

## Invitation to Apply to ESA Phi-Lab NET Spain

Reference: ESA Phi-Lab NET Spain Open Call – Issue 1.0, 26/11/2024

Thank you for your interest in ESA Phi-Lab NET Spain.

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-Lab NET, 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 markets. They ensure that the research is not just innovative but closely serve immediate ESA or industry needs. Phi-labs are geared for supporting the maturation of technologies that enable commercial applications. The focus is given to applications with the potential to disrupt and transform markets. The support provided is intended to boost the delivery of innovation, thereby reducing the time to market.

In Spain, a consortium led by Institut d'Estudis Espacials de Catalunya (IEEC) is responsible for managing ESA Phi-Lab NET Spain.

ESA Phi-Lab NET Spain offers a comprehensive package of support to research teams selected, including access to and use of Phi-Lab laboratories, equipment, 24 labs and services targeting Satellite Design and Construction, Image Processing and Analysis, and Computing and Supercomputing capabilities (detailed in Annex 1 below and additional PhilabNET-pricing information in the draft contract template), innovation seed funding, technical support, business coaching, and legal/IPR advice.

The ESA Phi-Lab NET Spain focuses on developing technologies for climate adaptation and resilience, aiming to pioneer sustainable solutions that support economic growth. This lab also enhances local crisis management by improving the prediction of extreme weather events and their impacts, using Catalonia as a scaled experimental model for tackling climate challenges.

ESA Phi-Lab NET Spain hereby invites you to submit your application to enter the Phi-Lab NET Spain programme. All research activity proposals shall be in view of and shaped for potential commercial applications.

Projects are expected to be led by Commercial Economic Operator(s).

ESA Phi-Lab NET Spain especially welcomes proposals coming from SMEs, in order to assure the commercial focus.

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 NET Spain for any further questions by sending an email to [esa-phi-lab@ieec.cat](mailto:esa-phi-lab@ieec.cat)

Yours sincerely,  
Maria José Sedó  
Manager  
ESA Phi-Lab NET Spain

## Introduction

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

Selection and evaluation of applications are scheduled periodically, see [esaphilabnet-spain.ieec.cat](http://esaphilabnet-spain.ieec.cat) for details.

The Call is permanently open, has no closing date for the submission of applications unless the Phi-Lab NET Spain has indicated otherwise. Typically, two cut-off dates per year are defined, so that proposals received before those dates, will be evaluated.

## Research Focus at ESA Phi-Lab NET Spain

The ESA Phi-Lab NET Spain, is focused on addressing climate resilience through spacetechnology solutions. This initiative forms part of a broader European strategy to harness and expand the capabilities of the space industry in regional development, particularly in the context of climate resilience. The lab's main objective is to become a pioneer in developing resilient and sustainable technologies for climate adaptation, serving as a hub for economic development by providing opportunities for economic operators to develop innovative technologies and market solutions.

Proposed projects under the Phi-Lab NET Spain are expected to disrupt the market by fostering the development of new spacetechnology applications for climate solutions, ultimately benefiting the local, national, and European ecosystems.

## Who can apply?

The research project proposal must be submitted by (a team part of ) a legal entity or a consortium of legal entities.

The proposed application shall be disruptive, of potential high socio-economic impact; it shall be based on solid research-driven evidence of its feasibility. There shall be evidence of market traction for the applications that the technology (to be matured by the research project) enable.

The idea shall have a valid space connection. This is:

- The exploitation of space technology, use of knowledge from the space domain, or utilisation of space systems and space-based services in non-space domains (spin-off),
- Or the provision of products or services for the space sector, addressing any part of the space value chain (from components to entirely new space systems or related facilities and services) and any related activity (from concept definition to operation), possibly using non-space technology (spin-in).

Some further criteria apply:

- the project shall be relevant for the specific focus of competence of the Phi-Lab Net and the specific topics as defined in the previous Section;
- the project shall be focused on maturing (a) technology(ies) towards the performance levels required by the target application(s).
- the applicants must fulfil all the requirements below:
  - To be part of a legal entity established in an ESA Member State, and can demonstrate that the research activity can deliver a benefit to the Phi-Lab, which is of particular importance for applicants that are part of a legal entity established in an ESA Member State different from the one of the Phi-Lab. In case of a proposal from an entity outside Spain, the proposed project must have benefit to the phi-lab in Spain or Spain itself.
  - To observe the remaining requirements stated in this document;
  - The Applicants are fully compliant with their tax and social security obligations.
  - 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.
  - To declare that the work proposed under the submitted ESA Phi-Lab project is not being funded through other means (e.g. ESA R&D activities, ESA Business Incubation, ESA Business Applications, European Commission etc).

