



NATIONAL AEROSPACE TECHNOLOGY EXPLOITATION PROGRAMME (NATEP)

NATEP-South East Projects

3rd December 2015



Aerospace Growth Partnership

CALL 1 - Projects



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www.NATEP.org.uk

MAA001 Aeromet A20X Surface Treatments Development

Lead Partner: Aeromet International

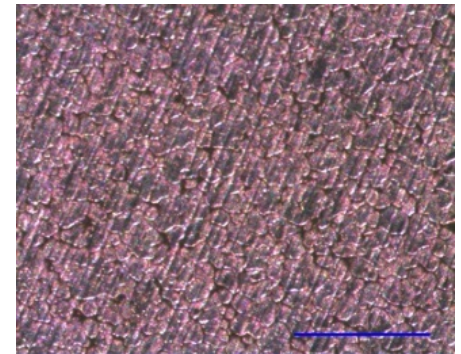
Partners:

Poeton Industries
Boeing

NATEP Grant Awarded £35,000

This project will:

- Support ongoing commercialisation of Aeromet's proprietary family of high property alloys.
- Position Poeton to establish a global network of treatments service providers to exploit the resultant IP.
- Further develop the UK components supply chain to cover raw material through to finished parts across multiple industry sectors.



MAA009 RACAL Aviation High Noise Headset

Lead Partner: RACAL

Partner:
Limit Ear

NATEP Grant Awarded £150,000

NATEP Grant Claimed £51,173

This project will:

The project will accelerate several innovative technologies into a new hearing protection and communications headset with an associated control system for use in high noise environments in rotary wing and fixed wing platforms.



CALL 2 - Projects



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FAC001: Avia Technique Portable Pulse Oxygen Cylinder Assembly (PPOCA)

Avia Pulse CP Series

- Lead: Avia Technique
- Partners: Air Liquide, Meditech Systems, Airbus
- Grant Awarded: £150,000

Objective:

- To develop a Portable Pulse Oxygen Cylinder (PPOCA) with an extended duration oxygen cylinder for cabin crew and first aid use



Development

- Orifice sizes determined
- Design updated
- New mask design investigated



AVIA TECHNIQUE LTD
Global Aerospace Services

meditech
systems limited

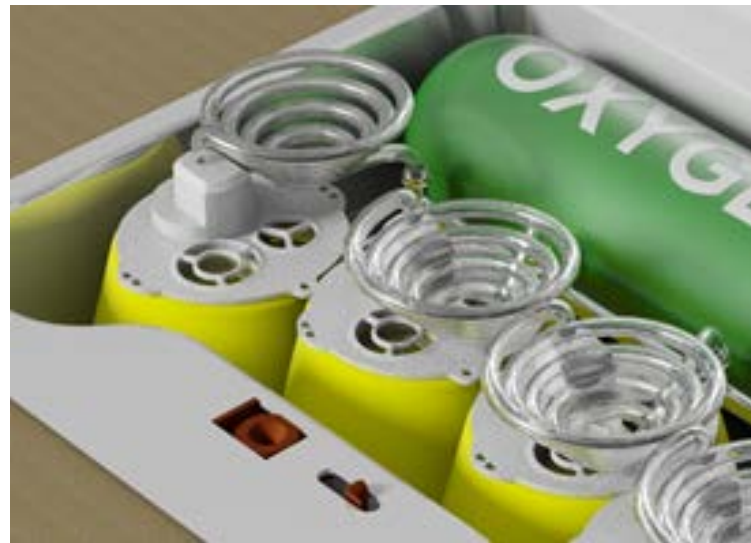
AIR LIQUIDE

AIRBUS

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CALL 2: FAC002 Avia Technique Pulse Passenger Service Unit (PPSU)

- Lead: Avia Technique
- Partners: Air Liquide, Meditech Systems, Airbus
- Grant Awarded: £150,000



CALL 2: FAC003 Kwikbolt Wet Fit Slave Fasteners

Wet Fit Slave Fasteners

Lead: Kwikbolt Ltd (SME)

Grant Awarded: £145,000

Partners: Lockheed Martin (End User), Wesco Airframes (End User), The Manufacturing Technology Centre (Research Provider), i2M (SME partner)

Objectives:

To create the next generation of single sided wet fir aerospace fasteners for manual and automated composite build lines.

