

Announcement of Opportunity

Centre for Earth Observation Instrumentation and Space Technology

Eighth CEOI Technology Call

The Centre for Earth Observation Instrumentation and Space Technology (CEOI-ST) invites collaborative proposals for Earth observation (EO) instrumentation and related technology research and development projects, applicable to future commercial, operational and science EO missions.

1. INTRODUCTION

The new CEOI-ST continues the work of the CEOI, which was established in 2007 in order to realise an excellent, internationally competitive national Earth observation instrument and technology research and development programme. The UK Space Agency (UKSA) under the National Space Technology Programme (NSTP), funds the CEOI-ST, which will also manage other aspects of the NSTP on behalf of the Agency. The CEOI-ST is a partnership led by Airbus Defence and Space Ltd with QinetiQ, University of Leicester and STFC Rutherford Appleton Laboratory.

The CEOI-ST strategic goal is to become the driving force in the UK for the development of world-class instrumentation for national and international EO missions. It will achieve this by funding, via a series of Themed and Open Calls, science or commercially driven instrumentation and technology projects to advance UK capability in EO. The intention is to exploit the UK technological capability in industry and academia from both the space and non-space sectors, with the aim of positioning UK consortia for flight opportunities in national and international space missions, thereby contributing to economic growth in the space sector in the UK. Brief details of previous CEOI funded projects may be found on the CEOI website (www.ceoi.ac.uk).

As part of the CEOI-ST programme, identification of technological capability and science need are actively sought via a horizon scanning activity, principally via science and technology Challenge Workshops. The CEOI-ST programme is underpinned by UKS, NERC and TSB strategies¹ and the Centre works in close collaboration with the National Centre for Earth Observation. The CEOI-ST fosters links with ESA and other international partners and supports UKSA in identifying bi-lateral opportunities and associated funding. The CEOI-ST also provides training for the next generation of EO scientists and investigators through PhD studentships and training workshops.

2. THE 8th OPEN CALL

The total budget available for the Eighth CEOI Technology Call is up to £3M with additional PV funds required from industrial bidders. The Call will seek proposals for large scale projects requiring CEOI-ST funding up to £1M, with a preference for those that aim to complete within 12 months, although longer projects of up to 24 months duration will be considered. Preference will also be given to proposals that demonstrate an urgent need for funding in order to access an identified near-term space mission opportunity. This Call will not be open to Mission Studies, which will be the focus of an alternative funding process later in the year, or to smaller Fast Track or Pathfinder projects.

¹ See <http://www.bis.gov.uk/ukspaceagency/publications>, <http://www.nerc.ac.uk/about/strategy/ngscience.asp> and <http://www.innovateuk.org/ourstrategy.ashx>

The Open Call will be released on 14th July 2014 when full details will be available, with a closing date on **12th September 2014 at noon**. It is anticipated that proposal selection will be conducted during September/October 2014 with projects starting from mid- October 2014.

The priority for this Call will be to support proposals that advance the TRL of UK technology; bidders are encouraged to focus proposals on activities which advance the development of EO instrument technologies to TRL 5 and 6, including development of previous CEOI-ST funded technologies.

Suitable activities could include:

- Improving the TRL of concepts and technologies, advancing previous CEOI-ST and other promising technology developments towards TRL 5 & 6
- Undertaking technology demonstration, potentially involving an airborne demonstrator programme where appropriate.

Projects eligible in this Call:

Grant Type	Maximum CEOI-ST Funding	Eligible Activities ²
CEOI-ST Flag Ship Grants	£1,000k	<ul style="list-style-type: none"> • Industrial research • Experimental development

Proposals of the highest scientific and technical quality that demonstrate urgent need for funding to access an important mission opportunity will take precedence over proposals addressing more speculative objectives.

From this budget the CEOI-ST would expect to fund around 3 or 4 projects. It should be noted that value for money will be a major evaluation criterion.

Projects developing instrumentation for commercial applications are encouraged and the CEOI-ST will welcome proposals that exploit the facilities and capabilities of the Satellite Applications Catapult.

Proposals for projects which are from collaborative teams will be given preference and the CEOI-ST encourages combined industrial/academic teams (any organisation type can lead). Note 2 of Annex B Table 1 defines eligible collaborations. We will also consider proposals from single bidders, either academia or industry if sufficient funding is available. Note that there are PV concessions for collaborative activities (see Annex B). We will also consider collaborative proposals that form part of a larger activity funded by one or more other organisations, provided that the proposed work falls fully within CEOI-ST objectives.

