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ESA Phi-Lab Poland

ESA ACCESS Opportunities in Poland

Julia Gościańska-Łowińska

ESA Phi-Lab Poland

17th March 2026

→ THE EUROPEAN SPACE AGENCY

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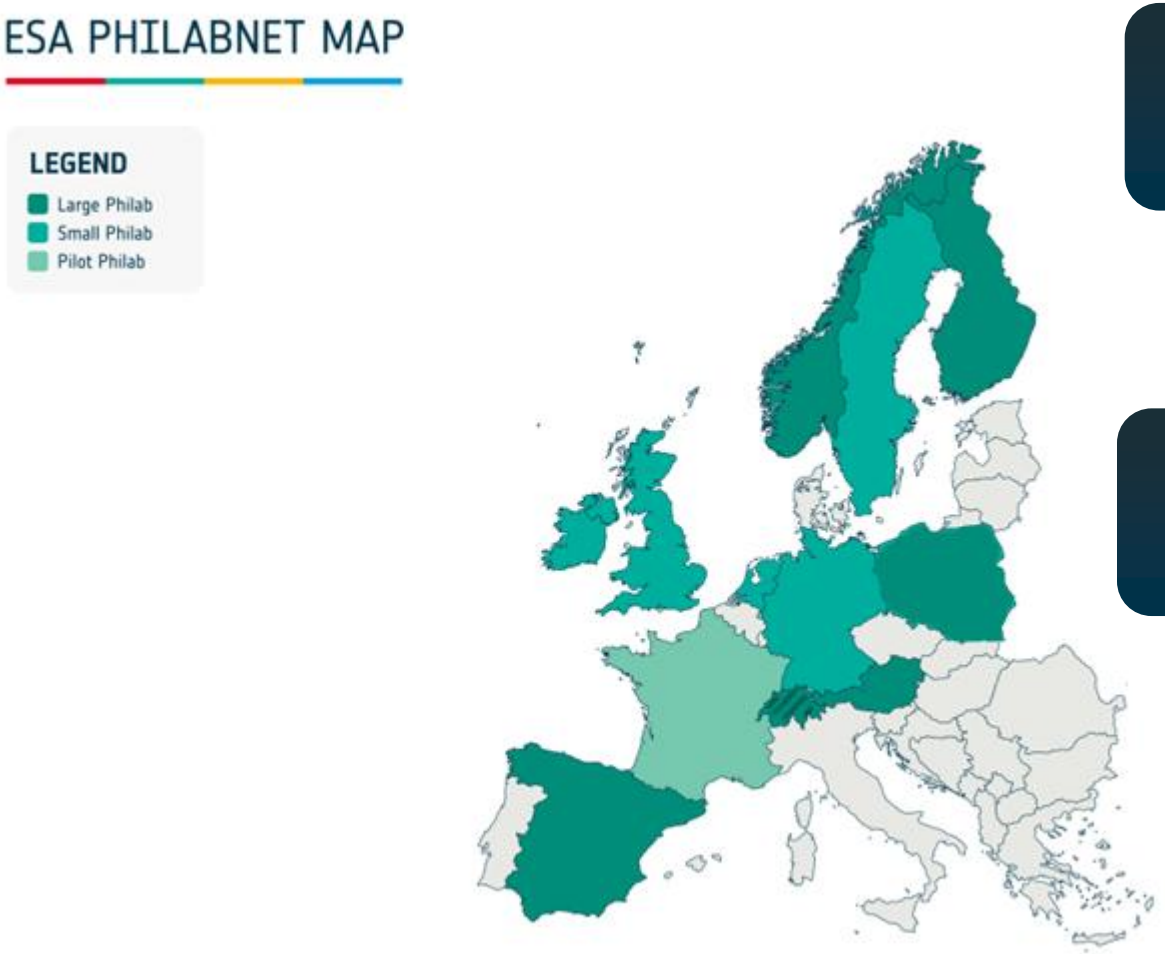
Overall information

ESA Phi-Lab NET

Phi-Lab NET POLAND



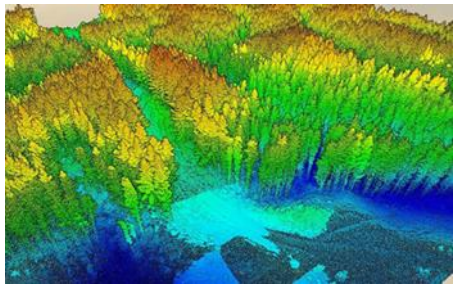
11+ Phi-Lab

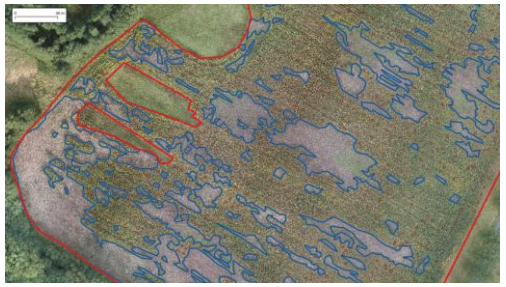
Large Phi-Lab: **5.2Meuros**

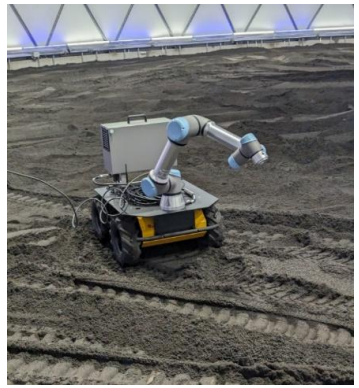
ESA Phi-Lab - Overall approach

- Innovation focus on a pre-defined area - Phi-Lab Poland will concentrate on the thematic area of **Autonomous Robotic and Intelligent Systems for Space Exploration and derived Earth applications.**
- Offers the **"Innovation under one roof",** providing technical and business support, and Innovation Seed Funds to the selected Economic Operators
- Measures the results and their impact (in terms of innovation, societal and economic benefit, etc.)

