Invitation to Apply to ESA Phi-Lab Poland

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Thank you for your interest in ESA Phi-Lab Poland.

Space-based studies and technology developments bring benefits to Earth in the form of services and top-class science. This makes the space industrial sector of high strategic and economic value. At the same time leading edge research brings benefit to space, and indeed to Earth and society with disruptive innovation.

As part of the Phi-LabNET, one of the Components of the Innovate Element in the ScaleUp Programme, ESA is rolling out a dynamic network of Phi-Labs in ESA Member States.

Phi-Labs do bridge the gap between early-stage research and commercialisation. They ensure that the research is not just innovative but closely serve ESA or industry needs. Phi-Labs are geared for early stage exploration and maturation of technologies that enable commercial applications. The focus is given to technologies with the potential to disrupt existing markets or even create new markets. The support provided is intended to boost the delivery of innovation, thereby reducing the time to market. Beyond the creation of new technical capabilities, the activity shall output an assessment of the market disruption potential and a roadmap to commercialisation.

The ESA Phi-Lab programme is not a TRL-driven development programme like GSTP, ARTES, FIRST, Boost!, or NAVISP. Because of its role of "innovation catalyst", the Phi-Lab's programme supports work typically covering low to mid TRLs, with an emphasis on TRL 2–4 upon entry, occasionally extending to TRL 5–6 when activities mature into prototypes that can be handed over to programmes such as InCubed, GSTP, NAVISP, ARTES, or FIRST.

In Poland, Poznan University of Technology (PUT) is responsible for managing ESA Phi-Lab Poland . Please note that this Open Call is issued under the exclusive responsibility of Poznan University of Technology .

ESA Phi-Lab Poland offers a comprehensive package of support to research teams selected, including

- Access to and use of Phi-Lab laboratories, infrastructure and equipment, including facilities supporting space robotics testing, aerospace data transmission, aerospace data transmission observation, supervision and tracking of satellite objects, Earth surface Observation (diverse UAVs, hyperspectral and multispectral cameras, high resolution observation and 3D reconstruction cameras, thermal and night vision sensors, LiDAR sensors, physical quantity sensors), as well as geospatial analysis and satellite calculations (spatial big data type), satellite computation (SANDBOX), testing and authorizing measuring Instruments used in acquiring spatial data, geoinformation applications and spatial data testing;

- Innovation seed funding,

- Technical support, business coaching, and legal/IPR advice.

The focus of ESA Phi-Lab Poland is Autonomous Robotic and Intelligent Systems for Space Exploration and Earth Applications.

ESA Phi-Lab Poland hereby invites you to submit your application to enter the Phi-Lab Poland programme. All research activity proposals shall be rooted in novel research, as well as targeted and shaped for potential commercial applications.

This document provides an introduction to the application and evaluation process and contains references to the templates that should be used when applying.

Please contact ESA Phi-Lab Poland for any further questions.

Yours sincerely,
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ESA Phi-Lab Poland Local Manager, Director of Kakolewo Campus – Poznan University of Technology
ESA Phi-Lab Poland

Introduction

The purpose of this Open Call for ESA Phi-Lab Poland is to inform about the opportunity for research projects to become supported by ESA Phi-Lab Poland and to provide the material and guidance needed to apply for support.

Selection and evaluation of applications are scheduled periodically, see https://esaphilab.pl/howtoapply/for details.

The Call is open from 20 April 2025 to 29 May 2026.

Objectives and scope of Phi-Lab activities

The proposed activity shall focus on maturing a technology, through research led process, towards the performance levels required by the target application(s). The proposed work must include a clear plan of research activities, with defined roles for scientific or technical contributors. It shall be based on solid research-driven evidence of its feasibility.

Priority will be given to developing technical capabilities with the potential to enable market disruptive applications, with high socio-economic impact.

In addition to technical research, the activity shall include a market analysis for the product & services enabled by the technology, a roadmap to commercialization, and an investigation of the potential socio-economic impact.

The technology to be matured shall have a valid space connection, i.e.

- It has been developed for a space application, and/or
- It enables new capabilities relevant for space applications, or relevant for an element of the space value chain.