The new Kwikbolt wet fit fasteners will be a high tolerance fastener that will allow for clamping and positioning of aircraft panels from one side.

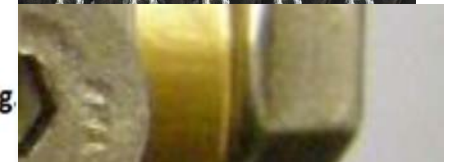
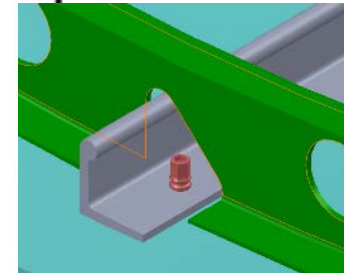
The fasteners will reduce labour costs while improving the quality and speed of production.

Deliverables:

The manufacture and testing of validated prototypes by 3D metal printing and micro machine polishing.

Outcomes:

The current aerospace manufacturing environment is moving quickly to automated lines and composite components that require quicker assemble and composite friendly tools.



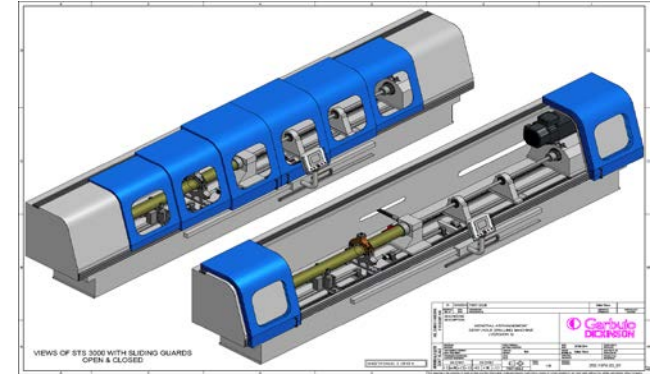
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CALL 2: FAC006 Perfectbore Precision Deep Hole Boring

Lead: Perfect Bore Manufacturing Limited

Partners: Dickinson Legg Ltd
GEMMSS Ltd
Impcross Ltd (Customer)



Grant Awarded: £150,000

Objective: *“Production of more accurate, robust and enhanced geometric tolerance bore solutions to the aerospace industry by the end of 2015/early 2016; forming a bedrock for future developments in bore production technology for the aerospace sector.”*

Deliverables: 100% complete through the design phase.

Outcomes: A detailed full review of the bill of materials to be carried out.

CALL 2 : FAC009 Aeromet Water Soluble Ceramics for Aluminium Investment Casting Applications

Lead:  aeromet
INTERNATIONAL PLC

Partner:  adaptive engineering solutions

Grant Awarded: £148,011

Objective:

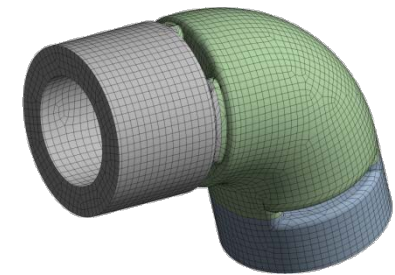
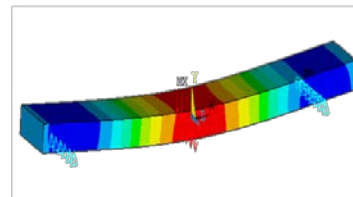
- Move from TRL4 to TRL7
- Validate a process parameter
- Boost competitiveness
- Increase development activities

Deliverables:

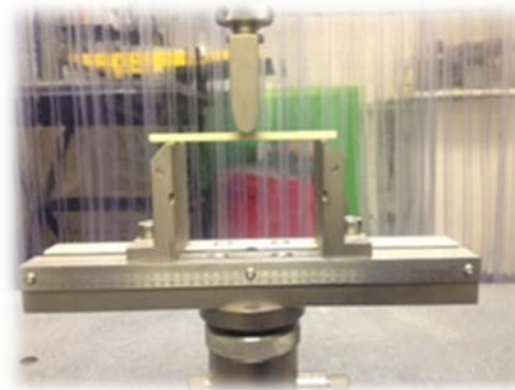
- Material & Process Optimization
- Core Demonstrator Development
- Demonstrator Test & Evaluation
- Dissemination

Outcomes:

- Open up unique design markets



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Call 2: FAC010 Blue Bear Plane Sight

Lead: Blue Bear Ltd (SME)

Partners: Createc Ltd (SME), General Dynamics UK Ltd (Prime)

Grant Awarded: £67,190

Objective: Each year hundreds of aircraft are damaged during ground manoeuvre. Blue Bear, Createc and General Dynamics are working together to develop a novel situational awareness avionic system which enables the pilot to view the aircraft within the environment from viewpoints which are impossible to achieve for any camera.