Our approach to scout, select and support the Economic Operators in running their proposed Research Projects.







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Poznan University of Technology	**LOCAL ADMINISTRATOR - PRIME**
Warsaw University of Technology	**CONSORTIUM PARTNER**

Main Point of Contact	esaphilab@put.poznan.pl
Phi-Lab Manager	Julia Goscianska-Lowinska e-mail: julia.goscianska-lowinska@put.poznan.pl
Deputy Manager for Science	Marek Kraft e-mail: marek.kraft@put.poznan.pl

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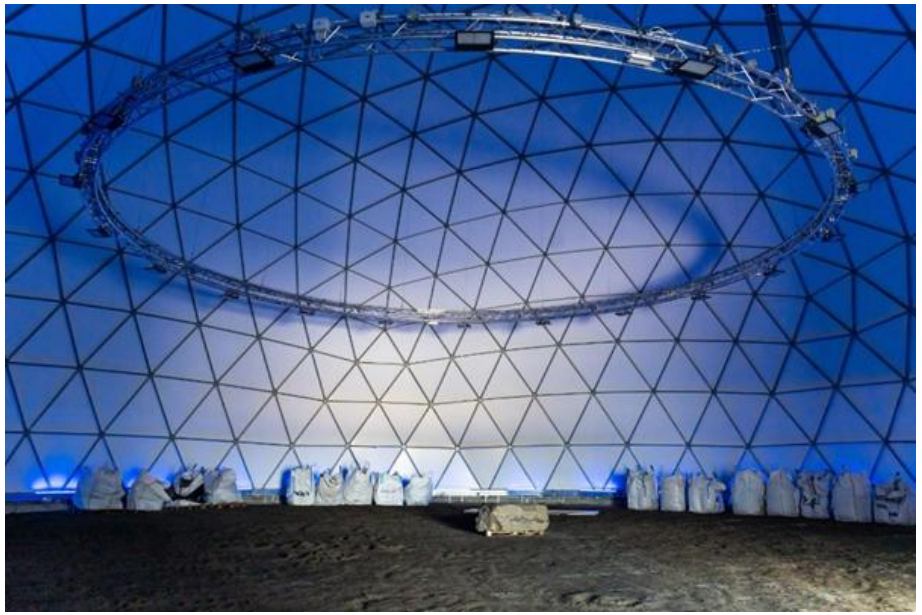
Phi-Lab Poland

Total Seed Innovation Funding available for the Economic Operators:	**4,400,000 Euro**
Specific topic of the Phi-Lab Poland:	Autonomous Systems for space and derived Earth applications.
Number of planned Open Calls:	2 per year
Predefined size of funding:	an average value of 250,000 Euro



Source: PUT

ESA Phi-Lab PL services

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Our services

Funding

Access dedicated seed funding to support **high-risk, high-potential research projects** with strong commercial and application-driven prospects.

Expert Support

Benefit from hands-on guidance from ESA and industry experts in **technology development, rapid prototyping, IP strategy, business models, and sustainability**.

Facilities

Leverage state-of-the-art **laboratories, testbeds, simulation environments, and background IP**, enabling fast experimentation, validation, and iteration.

Ecosystem

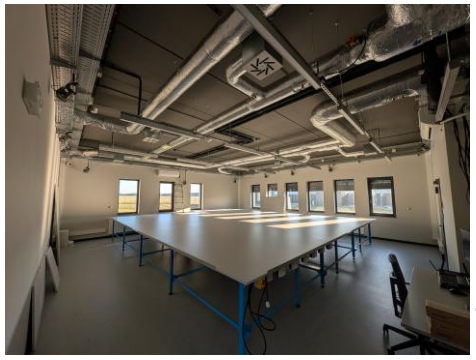
Engage with a strong network of **industrial partners, researchers, startups, and ESA stakeholders**, fostering interdisciplinary collaboration and ensuring innovation aligns with real market demand.

ESA Phi-Lab Poland - technical facilities [1/2]

Poznan University of Technology

- Space Robotics Testing Centre (700m² test hall with shapeable surface, climate and microgravity laboratory, Simulated Mission Control Centre)
- Digital airport (hangars, laboratory area)
- Aerospace Data Transmission (satellite communication station, two robotic antennas)
- Observation, Supervision and Tracking Station of Satellite Objects (two astronomical domes with facilities)
- Earth Surface Observation Centre (diverse UAVs, hyperspectral and multispectral cameras, high resolution observation and 3D reconstruction cameras, thermal and night vision sensors, LiDAR sensors, physical quantity sensors).



ESA Phi-Lab Poland - technical facilities [2/2]

Warsaw University of Technology

- advanced IT infrastructure allowing for geospatial analysis and satellite calculations (spatial big data type) – SANDBOX
- centre of satellite computation
- laboratories for testing and authorising measuring instruments used in acquiring spatial data
- laboratories for testing geoinformation applications and spatial data

Geospatial Analysis Platform

Advanced IT infrastructure to conduct geospatial analysis and satellite computing (spatial big data type).

Data Repository

Publicly accessible Database designed to store and share scientific research results in accordance with FAIR principles.

Laboratories for testing devices and applications

Laboratories for calibration/calibration/certification of measurement instruments used in geoinformation acquisition and laboratories for testing geoinformation applications and spatial data

Astronomical-Geodetic Observatory

Laboratories related to permanent satellite (GNSS) and gravimetric measurements that are part of the international geodynamics measurement network.

