

# Announcement of Opportunity

## Studies into UK National Microgravity Experiments

### Call for Proposals

**Closing date for full proposals:** Friday 18 August 2017, 16:00.

#### **Summary**

The UK Space Agency is making funding available for studies into possible UK led experiments that have the potential to be carried out and deliver high quality science on the International Space Station, in preparation for a potential second mission for Tim Peake. This Announcement of Opportunity invites proposals for the £300K funding available, with individual projects limited to £125K. The UK Space Agency expects to fund three or four proposals.

#### **Background**

The European Space Agency announced in December 2016 that they expect all of the astronauts that were selected in the 2009 class to be assigned a second mission. Based on current crew assignments and likely flight opportunities, Tim Peake may be assigned to a flight in the early 2020s. The UK Space Agency would like to ensure that the UK microgravity and space environments community is properly placed to capitalise on the scientific opportunities that such a flight would offer, should funding for a national programme be available in the coming years.

The UK Space Agency anticipates that a national programme of experiments for a future Tim Peake mission, budget allowing, would be undertaken. The development of experimental hardware and the flight opportunities would be funded by the UK Space Agency but funding for scientific exploitation of the data would be expected to be found by the research team from other sources, such as RCUK/UKRI.

Should such a programme be run, the UK Space Agency would issue an open call for ideas to be funded. Note: Success in this call does not guarantee selection in any future calls and neither does not applying to this call preclude an application to future calls for experiment development.

#### **Remit of the Call**

This announcement of opportunity calls for proposals to study concepts and designs for new experiments that that could be flown to the International Space Station and form a part of a national UK programme of science for Tim Peake's next mission.

The studies undertaken will address how a high quality science can be implemented within the constraints of the ISS, feasibility and provide an accurate cost for the full flight experiment. Studies will only be considered for experiments that can be ready for flight to the ISS by 2020.

We welcome input from all research areas, and in particular projects within the highlighted research areas in the [National Strategy for Space Environments and Human Spaceflight](#):

- Astrobiology/chemistry
- Fundamental Physics
- Life and biomedical sciences
- Materials research

The proposed work could be a continuation of an existing programme of research, preparatory activities for potential longer-duration experiments, or a wholly new concept.

Studies costs may include hardware and staff time.

Proposals need to cover:

- The key science question(s) to be addressed
- The potential outcomes and their impact
- The requirement for using the unique ISS environment: Why must the experiment be done on the ISS and not elsewhere (e.g. parabolic flight; sounding rocket; orbital capsule)?
- The knowledge and expertise foundation that underpins the research
- The alignment to current UK research priorities (e.g. Research Council roadmaps; UK Space Agency Space Environments strategy.)
- An estimate of cost to completion and time line
- Details of any existing facilities on the ISS to be used
- Justification of resources

We anticipate that proposals will be University led but this does not preclude industry led commercial research proposals, though in these cases state aid rules apply.

Work on the studies selected will run from September 2017 through to March 2018, with all work completed by 31 March 2018.

### **Criteria and Review**

All proposals will be judged by a panel from the UK Space Agency and other parties. The panel will rank proposals based on the following criteria:

- Science excellence
- Feasibility & management
- Fit to UK strategic priorities
- Impact
- Potential outreach opportunities

### **Timeline**

Applications close: Friday 18 August, 16:00

Funds awarded: Early September 2017

Studies to be complete by 31 March 2018

**How to Apply**

Proposals are to be submitted to the UK Space Agency, via the email address below, clearly marked as AO: National Studies. Proposals should be no longer than 8 sides. Anything longer than this will not be reviewed.

Industrial companies will be expected to provide a contribution in line with state aid rules and should state in the outline proposal which aid intensity category the proposal falls within. (See Annex A: State Aid Rules).

**Further Information**

For further information, please contact:

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## Annex A: State Aid Summary

Applicants are asked in the outline proposal to explain where their proposal fits within the State Aid framework for R & D. The information below summarises the position at publication the latest information can be found at <https://www.gov.uk/government/publications/state-aid-general-block-exemption-regulation>

**Fundamental research:** defined as “experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any direct practical application or use in view”.

**Industrial research:** defined as “planned research or critical investigation aimed at the acquisition of new knowledge and skills for developing new products, processes or services or for bringing about a significant improvement in existing products, processes or services” .

**Experimental development:** pre-competitive development category defined as “the acquiring, combining, shaping and using of existing scientific technological business and other relevant knowledge and skills for the purposes of producing plans and arrangements or designs for new, altered or improved products, processes or services”. This category extends to the development of commercially usable prototypes and pilot projects where they would be too expensive to produce only for experimental purposes; where there is subsequent commercial use of the prototype any revenue generated has to be deducted from eligible costs. This category does not cover routine or periodic changes to produces and services.

**Technical feasibility studies** preparatory to industrial research and experimental development.

Aid Intensities – Project Aid	Small enterprise	Medium enterprise	Large enterprise
Fundamental research	100%	100%	100%
Industrial research	70%	60%	50%
Industrial research projects involving collaborations* or where the results will be disseminated	80%	75%	65%
Technical feasibility study preparatory to industrial research	70%	60%	50%
Experimental development	45%	35%	25%
Experimental development projects involving collaborations*	60%	50%	40%

\* collaborations between businesses and research organisations where the research organisation bears at least 10% of the costs & have the right to publish their own research, or business to business collaborations which involve more than one member state of the EU/ EEA or involve at least one SME, provided that no one business partner carries more than 70% of the project costs.