

Announcement of Opportunity

CEOI-ST Call for Mission and Technology Preparation Activities for ESA Earth Explorer 9

1 INTRODUCTION

On behalf of the UK Space Agency, the Centre for Earth Observation Instrumentation and Space Technology (CEOI-ST) invites full proposals covering mission and technology preparation activities for the ESA Earth Explorer 9 (EE9) Call for Mission Proposals, which is expected to be issued later this year.

The CEOI-ST has the objective to realise an excellent, internationally competitive national Earth observation instrument and technology research and development programme. It will achieve this by building UK academic and industrial capability in EO, and by funding the development of advanced EO instrumentation through a series of Themed and Open Calls.

The UK Space Agency under the National Space Technology Programme (NSTP), funds the CEOI-ST, which also manages 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.

Brief details of previous CEOI funded projects may be found on the CEOI website (www.ceoi.ac.uk).

2 ESA EE9 Mission and Technology Preparation Call

The overarching goal of ESA's new EO science strategy¹ is "to challenge ESA and the scientific community to strive for major advances in knowledge along with the technological capabilities that are needed to respond to the ever-increasing societal needs associated with risks and opportunities in our changing global environment".

It is expected that proposals to ESA for the Earth Explorer 9 mission (EE9) will be required to show that the proposed mission will make a significant contribution to the science and societal challenges identified in the ESA Science Strategy. Although the timescales of the ESA Call for Mission Proposals for EE9 are not yet confirmed, it is expected this will be released towards the end of 2015, with submissions due around mid-2016.

¹ http://www.esa.int/About_Us/ESA_Publications/ESA_Publications_Monographs/ESA_SP-1329_EO_Science_Strategy

This Call is aimed at preparing UK organisations to respond to the ESA EE9 Call. The Call is looking for proposals that will consolidate the scientific and technology teaming, strengthen the arguments that the mission meets the ESA objectives and mature the under-pinning technology.

To achieve this, proposals are invited for projects to undertake either Mission Preparation activities and/or Technology Development activities. The preference is for proposals that include both of these activities. However, for those focussing on the science case the technology readiness has to be considered; and for those primarily addressing technology development, the justification of the science case has to be provided.

The Mission Preparation activities should be designed to improve the science case for candidate missions with a prospective UK PI or Co-PI and would be expected to be completed by May 2016 so that the outputs can be exploited to improve the response to the ESA Call.

The Technology Development activities should be designed to de-risk and/or mature UK developed technologies considered critical to the proposed mission:

- Shorter technology development tasks (to complete by May 2016) could be proposed if these will impact on the response to the ESA Call for Mission Proposals.
- Longer technology developments (up to 12 months) could be proposed with the aim of undertaking technology development activities which prepare UK organisations for subsequent ESA funded opportunities in relation to the EE9 Call.

Technology developments will be considered for both UK led (i.e. with a UK-based PI or Co-PI for the ESA EE9 mission) and non-UK led missions (i.e. where the prospective ESA PI/Co-PI is not in the UK).

All proposals into this CEOI-ST Call must be led from the UK and will need to show an adequate understanding of the mission science objectives and how the proposed technology developments are justified in relation to these. Projects which incorporate Mission Preparation activities should either be in support of proposals planned for the ESA EE9 Mission Call by a UK PI or Co-PI, who must be fully engaged in the project team, or demonstrate that there is a high likelihood of involvement of one of the project partners as PI or Co-PI in the proposed mission.

The maximum duration and grant for these elements are given in Table 2-1.

Proposal element	Maximum Duration	Maximum CEOI-ST Grant
Mission Preparation	6 months	£125K
Technology Development	12 months	£125K
Total	12 months	£250K

Table 2-1 Response components

This Call is released on 17th July 2015, with a closing date of **22nd September 2015 at noon**. It is anticipated that proposal selection will be conducted during October 2015. Teams are required to register their intention to bid (see Section 3).

The total budget available for the EE9 Preparation Call is £1M. Additional PV funds may be required from industrial bidders as defined by State Aid General Block Exemption Regulation.

Eligible activities include Fundamental Research, Industrial Research and Experimental Development². Proposals for work categorised as Fundamental Research will be considered, but these will require strong justification that the proposed activities align with this GBER categorisation. If a specific technology development is required but is not justifiable as Fundamental Research under the GBER rules, then this would be allowable as a project procurement should PV co-investment not be available.

This funding opportunity is open to industry, UK HEIs and other research organisations. Proposals for projects which are from collaborative teams are encouraged; Annex C Table 1 and Note 1 define eligible collaborations and the PV concessions for collaborative activities.

Proposals of the highest quality that demonstrate urgent need for funding in support of an important mission in relation to the ESA Earth Explorer criteria will take precedence over proposals addressing more speculative objectives.