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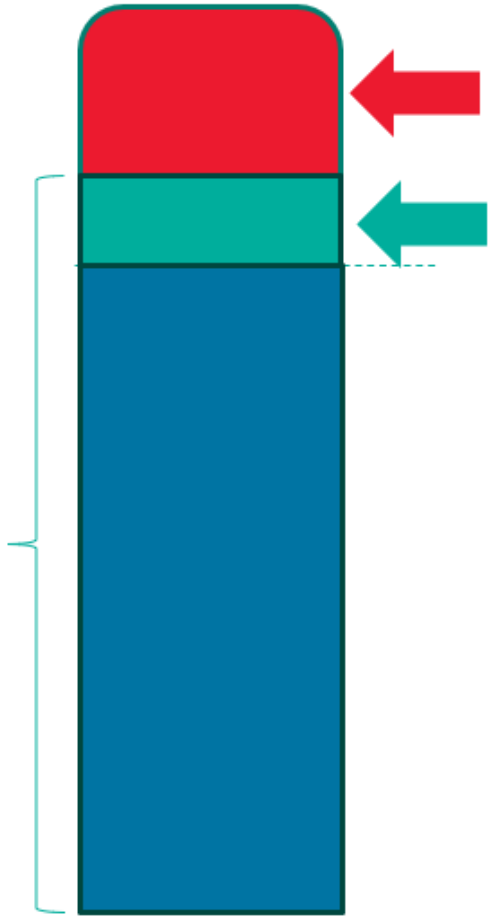
Funding opportunities

Business model

ESA (+Local) Innovation Seed Funding min 200kEuro - 50-80-100% of research activity cost (depending on the status of the Economic Operator)



From Econ Op, In-kind or cash, to ensure the **Econ Op commitment**)

% from the PhiLab local co-funding, it may vary Philab from Philab, Research Project from Research Project. In-Kind or cash. It may have implications on the **IP ownership.**

Options for entity status and co-funding rules

- SME: Work carried out by SMEs may be funded up to a maximum level of **up to 80%** of the total allowable cost of the activity

- UNIVERSITY / RESEARCH INSTITUTION: 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 the 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.

- LARGE INDUSTRY: 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 the total allowable cost of the activity.

R&D and Potential Impact Proposal

- **Background and Experience** (Team composition, Background of the entities involved, Partnerships and Support Entities, Vision)
- **Research and Technology Developments** (R&D objectives, scope and significance, Relevance for the Call, Understanding of and leveraging on the State of the Art, novelty of the proposed research, Maturity of the technology, feasibility of the proposed research)
- **Commercial Opportunities and Potential Socio-Economic Impact** (The potential target market, Product/service, Customers/users, current situation, and their needs; Value proposition, Market disruption and Socio-Economic Impact, IPR strategy)

Source: ChatGPT

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Preparation and submission of an application (proposal)

ESA Phi-Lab General Application Requirements

- The proposed Research activity is in line with the focus and objectives defined by the Call
- The Applicant **has been in dialogue with** ESA Phi-Lab Poland prior to submitting the application
- The Applicant is a legal entity (a public law company / a private law company / an association / a foundation, etc.) registered under the laws of Poland
- The Applicant declares that the activities proposed under the submitted ESA Phi-Lab project are not and have not been funded through other means, e.g. ESA R&D programmes such as Discovery, Preparation, TDE, GSTP (pls check nebula.esa.int, activities.esa.int), ESA Business Incubation, ESA Business Applications, European Commission, etc.)
- The Funding is granted in net amounts (not including VAT).

Pre-proposal

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1. Project title and main objective
2. Applicant and project team
3. Description of the innovative technology and its current Technology Readiness Level (TRL)
4. What is the current state-of-the-art in this field?
5. How is the technology relevant to the space sector and what value does it bring?
6. Who are the potential customers and what is the commercialization potential?
7. What are the key risks associated with the development of this technology (technological, market, or operational risks)?

Send to: esaphilab@put.poznan.pl

1 hour of consultation for the Applicant during the application preparation stage

ESA Phi-Lab Poland Proposal

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Background and Experience

- Team composition (including all key personnel)
- Background of the entities involved (experience of the Applicant and consortium partners),
- Partnerships and Support Entities (any Support Letter),
- Vision (medium- or long-term objectives, synergies with other activities).

a) Background and Experience

(i) Team composition:

Please describe the overall team composition, including participants from all subcontractors, if any, including all key personnel (i.e. having a major role within the team and/or being responsible for one or more tasks) and their position within his/her own entity's structure. Present the role of each team member in the activity and their credentials to fulfil that role.

(ii) Background of the entities involved:

Please describe briefly the relevant experience of the Applicant and consortium partners for the performance of the proposed work, including experience with the envisaged target markets. Please provide the rationale for the involvement of the proposed consortium partners in the activity.

(iii) Partnerships and Support Entities:

Please describe briefly the partnerships that are required (at the time of the project execution or after its completion). Please add as annex any Support Letter received from relevant Entities. These may include potential customers or commercial partners.

(iv) Vision:

Please describe how this activity fits into the vision of the Applicant and proposal partners (e.g. alignment with medium- or long-term objectives, synergies with other activities, etc.).
Please provide an overview of the broader implementation plan of the product/service (including the key steps to have a fully-fledged offer and roll-out the product/service to the potential market, as well as follow-up actions to this activity (e.g. apply for further ESA or non-ESA funding, spin-off creation, licensing, commercial efforts, etc.).