## 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.

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 NET Spain Manager for guidance.
- Make sure the Cover Letter and the Requirement Checklists are signed by the legal representative of the Legal Entity.
- Support in ESA Phi-Lab NET Spain may be requested for a maximum of 24 months.

Please submit the application documents in electronic form (pdf, one for each required document including the identification document of the applicant) using the form within the Phi-Lab NET Spain website.

ESA Phi-Lab NET Spain will verify the identity of applicants. You are requested to send digital copies of a passport (or similar) of the legal representative. in a separate file together with your application.

Any questions related to submission of proposals should be sent to the same e-mail address: [opencall-esaphilabnet-spain@ieec.cat](mailto:opencall-esaphilabnet-spain@ieec.cat)

## Budget and additional benefits

The total available budget for the implementation of the Call is 4.4 Millions Euro assigned to research projects at different cut-off dates to occur until the 30<sup>th</sup> September 2028 Depending of the size of the project and its projection, the Phi-Lab NET Spain will typically seed the projects at 3 different levels: €200.000, €300.000 or €400.000 per project. Other project sizes are also possible under justified circumstances.

This amount shall represent a percentage 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 the total allowable cost of 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 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.
- 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.

In addition to the budget made available for the research activity, the Phi-Lab NET Spain will contribute with the following elements in the conditions that can be found in the Draft Research Contract :

- Research mentoring and technical advisory in the conditions and terms that can be found in the Draft Research Contract
- Business and IP coaching / advisory in the conditions and terms that can be found in the Draft Research Contract
- Access to technical facilities at favourable conditions, as per Annex 1 to this Invitation to Apply.
- Access to background IP, to be discussed on a case-by-case basis.

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

## 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 NET Spain and follows common ESA Phi-Lab NET procedures.

Once a published submission deadline has passed, ESA Phi-Lab NET Spain 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 NET Spain 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 NET Spain, ESA, AEE (National Delegation), Key partner(s)] 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.

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

Criteria and weighting factor	Sub criteria
<b>Background and Experience (25%)</b>	<ul style="list-style-type: none"> <li>a) Experience Team composition</li> <li>b) Partnerships and Support Entities</li> <li>c) Vision</li> </ul>
<b>Research and Technology developments (30%)</b>	<ul style="list-style-type: none"> <li>a) Relevance for the Call</li> <li>b) Suitability of technology for targeted application</li> <li>c) Understanding of and leveraging on the State of the Art (SoA), novelty of the proposed research</li> <li>d) Maturity and feasibility for target application and feasibility</li> <li>e) Relevance of the proposed R&amp;D approach</li> </ul>
<b>Commercial Opportunities and Potential Socio Economic Impact (25%)</b>	<ul style="list-style-type: none"> <li>a) Potential Market Segment</li> <li>b) Potential Product/Service</li> <li>c) Potential Customers/Users</li> <li>d) Value Proposition</li> <li>e) Potential Socio Economic Impact (including sustainability)</li> <li>f) IPR strategy</li> </ul>
<b>Activity and Management proposal (20%)</b>	<ul style="list-style-type: none"> <li>a) Relevance of the work to achieve objectives</li> <li>b) Milestones/Cost-planning / Work break down.</li> <li>c) Involvement of customers</li> <li>d) Management of the research project</li> <li>e) Fit with the philab</li> </ul>

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.

ESA Phi-Lab NET Spain will enter into contract negotiations with successful applicants, taking the comments of the evaluation board into account. ESA Phi-Lab NET Spain 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, ESA Phi-Lab NET Spain has the right not to place a contract in case the (intended) legal entity presented in the application is different from the actual established and registered legal entity.

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 NET Spain 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 NET Spain, ESA and/or any third party.
- This Open Call does not impose any obligation upon ESA Phi-Lab NET Spain to enter into negotiations with any applicant.