Technology Developments 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 if funding should become available.

The CEOI-ST will only award grants to proposals which are judged to be of sufficient quality. It should be noted that value for money will be a major evaluation criterion. The CEOI-ST reserves the right to re-issue the Call in a revised form if all allocated funds are not utilised.

We welcome enquiries from 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 **19th August 2015 at noon**.

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

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 C for more details.

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).

All Sections defined in Table 4-1, unless defined as optional, must be supplied in the proposal.

Optional sections must be completed to align with one of proposal configurations specified in Table 2-1.

Section	Details in Section:	Maximum page count
Cover letter	4.1	3 pages
Application Form	Annex B	1 page
Project Summary	4.2	1 page including picture or diagram
Mission Overview	4.3.1	4 pages
Mission Preparation Activities (For bids including this Activity)	4.3.2	6 pages
Technical Development Activities (For bids including this Activity)	4.3.3	6 pages
Management proposal	4.4	6 pages
Financial proposal	4.5	4 pages
Finance Table	4.6	Completed Excel spreadsheet (One Worksheet per Partner and one Summary Worksheet)
Company and organisation background	4.7	2 pages per organisation
Eligibility information (Required only for organisations new to CEOI-ST)	8	1 page plus any appended information
CVs	-	1 page each
Work Package descriptions	-	1 page each

Table 4-1 Application Checklist

Proposals not including all of the mandated Sections or not conforming to the page count limit may be rejected.

Bidders should note that the Agency, University of Leicester or CEOI-ST will not refund any costs associated with preparing proposals.

4.1 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 the Agency and CEOI-ST.
- 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.

4.2 The Project Summary

The project summary should provide a brief overall description of the project (including but not limited to) an outline of the proposed mission. It should be suitable for publication should the project be funded. The intention is that this summary would be included in a press release and published on the CEOI-ST and the Agency websites when any award is made and updated during the project, to keep the websites current.

4.3 The Technical Proposal

4.3.1 Mission Overview

This should identify the science and societal benefits which will be offered by the mission, justifying the need for improved measurements and showing the links to the 2015 ESA EO science strategy (see Section 2 footnote) and how the mission will address the ESA strategic science goals and challenges.

It should outline the scientific objectives, the mission requirements in terms of the geophysical parameters to be retrieved, the target accuracy and the relevant spatial and temporal scales and the overall justification for the mission requirements.

It should also contain a description of the mission implementation concept; the candidate instrument concepts and outline the overall mission architecture (space segment, ground segment, mission operations and utilization, approach to data exploitation).

³ Applicants should note that the University of Leicester will be administering the grant funding and hence the letter with the committing offer should be addressed to the University.

It should be noted that the new science strategy for EO stresses the dual importance of scientific innovation and societal impact.

4.3.2 Mission Preparation Activities

This section is required if the Mission Preparation element is included. It should contain:

- A clear explanation of the focus of the proposed study and identify the areas that the project needs to address as a priority. All aspects of the mission should be considered, even where not the focus of the proposed study, to explain the overall status of the mission proposal and allow assessment of its likely success.
- Detailed justification of the mission preparation activities proposed in this project and how they will impact the success of the mission proposal for EE9.
- Definition of the mission, including its unique science objectives and its societal benefits.
- Specification of required data products to meet the unique science objectives and any secondary data products.
- An outline of the mission payload, orbits and sensor design
- Identification of key technologies, their current technology readiness and the main development risks

4.3.3 Technical Development Activities

This section is required if the Technology Development element is included. It should contain:

- A description of the work, highlighting the innovative aspects of the project.
- Detailed justification of the technology activities proposed in this project and how they will impact the success of the mission proposal for EE9.
- A description of how the proposed work takes advantage of UK strengths, and further positions the UK for increased involvement in the target mission.
- A technology roadmap showing heritage, future evolution and also the start and end TRL of the proposed work.
- A summary of any subsequent stages of development and an 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 and funding becomes available.
- Information on collaboration between partner organisations and exploitation of Intellectual Property Rights.
- If relevant (see Section 5.2), identification and justification of the European State Aid General Block Exemption Regulation (GBER) work category (see Table 1 at Annex C).

4.4 Management Proposal

The management section of the proposal should contain

- A project plan, including a summary of the work, a project schedule, work break down structure, work package descriptions. Work package descriptions should be attached as an Annex.
- A clear identification of which institutions and individuals will be performing which functions and the respective resources requested.

- A list of the key individuals and their position in the project team.
- A justification of the resources requested against work-package and key activities.
- A clear description of any technology support to be procured from industry (who, what will they do and the cost) and how this will be managed. Note: an industry from whom technology support is procured should not listed as a Partner to the project.
- An assessment of the major risks (scientific, technical and managerial) in the project and the approach to tracking and mitigation of these risks.
- A list of deliverables and outputs, with clearly identified scope and delivery schedule.