ESA Phi-Lab Poland Proposal

Research and Technology Developments

- R&D objectives, scope and significance,
- Relevance for the Call,
- Technical value and novelty,
- Involvement in other publicly (co-) funded activities, NEW
- Maturity of the technology, feasibility of the proposed research

b) Research and Technology Developments

(i) R&D objectives, scope and significance:

Please describe the new (market disrupting) capabilities that are enabled as the result of this project;

Summarize the scope and objectives of the proposed research; briefly describe the approach and steps to achieve those objectives, incl. research, development and verification / validation;

Explain how (and how significantly) this project contributes to achieving the target capabilities.

(ii) Relevance for the Call:

Please clearly discuss how the activity is in line with the objectives and expertise / capabilities of the Phi-Lab and more specifically with the objectives of the Call.

(iii) Technical value and novelty

Please present the current State of the Art (SoA) in the technical domain of this project; provide a prospective analysis of likely evolutions of competing technologies.

Discuss how the technology you intend to mature leverages on the SoA. In particular include an explanation whether and how the proposed research is related to past and ongoing ESA R&D activities (https://nebula.esa.int , https://activities.esa.int). Explain how and how much the proposed research represent a step forward from the SoA?

Clarify the dimension(s) for which the technology would enable a performance leap (e.g. cost, compactness, energy efficiency, speed, etc.). Benchmark the technology against current or emerging alternative technologies across the main relevant dimensions.

Explain the novelty and depth of the technical innovation that will be developed in the project, e.g. is the technology based on a recent or under-exploited scientific discovery? Does it constitute a paradigm shift in addressing the target application(s)? Is it directed to solving unprecedented technical challenges, or to enabling a performance leap? Can the technology serve as a base technical layer up which third parties can build new products or services?

(iv) Involvement in other publicly (co-) funded activities

Identify other publicly (co-) funded activities (related to the R&D topic of this proposal) that any of the consortium partners are (or were) engaged with. For each, explain briefly the scope and main objectives, and describe the overlap with the proposed activity, if any. In the case of ESA activities, please provide the contract number.

(v) Maturity of the technology, feasibility of the proposed research:

Please present the maturity of the technology, including current TRL; discuss the challenges of the proposed research, and assess the feasibility of achieving the new targeted capabilities. Please provide information on the means of access to data/asset/facilities needed for the proposed R&D.

ESA Phi-Lab Poland Proposal

Commercial Opportunities and Potential Socio-Economic Impact

NEW

- Potential application(s) and target market(s)
- Hurdles, risks and roadmap,
- Market disruption, industrial transformation and Socio-Economic Impact,
- IPR strategy

(iv) IPR strategy:

Please describe the initial plans (if any) for protecting the innovation resulting from the activity.

The background Intellectual Property Rights (IPR) status of the technology/asset(s) involved shall be identified and described incl. ownership, type of protection, rights of use by 3rd parties, etc.).

If applicable, applicants should include (a) letter(s) from the owner(s) of the background IPR confirming that the Applicant will have access to the relevant IPR during the project.

A description of any limitation or condition in the access and exploitation of the background IPR (for this project, follow up developments, and the commercialization phase) shall also be presented.

c) Commercial Opportunities and Potential Socio-Economic Impact

The following subsections are intended as a preliminary analysis. If selected the Applicants will be supported by the Phi-Lab to mature this analysis during the Activity

(i) Potential application(s) and target market(s):

Describe the application(s) and market(s) that the new capability could disrupt or unlock.

For each, please explain:

- Who are the potential users/customers? What products could they develop based on the technology?
- What is the current (dominant) use case scenario and associated concerns?
- How critical and urgent those problems are for the users and other impacted stakeholders?
- How well may the new technology enable products/services that solve those challenges?

(ii) Hurdles, risks and roadmap

Provide a preliminary account on possible difficulties and risks in the way of the R&D and commercialisation of the technology into new products / services, and associated mitigation e.g.

- Resistance to adoption by potential customers, e.g. large cost of adoption; threatening of the core business of incumbent players; conflict is widely adopted industrialized standards.
- Ease of integration into existing value chains.
- Feasibility of developing new products based on this technology; feasibility of industrialization and scaling.
- Critical dependency on key resources (e.g. other technologies, infrastructure, material, supplier) and ease of access to such resources.
- Certification complexity.

Provide a preliminary roadmap with key steps and time frame for the commercialization of a key product that would be enabled by the technology.

(iii) Market disruption, industrial transformation and Socio-Economic Impact

Explain how the market and industrial ecosystem may be impacted, e.g.

- Demand market: Growth of demand, thanks to reduced costs? Enabling of completely new services, and creation of new markets? etc.
- Supply market: Opportunity for new entrants? Threatening of incumbent's core business by making their solutions obsolete? Loss of control over key segments of the value chain? How can they possibly respond to it? Etc.
- Does the technology enable new business model(s) in the target sector(s), incl. different pricing, delivery, or ownership model?

Provide a preliminary analysis on the significance of those changes / disruptions, and in turn their socio-economic impact.

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Need of ESA Phi-Lab support expertise and facilities

- Support (and associated expertise) - technical advisory, research mentoring, business coaching and/or IP support (as relevant).
- Estimate of support time required.
- Tasks or sub-tasks requested the Phi-Lab to perform (if applicable).
- Facilities (e.g. laboratory, instruments, workspace, etc.) (if applicable).
- IPR from the Phi-Lab needed to carry out R&D activity.
- Concluding explanation of how the Phi-Lab environment benefits the proposed R&D activity.

