealant between joints, balancing the conflicting requirements of tight aerodynamic tolerances, against cost-effective, easy-to-repair structures. They seek pilot partners to help them further develop the technology under a commercial agreement with technical assistance.

Full description

The UK company innovates in lightweight structures with a commitment to sustainable and renewable engineering and the appropriate synthesis of conventional and advanced materials. The company has been successful in obtaining several Innovate UK (the UK Innovation Agency) and ATI (Aerospace Technology Institute) funding grants to support the development of its in-house innovations.

The company has developed a novel sealing technology that aims to deliver an innovative wing assembly sealing system employing a high build-rate end effector to snap-fit an operability-friendly seal.

The mechanical snap-fit seal manages gaps / steps in aerodynamic surfaces to maintain laminar flow across joints. It provides an alternative to traditional sealant enabling a further ramp-up in production rates, and in-service operability requirements (MRO easements)

Although the innovation has focused on civil wing Leading Edge (L/E) assemblies, the technology is also applicable to other cross-cutting use-cases in engine nacelles and wind turbine blades.

The ease of assembly of this innovative sealing system removes the need for application of sealant between joints (steps/gaps) balancing the conflicting requirements of tight aerodynamic tolerances, against cost-effective, easy-to repair modular structures.

Moreover, as a replacement for traditional sealant (which is increasingly incompatible with highly flexible advanced wings), this technology will contribute to a ramp-up in aero-structure production rates, which will also be a differentiator with the upturn in aircraft demand and the required delivery at pace of sustainable aviation airframes.

The technology also incorporates a novel seal insertion and removal end effector which complements the snap-fit seal and is automation-ready (no such product exists on the market).

The UK company seeks a commercial agreement with technical assistance. They are specifically looking for a designer / manufacturer of aerospace structures or wind turbine blades who can facilitate a design integration package utilising the UK's seal technology in their product.

Advantages and innovations

Traditional airframe sub-assembly is laborious, involving drilling, disassembly, fettling and shimming/sealing. In the future, component assembly will be increasingly smart and automated, and this innovation champions these ambitions.

The ease of assembly of this innovative sealing system and its innovative bespoke assembly process removes the need for application of sealant between joints (steps and gaps) balancing the conflicting requirements of tight aerodynamic tolerances, against cost-effective, easy-to repair structures.

The technology solves and manages the stubborn legacy challenge of marrying aerodynamic efficiency and mechanical fit.

Moreover, as a replacement for traditional sealant, this innovative sealing technology contributes to a ramp-up in aero-structure production rates, which will also be a differentiator with the upturn in aircraft demand and the required delivery at pace of sustainable aviation airframes.

The technology also addresses the labour-intensive application of current sealant solutions that continue to hinder a ramp-up in production rates, and the associated COSHH (toxic/hazardous substances) for sealant removal undermining carrier in-service operability.

Technical specification or expertise sought

Stage of development

Under development

IPR Status

IPR granted

IPR Notes

UK patent

Sustainable Development goals

• **Goal 9: Industry, Innovation and Infrastructure**

Partner Sought

Expected role of the partner

The UK company is looking to collaborate with a designer / manufacturer of aerospace or automotive structures or wind turbine blades. The UK company will provide technical expertise to the collaboration partner to help them

incorporate the sealant technology offered into their product design.

The partner needs to have the capacity to work on the necessary design research and development. A successful design collaboration would ideally result in the licensing of the patented sealing technology.

Role/tasks to be performed by the partner: The UK company is offering the laminar flow sealing technology to aerospace manufacturers who will pilot / test / integrate on their own platforms with a view to commercialisation.

The ideal partner would be a designer / manufacturer of aerospace structures or wind turbine blades who can facilitate a design integration package utilising the seal technology in their product.

Type of partnership

Commercial agreement with technical assistance

Type and size of the partner

- **SME 11-49**
- **SME <=10**
- **SME 50 - 249**
- **Big company**
- **Other**

Dissemination

Technology keywords

- **02007005 - Composite materials**
- **02007019 - Lightweight materials**
- **02011001 - Aeronautical technology / Avionics**

Targeted countries

- **World**

Market keywords

- **09004008 - Other manufacturing (not elsewhere classified)**
- **08001015 - Other speciality materials**
- **09003001 - Engineering services**

Sector groups involved

- **Energy-Intensive Industries**
- **Aerospace and Defence**
- **Renewable Energy**