4.5 Financial Proposal

The financial section of the proposal should contain:

- A financial summary table with the major items of expenditure by each partner (staff, travel, external contracts, procurements etc).
- Proposed payment milestone plan with dates and associated deliverables.
- A costed travel plan.
- An itemised list of major expenditure or procurements, with justification;
- A clear statement of any Private Venture (PV) investment offered, and its relationship to the State Aid mandatory limits under GBER exclusions (see 5.2 below and Annex C);

4.6 Finance Table

The CEOI-ST Finance Table must be completed, using one worksheet (P1-P8 in the Excel spreadsheet) for each Partner.

Any industrial support to be procured should be itemised in the ‘Direct Costs’ section of Sheet P1.

This table will not be sent to the proposal assessors, so please ensure that there is sufficient information in the Financial and Management Proposal.

The template is available on the CEOI website.

4.7 Company and organisation background

For each of the project partners include company/organisation background and relevant track record.

5 CONTRACTUAL INFORMATION

Award(s) will take the form of a contract between University of Leicester and the project's lead organisation.

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

All relevant costs, including taxes on procurements, must be included within the total amount of the grant application. Note that a direct procurement for services from another organisation implies that they are a sub-contractor and not a partner.

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

5.1 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.

5.2 'PV' (Private Venture) Contribution - Grants to Industry

If an industrial organisation is applying for a Grant under this Call, either as project lead or as a Partner in a team led by another organisation, then that industrial organisation may be required to provide a PV contribution to eligible project costs to conform to the European State Aid General Block Exemption Regulation (GBER) requirements. Note that EC or other UK national grants are not eligible as a PV contribution, as these arise from public funds.

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 C), 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>

In this Call, bidders may propose technology activities under the 'Fundamental Research' category, in which case they must provide full justification in relation to the EC State Aid legislation (see Annex C for further details).

If the project is selected for grant offer, the following conditions must be met before the CEOI-ST will initiate preparation of the contract:

- The source of PV funding is fully defined.

- The financial viability of all members of the project consortium and funding sources are established through a due diligence process.
- The consortium is judged by the UK Space Agency to be eligible to receive a Grant from UK government under HM Treasury regulations and under EU State Aid rules.
- The company size and GBER category under EU State Aid rules are correctly defined.

5.3 Academic contribution

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

5.4 Type of Award

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

5.5 Intellectual Property

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.

6 ASSESSMENT OF PROPOSALS

The Review Panel will consist of independent Agency approved reviewers drawn from academia, industry, Government or the Research Council Review Colleges. It will assess the proposals against the Gateway questions and according to the criteria listed below, taking into account the commitment of the organisations, in particular the lead organisation, to the success of the project and the financial viability of all the project partners.

Gateway Questions

- Is the quality of the overall mission likely to meet the ESA EO science strategy objectives, including addressing scientific excellence and societal need;
- Is there is a reasonable likelihood of success of a proposal to ESA, including strength and maturity of the potential European mission proposal team.

Assessment of Mission Activities

The criteria will assess the strength of the mission concept in relation to the ESA mission selection criteria⁴:

- Relevance to the ESA research objectives defined in ESA SP-1329 EO Science Strategy;
- Scientific/societal need, usefulness and excellence; the significance of the mission for ESA and the European environmental science community;
- Uniqueness and complementarity compared to existing and planned missions;
- Readiness and maturity of the technologies required for mission success
- Degree of innovation and contribution to the advancement of UK EO technological, data and service capabilities;

⁴ Earth Observation Programme Board (ESA/PB-EO(98)14,rev1)

Assessment of Technology Activities

- Technological excellence of the work, degree of innovation and likelihood that a step-change in technological capability will be achieved
- Need for this technology development in the context of the proposed mission and the benefits it offers over alternatives technologies
- Feasibility and level of maturity of the mission technology, the potential risk and cost factors
- Timeliness of the proposed work in relation to external factors.

Quality of project planning and management arrangements

- Quality, completeness and realism of timescales of the project plan
- Capability and track record of the team members - ability of the team to deliver the outcomes proposed
- Quality of risk analysis and the mitigation proposed. “Risk” is defined as the probability that the project will meet its stated mission or technology objectives.

Value for money of the proposed work including assessment of PV

- Value for money of the work proposed relative to the Grant requested
- Level and justification of PV commitment, and conformance with the State Aid rules

The weightings that will be applied to these criteria is determined by the form of the proposal submitted and is shown in Table 6-1.

