ESA-GBF Continuously Open Research Announcement

Access to Ground Based Facilities for Life-, Physical-, and interdisciplinary- Sciences

This announcement is until further notice permanently open

ACCESS TO GROUND BASED FACILITIES IN EUROPE
PREPARING FOR
RESEARCH IN THE SPACE ENVIRONMENT AND FOR SPACE EXPLORATION

European Space Agency
Agence spatiale européenne

Introduction and objectives of the GBF Programme

Extensive and timely use of research capabilities offered by ground based facilities (GBF) not only will improve the preparation of space flight experiments, but will also further scientific knowledge of the basic influence of gravity or other space or planetary conditions on life-, physical-, and interdisciplinary- processes in general. It will also considerably increase the potential for experimenting under simulated space conditions as compared to real space and microgravity access possibilities, which at present are still limited. This will allow for more comprehensive research programmes, making them compatible with earth-based research activities, and will favour the development of a strong community of scientists from all disciplines keen to include space relevant research into their daily scientific activities.

Closing date, evaluation criteria, confirmation of resources, and fast- versus normal track evaluation

The call is as from this announcement and up to further notice permanently open. Scientists can apply as the need arises according to the schedule of their ongoing research.
In order to better cope with the need to respond rapidly with the need for accessing a GBF, ESA has implemented a Fast-Track evaluation process for proposals with a threshold maximal cost for ESA of 50 k€.
For the evaluation of fast-track proposals, ESA will make use of its Life or Physical Sciences Working Groups, together with an in-house feasibility assessment. For interdisciplinary proposals merging the study of physico-chemical processes within biological systems, relevant expertise from the two working groups may be sought. For this fast-track process, the proposal coordinator may expect receiving a confirmation of selection/rejection within a period of nominally two months.
Other proposals within a ceiling of 150 k€ cost for ESA will be reviewed by the first coming full-scale peer review board invited at the occasion of the next regular Research Announcement in the relevant discipline. Knowing that such Regular Announcements are organised at the best at yearly intervals, proposers are invited taking the resulting potential delays into account.
When previous experience and literature data with either the space related phenomenon or the specific facility is limited or even absent, it is encouraged first to make use of the fast-track for a preliminary experiment on which base a more ambitious project can be designed.
When justified by any scientific or practical organisational aspects, successive fast-track proposals may be introduced; decision about funding continuation will be based, in addition to the evaluation criteria, on whether the selected approach is making best use of the complementary normal ground-, GBFs'-, and real space research potentials.

For both type of proposals, but with a higher flexibility for the fast-track proposals, the same evaluation criteria will be used, namely:

1. Degree to which the proposal addresses the objectives of the call and justification for experimenting in space simulating conditions
2. Scientific and technical excellence

- addresses the basic influence of gravity or other space related conditions in natural phenomena

- clear, verifiable, realistic objectives, preferably clearly within the lines of an integrated research programme
- quality of the preparatory research on which the proposal is based

3. Qualification of the Research Co-ordinator and Partners / quality of the consortium / degree to witch integration at international level increases the scientific value of the proposal
4. Clarity and quality of the management
5. Mobilisation of the necessary resources

Participation of non-aerospace companies, including SMEs', at own cost, is welcome, but not used for the evaluation, except for their possible contribution to the resources (criterion 5; cash, hardware, manpower, drugs/products...) and to the IPR and other innovation-related activities (criterion 4).
The above mentioned limits (resp. 50/150 k€) are concerning exclusively the contribution requested from ESA for access to the GBF. The total cost for access to the facility may exceed this limit providing the necessary complementary resources are confirmed made available to the project. In such case, suitable letters detailing and confirming such resources have to be part of the proposal.
All aspects that are necessary to prepare and to run the experiment and that are not to be covered by ESA will also be described in the proposal and their availability will be certified either by the Co-ordinator and its partners, or by their legal organisations as prevails. Any sources, being from the own institution, national, including from space organisations, or international grants, or from industrial/commercial origin may be considered providing this is not breaching the specific conditions for their attribution.

Proposals for which no suitable facility can be identified in the ESA GBF-Database

When a suitable facility cannot be identified in the GBF-DB, scientists are invited identifying such facilities and providing the contact information. In this case, a concept proposal limited to criterion 1 is invited to support selection of the candidate facility but will not be used for selection. The Announcement being permanently open, a fully detailed proposal will be invited as from the time the facility has been accepted for inclusion in the GBF-DB.

Experimental functions presently available and invitation for complementary facilities

The Facilities are providing for a very wide range of functions mimicking space typical conditions but also planetary conditions and special Earth environments under sound experimental conditions, and specific advanced analytical infrastructures therefore. Such functions are presently covering: Bed rest / hypokinesia / metabolic balances, Hypergravity (centrifuges), Confinement / pressurisation chambers / climate chambers, Telemedicine / behaviour / body-metrics, Remote isolation, Radiation, Movement analysis (body), Human rated linear and angular accelerator, Magnetic resonance, Tomography / high resolution echography, Physical & skills training biofeedback, Absence of sedimentation (random positioning machines, clinostats, magnetic levitators), Phytotron, Artificial ecosystems, Extreme environments / space power, Integrated bioprocesses / tissue engineering, Small animals facility, Crystallisation, Surface tension.

