Expression of Interest for the UK Advanced Tooling Grand Challenge

EOI Submission Process

Submit the completed form to Info@Axillium.com **no later than 5.0 pm on April 9th.**

All information you provide as part of your proposal, both submitted directly and through the workshop process, will be handled in confidence, under NDA held by GKN Aerospace, Challenge Owners, Axillium and Composites UK please though ensure that no proprietary information is shared.

By submitting your EOI you are confirming your organisation's acceptance of these terms and conditions. If you have any questions, please contact Axillium for clarification.

The Grand Challenge

To address the Grand Challenge opportunity GKN Aerospace, and leading Challenges Owners from the composites sector, are launching a Grand Challenge programme to develop and demonstrate the technologies needed by 2030.

This aligns with the recommendations of the Aerospace Growth Partnership, Strategic Competency Analysis to develop UK capability for Aerospace and critical manufacturing supply chains.

The Opportunity:

To achieve this ambition, solutions are being sought from both UK and international organisations willing to locate and invest in developing UK capability.

The focus of the programme will be to collaborate on an application for ATI funding in 2026, and, upon successful funding, engage in a sprint project, of up to three-year collaboration from 2027 to develop and demonstrate both technology and capability to meet the Tooling Challenges in the UK by 2030.

Expressing an interest in joining the Grand Challenge Consortium

When completing this Expression of Interest please note the following:

Programme Duration	Up to 3 three years, commencing January 2027
Solution Providers Sought	Organisations with novel tooling solutions at TRL3-6
Expression of Interest Open	Thursday 19 March 2026
Expression of Interests Closed	Thursday 9 April 2026
Expressions of Interest Assessed	Successful EOI's will be notified April 14th latest
Solution Providers Workshop	Thursday 16 April 2026 – By Invitation Only
Successful Solution Providers Notified	Thursday 30 April 2026

EOI Assessment:

The summary below will be considered by the Challenge Owners, where selected to attend the **Solution Providers Workshop on April 16th** you will be requested to prepare a pitch presentation. You will be notified no later than April 14th if your EOI is successful.

Opportunity to Present By Invitation Only:

EOI's which are suitable for the Grand Challenges will be invited to pitch to the Challenge Owners and Solution Providers at the GKN Global Technology Centre. Following this event successful Solution Providers will be invited to join the consortium.

About your Organisation:

	Please complete all fields
Company Name	
Company Number	
Contact Name	
Position	
Address	
Email	
Telephone	
Confirmation	Please confirm availability to attend 16 April 2026 ☐

Detailed Challenge Areas:

Outcomes demonstrated from the programme must target at least TRL5-6 and show clear route to market that ensure viable business cases and continued support.

- ***Alternative Materials for CTE equivalence*** – Exploring the use of substitute materials designed to match the coefficient of thermal expansion (CTE) requirements, to enhance compatibility and performance within composite tooling applications.
- ***Design and Simulation Methods and Tools for Right-First-Time Tooling*** – Developing and applying advanced design and simulation techniques to achieve precise tooling results on the first attempt, minimising costly rework and optimising production efficiency.
- ***Re-usable and Re-configurable Tooling*** – Investigating approaches for creating tooling that can be reused or easily reconfigured, supporting flexible manufacturing processes and reducing waste.