Deliverables: Synthetic environment development
Sensor system development
End user demonstrations

Outcomes: Showcase the synthetic environment and development activities to potential end users



CALL 2: FAC013 SCS TIPToE Temperature Indicating PainTs for aero Engines

Lead: Sensor Coating Systems

Partners: Indestructible Paint and MAN Diesel & Turbo

Grant Awarded: £122,500

Objectives: develop a durable paint to enable temperature measurements from 300-1200°C with a robust read-out device

Outcomes:

- Durable paint operating up to 1200°C
- Market ready instrumentation
- System demonstrated on industrial engine

Progress:

- Positive results with existing paint composition
- System demonstrated on industrial components



MAN Diesel & Turbo



CALL 2: FAC016 Valuechain Connecting Aerospace Supply Chains

Valuechain.com

Lead: Valuechain.com

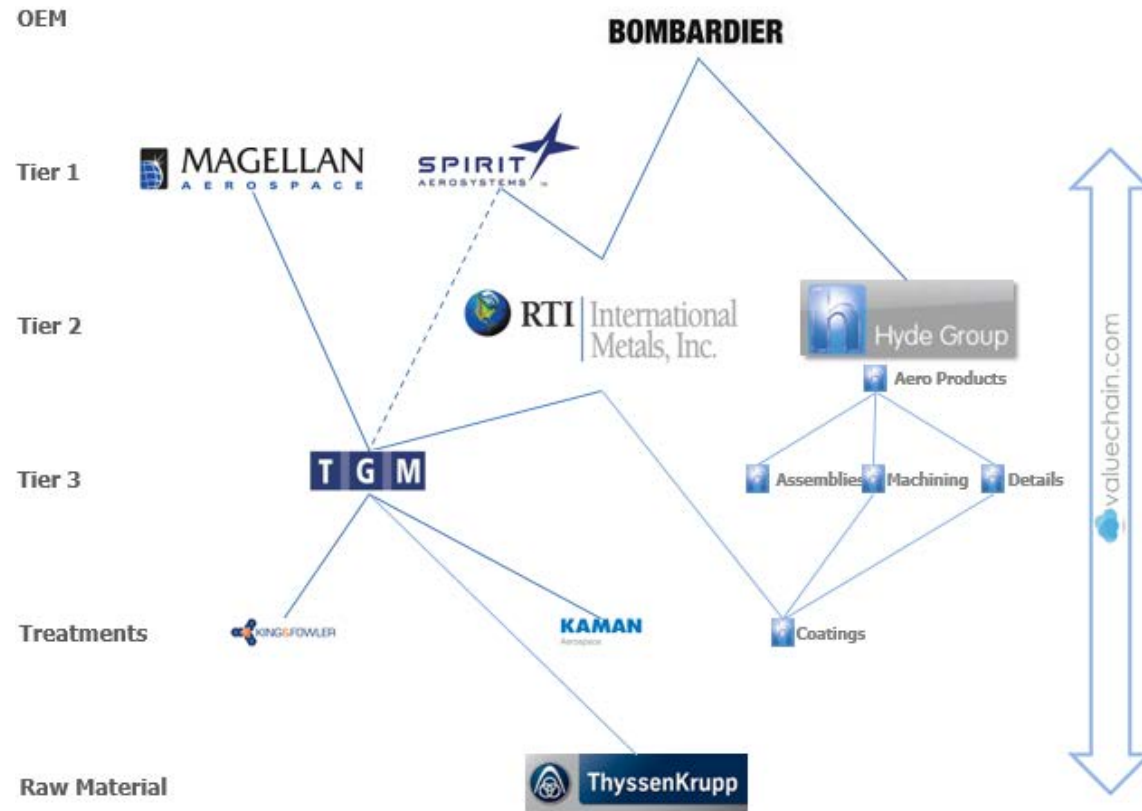
Partners: Hyde, Technigrind

Grant Awarded: £150,000

Objective: to pilot a multi-tier supply chain systems collaboration platform to create competitive extended enterprises