In preparation for an ever widening of the scientific fields covered by the initiative, ESA is also looking to complement the database of facilities for scientific research capabilities (all scientific disciplines) not yet covered.
The following criteria applies for registration in the GBF-DB
Criterion 1: the facility enables investigations in a space relevant research domain,
Criterion 2: because of specific equipment and know-how, the facility constitutes a unique experimental test-bed of its kind in Europe,
Criterion 3: the current rules of access to the facility are compatible with granting the access of external scientists to it by way of Research Announcements at European level.

Specific experiments versus integrated research programmes, and international dimensions

Given the natural limitations for any space experiment, it is highly recommended to first test the hypothesis using extensively the simulation capabilities provided by the GBF, but also when applicable by Drop Towers (DT) and Parabolic Flights (PF). This will allow for confirming the gravity/µg/space influence on the process, and identifying the optimal experimental condition to reach unequivocal confirmation in a later space flight. Such an approach naturally encourages long term planning, and integrates normal ground research, space simulation, and real space experimenting. It is therefore expected that the proposal also elaborates on the outlook for an integrated scientific programme (consisting of all aspects, i.e. normal ground research, GBF/DT/PF, and space) would the experiment confirm the research hypothesis. Subsequently, every further extension of the integrated scientific programme towards a MAP project and/or space validations should clearly refer to the initial GBF integrated scientific programme.
In the same spirit and in order to favour collaborative and integrated European research proposals are recommended having a justified international dimension (ESA participating countries; representatives of 2 countries as a minimum).

Who can apply

Any scientists from the participating member states, either from academic or industrial origin, may apply to the programme. Participating countries by June 2004 are Austria, Belgium, Denmark, France, Germany, Ireland, Italy, The Netherlands, Norway, Spain, Sweden, and Switzerland. Nationals from other ESA member states may participate in proposals as ordinary team members. Such nationals should consult with their own national authorities regarding intentions to participate in future phases of ESA's utilisation programmes e.g. ELIPS-2. Nationals from other states, and in particular ISS partners (Canada, Japan, Russia, USA), should consult with their national space agency on its intention to support their participation in the project.
Specific case: participation of the owner of the facility into the experiment
The owner of a facility may participate in a proposal, especially where his contribution would increase criterion 3. Costs related to the part of the experiment he is responsible for will however usually not be covered by ESA.

Financial coverage by ESA, Unit of Access costing, and Implementation Plan

The financing of the selected experiments and associated laboratory work is the responsibility of the Co-ordinator and Partners. ESA is providing for the access costs (additional costs) to the facility (i.e. not for investment costs); this also includes cost of

travel/subsistence for the experimenter(s) and consumables. Costs for analysis on site may also be included when such analysis are justified, either because the analytic instrument is integral part of the facility itself, or because sampling and transportation for analysis to the experimenters laboratories would raise scientific or ethical/safety concerns. In such case, clear mention and justification for it will be made in the proposal.
Whatever the type of proposal submitted (fast-track or normal) the proposal shall include a clear description of a typical "Unit of Access" experimental session (defined as running one single experimental set, or grant of one single access period (day/week/run...) in line with the characteristics of the facility) with a description of the associated costs (at this stage, may be indicative only for proposals not belonging to the fast-track). An indication of the number of repeat, with justification, and scheduling therefore will be given (Implementation Plan), leading to an estimate of the total funding requested. The financing aspects may be further negotiated by ESA directly with the facility owner in case of lack of clarity or upon recommendation by the evaluation boards.
In case a request is made specifically for applying the fast-track procedure, a sufficiently detailed experimental protocol to be performed at the host facility, along with the detailed related costs established with the support of the facility owner and endorsed by him (ceiling costs), has to be part of the proposal. As presented above, this cost description will clearly indicate the cost for a single "Unit of Access" and the number of repeat with suitable justification.

Preparing and addressing the proposal

The downloadable document "ESA-CORA-GBF submission template" will be used to structure the proposal.
The amount of effort invested in preparing the proposal should be reasonably apportioned to the budget requested to ESA, while always providing clear elements responding to the five selection criteria and to costing aspects. To help fixing ideas, a proposal for the fast-track scheme, complete, would be expected not representing more than 8 to 12 A4 pages; emphasis has to be on quality and clarity.
The proposals are invited to be submitted as a virus checked eMail attachment, addressed to

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Once received by ESA, the proposal will be considered definitive and neither change nor complement will be accepted.

Acknowledgement of receipt

An acknowledgement of receipt will be returned to the proposal coordinator as soon as the original proposal will have been received and registered.

National Authorities
National Delegates to the ESA Human Spaceflight, Research and Applications Programme Board can be helpful to guide for a proposal and to harmonise this proposal within a possible national research priority plan and related funding. The partners in the proposal are invited to inform their respective.

Deselection of proposals
Following confirmation of selection and readiness for support by ESA, the Coordinator should provide a Letter of Acceptance stating that all necessary resources will be made available to conduct the experiment. Failing to provide this letter within 6 weeks after notification by ESA will lead to automatic deselection of the proposal.