

# NATEP

National Aerospace Technology Exploitation Programme

## On Board Equipment Projects



On board equipment – Aircraft Systems Projects

Project	Supply chain partnership	Contact
<b>Portable Pulse Oxygen Assembly (PPOCA)</b>	<ul style="list-style-type: none"> <li>• Avia Technique</li> <li>• Meditech Systems</li> <li>• Air Liquide</li> <li>• Airbus Operations (customer)</li> </ul>	Barry Wood - Senior Design and Development Engineer Barry.wood@airliquide.com
Using pneumatic pulse technology in on-aircraft portable oxygen cylinders. NATEP Grant £150,000		

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<b>Pulse Passenger Service Unit (PPSU)</b>	<ul style="list-style-type: none"> <li>• Avia Technique</li> <li>• Meditech Systems</li> <li>• Air Liquide</li> <li>• Airbus Operations (customer)</li> </ul>	Barry Wood - Senior Design and Development Engineer Barry.wood@airliquide.com
The project will use Pneumatic Pulse Technology to deliver oxygen through the passenger service unit. NATEP Grant £150,000		

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<b>Plane Sight</b>	<ul style="list-style-type: none"> <li>• Blue Bear Systems Research</li> <li>• Createc</li> <li>• General Dynamics UK (customer)</li> </ul>	Gavin Goude gavin@bbsr.co.uk
Each year hundreds of aircraft are damaged during ground manoeuvre due to limited view of the operator/pilot when manoeuvring a large dynamic system within a complex and cluttered environment. Blue Bear Systems Research (BB), Createc and General Dynamics (GDUK) have teamed together to develop a novel situational awareness avionic system for commercial aircraft. NATEP Grant £67,200		

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<b>Large Deployable Antenna for Space</b>	<ul style="list-style-type: none"> <li>• Oxford Space Systems</li> <li>• Reliance Precision Ltd</li> <li>• MDA Corporation UK Ltd (customer)</li> <li>• VTOL-Technologies (customer)</li> </ul>	Mat Rowe – Project Manager mat.rowe@oxfordspacesystems.com
Oxford Space Systems will design & develop a reflector surface for attachment to their existing scalable large deployable antenna. NATEP Grant £150,000		

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<b>SafePilot Weather Watch</b>	<ul style="list-style-type: none"> <li>• Blue Bear</li> <li>• Met Office</li> <li>• Hybrid Air Vehicles (customer)</li> <li>• e-Go (customer)</li> </ul>	Andrew Berry andrew.berry@bbsr.co.uk
<p>SafePilot Weather Watch is an electronic decision aid for manned aircraft (and an automated planning tool for unmanned aircraft) that enhances tactical and strategic route planning to make operations safer and more fuel efficient</p> <p>NATEP Grant £95,000</p>		

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<b>EyeQuad-T (Miniature Thermal/Optical Camera for UAV/UAS)</b>	<ul style="list-style-type: none"> <li>• Rinicom Limited</li> <li>• HW Communications</li> <li>• Eurocontrol (customer)</li> <li>• THALES (customer)</li> <li>• Trimvale Aviation (customer)</li> <li>• German Aerospace Centre (DLR) (customer)</li> <li>• ALTUS (customer)</li> </ul>	Natasha McCrone – Project Manager natasha@rinicom.com
<p>The overall objective of the project is to produce a small, lightweight imaging system with pan, tilt and zoom functionality that captures optical and thermal video. The miniature camera will be able to support surveillance operations from small Unmanned Autonomous Systems; potentially presenting a high market value, applicable to the robotics, security and defence markets. This is an opportunity to deliver the operational capabilities of more automated and intelligent Unmanned Autonomous Systems, through a novel offer in the area of on-board surveillance. EyeQuad-T will deliver enhanced capability to build basic situational awareness and detection that is essential for decision-making.</p> <p>NATEP Grant £149,810</p>		

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<b>Novel Miniature Actuator</b>	<ul style="list-style-type: none"> <li>• CNR Services International</li> <li>• Midland Aerospace</li> <li>• BE Aerospace, Florida (customer)</li> </ul>	Chris Reckless – Managing Director creckless@cnrdesign.co.uk
<p>CNR have designed a concept self-contained Novel Miniature Actuator (NMA) specifically for the aircraft passenger seat actuation market. This NMA is expected to provide cheaper manufacturing costs per actuator, lower mass, more reliability, greater efficiency and quieter and smoother performance than current seat actuators.</p> <p>NATEP Grant £148,500</p>		

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<b>Enhanced Safety for Small to Medium-Size Helicopters</b>	<ul style="list-style-type: none"> <li>• Helitune</li> <li>• Prosig</li> <li>• University of Bristol</li> <li>• Castle Air (customer)</li> <li>• Leonardo MW Ltd (customer)</li> <li>• MD Helicopters (customer)</li> </ul>	Peter Morrish – Technology Manager peter.morrish@helitune.com
<p>The goals of this project bring the safety and cost-saving benefits of Health &amp; Usage Monitoring (HUMS) to the small and medium-sized helicopter market. New hardware and data processing technologies will be combined and applied, resulting in a cost-effective 'Mini-HUMS' prototype for exploitation through the UK aerospace supply chain.</p> <p><b>NATEP Grant £150,000</b></p>		

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<b>SPARCS Rotary Engine</b>	<ul style="list-style-type: none"> <li>• Advanced Innovative Engineering (UK) Ltd</li> <li>• Vortex Exhaust Technology Ltd</li> <li>• Aero Composites Innovations, France (customer)</li> </ul>	Nathan Bailey – Managing Director nathan@aieuk.com
<p>Design, development and testing of a SPARCS (Self-Pressurised-Air Rotor Cooling System) enabled rotary engine propulsion system for Unmanned Aerial Vehicles.</p> <p><b>NATEP Grant £130,000</b></p>		

