Innovation in the Space Sector
Space-Themed Knowledge Transfer Partnerships Call

www.ktn-uk.org
Connecting
• Bringing people together to innovate
  • _connect networks
  • Networking Events
  • Building Community

Communicating
• Broadcasting to keep people informed
  • _connect Articles
  • Event Diary
  • Funding Calls

Collaborating
• Bringing Government, Academia and Industry together
  • Conduit of information
  • Listen to All, Speak for All

Changing
• Breaking barriers between sectors
• Leading the Innovation Discussion
• Accelerating Innovation for Economic Growth
InnovateUK – Who?

• A brief history
  - The original DTI Innovation Unit and advisory “Technology Strategy Board” was set up in 2004
  - It was spun out of government as a “non-departmental public body” in July 2007, relocated to Swindon and staffed with people from business
  - Since then our budget has increased from £250m to £440m a year
  - Independent evaluation suggests that we have increased the return on that investment from £4 to over £20 for every £1 used by focussing on challenges and building the community
  - August 2014 change of [brand] name to InnovateUK
What problems are we trying to solve?

- **Business investment is too low and too late**
  - Technical and financial risks need to be mitigated
  - The time for financial return is too long for many players

- **Innovation disrupts value chains and business models**
  - New partnerships are required to build new supply chains
  - Investment and innovation is required at multiple points

- ** Longer term trends not visible to all players**
  - Impact and opportunities from emerging technologies & policies

- **Innovation infrastructure complex and inefficient**
  - Fragmented and difficult to navigate

- **Government does not make best use of its levers**
  - Procurement, regulation, standardisation, fiscal incentives
What are we doing about it?

• Accelerating the journey between concept and commercialisation
  - Understand the business journey and accelerate it
  - Provide a coherent package of support – matched to needs
  - Specific SME package – but recognise role of larger companies
  - Promote knowledge exchange

• Connecting the innovation landscape

• Turning government action into business opportunity

• Investing in priority areas based on potential

• Continuously improving our capability
Why a Space Themed KTP call?

- Space Technology (upstream) has been under represented in the KTP responsive call(s)
- The Space sector has committed to a significant growth agenda (target)
  - 10% of global Space market by 2030
  - Recognising the need to exploit the UK research base better
- A themed call focuses attention and has already stimulated renewed interest in KTP
  - From the Space sector

- And why not.....? 😊
What are we looking for?

• Primarily looking to fund in the “upstream” domain
  - Satellite & satellite instrument manufacture
  - Infrastructure
  - Mission design
• Not excluding “downstream”
  - Applications, use of space data
• Projects that contribute to the wider space economy
  - Pulling tech from other areas perhaps?
• Also innovative projects in space
  - i.e. things we have not thought of!
• Projects between 6 months and 36 months duration
How are we doing this?

• Up to £1.3m, funded by Innovate UK and Natural Environment Research Council, NERC.
  - Science and Technology Facilities Council will also consider funding projects on an individual basis
• Projects must be business led
  - Looking to fund 10-12 projects
  - A cohort approach for Associates
• We will set aside a bursary fund for Associate to attend the International Space University (ISU) summer school
  - Space Studies course
Natural Environment Research Council

NERC
Science of the Environment

UK Universities
Centre for Ecology & Hydrology
British Geological Survey
NERC National Centre for Earth Observation
British Antarctic Survey
National Oceanography Centre
National Centre for Atmospheric Science
Aim of KTP for NERC

- Establish long-term links with expertise in research base
- Pull through of Science to Industry
- Sharing knowledge (flow both ways)
- Career development for associate (early career scientist)
NERC Science: Translation

Upstream applications
• Expertise in instrumentation (developed for Science missions)
• KTP could provide expertise in understanding the scientific principles of instruments & potential applications.
• Centre for Earth Observation and Instrumentation (http:www.ceoi.ac.uk/)

Downstream Applications
• Expertise in Data Assimilation, Modelling, Understanding Data & Processing
• Infrastructure – processing satellite information
Get Involved

Contact your local KTP Adviser
   - Gerry Black
   - www.ktponline.org.uk

Contact the KTN
   - Andy Powell
   - andy.powell@ktn-uk.org
Knowledge Transfer Partnerships is Europe’s leading programme helping businesses to improve their competitiveness, productivity and performance through the better use of knowledge, technology and skills that reside within the UK knowledge base.

Embedding a **NEW capability**, demonstrating innovation, impact and challenge.
Partnership Structure

- Associate Transfers Knowledge
- Academic Partner Has Knowledge
- Business Partner Needs Knowledge

Innovate UK
Technology Strategy Board
Generic 5 C Model

<table>
<thead>
<tr>
<th>C 1</th>
<th>Business Opportunity Recognition</th>
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</thead>
<tbody>
<tr>
<td>C 2</td>
<td>Co-Recognition</td>
</tr>
<tr>
<td>C 3</td>
<td>Co-Formulation</td>
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<tr>
<td>C 4</td>
<td>Co-Creation</td>
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<tr>
<td>C 5</td>
<td>Commercialisation</td>
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</tbody>
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- Poor awareness / weak networks
- Uni Rules / confidentiality / IPR issues / TTO expectations / Different Motives
- Language / Values / Trust / Timescales / Lack of Solution Focus
- Absorptive Capacity / Communication / Change Management
- Finance / IPR / Management

Acknowledged CIHE
Academic Departments

- Engineering (34%)
- Management (18%)
- Computing (14%)
- Sciences (15%)
- Design (5%)
- Other (14%)
Budgets, Grant Rates and Timescales

- Average project budget ~£65kpa / per associate;
- £27k-£35k (employment budget) + £6k (T&S, Cons., Training);
- SMEs up to 67% grant (~£22kpa cash contribution)
- Large companies up to 50% grant (~£33kpa)
- Project duration 6 – 36 months
- Submission windows every 2 months
- Decision within 4-weeks and free to appoint / recruit thereafter;
- 80% application success rate
Business Benefits

Benefits per Associate project*

- Increase in annual profit before tax: £366,000
- Investment in plant and machinery: £117,000
- New jobs created: 3
- Business staff trained: 21
- Plans for further collaboration: 78%

*(2011/12 Annual Review)
Academic Benefits

Personal and Professional Development:
- Opportunity to apply research outputs and expertise in a real-world environment;
- ADR and career progression
- REF - publications and IMPACT case studies

Income Generation:
- During project - Typical one associate, 24m project ~ 130k income (scope for larger projects)
- Post project - relationship with company (consultancy, CPD, sponsored research, student projects)

Support and Success RATE:
- Local KTP Centre;
- National HIT RATE OF ~80%
KTP Centres

- Glasgow University is a member of the West of Scotland KTP Centre.

- Contact Dr Alison Reith - alison.reith@ktpws.org.uk

Application Process

Prepare EOI* for submission to KTP Adviser

Prepare application with guidance from KTP Adviser

Application assessed by Partnership Approval Group (PAG)

Proposal funded – continued input from KTP Adviser

* EOI – Expression of Interest
KTP 6714 - To develop an integrated nano-satellite platform that customers can produce as a kit; fully assembled spacecraft; or send their payload for integration and test before launch.

“This project has been one of our most exciting projects to date. Not only is it one of the most advanced Nano-satellite ever made, it is also the first satellite to be designed and built in Scotland.”

“The payloads flying on UKube-1 were selected following a competition run by the UK Space Agency to find the most innovative and creative payloads in the UK for a CubeSat. The competition received more than 20 payload submissions.”
Thankyou

Dr Gerry Black
KTP Adviser
www.ktponline.org.uk