

## **NATIONAL AEROSPACE TECHNOLOGY EXPLOITATION PROGRAMME (NATEP)**

### ***New technologies, new manufacturing productivity for the aerospace supply chain***

#### **A unique way to help 250+ aerospace suppliers, mostly SMEs, create and exploit new technologies**

- NATEP is helping more than 250 aerospace suppliers undertake an R&D project, most of them for the first time, by giving them grants combined with expert mentoring by aerospace engineers.
- Six out of seven of these companies are micro, small or medium sized companies.

#### **The technologies will be used on new airplanes and will increase productivity; new jobs will be created, and new R&D capabilities will be injected into the supply chain**

- More than 100 new product and manufacturing technologies are being created in the supply chain thanks to NATEP funding. These will be used by Airbus, Boeing and other aircraft makers on updates to current aircraft as well as on the aircraft of the future.
- As the new technologies find market outlets and as manufacturing productivity improves competitiveness NATEP will directly create or safeguard more than 1,200 jobs. Jobs in aerospace are high skill, well paid and long lasting.
- Because companies are given expert mentoring to make sure their project succeeds, the companies develop new R&D capabilities that will contribute to their long-term competitiveness.

#### **Airbus, Rolls-Royce and others support each project, and the process is simple for small firms**

- NATEP brings over 100 small teams of supply chain companies together. Each team is supported by experts from customer-mentors like Airbus, Rolls-Royce, GKN and others, who advise on project design, help projects when problems arise, and suggest routes to market.
- NATEP provides a simple and clear process for SMEs to be funded, in a cluttered funding landscape, with hand-holding and guidance from dedicated NATEP technology managers.

#### **Other benefits include export growth, cross-sector sales and a gateway to other funding**

- Export prospects are increased because a quarter of the customer-mentors are from countries including the USA, France and Germany.
- Many of the new technologies can be applied in other sectors, like automotive, marine, rail, oil/gas, medical, power generation and nuclear – helping companies diversify.
- NATEP lays a foundation for companies to apply for support from other technology funding streams such as Innovate UK, the Aerospace Technology Institute and the European Union.
- Its success in England has attracted additional funding from government in Northern Ireland.

# There are more than 100 projects like these

supported by  
**NATEP**

Composites technologies

## Inhibiting Delamination in CFRP Composites

Project Ref : MAA 018  
Partnership:



Grant Awarded: £150,000  
Duration: 24 months

### The Project will:

- Quantify the benefits of the through-thickness reinforcements in 3d Carbon Fibre Reinforced Plastic composites, in particular their effect on delamination and crack propagation
- Deliver confidence to allow design of aerospace parts at optimum weight, performance and efficiency



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## Xenon Pulse Technology in Fibre Placement

Project Ref : MAA 012  
Partnership:



Grant Awarded: £145,000  
Duration: 18 Months

### This project will:

- Demonstrate how Heraeus Noblelight Xenon Flash technology offers potential cost and performance advantages in the processing of composite materials for aerospace applications
- The research will result in a fully operational demonstrator at the National Composites Centre



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Electronics technologies

## Plasma Cleaning in MCM Advanced Manufacture

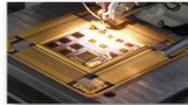
Project Ref : MAA 031  
Partnership:



Grant Awarded: £70,000  
Duration: 15 Months

### This project will:

- Develop the use of plasma desmear as a cleaning process for high reliability electronic multi-chip modules
- Test and qualify an automated cleaning process that will improve the yield and quality of wire bonding within MCM manufacturing



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## Verifying the Speed of Software

Project Title: RapiTime Object Code Analyser  
Partnership:



Grant Awarded: £150,000  
Duration: 18 Months

### The Project will:

- Develop the next generation of safety-critical software verification tools reducing the effort of timing measurement by at least 25%
- Produce a certifiable solution for DO-178B/C Level A
- Take the technology from TRL 3/4 to TRL 5/6



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Additive manufacturing

## ALM for Better Design of Fluids Conveyance

Project Title: Lightweight Pipe End Fittings  
Partnership:



Grant Awarded: £143,834  
Duration: 12 Months

### This project will:

- Redesign a selection of typical end-fittings to minimise weight and cost, suitable for metal additive layer manufacture
- Manufacture samples in special materials and develop quality control procedures
- Validate the new parts through a combination of analysis and rig testing



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## Additive Aero Valve Optimisation (AAVO)

Project Ref : MAA 028  
Partnership:



Grant Awarded: £142,500  
Duration: 15 Months

### The Project will:

- Develop a Bleed Air Valve (BAV) by additive layer manufacture which is optimised for weight, reliability, acoustic emission and manufacturing method
- Maintain current BAV non-recurring costs while reducing component recurring costs
- Use lessons learned to develop a broader optimisation capability



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Advanced manufacturing

## Dry Drilling of Aluminium

Project Ref : MAA 032  
Partnership:



Grant Awarded: £105,675  
Duration: 12 Months

### The Project will:

- Develop the technology for dry-drilling of aluminium alloys, with no significant loss of performance
- Use newly designed tools exploiting the latest high performance solid lubricant coatings
- Reduce costs while improving the work place environment



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## Better Manufacturing for Difficult-to-Make Parts

Project Title: Process Optimisation for Aerospace Alloys  
Partnership: A Supply Chain Cluster Project



Grant Awarded: £90,497  
Duration: 12 Months

### This project will:

- Allow three small manufacturers to use the Manufacturing Technology Centre expertise to solve machining problems associated with difficult-to-make aerospace components made from specialist alloys



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