



# NATEP

# National Aerospace Technology Programme

Aerospace Growth Partnership



## New product R&D in the UK aerospace supply chain

The AGP recognises that the larger companies, acting alone, will not be able to make the product technology advances required to sustain the UK's market position in global aerospace markets.

To remain competitive, many companies in the supply chain need to develop greater competences and move up the value chain and innovate new product technologies at a greater rate than our competitors.

The AGP aims to create, within the supply chain, an increased availability of market ready, innovative technologies for prime and first-tier manufacturers to incorporate into future aircraft and engines.

A step change towards an 'R&D supply chain' is required. However, the market is not creating this with sufficient urgency.

To counter this, the AGP believes that by bringing together industry and government we can foster the development of new technologies.

The AGP has developed a National Aerospace Technology Programme (NATEP) aimed at small and medium sized suppliers to help them develop their own innovative technologies to enhance their capabilities and increase their ability to win new business with higher tier companies anywhere in the world. This builds on the successful regional technology programme run in the Midlands.

By developing a supply chain with a high rate of innovation, rich in new technologies the UK will be better able to offer the right products and services, at the right time and ahead of competition. This will ensure that market opportunities are exploited with high value manufacturing work retained in the UK. The Government's Advanced Manufacturing Supply Chain Initiative (AMSCI) provides the opportunity to take this forward.

### Case Study: NEW CAPABILITIES SPRING INTO ACTION IN THE AEROSPACE SUPPLY CHAIN—G&O SPRINGS

Info: [steve.boyd@springs.aero](mailto:steve.boyd@springs.aero)

Springs play an integral role in today's advanced aircraft systems, yet spring manufacturers have traditionally had no input into the design of those systems. This had led to sub-optimal systems design and systems that are larger and heavier than they need to be.

G&O Springs took advantage of R&D funding offered through the Midlands Aerospace Alliance's Aerospace Technology programme to collaboratively research more effective product solutions. They brought together Reliable Spring and Manufacturing Co (a fellow local spring maker), Alloy Wire (a material provider) and the Institute of Spring Technology, with Aero Engine Controls and BAE Systems as customer advisors. Between 2009 and 2011, the team manufactured a large number of springs in ten different titanium and exotic alloy grades and tested them rigorously. The results were fed into computer models to predict how springs would perform.



As a result, aircraft system makers can now be provided with data needed to design the optimal spring for their systems without compromising on performance and reliability.

This has enabled G&O Springs and its supply chain to move up the value chain, now possessing differentiating intellectual property and design expertise.

## Supply chain collaborative technology projects £50,000 to £150,000 grant funding with duration up to 18 months

### Projects will be expected to be:

- ⇒ Comprised of a supply chain technology partnership of at least 2 entities and preferably 3 or more
- ⇒ Industrially led and involving the UK aerospace supply chain
- ⇒ Having the objective of pulling through new technology or process for use in current or future product
- ⇒ Showing clear benefit technically and in creating or safeguarding jobs and have a clear path to commercial exploitation through system house or prime
- ⇒ A development in line with national technology roadmaps and national technology strategy
- ⇒ With wider exploitation possibilities to enhance the advanced manufacturing sector

Fundamental research is probably not suitable, but wide range of technology readiness levels considered if a clear outcome is defined. Any arising IP will be owned by the collaborating partnership. Direct financial support will usually up to 50% of spend. In-kind matching is expected.



**Working together to deliver innovation in the UK Aerospace Supply Chain**

# NATEP will support projects like these



## Ceramics in aircraft brakes

Meggitt Aircraft Braking Systems worked with SME James Kent Ceramic Materials, technology experts CERAM and customers Embraer and BAE Systems to investigate new ways to extend the life of aircraft brakes.  
Info: [toby.hutton@meggitt.com](mailto:toby.hutton@meggitt.com)

**Coatings without hazardous elements**  
Indestructible Paint worked with fellow SMEs Ashton & Moore and Clean Burner Systems, technologists at CERAM and customers Messier-Dowty and Rolls-Royce to remove chrome from engine-surface coatings.  
Info: [brian@indestructible.co.uk](mailto:brian@indestructible.co.uk)



## New design methods for tyres

Dunlop Aircraft Tyres has developed new Finite Element Modelling techniques with the University of Birmingham. Airbus, the customer, regularly provided input to validate the models on existing and new tyres.  
Info: [martin.pye@dunlopatl.co.uk](mailto:martin.pye@dunlopatl.co.uk)



## Composites in actuation systems

Wolverhampton-based Goodrich Actuation Systems has worked with local SME Rojac and Advanced Composites Group to develop an actuator gear box housing in composite materials to replace traditional aluminium die-casting. The component is 60 per cent lighter. Following rigorous successful tests by Goodrich, the technology was inserted into the Airbus-led Next Generation Composites Wing Programme.  
Info: [steve.sproson@ufas.utc.com](mailto:steve.sproson@ufas.utc.com)

**Manufacturing novel aluminium alloy**  
The Aeromet-led project with SME partner Grainger & Worrall, the University of Birmingham, materials provider London & Scandinavian Metals and customer Aero Engine Controls developed manufacturing processes for a novel high-strength aluminium alloy, A20X.  
Info: [alan.dustan@aeromet.co.uk](mailto:alan.dustan@aeromet.co.uk)



## Using surfaces as coolers

HS Marston, with SME Advanced Chemical Etching and the University of Wolverhampton, modelled novel surface coolers and validated the models on a new test rig.  
Info: [alanr@ace-uk.net](mailto:alanr@ace-uk.net)

## NATEP – How to apply:

Contact the National or Regional Teams: [www.natep.org.uk](http://www.natep.org.uk)

- ⇒ **Programme Director:** Dave Dawson, email: [dave.dawson@adsgroup.org.uk](mailto:dave.dawson@adsgroup.org.uk), tel: 02476 430100
- ⇒ **National team:** Bridget Day, email: [bridget.day@natep.org.uk](mailto:bridget.day@natep.org.uk), tel: 02476 430100
- ⇒ **Southwest (WEAF):** Pauline Kelly, email: [pauline@weaf.co.uk](mailto:pauline@weaf.co.uk), tel: 01275 872353
- ⇒ **Southeast (FAC):** Alan Maskell, email: [alan.maskell@fac.org.uk](mailto:alan.maskell@fac.org.uk), tel: 07768 387833
- ⇒ **Midlands (MAA):** Stan Payne, email: [stan.payne@midlandsaerospace.org.uk](mailto:stan.payne@midlandsaerospace.org.uk), tel: 07769 677870
- ⇒ **Northwest (NWAA):** Sally Giles, email: [sally.giles@aerospace.co.uk](mailto:sally.giles@aerospace.co.uk), tel: 01772 648800
- ⇒ **Wales (Aerospace Wales):** John Whalley, email: [john@aerospacewales.aero](mailto:john@aerospacewales.aero), tel: 01656 655210
- ⇒ **Northern Ireland:** Leslie Orr, email: [leslie.orr@adsgroup.org.uk](mailto:leslie.orr@adsgroup.org.uk), tel: 02890 468296
- ⇒ **Scotland:** Ian Watson, email: [ian.watson@adsgroup.org.uk](mailto:ian.watson@adsgroup.org.uk), tel: 07710 872099

## NATEP – Competitive call timing

Call 1 – Outline application 14th Aug 2013, full application 26th Dec 2013 (now closed)

**Call 2 – Outline application 20th Mar 2014, full application 23rd May 2014**

**Call 3 – Aug 2014, Call 4 – Nov 14, Call 5 – May 2015**

Programme ends - March 2017