D. Need of ESA Phi-Lab support expertise and facilities.

Describe specifically the support (and associated expertise) that you would like to receive from the Phi-Lab. This includes technical advisory, as well as research mentoring, business coaching and/or IP support (as relevant). Provide an estimate of support time required.

If applicable, explain which tasks or sub-tasks of your workplan you request the Phi-Lab to perform. Provide an estimate of the task execution time.

Describe the facilities (e.g. laboratory, instruments, workspace, etc.) that you would like to gain access to in order to carry out the proposed R&D activity (if applicable).

Describe the IPR from the Phi-Lab that you would need to leverage on to carry out your R&D activity.

Conclude by explaining how the Phi-Lab environment is beneficial to carrying out the proposed R&D activity.

World-Class Research Infrastructure

Campus Kakolewo: Space Robot Testing Facility

Located near Poznań, Campus Kakolewo represents PUT's commitment to space technology advancement. This state-of-the-art facility features:

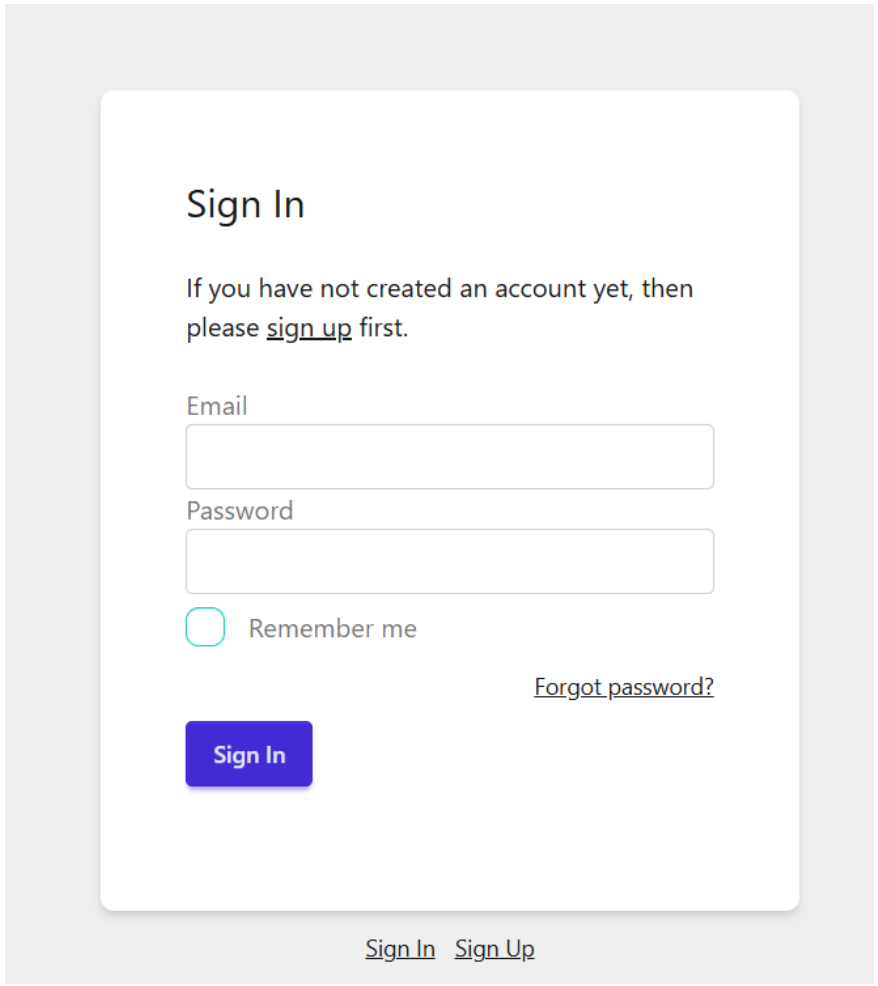
- Planetary Surface Simulation Arena (700m²): A dome-shaped structure with reconfigurable terrain features, including craters, slopes, and various soil compositions that mimic lunar, Martian, and asteroid surfaces. The facility includes programmable lighting systems to simulate different solar conditions and shadow patterns encountered in space.
- High-Precision Motion Capture System: This overhead multi-camera system covers the entire testing arena and is capable of tracking robot movements with high precision. It is essential for validating autonomous navigation algorithms and providing ground-truth data.
- Environmental Testing Chamber: A specialized laboratory (~100m²) equipped with a low-temperature thermal chamber for testing under cryogenic conditions, a pressure chamber for testing under vacuum conditions, and a climate chamber for testing under simulated conditions of varying temperature and humidity.
- Microgravity Laboratory: A 50m² frictionless microgravity simulation platform with a 12-camera optical tracking system for tracking objects on a frictionless surface.
- Mission Control Center: Connected to the simulation environment, enabling simulation of remote-control algorithms, including controllable latency, noise and interference, reflecting realistic conditions of very long-range communication with rovers.
- Computational Facilities: High-performance CPU and GPU servers for data processing, running simulations and experiments, with over 200TB of secure, redundant storage for experiment data.