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<b>Single Stage Isolated AC/DC Power Supply</b>	<ul style="list-style-type: none"> <li>• On-Systems Ltd</li> <li>• Peregrine Semi-conductors UK</li> <li>• Raytheon UK (customer)</li> </ul>	Mike Harvey – Commercial Director mike.harvey@on-systems.co.uk
<p>This project will deliver a single stage AC to DC power supply with power factor, and conversion efficiency greater than 95%. The power supply will work with single phase or three phase input from 80VAC to 264VAC, frequency from 40Hz to 800Hz, and give a regulated, isolated output from 12VDC to 400VDC.</p> <p><b>NATEP Grant £150,000</b></p>		

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<b>Hybrid Aircraft Thrust-Vectoring Propulsion System</b>	<ul style="list-style-type: none"> <li>• V-TOL Technologies</li> <li>• Flow HD</li> <li>• Beagle Technology Group Ltd</li> <li>• Scotia Gas Networks (customer)</li> </ul>	Ashley Bryant Managing & Technical Director ashley.bryant@vtol-technologies.com
<p>This project will directly support the development of an optimised thrust-vectoring propulsion system targeted at delivering Beyond Visual Line Of Sight capabilities for the inspection of network industry based assets and infrastructure using a breakthrough Remotely Piloted Aerial System [RPAS] VTOL aircraft concept.</p> <p><b>NATEP Grant £150,000</b></p>		

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<b>Ultrasonic Ice Protection</b>	<ul style="list-style-type: none"> <li>• Ultra Electronics – Controls</li> <li>• Southampton University</li> <li>• Morgan Advanced Materials</li> <li>• BAE Systems (customer)</li> </ul>	Simon Marsden Marketing Manager simon.marsden@ultra-controls.com
<p>This project is to further develop a new concept for a Wing Ice Protection technology for smaller commercial business aircraft and unmanned air vehicles, and to demonstrate operation in an icing tunnel on a representative aerofoil sample.</p> <p>NATEP Grant £150,000</p>		

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<b>Hot spot heat detection system</b>	<ul style="list-style-type: none"> <li>• Photon Fire Limited</li> <li>• Leigh Speciality Cables</li> <li>• Meggitt PLC (customer)</li> </ul>	Bill Shepherd Managing Director Bill.Shepherd@PhotonFire.com
<p>Development of an in-flight temperature monitoring system for aircraft - that localises hot-spots before an emergency incident occurs.</p> <p>NATEP Grant £85,480</p>		

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<b>Advanced UAV Thermal Imaging and Video Analytics for Search and Rescue Missions (TIVA)</b>	<ul style="list-style-type: none"> <li>• Remvox Limited</li> <li>• RNC-Avionics Ltd</li> <li>• Lancashire Fire &amp; Rescue (customer)</li> </ul>	Steve Pearson CEO Remvox Ltd steve@remvox.co
<p>The overall objective of the project is to develop and implement an all-encompassing system to aid search and rescue missions by automatically detecting body heat through the video analytics of thermal imaging and the incorporation of the analytics results in conjunction with the on-board navigation system to deploy resources directly to area of high potential for rescue/retrieval of personnel.</p> <p>NATEP Grant £150,000</p>		

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<b>Precision Back-up Navigation for UAVs</b>	<ul style="list-style-type: none"> <li>• Forsberg Services Ltd</li> <li>• VTOL Technologies Ltd</li> <li>• Rockwell Collins (customer)</li> <li>• Locanis (customer)</li> </ul>	Charles Forsberg Director charles.forsberg@forsbergservices.co.uk
<p>Forsberg Services Ltd propose an enhanced air navigation system for safe operation of UAVs during critical parts of the flight envelop, in particular landing and take-off. These phases of low-level flight are subject to object avoidance and safe navigation.</p> <p>NATEP Grant £150,000</p>		

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<b>New Photonic Architectures using GaAs Modulators</b>	<ul style="list-style-type: none"> <li>• aXenic Limited</li> <li>• University of Bedfordshire</li> <li>• Selex ES (customer)</li> </ul>	Steve Clements Managing Director steve.clements@axenic.co.uk
<p>The project will develop a novel photonic architecture to allow hi fidelity, high bandwidth, remoting of microwave sensing in harsh avionics environment. Photonic signal pre-processing will also be used to produce a better performance than from pure electronics.</p> <p><b>NATEP Grant £143,000</b></p>		

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<b>Novel contra-rotating propeller for electric aircraft</b>	<ul style="list-style-type: none"> <li>• Hercules Propellers Ltd</li> <li>• Contra Electric Propulsion Ltd</li> <li>• Falcomposite Ltd (customer)</li> </ul>	Rupert Wasey Managing Director rupert@hercprops.com
<p>This collaboration between a propeller manufacturer and electric aircraft innovator will investigate novel contra-rotating blade designs.</p> <p><b>NATEP Grant £130,000</b></p>		

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<b>Small Rotary Engine Technologies</b>	<ul style="list-style-type: none"> <li>• A&amp;M EDM Ltd</li> <li>• Techteam Development LLP</li> <li>• ASNU Corporation Europe Ltd</li> <li>• UAV customer</li> </ul>	Tim Shires Design Engineer tim@amedm.co.uk
<p>Development of an innovative aerospace standard engine architecture to support production of small multi-fuel operation power units specifically aimed at the unmanned air vehicle (UAV) market.</p> <p><b>NATEP Grant £95,000</b></p>		