ATI introduction for EPSRC institutional support launch meetings



The ATI

- The Aerospace Technology Institute (ATI) is the objective convenor and voice of the UK's aerospace technology community
- We define the national aerospace technology strategy
- We work closely with Government and industry to direct joint funding into aerospace R&T projects that align with the strategy
- The Comprehensive Spending Review of November 2015 extended the joint funding available to £3.9 billion over 13 years (to 2026).



Our mission & goals

Through strategic investment in differentiating technologies, secure the full economic potential of the UK aerospace sector

Technology investment

Providing technology leadership and maximising economic impact of R&T for UK aerospace

Provide Technology Leadership

Define a UK aerospace technology strategy that challenges industry, and create opportunities for advanced technology programmes to drive the growth of the UK aerospace sector

Maximise funding Impact

Drive the UK's aerospace R&T programme to maximise impact and embed benefits

Institute impact

Leveraging the Institute to add value in the sector

Convene strategic partnerships

Engage with a broad spectrum of stakeholders to challenge existing thinking, energise the UK aerospace sector and unlock new value

Elevate UK's international technology profile

Promote the advanced capabilities of UK aerospace technology and increase the UK's influence within European programmes and beyond



The UK aerospace technology strategy





EPSRC support for Early Stage Research

Aircraft of the Future

• Prof. Andreas Schafer (University College London)

Smart Connected & More Electric Aircraft

• Prof. Barrie Mecrow (Newcastle University

Propulsion of the Future

• Prof. Pericles Pilidis (Cranfield University)

Aerostructures of the Future

• Prof. Kevin Potter (University of Bristol)



ATI Early Stage Research Opportunities

Propulsion of the Future:

- Novel propulsion and airframe integration (structural, aerodynamic) approaches to enable distributed propulsion concepts
- Electrical technology

 (transmission, control, cooling, storage) to facilitate hybrid turboelectric propulsion
- Research on novel aerothermal cycles to meet the European Union's ACARE Flightpath 2050 environmental targets

Smart, Connected and MEA:

- Development of an experimental hybrid propulsion platform to validate technologies including high-density energy storage, superconducting electrical systems and networks
- Ultra-high bandwidth secure communications systems
- Advanced control for more autonomous architectures together with cost effective approaches to development and verification
- Advanced analytics for health management of increasingly complex aircraft systems
- Advanced sensing technology to enable optical data distribution and novel energy harvesting



ATI Early Stage Research Opportunities

Aircraft of the Future:

- New and novel whole-aircraft architectures and operational concepts
- Greater interaction between aircraft conceptual and air transport system modelling linked to the European Union's ACARE Flightpath 2050 goal
- Human factors in the flight deck
- Design and evaluation of the overall aircraft system to better leverage ongoing component and system research

Aero-structures of the Future:

- Disruptive processes for additive and subtractive manufacturing
- Complex, high-performance, and low-cost composite, metallic and hybrid components
- Enhanced verification and validation to reduce physical certification requirement
- Digital enablement of the entire vertical and horizontal supply chain
- Advanced material formulation, design, processing and certification
- Seamless virtual product lifecycle modelling to ensure high-quality, low variability, and minimal process steps