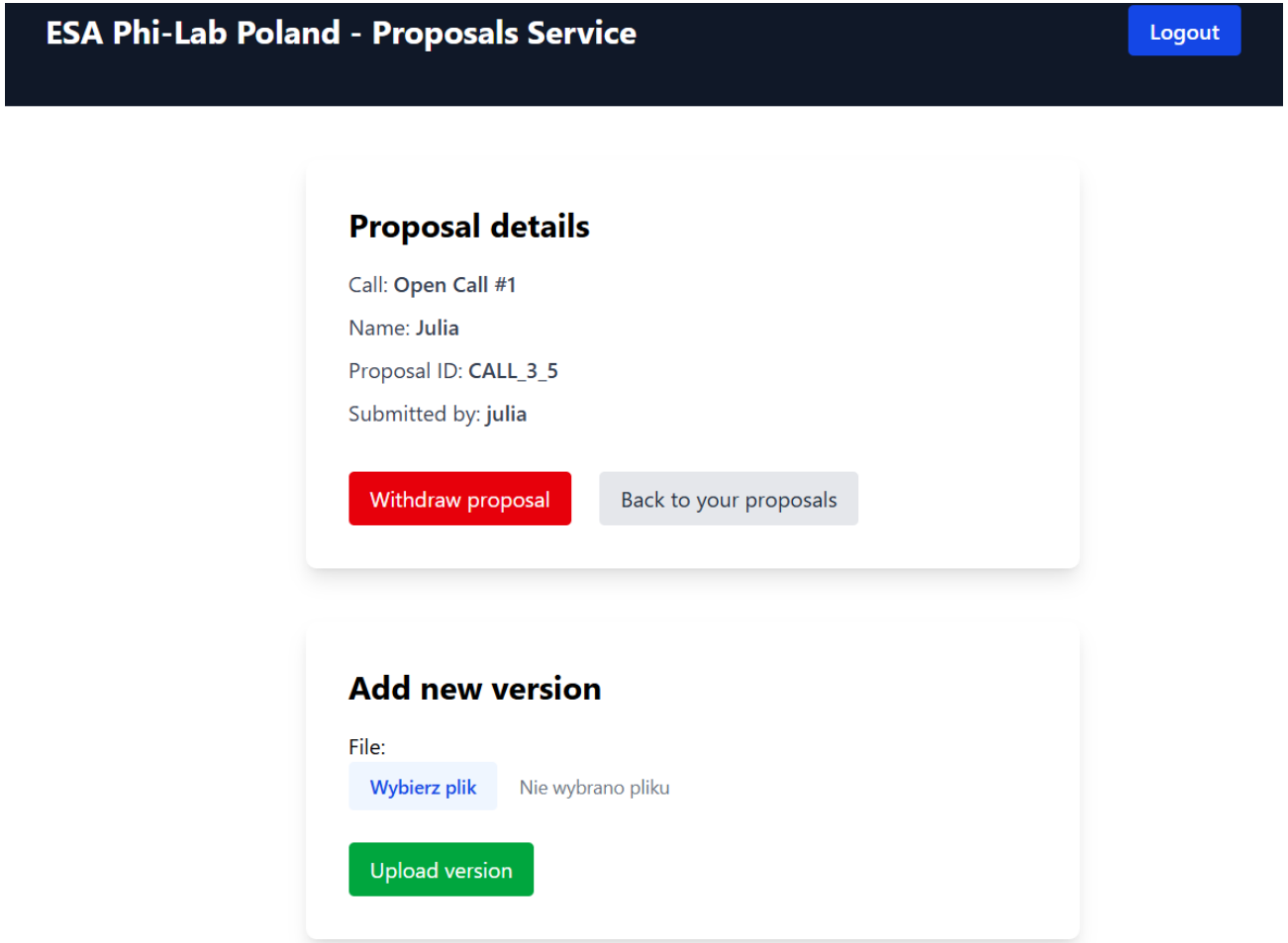
Advanced Technology Infrastructure at WUT

The partnership within Phi-Lab Poland leverages specialized facilities at Warsaw University of Technology:

- CENAGIS (Center for Scientific Geospatial Analysis and Satellite Computations): Advanced IT infrastructure that allows geospatial analysis and satellite calculations (spatial big data type), with laboratories for testing and authorizing measuring instruments used in acquiring spatial data.
- Center of Satellite Computation: Working in cooperation with EUREF (Regional Reference Frame Sub-Commission for Europe) as Local Analysis Center EPN (European Permanent Network), computing topographic corrections and precise coordinates using GNSS data.
- Laboratories for Testing and Authorising Geomatic Products: Facilities for testing and authorizing measuring instruments used in acquiring spatial data and laboratories for testing geoinformation applications and spatial data, including measuring and testing self-driving cars and UAV technologies.

How to submit a proposal?





Path to the project launch

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Check the requirements
Please download the open call documentation and check the FAQ's and make sure that your project meets the requirements of the call.

Get in touch with the ESA Phi-Lab Team
Complete the pre-proposal form and benefit from our feedback. We will aim to reply within 4 business days.

Apply for the ESA Phi-Lab Poland program
Download the open call documentation, fill out the research proposal application template and send it through our dedicated system before the deadline.

Evaluation process
Applications passing the tender opening board (TOB) will be invited for presentations at the ESA Phi-Lab Poland tender evaluation board (TEB).
The evaluation process is conducted in two stages.
Stage 1: Following the submission deadline, the Tender Opening Board (TOB) reviews the applications to verify compliance with all formal requirements.
Stage 2: After completion of the TOB, the Tender Evaluation Board (TEB) review the submitted documentation as well as the applicants' performance during the pitch and Q&A session. The TEB evaluates each applicant against the established evaluation criteria and decides whether the company will be invited to sign a contract. The TEB is managed by PUT, WUT, and ESA.
The TEB meeting typically takes place approximately one month after the submission deadline. Applicants are informed of the results shortly thereafter.