Assessment element	Mission Prep	Mission Prep + Tech Develop	Tech Develop
Mission Assessment	60%	30%	30%
Technology Assessment	0%	30%	30%
Quality of management	15%	15%	15%
Value for money	25%	25%	25%

Table 6-1 Assessment Criteria Weighting

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. 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 normally be addressed by the coordinator by telephone or email;
- There will be a progress review every 3 months, by preference face-to-face, with one of these designated as the mid-term review, held at an appropriate site. Where feasible, the reviews should be synchronised to significant project events and/or delivery of some of the project objectives;
- At the end of the project, a Final Report and Executive Summary both suitable for publication will be produced. There will be a formal project final review and there may 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 the Agency 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.

Only those organisations in the proposed team which have not previously received a grant from CEOI-ST or the Agency need provide this information in their bid. Organisations that have previously received a grant should provide a title and date of a relevant previous award.

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

- It would normally be expected that 3 years of audited accounts are available for all project partners. In the absence of 3 years of company accounts the bid response should provide details of the specific measures that will be taken to protect the UK Space Agency's grant investment;
- 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;
- Micro SMEs and single-person (Sole Trader) companies will need to show robust risk mitigation against single point resource failure and the measures in place to protect the grant investment.

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:

- All bids will be handled according to UK Space Agency/Civil Service Code of Conduct confidentiality practice. This is summarised in the Cabinet Office framework which covers commercial in confidence⁵.
- 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. The UK Space Agency/Civil Service Code of Conduct for confidentiality 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 any staff of the CEOI-ST Partners other than the project co-ordinator and the CEOI-ST Leadership Team).

The CEOI-ST Director, the CEOI-ST Technology Director and the CEOI-ST appointed project coordinator 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 and CEOI-ST staff at any stage during the bid or contract. A copy is available on the CEOI website.

⁵ pp15-16:

<https://gcn.civilservice.gov.uk/wp-content/uploads/2011/02/propriety-guidance.pdf>

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 bid should preferably be contained in single PDF file (apart from the separate Excel format Finance Table).**
- In submitting a proposal, bidders accept that all information supplied as part of the bid will be handled under the procedures defined in Section 9, irrespective of any confidentiality markings.
- 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	
Project partners	
Name and science objective for the target mission	
Short description of the project	
Estimated Grant request (ROM value)	

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

Annex B – Application Form

The completed Application Form should be included with the Cover Letter when the full bid is submitted.

Title of Project		
Lead Organisation and Grant requested for lead partner		£
Project partners and Grant Requested for each partner		£
Address of Lead Organisation		
Lead Contact - Commercial (Name and e-mail)		
Lead Contact – Technical (Name and e-mail)		
GBER State Aid Category (see Annex C)		
Total Grant Funding Requested (£)		
Academic Contribution (£ and % of Total Project Cost)		
PV Contribution (£ and % of Total Project Cost)		
Total Project Cost (£)		
Proposed start date and duration		

Annex C - 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'** means experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any direct commercial application or use in view;
- **'industrial research'** means the 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. It comprises the creation of components parts of complex systems, and may include the construction of prototypes in a laboratory environment or in an environment with simulated interfaces to existing systems as well as of pilot lines, when necessary for the industrial research and notably for generic technology validation;
- **'experimental development'** means acquiring, combining, shaping and using existing scientific, technological, business and other relevant knowledge and skills with the aim of developing new or improved products, processes or services. This may also include, for example, activities aiming at the conceptual definition, planning and documentation of new products, processes or services;

Experimental development may comprise prototyping, demonstrating, piloting, testing and validation of new or improved products, processes or services in environments representative of real life operating conditions where the primary objective is to make further technical improvements on products, processes or services that are not substantially set. This may include the development of a commercially usable prototype or pilot which is necessarily the final commercial product and which is too expensive to produce for it to be used only for demonstration and validation purposes.

Experimental development does not include routine or periodic changes made to existing products, production lines, manufacturing processes, services and other operations in progress, even if those changes may represent improvements;

- **'feasibility study'** means the evaluation and analysis of the potential of a project, which aims at supporting the process of decision-making by objectively and rationally uncovering its strengths and weaknesses, opportunities and threats, as well as identifying the resources required to carry it through and ultimately its prospects for success;

Fig 1 EC definition of the various company types⁶:

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

This table summarizes the GBER State Aid categories and maximum allowable intervention rates.

State Aid Category	Intervention rate		
	SME	ME	LE
Fundamental Research	100%	100%	100%
Feasibility study	70%	60%	50%
Industrial research	70%	60%	50%
Industrial research projects involving collaboration/ dissemination ¹	80%	75%	65%
Experimental development	45%	35%	25%
Experimental development projects involving collaboration/dissemination ¹	60%	50%	40%

Note 1 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.

⁶ http://ec.europa.eu/enterprise/policies/sme/files/sme_definition/sme_user_guide_en.pdf