Deliverable: a scalable, intuitive platform proving the benefits of real-time upstream & downstream supply chain visibility

Outcome: streamlining intercompany communication and data transparency to unlock new competitive business models for UK aerospace companies and cross sector



CALL 3 - Projects



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Call 3: FAC011 Blue Bear SafePilot Weather Watch

Lead: Blue Bear Systems Research Ltd

Partners: Met Office, Hybrid Air Vehicles, e-Go aeroplanes

Grant Awarded: £95,000

Objectives:

- Electronic decision aid for manned aircraft
- Automated planning tool for unmanned aircraft
- Enhances tactical and strategic route planning to make operations safer and more fuel efficient.

Deliverables:

- Simulation based hardware-in-the-loop demonstration of a **proof of concept** weather and airspace aware route planning tool

Outcomes:

- Demonstrated value to end users
- Identified path towards exploitation



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Call 3: FAC020 Adhesion Technologies Spida - Manufacturing Process for Light Weight Composite Fixings

Making Transport Lighter Stronger & Faster

Adhesion Technologies, MEP, Loop, Formax, Pressavon, Dopag and GKN are collaborating to produce a composite moulding machine that will manufacture a revolutionary fixings system for the global aerospace industry by the end of 2015.

Grant Awarded: £150,000

This will form a bedrock for ground breaking approaches to structural composite design, weight and cost reduction for both marine, automotive and aerospace sectors.



CALL 3: FAC025 Oxford Space Systems Large Deployable Space Antenna

Lead: Oxford Space Systems

Partners: Reliance Precision, Two industry significant primes one located overseas

Grant Awarded: £150,000

Objective:

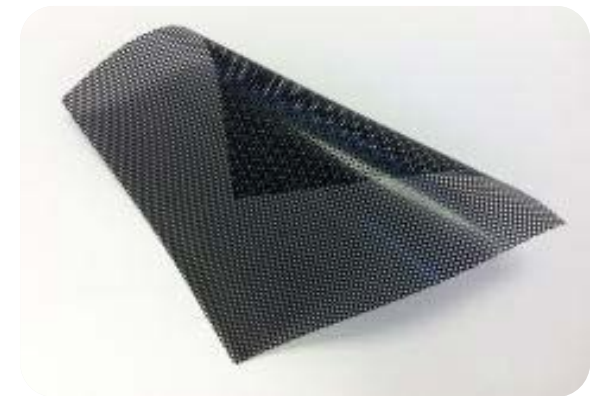
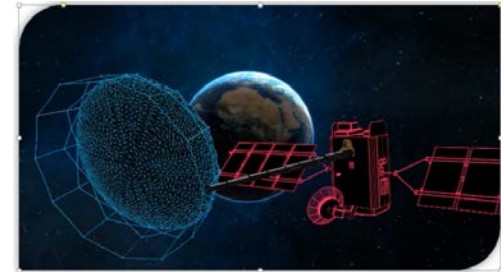
- Reflector surface test samples for RF/Mechanical characterisation
- Development of reflector surface and stowage techniques to fit structure
- Development of kinematically representative LDA structure

Deliverables:

- Kinematic representative LDA structure
- Reflector surface made from RF characterised material

Outcomes:

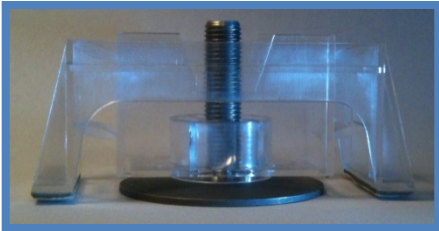
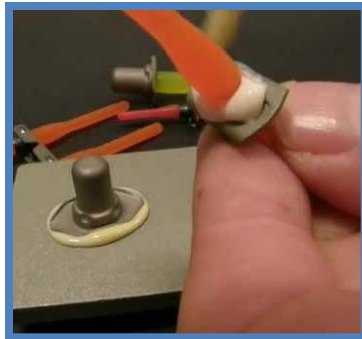
- ✓ novel reflector surface material
- ✓ high stowage efficiency
- ✓ scalable design
- ✓ strong IP