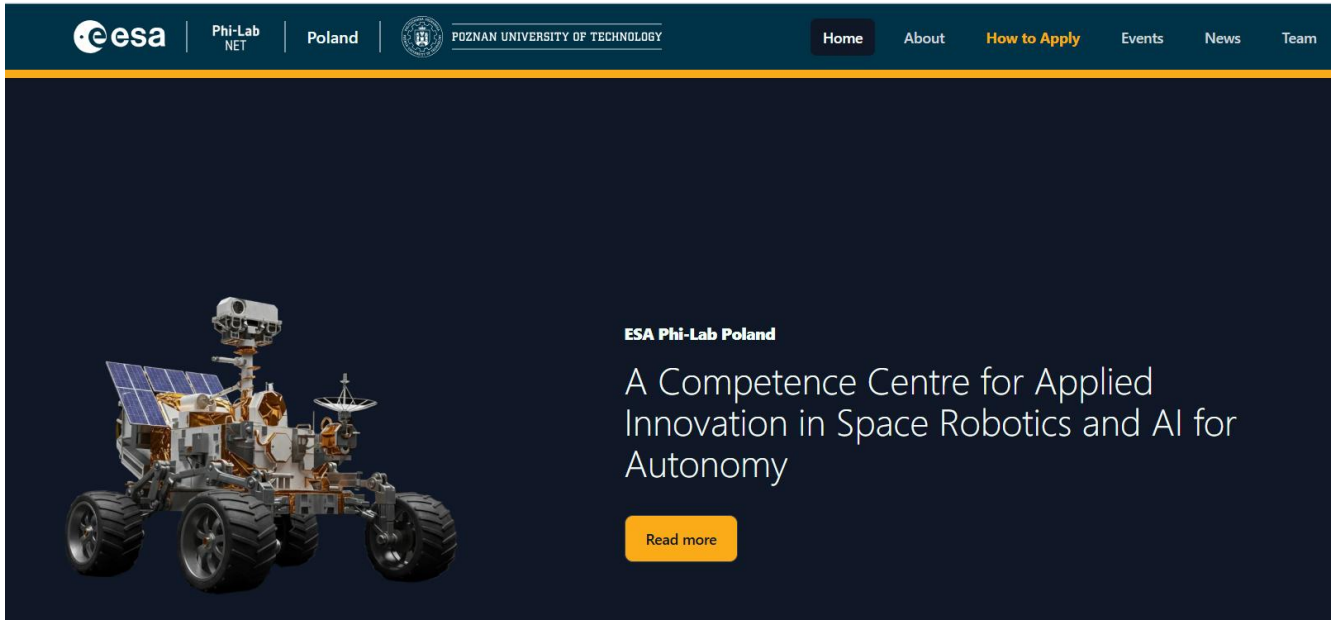
Launch Project
Project initiated with the support of the European Space Agency (ESA).

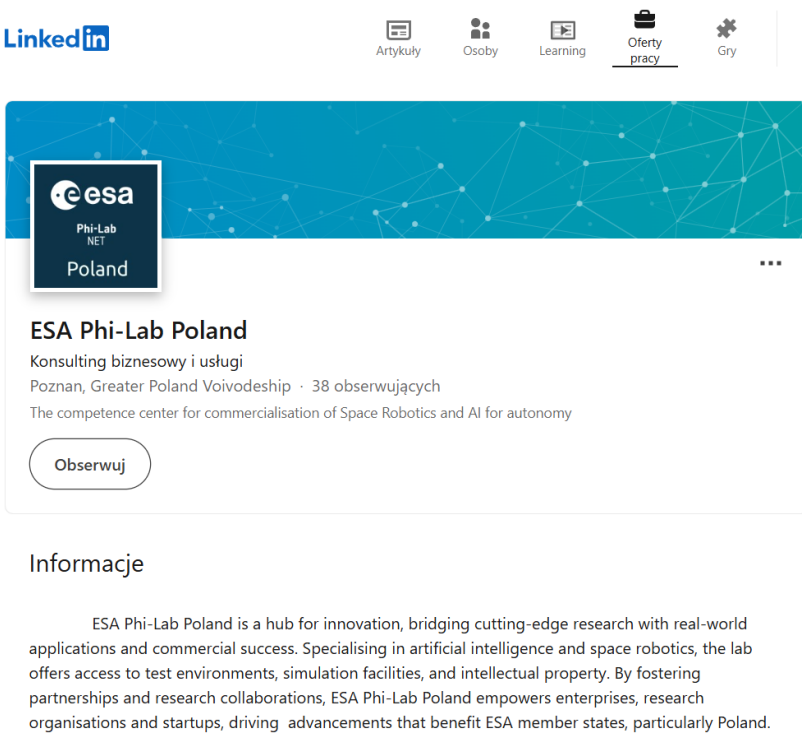
ESA Phi-Lab Poland - communication

Website - https://esaphilab.pl/

Open Call: Q1 2026

Deadline: 2 months





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Info Days

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Open Call theme

Call overview

- Focus on projects for the **maturation of technologies** enabling solutions that can improve hardware for advanced robotic manipulation for in-orbit operations

AND

- **Autonomy** of such operations including machine learning based autonomous rendezvous, proximity operations, and inspection.

- Satellite servicing, assembly, manufacturing, recycling, and logistics in space.
- Focus on technology maturation with high potential for commercial applications in the near term.
- The topic is in line with ESA and EC initiatives for in-space operations and services.

Scope

- **Robotics and automation**: provide robots and autonomous systems for on orbit servicing, assembly and manufacturing, allowing for reuse of hardware and software components from mission to mission, possibly from task to task.

- **Machine learning and digitization**, using data driven solutions for on orbit decision making, motion planning, proximity operations, and inspection.

- We expect the use of different sensing modalities which require data fusion which can be performed with learning methods, but the call do not exclude more classical approaches.

- For machine learning approaches safety bounds should be provided.