Projects will be considered which introduce technologies which offer ‘disruptive’ or enabling potential to existing instrument concepts, e.g. to improve performance, and/or improve system

² These are the definitions of R&D activities that are used by the European Commission to determine the maximum allowable intervention rates mandated by State Aid regulations. See Annex B for more details.

parameters such as cost, mass and resource requirements. Such technology-led projects must show a credible benefit to future commercial, operational or scientific mission objectives.

Projects addressing international candidate EO missions for ESA and other agencies will be expected to construct their proposal to acknowledge the mission down-selection decision points, i.e. the proposed work should complete at these points, or be phased so that projects may be stopped if missions are deselected or cancelled.

Projects which are conceived as part of a multi-stage development should outline the activities which may follow. If a project is successful in this Call and achieves its objectives, the project team may subsequently be invited to provide a bid for additional activities to continue with the development.

Projects addressing airborne, balloon or High Altitude Platform (HAP) flight opportunities will be considered if:

- This is an intermediate step to a space flight opportunity and/or;
- Early high-priority science return may be obtained relating to a space mission.

The CEOI-ST will only award grants to proposals which it judges to be of sufficient quality. It reserves the right to re-issue the Call in a revised form if all allocated funds are not utilised.

This funding opportunity is open to UK HEIs, other research organisations, and industry, and there is no restriction on which type of organisation can lead. We encourage organisations (industry and academia) new to CEOI-ST to participate and welcome enquiries from all potential bidders for clarification of any aspect of the Call.

3. NOTIFICATION OF INTENTION TO BID

Applicants are required to notify CEOI-ST of their intention to bid by email to the CEOI-ST Call Administrator Lisa Finch, lf107@leicester.ac.uk, using the pro-forma at Annex A, by noon on 11th August 2014.

The purpose of this is to gauge the size of the response and to guide the selection of reviewers. The notification and information therein will be held in confidence as described in Section 9.

4. GUIDELINES FOR PREPARING AN APPLICATION

Applications should take the form of a proposal in single-spaced typescript (minimum font size 12 point Times New Roman, minimum 1.5 cm margins all round, including diagrams and tables). The required financial information and other supporting information detailed below should also be attached (not included in the page limit).

Section	Description	Page count (max)
Cover letter	See below.	1-3 pages
Project Summary	A summary of the project, suitable for publication on the CEOI-ST and UK Space Agency websites and for use in a press release if the project is funded	1 page of text including picture or diagram

Technical proposal	Technical case as described below.	12 pages
Outline business plan (for commercial projects only)	Description of potential and accessible market, including a simple Return on Investment model	4 pages
Financial and management information	Project cost information and management details as described below, including key staff to be deployed and their position in the organisation(s)	4 pages plus the completed finance table
Company and organisation background	Track record and company/organisation background.	2 pages per organisation
Eligibility information	Eligibility and financial viability information (see section 8)	1 page plus any appended information
CVs	Brief CVs of key personnel within the consortium	As needed (1 page each)

The Covering Letter

To ensure ease and speed of placing the contract following selection, the bids must include a covering letter³ containing:

- A committing offer to University of Leicester, who will contractually administer the CEOI-ST grants on behalf of UKSA and CEOI-ST.
- A firm fixed price for the work to be carried out;
- A statement of acceptance of the standard CEOI-ST Terms and Conditions (T&Cs). A copy of these T&Cs is available on the CEOI website. Bidders should note that these T&Cs will not be open to negotiation.
- Nominated Referee: Details of at least one referee who may be approached for assessment of the tender. Please give name, address, Email, telephone number. The bids will be assessed by the Review Panel (see Section 6), but the CEOI-ST reserves the right to seek the opinion of an external expert referee, which will be taken into account by the Panel.
- Reference (Industry only): The name of at least one customer contact in the UK who may be approached, with whom you have recently undertaken similar work. The bids will be assessed by the Review Panel (see Section 6), but the CEOI-ST reserves the right to seek a customer reference, to be considered by the Panel.

The Project Summary

The project summary should be brief and contain no confidential or sensitive Intellectual Property (IP) material. The intention is that this summary will be suitable for inclusion in a press release and published on the CEOI-ST and UK Space Agency websites when any award is made and updated during the project, to keep the websites current.

