NATEP

Electrics/Electronics Projects

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Project	Supply chain partnership	Contact
Engineering Augmented Reality "ET-AR"	• VR Simulation Systems Ltd • Blue Flame Digital Ltd • Wolverhampton University • Rolls-Royce plc (customer) • Stadco UK Ltd	Tim Luft Director tim@vrsimulation.co
VRSS propose the research, development and industrial trial of a new form of learning for the aerospace engineering/manufacturing industry – combining Augmented Reality (AR) with a set of new AR glasses for intuitive point-of-need training and knowledge. NATEP Grant £140,000		

Project	Supply chain partnership	Contact
Prometheus: Novel Hybrid Power Technology for Aerospace	• EU ECO Technology • Innovation Works & Systems • Blackburn College • Cranfield University • United Technologies Research Centre • BAE Systems	Stavros Kindylides Technical Director skindylides@eu-eco.com
Passenger aircraft are becoming more electric in order to reduce fuel consumption and CO2 emissions. Prometheus is a game changing technology, based on thermoelectric generators which are energy harvesting devices that can generate power from excess heat sources which exist on aircraft components such as engines, fuselage skin and cabin, Prometheus is a technology which will complement existing power sources and reduce directly operation costs on aircraft while increasing UK competitiveness. NATEP Grant £149,150		

Project	Supply chain partnership	Contact
Wireless Telemetry Antennas	• TBG Solutions Ltd • G2 Communications • Rolls-Royce plc (customer)	Neil Roddis – R&D Manager neil.roddis@tbg-solutions.com
Innovative antennas to be used to improve the reliability and efficiency of wireless monitoring of measurement data in aero engine development test; generic signal conditioning for signals from the measurement sensors NATEP grant £150,000		

Project	Supply chain partnership	Contact
Fit and Forget Cable Harnesses	• Scientific Management International Ltd • Concept Cables Ltd • Safran Landing Systems	Glen Richardson Chief Technical Officer glen.richardson@smi.group
Fit and forget design solution to avoid any water or moisture ingress into aircraft landing gear connector harnesses. NATEP Grant £150,000		

Project	Supply chain partnership	Contact
Temperature Indicating Paints for Aero Engines (TIPTOE)	• Sensor Coating Systems Ltd • Indestructible Paint Ltd • MAN Diesel and Turbo (customer)	Dr Jörg Feist – Managing Director jfeist@sensorcoatings.com
Thermal History Paint records temperature information by going through irreversible changes which can be detected non-destructively using specialised hand-held read-out equipment. This project will support the development of the technology to demonstrate its applicability in aerospace engine development. NATEP Grant £122,500		

Project	Supply chain partnership	Contact
Improved Harness Technology (IHT)	• Trackwise Designs Ltd • Boston Design Consultants • Fokker Elmo BV (customer) • Messier-Dowty Ltd (customer)	Philip Johnston -Managing Director philip.johnston@trackwise.co.uk
Trackwise has developed a means of producing length-unlimited multilayer flexible printed circuit boards. This project will accelerate the adoption of this technology as a weight saving replacement for conventional wiring harnesses with associated carbon reduction benefits for aerospace platforms and payloads. NATEP Grant £84,000		

Project	Supply chain partnership	Contact
Configurable Double Sided Cooled Integrated Power Module	• Semelab Ltd • Pre-Met • Rolls-Royce plc (customer)	Julian Thomas Julian.Thomas@ttelectronics.com
The project is intended to standardise power modules by having a single switch that can be configured to make various topologies. The single switch will be replaceable meaning maintenance can be done to power modules. The single switch will have a double sided cooled technology as a way of replacing wirebonds and improving the performance. NATEP Grant £ 127,200		

