

NATEP

**National Aerospace Technology
Exploitation Programme**



Department for
Business, Energy
& Industrial Strategy

- NATEP is a Government Scheme to promote innovation in the Aerospace Supply Chain.
- It is open to all companies and RTOs but each project must be led by an SME
- The grant comes from the Government through the funding of the Aerospace Technology Institute (ATI)
- All projects must be in line with the latest ATI Aerospace Technology Strategy – currently Accelerating Ambition (2019)

- £20 Million of Grant Funding, over six calls, from Autumn 2019
 - Maximum £300k Project Costs
 - Maximum 18 month Duration
- Mentoring from proposal development and submission to project delivery

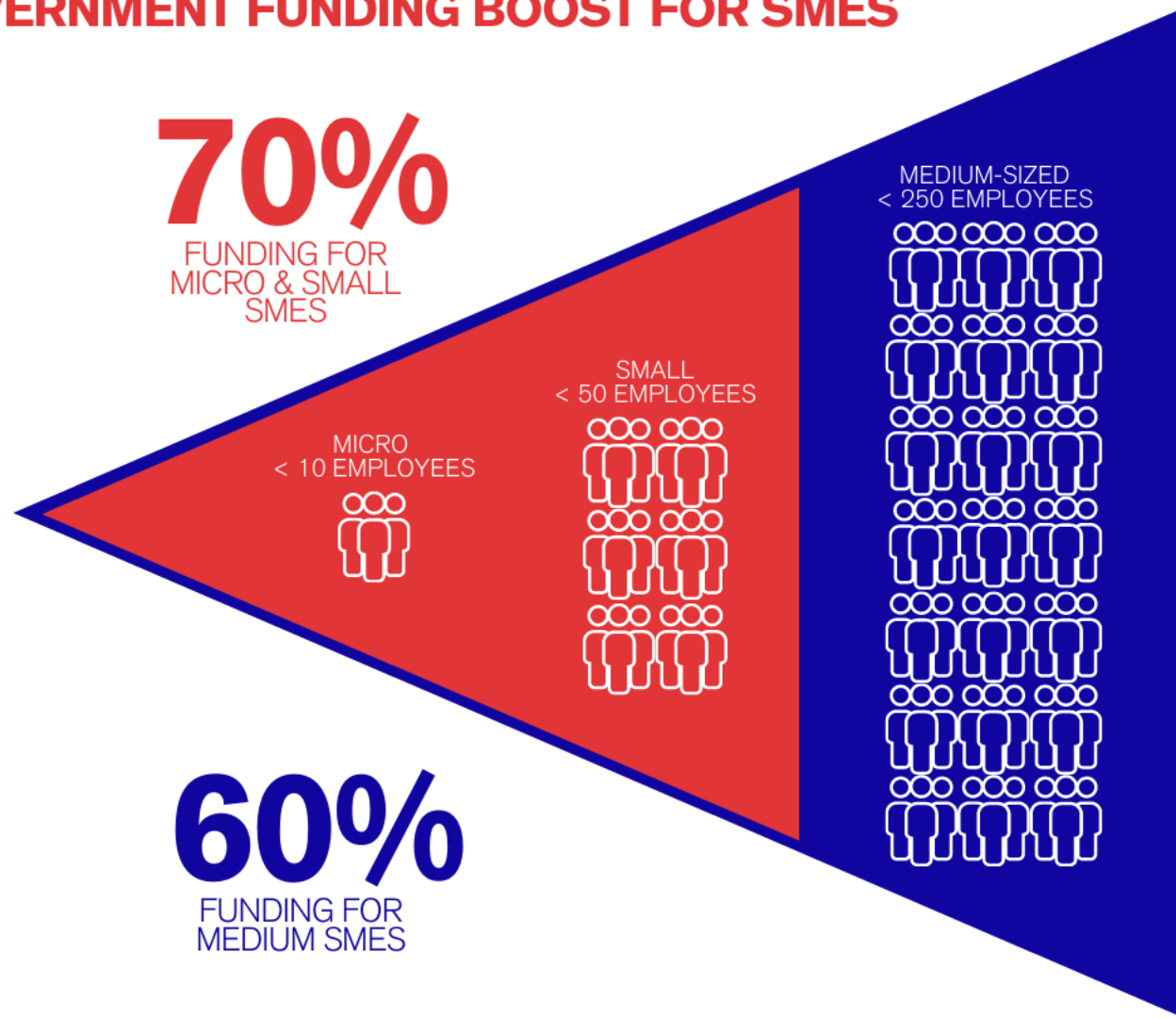


- **Funding**



- **Mentoring**

GOVERNMENT FUNDING BOOST FOR SMES



NATEP

A proven model of grants and mentoring to support aerospace technology development led by UK SMEs. An ATI Programme.