Research Focus of the call Poland

The research activity shall deliver a clear benefit to Poland industrial ecosystem. This is of particular importance for applicants that are part of a legal entity established in a state different from the one of the Phi-Lab.

In addition the project shall be relevant for the specific focus of competence of the Phi-Lab and the specific topics as defined below.

TOPIC: Software and Hardware Solutions for autonomous in-orbit robotic operations.

CALL OVERVIEW
This call seeks projects that are aimed at advancing hardware and software towards greater autonomy of in-orbit operations. This includes machine learning-based autonomous rendezvous, proximity operations, and inspection. The topic aligns with ESA and EC initiatives for in-space operations and services, encompassing satellite servicing, assembly, manufacturing, recycling, and logistics. The call prioritizes technology maturation with high potential for commercial applications in the near future.

SCOPE
The scope of the call is to mature technologies for:
Robotics and automation: providing robots and autonomous systems for in-orbit servicing, assembly and manufacturing, allowing for reuse of hardware and software components across multiple missions and individual tasks.
Machine learning and digitization, using data-driven solutions for in-orbit decision making, motion planning, proximity operations, and inspection. We expect the use of different sensing modalities requiring data fusion which can be performed with learning methods, but the call does not exclude more classical approaches. For machine learning approaches, safety bounds should be provided.

EXPECTED OUTCOMES:
Proposals should demonstrate how they will contribute to at least two of the following expected outcomes:

- Hardware-based modular robotic solutions for in-space operations and services
- Autonomous robotic assembly, servicing, or manufacturing for in-space applications, including perception, control and motion planning
- Software systems for data-driven rendezvous, proximity operations and inspection in-space
- Preparation of a large-scale dataset for in-space operations using simulation and an analogue environment for tasks such as robotic assembly, servicing, rendezvous, proximity operations, and inspection. The data should be provided under the ESA open license allowing for free-of-charge use for non-commercial purposes.

Who can apply?

The research project proposal must be submitted by applicants who are part of a legal entity, or a consortium of legal entities.

The applying legal entity(ies) shall be established in an ESA Member State, Associate Member of European Cooperating State (specify Country).

The team applying shall have the skills necessary to achieve the proposed activity, including insight in the industrial and market ecosystem that the technology will impact.

An Economic Operator may be part of maximum 2 applications per call and may be the prime contractor of only one application.

When acting in collaboration with other national or foreign entities, the applicant will be the sole contractor and will be fully responsible for managing the funding.

Additional application requirements

- The work proposed under the submitted ESA Phi-Lab project shall not being funded through other means (e.g. ESA R&D activities, ESA Business Incubation, ESA Business Applications, European Commission etc).
- The project shall be relevant for the specific focus of competence of the Phi-Lab and the specific topics as defined in the previous Section;
- The project shall be focused on maturing (a) technology(ies) within the scope of this call.
- The Funding is exclusively dedicated to completing the work packages of the ESA Phi-Lab Research project.
- The Applicant must have meaningfully interacted with ESA Phi-Lab Poland about the project (incl. support and involvement of the Phi-Lab) prior to submitting the application.
- The Applicant shall submit a pre-proposal as a mandatory first point of contact with ESA Phi-Lab.
- The pre-proposal stage shall enable ESA Phi-Lab to provide tailored feedback regarding project readiness, alignment with the ESA Phi-Lab portfolio, and potential collaboration opportunities.
- The Applicant must engage in direct discussions with ESA Phi-Lab based on the submitted pre-proposal.
- The Applicant shall refine the project objectives and scope in line with feedback received, ensuring alignment with ESA Phi-Lab expectations prior to full proposal submission.
- Collaboration with Phi-Lab PL shall be structured and time-bound.
- The activity shall leverage on the support of ESA Phi-Lab Poland across defined categories, including technical and technological guidance, business and commercialization support, networking and partnerships, project management and proposal support, as well as access to research facilities.

How to apply

Please make sure you have received the following documents, which are part of the Open Call documentation:

- Cover Letter including Requirement Checklists
- ESA Phi-Lab Research Proposal:
  - Executive Summary
  - R&D and Potential Impact Proposal
  - Activity and Management Proposal
- Draft Research Contract including Draft Service Agreement

Contact Phi-Lab Poland prior to applying to discuss the scope of your project, as well as the fit with the objectives (See table 1, criterion 5).