Project	Supply chain partnership	Contact
Plasma Cleaning in MCM Advanced Manufacture	• Welwyn Components Power & Hybrid • Accelonix • Rolls-Royce plc (customer)	Billy Shaw – Engineering Manager billy.shaw@welwyn-tt.com
This project will demonstrate that an innovative cleaning process can be introduced into the manufacture of advanced MCM (multi-chip module) devices for avionic engine controls, and automated to improve both yield and quality. NATEP grant £70,000		

Project	Supply chain partnership	Contact
Optical Brake Temperature Sensor	• Oxsensis • Meggitt Sensing Systems • Airbus Operations SAS (customer)	Conrad Langton – Engineering Director conrad.langton@oxsensis.com
Oxsensis is working with Airbus and Meggitt Sensing Systems to demonstrate that a novel fibre optic temperature sensor can monitor the temperature of aircraft braking systems. This is a truly harsh environment in which the aircraft mounted sensors will be exposed to temperatures in range of -55°C to 1300°C. NATEP Grant £150,000		

Project	Supply chain partnership	Contact
Automated Manufacture of Slot Liners (AMSL)	• MEP Ltd • Jackson Design Ltd • SAFRAN Labinal Power Systems (customer)	Phil Hart – Managing Director phil.hart@mep.co.uk
Aerospace power generators operate at high temperatures; moulded components which act as insulators must cope with demanding electrical output, stresses and strains. This technology delivers high quality, safe products whilst retaining manufacturing in the UK in the long term. NATEP Grant £150,000		

Project	Supply chain partnership	Contact
GOCOM - Ground Operations Control Monitoring	• HW Communications Ltd • NEDEAS Ltd • Rinicom Ltd • Airbus Operations Ltd (customer) • Ultra Electronics Controls (customer)	Michael Szczygiel - Research Projects Manager mszczygiel@hwcomms.com
GO-COM is a collaborative R&D project to identify airport impact incidents between aircraft and external ground objects (aircraft, equipment and structures) using wireless sensor networks on board the aircraft. Its aim is to immediately alert airline maintenance and airport ground services that an impact has occurred: where, when and with what force. It will also provide visual evidence via airside cameras. NATEP Grant £149,790		

Project	Supply chain partnership	Contact
SmartHUD	• Artemis Optical • Plessey Semiconductors Ltd • BAE Systems (customer)	Stuart Allan – Technology Director stuart.allan@artemis-optical.co.uk
SmartHUD aims to use the recent proliferation in LED light sources and design unique and novel thin film coatings to enable their use in Head Up Display systems. The advantages sought are reduced weight, longer useful life of the light source and enhanced optical performance of the overall module. NATEP Grant £102,890		

Project	Supply chain partnership	Contact
In-loom splicing for aerospace applications	• AvOptics • TT Electronics • BAE Systems • MOD - UK Chinook project team (customer)	Andrew Voizey – Managing Director andy.voizey@avoptics.com
To develop a simple to use, novel in-loom mechanical splicing technology to enable the repair of fibre optic harnesses on aircraft. NATEP Grant £149,760		

Project	Supply chain partnership	Contact
Creating an Understanding of ILS Specifications	• Aspect Supportability Consultants • RTP-UK Ltd • Showcase Graphics • UK Council for Electronic Business(customer)	Mark Williams Head of Operations (ILS) mwilliams@rtp-uk.com
Aspect and RTP Ltd investigated the transition and migration complex legacy data sets into the new S3000L Logistic Support standard NATEP Grant £149,750		

Project	Supply chain partnership	Contact
SkyBike	• SkyBike International Ltd • Bit Parallel Ltd • Embedded Logic Ltd • BASF plc (customer)	Gilo Cardozo – Chief Technical Officer gilo@giloindustriesgroup.com
This project will work to develop a UAV platform with crop spraying capabilities. It will explore flight control systems and location integration with an experimental VTOL design. NATEP Grant £150,000		

Project	Supply chain partnership	Contact
Digital High Performance Servovalve	• Moog Controls • 4C Electronics • Moog Inc. (customer) • Embraer Commercial Aviation(customer)	Dr Phil Elliott – R&D Manager pelliott2@moog.com
The execution of electronic closed loop control within a small flight control servovalve has many benefits at the system level including: digital interface, reduced internal leakage, faster dynamic response, higher accuracy and smaller size.		