³ Applicants should note that, in a change from previous CEOI arrangements, the University of Leicester will be administering the grant funding and hence proposals should be made to the University.

The Technical Case must be no more than the indicated page limit and should contain:

- A description of the work to be undertaken, highlighting the innovative aspects of the project;
- Identification with justification of the European State Aid General Block Exemption Regulation (GBER) work category (see Table 1 at Annex B);
- An exposition of the science, commercial and/or operational need and drivers for the project, showing the relationship of the work to UKSA strategy, and/or high priority NERC science;
- Justification for why this technology should be developed and the benefits it offers over alternative solutions;
- A description of how the proposed work takes advantage of UK strengths, and further positions the UK for increased involvement in space and future growth.
- A description of any system-level benefits expected (e.g. cost, mass, size, resource requirement)
- Identification of the exploitation route leading to a potential flight opportunity, including justification for the timeliness of development;
- A technology roadmap showing heritage, future evolution and also the start and end TRL of the proposed work.
- A summary of the subsequent stages of development and outline of the work required to take the technology to ‘flight ready’ status. Teams may be invited to bid for additional work at a later stage if their project is successful.
- A project plan, including a summary of the work, a project schedule (to complete no later than 1st October 2016), work break down structure, brief work package descriptions and deliverables for each work package. The deliverables should be clearly identified as to their scope and delivery schedule, and where possible linked to payment milestones.
- Information on collaboration between partner organisations and exploitation of Intellectual Property Rights.
- A list of the individuals involved and the resources required, identifying precisely which institutions and individuals will be performing which functions and the respective resources requested.

Outline Business Plan

- In the case of projects targeting commercial missions, the project description should be supported by a brief business plan indicating potential accessible market size and estimated time to break even and enter profit.

Financial and Management Information – also see section 5 below.

Please include financial information as follows:

- The completed CEOI-ST Finance Table;
- A justification of the resources requested, including travel plans and other expenditure;
- A clear statement of the Private Venture (PV) investment offered, and its relationship to the State Aid mandatory limits under GBER exclusions (see below and Annex B);

Should any part of the application overrun the specified page limit, the Assessment Panel will only consider material up to the designated page limit, in the correct format, for each proposal.

5. FINANCIAL and CONTRACTUAL INFORMATION

Award(s) will take the form of a contract between University of Leicester and the project's lead organisation. Bidders should note that the UKSA, University of Leicester or CEOI-ST will not refund any costs associated with preparing proposals.

This CEOI-ST activity has been assessed by HMRC as outside the scope of VAT, because no taxable supply is taking place and the IPR will not in the normal course of events pass to UK Space Agency or the CEOI-ST.

Bidders should note that grants cannot be given to companies in financial difficulties.

Bidders are reminded that proposals will also be judged on the basis of value for money.

Financial information must be provided in a summary table, using the template available on the CEOI website.

Payment plans

Payment plans should be constructed so that no more than 20% is paid at kick-off, and no less than 20% at the final review acceptance. Other milestone payments should be included, which should reflect major project stages and intermediate deliverables.

'PV' (Private Venture) Contribution

Industry is required to provide a PV contribution to eligible project costs according to the BIS interpretation of the European State Aid General Block Exemption Regulation (GBER) requirements.

Bidders must identify the category of work proposed, and this must be consistent with the work programme described in the technical case. Note that the type of activity and company size defines the maximum 'Intervention' rate (and hence the minimum required PV level) that is permitted for that activity (see Annex B), and that there are concessions for collaborative activities. Bidders will be expected to justify the category of work selected.

Bidders must ensure that they supply the correct information that allows CEOI-ST to award grants within the scheme and it is the responsibility of the bidder to ensure compliance with the relevant State Aid legislation. Further guidance is available on the BIS website:

<https://www.gov.uk/government/publications/state-aid-general-block-exemption-regulation>

EC grants awarded on related projects are not eligible as a PV contribution, as these arise from public funds.

Academic partners will be funded in all cases at 80% of Full Economic Cost (FEC).

Type of Award

The award will be made on a firm fixed price basis.

6. ASSESSMENT OF PROPOSALS

The Selection Panel will consist of independent representatives drawn from academia, industry, the UKSA or the Research Council Review Colleges. It will assess the proposals according to the criteria listed below, taking into account the commitment of the organisations involved, in

particular the lead organisation, to the success of the project and the financial viability of the organisations involved.