Make sure to fill in all required sections in the application templates and pay particular attention to the following:

- Instructions inside the documents (highlighted in blue in each template) shall be followed in order to fulfil all pre-conditions of the Open Call and for the application to be accepted.
- Please read the Draft Contract carefully. The Cover Letter must include a clear, explicit and unambiguous statement declaring that the applicant has read, understood and accepted the terms and conditions contained in the contractual documentation (this is part of the Cover Letter template). Modifications or amendments to the Contract may only be done in exceptional cases. Please contact the local ESA Phi-Lab Poland Manager for guidance.
- Make sure the Cover Letter and the Requirement Checklists are signed by a representative of the legal entity that will sign the contract.
- Support in ESA Phi-Lab Poland may be requested for a maximum of 24 months.

Please submit the application documents in electronic form (pdf, maximum three files, one for each required document) through our dedicated system (https://proposals.esaphilab.pl/) before the deadline.
Any questions related to submission of proposals should be sent to the same e-mail address: esaphilab@put.poznan.pl

Budget and additional benefits

The total budget allocated for the implementation of the Call is 500 000 Euro
The Innovation Seed Funds per selected project is from a minimum of 200.000 Euro to a maximum of 250 000 Euro.

This amount shall represent a percentage ranging from 50% to 100% of the total allowable cost of the activity, subject to compliance with the following provisions:

- Work carried out by SMEs may be funded up to a maximum level of up to 80% of their total allowable cost in the activity
- Work carried out by universities and research institutions involved as subcontractors in a consortium and justifying no further commercial interest in the product or service may be funded to a maximum level of 100% if this funding does not exceed 30% of the total allowable cost of the activity; Should work need to be (sub)contracted for more than 30% of the total eligible costs, such additional share shall be co-funded up to a maximum of 50% of their total eligible costs; Universities and research institutions claiming to have any commercial interest in the future exploitation of the final product or service shall be required to demonstrate this interest. In such a case, the funding level for SME or non-SME shall apply.
- Work carried out by economic operators that are not SMEs nor universities and research institutions may be funded up to a maximum level of 50% of their total allowable cost in the activity.

In addition to the budget made available for the research activity, the Phi-Lab will contribute with the following elements:

- Research mentoring and technical advisory
- Business and IP coaching / advisory
- Access to technical facilities at favourable conditions [details and conditions to be customized]
- Access to background IP [details and conditions to be customized]

Additional cooperation in the R&D may be negotiated between the bidder and the ESA Phi-Lab.

The projects requesting ESA Innovation Seed Funding equal or larger than 500 kE should provide evidence of their co-funding.

Eligible costs

In order to be eligible, all project costs must be:

- Necessary to the execution of the project;
- Incurred by the beneficiary and recorded in its accounts;
- Incurred during the contract term;
- Indicated in the cost planning in the proposal;
- Without VAT, interest owned, or duties.

Expenses incurred in the preparation and dispatch of the proposal will not be reimbursed.
The project may consider the following direct costs:

a. Staff costs;
b. Subcontracting costs;
c. Access to data sources or intellectual property;
d. Materials, equipment, and facilities;
e. Travelling, subsistence, and accommodation costs

The following costs incurred are eligible:

- Train and plane costs in Economy Class, up to 700 Euro travelling in Europe and up to 1600 Euro travelling outside Europe;
- Taxi costs;
- Car rental and/or car mileage;
- Accommodation up to 250 Euro per person per night;
- Subsistence costs up to 100 Euro per person per day.

Information regarding all Travelling, Subsistence and Accommodation costs must be provided in the Mid-Term (where applicable) and Final Reports, and shall include the objectives of the occasion (event, meeting, etc.), contacts made and results.

- Business development and promotion (data sheets, flyers, trade shows etc.). Attendance to trade shows (or similar) should be agreed in advance with the local ESA Phi-Lab Manager.
- Other – costs not included in the above categories but deemed critical to the execution of the project should be agreed in advance with the local ESA Phi-Lab Manager.