Project	Supply chain partnership	Contact
Machine Connectivity & Manufacturing Intelligence	• ATS UK • Hitex Ltd • Arrowsmith Engineering (Coventry) Ltd (customer)	Martin Kelman – Senior MES Consultant martin.kelman@ats-global.com
The project will create a highly cost effective Machine Connectivity Module (MCM) which connects and monitors manufacturing processes using the latest technology in the fields of; embedded sensors, wi-fi communications and android based data processing & display platforms NATEP Grant £150,000		

Project	Supply chain partnership	Contact
Proof of Systems Assurance & Certification	• D-RisQ Ltd • Abstract Solutions Ltd • GE Aerospace (customer)	Nick Tudor – Business Director njt@drisq.com
This project seeks to provide an automated, highly assured, systems design analysis capability tool which will enable faster and more cost effective development of constantly evolving complex systems for aerospace and other associated markets. NATEP Grant £75,000		

Project	Supply chain partnership	Contact
Piezoelectricity-enabled Aero Controls	• Ionix Advanced Technologies Ltd • Linwave Technology • Rolls-Royce plc (customer)	Dr Tim Comyn – Chief Technology Officer tim.comyn@ionix.at
Using novel piezoelectric materials integrated into engine components, Ionix and its project partners, supported by NATEP aim to make a significant impact on the fuel efficiency of gas turbine engines through improvements to the cost, reliability, accuracy, and response time of electromechanical components operating in extreme environments. NATEP Grant £127,170		

Project	Supply chain partnership	Contact
3D Moulded Circuits	• Laser Optical Eng. Ltd • Moulded Circuits Ltd • MBDA UK Ltd (customer)	John Tyrer johntyrer@laseroptical.co.uk
Develop a laser writing system capable of producing 3D copper tracks or circuits on 3D aerospace lightweight structures. Create the ability to produce fully functional circuitry directly onto 3D parts, enhancing functionality and enabling them to become part of a larger product or system, thereby reducing size, weight and cost. NATEP Grant £145,727		

Project	Supply chain partnership	Contact
Single Stage Isolated AC/DC Power Supply	• On-Systems Ltd • Peregrine Semi-conductors UK • Raytheon UK (customer)	Mike Harvey – Commercial Director mike.harvey@on-systems.co.uk
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. NATEP Grant £150,000		

Project	Supply chain partnership	Contact
Ultrasonic Ice Protection	• Ultra Electronics – Controls • Southampton University • Morgan Advanced Materials • BAE Systems (customer)	Simon Marsden Marketing Manager simon.marsden@ultra-controls.com
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. NATEP Grant £150,000		

Project	Supply chain partnership	Contact
Active Rapid Thermal-Transfer System (ARTS)	• TCS Micropumps Ltd • Electrobase RP • BAE Systems (customer)	Richard Weatherly Director richard@micropumps.co.uk
The Innovative ART System (Active Rapid Thermal-Transfer) provides a super-efficient method of transferring heat. It can be fully integrated into electronic systems and will help maximise electronic performance for the aerospace industry. NATEP Grant £150,000		

Project	Supply chain partnership	Contact
Hot spot heat detection system	• Photon Fire Limited • Leigh Speciality Cables • Meggitt PLC (customer)	Bill Shepherd Managing Director Bill.Shepherd@PhotonFire.com
Development of an in-flight temperature monitoring system for aircraft - that localises hot-spots before an emergency incident occurs. NATEP Grant £85,480		

Project	Supply chain partnership	Contact
Advanced UAV Thermal Imaging and Video Analytics for Search and Rescue Missions (TIVA)	• Remvox Limited • RNC-Avionics Ltd • Lancashire Fire & Rescue (customer)	Steve Pearson CEO Remvox Ltd steve@remvox.co
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. NATEP Grant £150,000		