SME DEFINITION

Small and medium-sized enterprises are defined in the EU recommendation 2003/361 based on headcount and either turnover or balance sheet total.

Company	Turnover	Balance sheet total
Medium-sized	≤ €50m	≤ €43m
Small	≤ €10m	≤ €10m
Micro	≤ €2m	≤ €2m

Making ideas happen - natep.org.uk

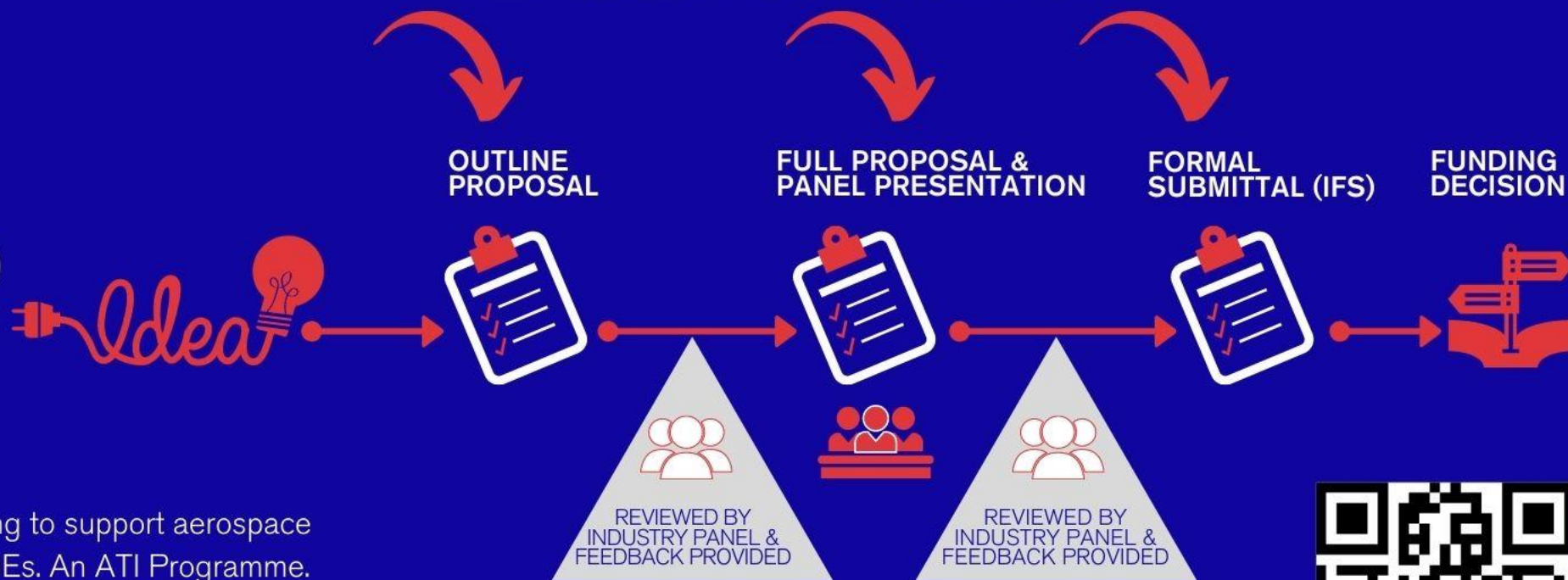
020 7091 4543

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The NATEP Process

A proven model of grants and mentoring to support aerospace technology development led by UK SMEs. An ATI Programme.

THREE POSSIBLE APPLICATION ENTRY POINTS



Engage with us as early as possible to maximise your potential. Technology Managers are available to support you throughout the process.

Contact us now for advice and mentoring and to help you through your application.