Assessment criteria:

- **Strategic *or* Commercial Relevance (30%):**
 - **Strategic Relevance:** Relationship to UKSA/CEOI-ST goals including high-priority NERC science, UKSA and TSB strategy in the areas of future EO missions and the strategy (technical and budgetary) to develop the technology to flight standard;
 - or*
 - **Commercial Relevance:** (for projects addressing commercial goals) Strength of the business plan, potential for job creation and economic growth;
- **Technological Excellence (30%):** Novelty, originality and suitability of the work proposed, including assessment of risk and benefits;
- **Rationale for the development of technology (20%):** The need for this technology development, its potential applications and the benefits it offers over alternatives technologies, including a justification for the timeliness of the proposed work in relation to external factors;
- **Quality of project planning and management arrangements (20%):** Including the capability and track record of the team members, quality of staff, and value for money. The level of PV commitment, and justification of level of PV.

7. PROJECT MONITORING AND REPORTING

Following an award and completion of contractual formalities, the CEOI-ST will assign to the project an experienced coordinator drawn from CEOI-ST partner organisations. The coordinator will oversee the projects with the following methodology:

- The coordinator will initiate each project, by preference at a face-to-face meeting at the lead contractor's site. For continuation projects, or if a timely face-to-face meeting cannot be arranged, the kick off meeting can take place through a telephone conference;
- The lead contractor's project manager will report on progress to the coordinator using the CEOI-ST report template at the end of every month by email. Any issues arising will be addressed by the coordinator by telephone;
- The monthly reports will need to provide an expenditure forecast for the following quarter using the CEOI-ST finance report template as required for UKSA administration;
- There will be a progress review every 3 months, with one of these designated as the mid-term review, held at an appropriate site. Where feasible, the reviews should occur immediately prior to a major manufacturing or integration step which will result in the delivery of some of the project objectives;
- At the end of the project, a final report will be produced (including an IP free Executive Summary). There will be a formal project final review and there will also be a CEOI-ST project final presentation day in which each of the projects will present a summary of work and achievements.

8. ELIGIBILITY

We welcome bids from a variety of organisations including academia, industry and government research institutes. The details of some organisations may not be known by UKSA or the CEOI-ST, especially for newer entrants. Such applicants should provide brief and relevant company

background information, including areas of expertise and company contact information including registration and official address.

Following receipt of bids and before award of any contract, new entrants may be required to provide additional eligibility details:

- Evidence of company legitimacy and financial solvency, supported by e.g. company Annual Reports;
- Details of company quality processes and accreditation;
- Track record, supported by reputation or by statements from referees and customer testimonials;

It is possible that some consortia bidding for projects may need to involve non-UK entities. This is allowable in principle subject to the following conditions:

- The UK must lead the consortium;
- The UK work must represent a substantial proportion of the whole project;
- The consortium must demonstrate that the proposed non-UK capability is essential and not available in the UK;
- The rules can be relaxed if the non-UK entity is supplying PV or capability, and resources on a no-exchange-of-funds basis;

Full details of the non-UK participation must be provided in the bid, appended to the eligibility statement.

9. CONFIDENTIALITY

The procedure for handling and assessing the bids and notifications will be as follows:

- Bids and notifications will be submitted to the University of Leicester administrator who will act on behalf of the CEOI-ST. The administrator will hold all bids in confidence and will not propagate the bids internally in the University or elsewhere.
- Copies of the notifications of intention to bid sheets will be provided to CEOI-ST Director and to the CEOI-ST Technology Programme Director, who will retain these as confidential information.
- When the bid period completes, electronic copies of the bid documents will be distributed to the independent assessment panel members, to the CEOI-ST Director and to the CEOI-ST Technology Programme Director. UKSA confidentiality rules will apply.
- Bids not recommended by the Panel will be destroyed. They will not be visible to the wider CEOI-ST Leadership Team or to any others;
- Bids recommended by the Panel will be visible to the CEOI-ST appointed project co-ordinator and to the CEOI-ST Leadership Team;
- Bids selected for funding will remain confidential (i.e. will not be visible to staff of any of the CEOI-ST Partners other than the project co-ordinator and the CEOI-ST Leadership Team).