Project	Supply chain partnership	Contact
Precision Back-up Navigation for UAVs	• Forsberg Services Ltd • VTOL Technologies Ltd • Rockwell Collins (customer) • Locanis (customer)	Charles Forsberg Director charles.forsberg@forsbergservices.co.uk
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. NATEP Grant £150,000		

Project	Supply chain partnership	Contact
New Photonic Architectures using GaAs Modulators	• aXenic Limited • University of Bedfordshire • Selex ES (customer)	Steve Clements Managing Director steve.clements@axenic.co.uk
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. NATEP Grant £143,000		

Project	Supply chain partnership	Contact
Novel contra-rotating propeller for electric aircraft	• Hercules Propellers Ltd • Contra Electric Propulsion Ltd • Falcomposite Ltd (customer)	Rupert Wasey Managing Director rupert@hercprops.com
This collaboration between a propeller manufacturer and electric aircraft innovator will investigate novel contra-rotating blade designs. NATEP Grant £130,000		

Project	Supply chain partnership	Contact
Software Defined Telemetry	• TBG Solutions Ltd • G2 Communications • Rolls-Royce plc (customer)	Neil Roddis R&D Manager neil.roddis@tbg-solutions.com
Software controlled wireless communications system for reliable wide bandwidth remote monitoring of sensor data, initially aimed at improving efficiency and cost-effectiveness of aero engine development test NATEP Grant £150,000		

Project	Supply chain partnership	Contact
Composite Baseplates for aerospace antennas	• Technical Composite Systems Ltd • Cobham Antenna Systems • University of Exeter • (customer) tbc	Michael Sloan Managing Director msloan@technicalcompositesystems.co.uk
The project consortium aims to develop, test and exploit new technologies to improve aircraft communication hardware. Structural composite materials and advanced surfacing technologies will reduce the mass of current systems. NATEP Grant £145,115		

Project	Supply chain partnership	Contact
HP1 Impact Classification System (HP1ICS)	• HP1 Technologies Limited • University of Central Lancashire • Centre for Process Innovation (CPI) • BAE Systems • GKN Aerospace	Andrew Howes – Director Andrew@hp1t.com
This project will develop a printable intelligent flexible, thin and durable sensor array that will collect and analyse data relating to impact events on aircraft. NATEP Grant £149,926		

Project	Supply chain partnership	Contact
Thermoplastic Encapsulated Embedded Power Modules (TEE-P)	• Tribus-D Ltd • Ultrawise Innovation Ltd • Leonardo MW Ltd	info@tribus-d.uk
Assembly processes for the power electronics modules are critical for efficiency, size, weight and costs. This project will maximise thermal dissipation and minimise circuit parasitics through advanced interconnection and device encapsulation techniques NATEP Grant £37,200		

Project	Supply chain partnership	Contact
Intelligent Diversion Assistant (IDA)	• The Great Circle Ltd • University of Central Lancashire • Pooleys Flight Equipment Ltd	Adam Berrington – Director adam@thegreatcircle.co.uk
The Intelligent Diversion Assistant (IDA) improves aircraft safety in emergencies, using data obtained from real-time digital aircraft and weather feeds, coupled with a detailed airfield navigation database, to provide real-time optimum re-routing and emergency landing decision support to pilots. NATEP Grant £143,767		

Project	Supply chain partnership	Contact
Low cost packages for semi-conductor devices	• Semelab Ltd • PandA Europe • AK Industries Ltd • GE Aviation Systems	Liam Mills – R&D Manager liam.mills@semelab-tt.com
The project proposes to develop a recyclable high temperature polymer that can be moulded around a metal lead frame to produce a lower cost package alternative to traditional co-fired ceramic surface mount packages for current aerospace applications and future high temperature requirements NATEP Grant £150,000		