- ***Intelligent Tooling for Advanced Composite Processing*** – Integrating intelligent features within tooling systems to facilitate advanced composite processing, enabling enhanced monitoring and adaptive control during production.
- ***Novel Sensing for Process Control*** – Implementing new sensing technologies to improve process control, ensuring quality, consistency, and reliability in composite manufacturing operations.
- ***Integrated heating and cooling for large scale and high integrity*** – Designing tooling with embedded heating and cooling systems to maintain optimal conditions for large-scale composite production, ensuring structural integrity and uniformity.
- ***Multi-Material Tooling for Enhanced Quality and Durability*** – Using a combination of materials within tooling solutions to achieve superior quality and durability, tailored to the demands of composite manufacturing.
- ***Vacuum Integrity of Complex Multi-Split Tools*** – Addressing the vacuum integrity challenges associated with complex, multi-split tooling configurations, essential for high-quality composite part production.
- ***Advanced Machining and Metallic Joining Technologies*** – Exploring innovative machining techniques and metallic joining methods to improve tooling performance and longevity in composite applications.
- ***Tool coatings and injected finishes, alternative to PFAS – REACH compliant*** – Developing tool coatings and injected finishes that provide effective alternatives to PFAS, ensuring compliance with REACH regulations and promoting safer manufacturing practices.
- ***Rapid response tooling manufacturing methods*** – Implementing rapid manufacturing methods to enable quick response in tooling production, supporting dynamic and flexible composite manufacturing environments.
- ***Metamaterials in Tooling Applications*** – Investigating the use of metamaterials within tooling applications to unlock new properties and functionalities for composite production.
- ***Automation and Integration of Tooling Operations: Tooling as a System*** – Advancing the automation and integration of tooling processes, viewing tooling as a holistic system to streamline operations and improve overall manufacturing outcomes.

Which Challenge Area does your interest in the Grand Challenge address:

Select	Challenge areas from the upcoming ATI Composites Strategy
☐	Alternative Materials for CTE equivalence
☐	Design and Simulation Methods and Tools for Right-First-Time Tooling
☐	Re-usable and Re-configurable Tooling
☐	Intelligent Tooling for Advanced Composite Processing
☐	Novel Sensing for Process Control
☐	Integrated heating and cooling for large scale and high integrity
☐	Multi-Material Tooling for Enhanced Quality and Durability
☐	Vacuum Integrity of Complex Multi-Split Tools
☐	Advanced Machining and Metallic Joining Technologies
☐	Tool coatings and injected finishes, alternative to PFAS – REACH compliant
☐	Rapid response tooling manufacturing methods
☐	Metamaterials in Tooling Applications
☐	Automation and Integration of Tooling Operations – Tooling as a System

These challenges are not exhaustive so please feel free to expand on these.

Describe how the solution aligns to the challenge area

Describe details of the innovation which will be developed
Describe how the solution will demonstrated against the challenge scope

Over what timescale will your solution be developed
Please provide a summary of organisation's expertise, online profile or web page

Commercial Terms and Shared Services

There will be a shared cost to support the development of the funding application for all interested partners. In order that we can assess the level of interest to join the consortium please ensure you have reviewed the following:	
Confidentiality All consortium members will be required to sign a multi-partner Non-Disclosure agreement before joining the consortium. In line with ATI requirements a consortium level Collaboration Agreement will be agreed upon submission of the Full Stage Application and executed on receipt of the Grant Offer Letter. **Commercial Terms:** GKN Aerospace has appointed Axillium Research and Composites UK as independent Advisors to develop and support the Tooling Grand Challenge from conception until the completion of the execution of the Grant Funded delivery of the programme. Commercial services will be engaged directly via Axillium Research as an independent shared service to each organisation within the consortium. In their capacity as independent Advisors, Axillium Research & Composites UK will provide the services for support to all Consortium Members for the ATI Funding Application. Shared service costs will based on business size in line with current UK definitions of large, small, and medium sized enterprises. Academic and Research Technology Organisations will be treated as large enterprises. **Service Costs** Shared service costs will based on business size in line with current UK definitions of large, small, and medium sized enterprises. Academic and Research Technology Organisations will be treated as large enterprises. Commercial services will be engaged directly via Axillium Research as a shared service to each organisation.	
Confirmation that you have reviewed the commercial terms for the Consortium – this phase is <u>not</u> recoverable against grant funding.	☐
Confirmation that match funding is available to support R&D activity – this phase will be recoverable against grant funding.	☐