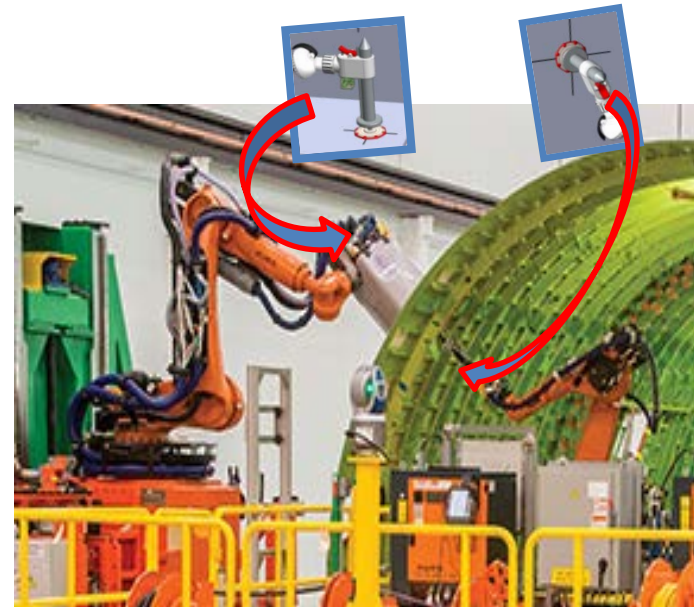
Call 3: FAC028 Adhesion Technologies Toggлон - a Bonded Fixings Installation System

Partners: Adhesion Technologies, MEP, Loop, Pressavon and GKN
Grant awarded: £150,000

Current Bonding Methods



Future Robotic Toggлон



Unlike metal riveting tools which have progressed from manual to automated installation, adhesive bonded fixings are still primarily manually installed.

CALL 4 - Projects



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Call 4: FAC030 Oxsensis Optical Aircraft Brake Temperature Sensor

Oxsensis and Meggitt Sensing Systems (MSS)

Project:	Optical Aircraft Brake Temperature Sensor
Partners:	Oxsensis Ltd - Meggitt Sensing Systems Ltd - Airbus Operations UK Ltd
Grant Awarded:	£150,000
Duration:	21 months

This project will:

- Demonstrate a novel fibre optic temperature sensor that can monitor the temperature of aircraft braking systems
- Deliver prototype optical a sensor system that has been shown to operate in a realistic environment.



Call 4: FAC033 MEP Automated Manufacture of Slot Liners

- **MEP Ltd; Safran Labinal Power Systems; Jackson Designs Ltd.**

Grant Awarded: £150,000

This NATEP Project looks to develop a fully automated manufacturing system that will replace the existing handmade method of manufacture of Electric Motor and Generator Slot Liners, to reduce cost, improve quality and reliability, ensuring the manufacture of these products is retained in the UK.



Following the full review and in-depth work study of the of the current method and the future research in to alternative materials, a demonstrator machine will be designed and built to deliver Slot Liner samples for operational testing.

Call 4: FAC034 CTES Cure Capable Mandrels

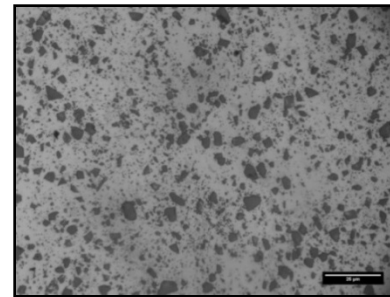
- Partners: CTES, Retrac and GKN
- Grant Awarded: £149,767
- The objective of this project is to develop a **cure capable AFP mandrel** which is a unique combination of three key elements: a structural item, a high accuracy mould tool and a CTE matched to the component.



- This will be achieved through the use of CTES Ltd's design and analysis knowledge and Retrac Composites Ltd's manufacturing experience.
- This will provide an innovative tooling option for automated manufacturing of large aerospace composite components, reducing tooling costs and part leadtimes.