SCHEDULE

Deadlines	Outline Proposal	Full Proposal	Formal Submittal (IFS)
Autumn 2022 Call	5 September 2022	31 October 2022	11 January 2023
Spring 2023 Call	3 January 2023	6 March 2023	10 May 2023

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- Lead company must be an SME.
- Applications must be collaborative
- You can collaborate with academic organisations, charities, public sector organisations or research and technology organisations (RTO)
- Applications must be industrial research
- Projects must plan to carry out and exploit project in the UK
- Technology must have an application or potential application within civil aerospace.
- Projects comprise a supply chain technology partnership of at least 2 entities.
- Development of technologies should be in line with the ATI Strategy
www.ati.org.uk
- See NATEP Website for full criteria

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NATEP Technology Managers



Department for
Business, Energy
& Industrial Strategy

- Mentoring from proposal development and submission to project delivery



- **Mentoring**

10 Technology Managers

Based at locations around the UK

A wide variety of networks and technical backgrounds

Experience with small and large Government funded project management.

- Mentoring – What do we actually provide?
- The best description for a NATEP Technology Manager is a “Critical Friend”

“The Critical Friend is a powerful idea, perhaps because it contains an inherent tension. Friends bring a high degree of unconditional positive regard. Critics are, at first sight at least, conditional, negative and intolerant of failure.

Perhaps the critical friend comes closest to what might be regarded as 'true friendship' – a successful marrying of unconditional support and unconditional critique”^[1]

- The support for beneficiary companies is unconditional, supporting every beneficiary to deliver the most impact to their companies, UK industry and the taxpayer. That level of support is provided with equal levels of critical input provided from a unique perspective.

[1] - A John MacBeath; Professor of Education Leadership, Cambridge University

What Does Mentoring Provide?

- NATEP Technology Managers available at all steps of the process, from project formation until after project completion
 - Project Formation – Identification and Introduction to partners, RO's, universities and end users
 - Support with the structure of a project plan for development efficiency, risk mitigation and project management
 - Critical Review and support with proposals prior, during and after review panels
 - Friendly Support at Presentation Stage to review panel
 - Feedback and further support into IFS

What Does Mentoring Provide Post Award?

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- Pre Launch to support getting project documentation together
- IP and Risk training to support documentation and initial project phases
- Claim and process support prior to IUK Meetings
- Support with End User and customer engagement
- Support and Guidance through project delivery, risk management, issue resolution and exploitation
- Support with exploitation planning, dissemination and road mapping
- Continued dissemination activities beyond project completion

Composite Baseplates for Aerospace Antennas

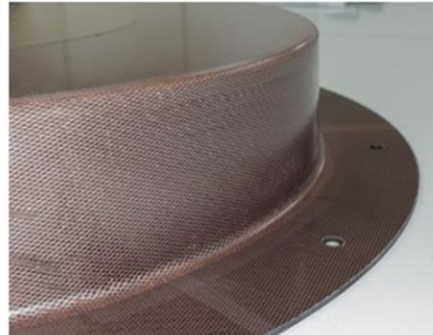
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Project Partners:

- Technical Composite Systems – Lead partner
- University of Exeter
- Cobham Aerospace Connectivity

Project Objectives:

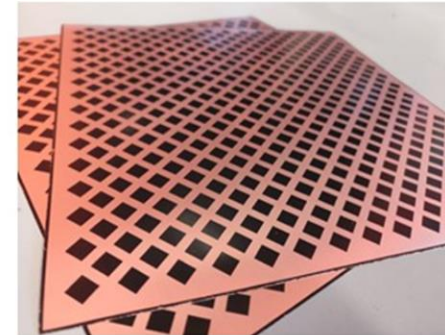
- Lightweight, high performance antenna hardware
- Reduced drag - fuel burn and emissions
- Reduction in size through use of Metamaterials
- Improved operational efficiency



Composite baseplate



Lightning strike testing of composite baseplates



Frequency Selective Surface (Metamaterial)

- DO-160G Pass – thermal & mechanical shock, ✓ humidity, ✓ altitude, ✓
- Fluid susceptibility ✓ Fungus ✓ Flammability ✓ Acidic Atmosphere ✓
- Lightning Strike Zone 1C ✓ Electrical continuity ✓
- Baseplate; Depth reduced by 80% ✓ mass reduced by 25% ✓



TECHNICAL COMPOSITE SYSTEMS

COBHAM



Contact: Michael Sloan msloan@technicalcompositesystems.co.uk www.technicalcompositesystems.com

www.natep.org.uk

TAPAS - Ti64 Advanced Processes for Aerospace Structures

- TAPAS explores the capability of Wayland's Neutral Beam (NeuBeam) technology for the additive manufacture of Ti64 for aerospace structures (and correspondingly for medical implants).
- The unique properties of Neutral Beam AM will allow for higher productivity, quality assured parts. By working with a target end user and the renowned metrology expertise of Huddersfield University a process for qualified Ti64 AM parts will be developed.
- The process will be developed to encompass the range of geometries and micro-structures needed by the aerospace industry using a set of carefully designed DOEs backed by detailed inspection and metrology.
- The project will also develop a catalogue of defect types and mitigation strategies that will be used to inform closed loop defect correction algorithms being developed in parallel to this project.