The evaluation procedure

The evaluation of all received applications is managed locally by ESA Phi-Lab Poland and follows common ESA Phi-Lab procedures.

Once a published submission deadline has passed, ESA Phi-Lab Poland first assesses the formal aspects of applications received before the submission deadline. If a formal non-compliance of formal nature is found, the applicant may be asked to address this in an updated proposal within 48 hours. If the proposal is found non-admissible, the applicant will be informed, and the reason will be explained. In such a case an applicant is eligible to submit a revised proposal at a later date.

If the application is compliant with the formal requirements, applicants will be invited to hold a presentation to the ESA Phi-Lab Poland evaluation board. The evaluation will typically take place a

few weeks after the submission deadline. The evaluation board consists of representatives of ESA Phi-Lab Poland , ESA, National Delegation, and other experts. There will also be an opportunity for the evaluation board to ask questions to the applicant.

The application and the presentation will be marked against the criteria in Table 1 taking weighting factors into account.

Criteria	**Sub criteria**
1 - Background and Experience (20%)	a) Experience Team composition b) Partnerships and Support Entities c) Vision
2 - Research and Technology developments (25%)	a) Suitability of technology for targeted application b) Understanding of and leveraging on the State of the Art (SoA), novelty of proposed research c) Depth and significance of technical innovation d) Maturity of technology and feasibility for target application e) Clarity and relevance of the research objectives
3 - Commercial Opportunities and Potential Socio Economic Impact (25%)	a) Potential applications, problem addressed and target markets b) Hurdles, risks and roadmap to commercialisation c) Market disruption, industrial transformation and socio-economic impact d) IPR strategy
4 - Activity and Management proposal (20%)	a) Clarity and relevance of the work to achieve objectives b) Feasibility: Access to facility and data + Availability of personnel. c) Milestones/Cost-planning / Work break down. d) Approach to align research with market needs e) Management of the activity f) Value for cost g) Double funding

5 - Alignment with Objectives (10%)	a) with Phi-lab programmatic objectives b) with Phi-Lab national scope c) with/ objectives the of the call d) Benefit for national ecosystem

Table 1: ESA Phi-Lab evaluation criteria and weighting factors

The criterion on "benefit for the national ecosystem" is particularly critical for applications involving (an) Economic Operator(s) from outside of Poland.

Proposals with a score below 40 (out of 100) for any one of the 4 evaluation criteria will be disqualified.

All applicants will be notified in writing about the outcome of the evaluation. The applicant may require, within 10 calendar days from the receipt of the notification, an oral debriefing explaining the reason why the application was successful or not. Applicants who wish to submit a complaint to the Local Administrator, are required to request a mandatory debriefing before filing their complaint.

ESA Phi-Lab Poland will enter into contract negotiations the best applications with an overall score of 60 and above within the limits of the available budget. ESA Phi-Lab Poland has the right *not* to place a contract if, after three months after the notification to a successful applicant, no contract still has been signed, and this is because of a reason for which the applicant can be held accountable.

Furthermore, we kindly ask you to pay attention to the following:

- Please note that applications will be treated as confidential. However, the applicant's idea may through this application fall into the public domain (e.g. if local laws require so). Therefore, we strongly recommend that the applicant discusses the protection of his/her idea with a dedicated expert in this field prior to application, and – if relevant – takes appropriate steps to protect the idea (e.g. by applying for a patent).
- As far as allowed by law, any title held by the applicant to his/her idea shall remain vested in him/her. An application to ESA Phi-Lab Poland will not result in the acquisition of any title whatsoever to the idea. *However, ESA retains a right to use the Intellectual Property in specific cases. Please read the detailed conditions described under the section "Use of Intellectual Property Rights" in the Draft Contract.*
- No expenses incurred in either stage of the application procedure will be reimbursed to the applicant by ESA Phi-Lab Poland, ESA and/or any third party.
- This Open Call does not impose any obligation upon ESA Phi-Lab Poland to enter into negotiations with any applicant.
- Please note that the Applicant's application shall be for purposes as stipulated in the ESA Convention.