It is expected that consortium members will declare any Background IP to be brought to the project as part of the establishment of the Contract with University of Leicester. The IP generated during the course of the project will belong to the originators.

The CEOI-ST Director, the CEOI-ST Technology Director and the CEOI-ST appointed project manager will monitor the funded project through regular project reports and reviews. A standard CEOI-ST Non-Disclosure Agreement can be used to cover information exchange between the

project participants, the CEOI-ST staff at any stage during the bid or contract. A copy is available on the CEOI website.

10. TEAMING AGREEMENT

Should an award be made, the contracted consortium will be required to establish a Teaming Agreement (TA) between its members, prior to the commencement of work. The TA should establish agreements regarding how the results of the work, including IPR and spin-outs, will be exploited by the consortium members. A model agreement is available from the CEOI website

11. SUBMISSION AND CONTACT INFORMATION

Only the lead institution should submit an application. Bids should be submitted to the University of Leicester administrator, who will act on behalf of the CEOI-ST, as follows:

- Electronically in PDF or Microsoft Word format. **The summary and technical bid should be contained in a separate file, as this will be sent to the assessment panel.**
- In addition, a single printed and signed copy of the full bid should be posted on or before the closing date. Note: The date of the postmark or other proof of posting will be considered sufficient to prove that it is posted on time.

The electronic submission should be sent by email to the CEOI-ST Technology Call Administrator, Mrs Lisa Finch at lf107@leicester.ac.uk

The printed copy of the proposal, including the financial information and a formal signed financial offer to University of Leicester should be sent to:

Mrs Lisa Finch
CEOI-ST Technology Call Administrator
Department of Chemistry
George Porter Building
University of Leicester
University Road
Leicester LE1 7RH

Telephone: +44 (0) 116 229 7681
Fax: +44 (0) 116 223 1710
Email: lf107@leicester.ac.uk

For further information and formal enquiries contact:

Mr Chris Brownsword
CEOI-ST Technology Director
QinetiQ Building, A8 Room 1004,
Cody Technology Park,
Ively Road, Farnborough
GU14 0LX

Tel: 01252 393918 (land line)
Mob: 07825 762527 (mobile)
Email: cbrownsword@QinetiQ.com

Annex A – Intention to Bid Pro-Forma

Title of the project	
Lead organisation	
Objective for the target mission (Commercial, non-commercial or both/either)	
Short description of the project	

This form should be emailed to Mrs Lisa Finch (CEOI-ST Technology Call Administrator) at:
lf107@leicester.ac.uk

Annex B - State Aid intervention levels

Bidders should ensure their proposal is compliant with the relevant State Aid legislation. European regulations allows State Aid to companies for technology R&D activities via the General Block Exemption Regulations (GBER), with intervention rates (i.e. maximum % grant offered) depending on the type of activity, the type of organisation, and the size of the company as follows:

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

The EC definition of the various company types is as follows⁴:

Enterprise category	Headcount: Annual Work Unit (AWU)	Annual turnover	Annual balance sheet total
Medium-sized	< 250	≤ €50 million (in 1996 € 40 million)	≤ €43 million (in 1996 € 27 million)
Small	< 50	≤ €10 million (in 1996 € 7 million)	≤ €10 million (in 1996 € 5 million)
Micro	< 10	≤ €2 million (previously not defined)	≤ €2 million (previously not defined)

Anything above the limits for a medium sized company is designated as a large company.

Academic partners will be funded in all cases at 80% of Full Economic Cost (FEC).

⁴ http://ec.europa.eu/enterprise/policies/sme/files/sme_definition/sme_user_guide_en.pdf

Table 1 GBER Definitions of State Aid Categories

This table provides the GBER definitions and allowable intervention rates.

State Aid Category	GBER Definition	Intervention rate		
		SME	ME	LE
Fundamental Research	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.	100%	100%	100%
Feasibility study	Evaluation and analysis of the potential of a project to support decision making	70%	60%	50%
Industrial research	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. No collaboration.	70%	60%	50%
Industrial research projects involving collaboration/ dissemination ²	As above with collaboration or the dissemination of results.	80%	75%	65%
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. No collaboration.	45%	35%	25%
Experimental development projects involving collaboration/dissemination ²	As above with collaboration or the dissemination of results.	60%	50%	40%

Note 2 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. Procurement/supplier relationships do not qualify.