WAYLAND ADDITIVE®

Neutral Beam Technology®

Graphene Composites Evaluated in Lightning Strike

Partners: Haydale (lead), Element Materials Technology, Airbus, BAE Systems, GKN Aerospace

Grant Awarded: £150,000

Duration: 18 months

Objective:

- Produce the next iteration of composite materials with significantly improved lightning-strike performance compared to current carbon/epoxy systems through the incorporation of functionalized graphene/2D fillers and to move closer to a commercial material for applications in aerospace structures and electronics enclosures

Deliverables:

- Lightning strike tests on laminated panels at Element on baseline unfilled panels, copper mesh panels, modified resin panels
- Testing of mechanical properties on the cured laminates
- Manufacture of a project demonstrator component

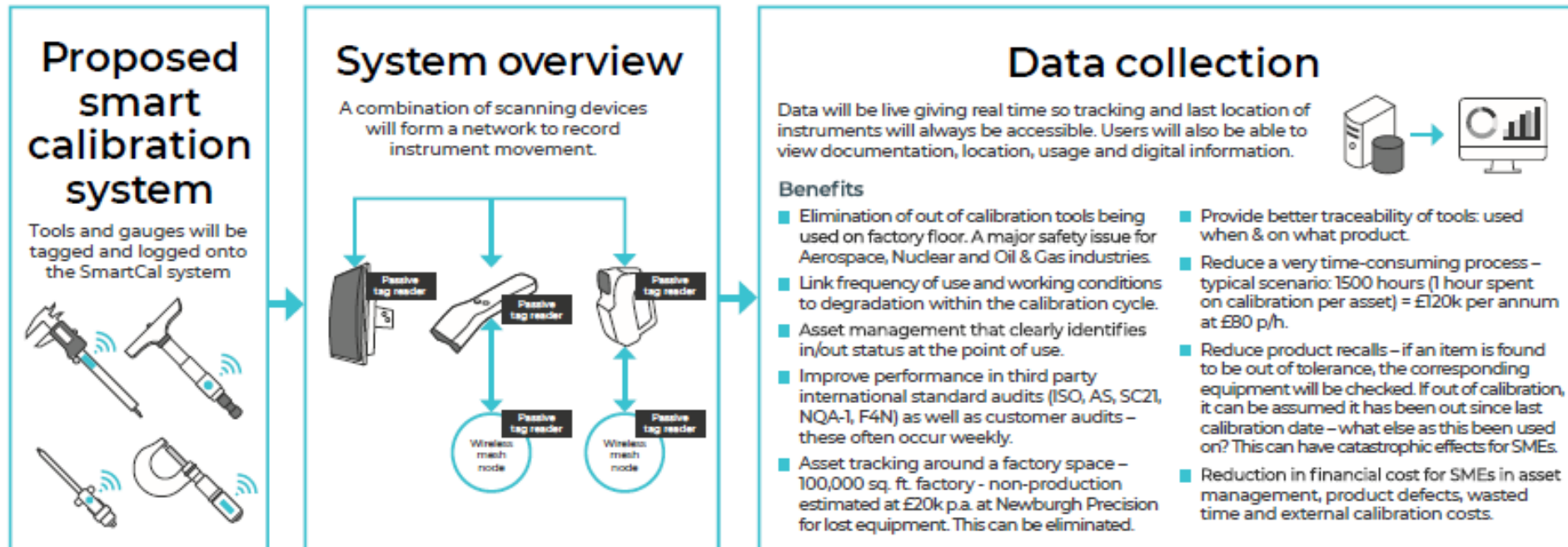


SmartCAL – Project to disrupt and redefine calibration

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- To develop a smart demonstrator calibration solution aimed at improving standards and efficiency in the aerospace industry.
- Disrupt outmoded practises and re-define how calibration and measurement tools are monitored.
- The key innovations: elimination of out of calibration tools for SME's, traceability/location/digitisation of tools, monitoring of tool degradation and interface with calibration cycle.

Tower DMS - University of Sheffield (NAMRC) - AML an aerospace engineering SME



Questions?

Technology Managers & NATEP office

NATEP



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