Outcomes

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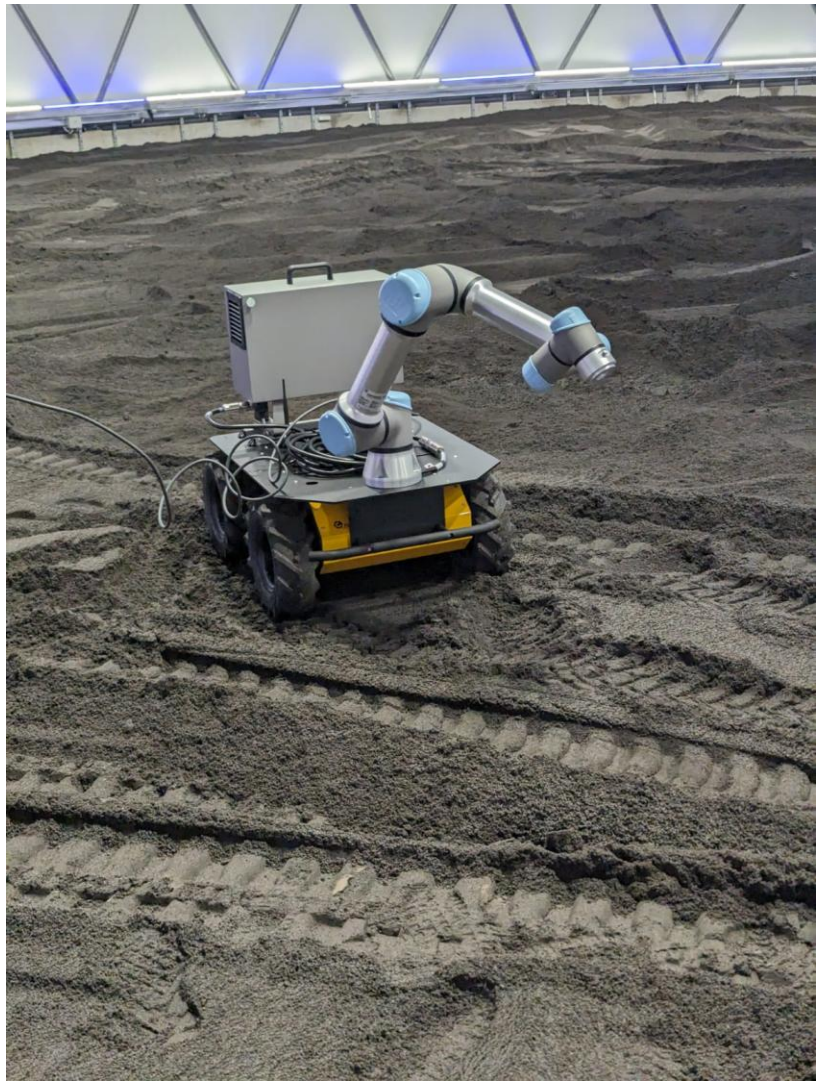
Proposals should demonstrate how they will contribute **to at least two** of the following expected outcomes:

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



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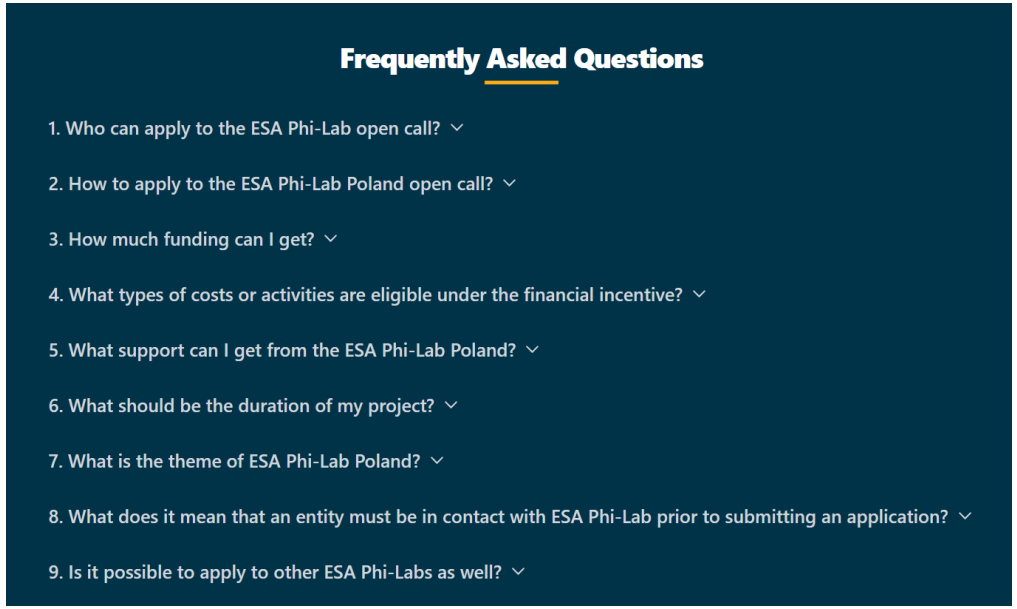
Lessons learnt

Key takeaways

The theme is Autonomy, Space Robotics, AI, Intelligent Systems for Space Exploration and Earth Applications.

Contact (dialogue) refers to submitting a pre-proposal and holding an online meeting to discuss the project's main assumptions.



Possibility to apply other Phi-Labs - now only for some of the other ESA member states. We advise you to check specific tender conditions of the other Phi-Labs (Austria, Netherlands, Switzerland, UK, Ireland, Finland, Norway, Spain, Sweden).

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Thank you

Contact:

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e-mail: julia.goscianska-lowinska@put.poznan.pl

Marek Kraft
e-mail: marek.kraft@put.poznan.pl