Call 4: FAC035 AMC Metal Matrix Composites for Helicopter applications

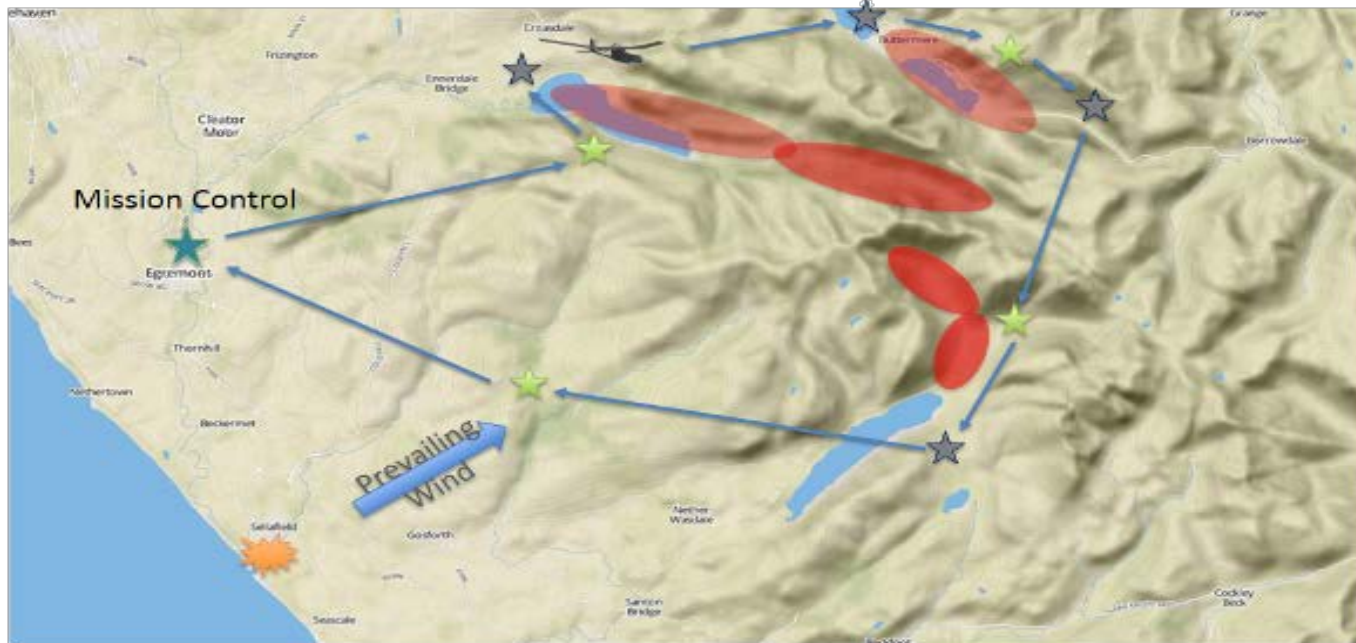
- Stuart Godfrey & Andrew Tarrant, Aerospace Metal Composites, Xenofon Gogouvitis & Peter Bishop. Mettis Aerospace, Redditch.
- Grant awarded: £150,000
- The project objective is to develop a grade of “metal matrix composite” or MMC materials for helicopter applications.
- The technical approach of the project will be based on reinforcing a high strength aluminium alloy with a reduced SiC content to give this helicopter specific MMC more toughness & ductility compared to the core products that AMC currently offer.
- The Work Packages in the project include material production, non-destructive testing, mechanical property evaluation, forge modelling & forging of representative parts.
- The NATEP funding will help develop and secure a UK supply chain for both the material production & the forging of parts for this helicopter specific alloy.




Call 4: FAC036 Tekever Risk Aware Mission Planning (RAMP)


- Partners: TEKEVER LTD, Rotron and EMSA
- Grant Awarded: £150,000

Course corrections proposed to preserve mission



 Planned search areas

 Risk areas

 Course corrections



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Summary

In General South East NATEP projects are going very well: jobs claimed and QPRs are on track. Money Claimed is slightly behind that what we would expect.

Totals

up to Call 4

- 20 Projects
- 38 Jobs delivered out of 114 planned - 33%
- £628,568 Claimed out of £2,827,468 planned - 22%
- 54 QPRs held out of 118 planned - 47%

Call 5

- 12 Projects
- 36 jobs
- £1,520,000
- 71 QPRs to be held