## Annex 1: Detail on Resources

Name	Description	Partner	Location
<b>ICCUB Technology Unit</b>	The technology unit provides access to electronics and instrumentation, as well as software and data engineering. More information <a href="#">here</a> .	IEEC	Barcelona
<b>UPC NanoSat Lab</b>	The UPC NanoSat Lab is a laboratory working mainly on the design and development of nanosatellite missions and payloads. More information <a href="#">here</a> .	IEEC	Barcelona
<b>MNT Clean Room</b>	The micro and nanotechnologies laboratory is a class 1000 clean room for the fabrication of micro and nanoelectronic devices (class 100 in some critical areas). More information <a href="#">here</a> .	IEEC	Barcelona
<b>Space Instrumentation Laboratory</b>	This laboratory develops GNSS reflectometry receivers, thermal diagnostic instrumentation for the LISA mission, and flight computers for nanosatellites. More information <a href="#">here</a> .	IEEC	Campus UAB
<b>Integration Laboratory</b>	The integration laboratory is the place where instrumentation modules developed by members of the Institute or third parties are coupled, and their behaviour is characterised and validated. More information <a href="#">here</a> .	IEEC	Campus UAB
<b>Optics Laboratory</b>	The optics laboratory has the required instrumentation to characterise CCD sensors and determine spectral responses between 300nm - 1100 nm. More information <a href="#">here</a> .	IEEC	Campus UAB
<b>Radiation Laboratory</b>	The facility allows experiments in high-energy physics as well as other research areas that can take advantage of the available instrumentation. More information <a href="#">here</a> .	IEEC	Campus UAB
<b>6G-GEN</b>	Experimental lab infrastructure for the research and validation of 6G technologies.	i2CAT	Barcelona
<b>6G StarLab</b>	In orbit infrastructure for the development and research of advanced 5G and 6G technologies in the frame of non-terrestrial networks.	i2CAT	Barcelona
<b>MELiSSA Pilot Plant</b>	Facility focused on developing a regenerative life support system for long-duration human missions in Space. More information <a href="#">here</a> .	MELiSSA	Campus UAB
<b>CATNET GNSS Positioning Network</b>	CATNET GNSS positioning network More information <a href="#">here</a> .	ICGC	Barcelona
<b>Network of Physical Parameters</b>	Network of physical parameters of the soil More information <a href="#">here</a> .	ICGC	Barcelona
<b>SAR Corner-Reflector Network</b>	SAR corner-reflector network.	ICGC	Barcelona
<b>ICGC Airborne Sensors</b>	Photogrammetric cameras, hyperspectral sensors and LIDAR on ICGC aircrafts More information <a href="#">here</a> .	ICGC	Barcelona
<b>VNIR Sphere</b>	Laboratory with VNIR sphere integrated for the radiometric/spectral assesment of VNIR sensors.	ICGC	Barcelona



Name	Description	Partner	Location
<b>Geospatial Data Platform</b>	Data access is facilitated from the ICGC's geospatial data platform, which has a processing pipeline called Fast-Track. Fast-Track provides data with L1 and L2 processing level. Raw data access, which is of relevant value for developers of pipelines specialized in improving information extraction, is also provided.	ICGC	Virtual (hosting in Barcelona)
<b>Image Signal Processing (ISP) at Universitat de València (VEG) - Computational Resources</b>	At the heart of ISP's infrastructure is its aAdvanced computational facilities, which are critical for processing and analysing large datasets typically used in imaging and signal processing applications. The group maintains a robust computational cluster that includes interconnected servers equipped with high-performance CPUs and GPUs. This setup is crucial for undertaking complex computations, simulations, and data analysis tasks required in modern remote sensing and environmental science research. More information <a href="#">here</a> .	ISP@UVEG	València
<b>Image Signal Processing (ISP) at Universitat de València (VEG) - Experimental and Laboratory Facilities</b>	ISP operates within the Scientific Park of the University of Valencia, which houses state-of-the-art laboratories equipped with the latest technology in imaging systems. These laboratories are essential for the development and testing of new imaging methodologies that apply to both airborne and satellite missions. The facilities also include specialized equipment for ground and lab experimentation, such as spectro-radiometers and unique multispectral image acquisition systems, which were developed as part of various EU-funded projects. More information <a href="#">here</a> .	ISP@UVEG	València
<b>Image Signal Processing (ISP) at Universitat de València (VEG) - Collaborative Spaces</b>	To promote collaboration and innovation, ISP offers dedicated spaces within its premises where researchers, students, and visiting professionals can work together on projects. These spaces are designed to encourage interaction and knowledge exchange, which are vital for fostering creative solutions and advancing research. More information <a href="#">here</a> .	ISP@UVEG	València

Name	Description	Partner	Location
<b>Image Signal Processing (ISP) at Universitat de València (VEG) - Access to Satellite Data and Software Tools</b>	ISP has established strong partnerships with major space agencies, including the European Space Agency (ESA) and the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT). Through these partnerships, the group has secured access to a vast array of satellite data, which is instrumental in conducting research in geoscience, environmental monitoring, and climate studies. Additionally, the group provides access to proprietary and open-source software tools that are essential for data processing and analysis. More information <a href="#">here</a> .	ISP@UVEG	València
<b>Image Signal Processing (ISP) at Universitat de València (VEG) - Training and Development Facilities</b>	The group is committed to the training and development of its members and partners. It regularly hosts workshops, seminars, and training programs that cover various aspects of remote sensing, machine learning, and data analysis. These educational activities are supported by the infrastructure to facilitate hands-on training and practical demonstrations, which are key to understanding complex scientific concepts and technologies. More information <a href="#">here</a> .	ISP@UVEG	València
<b>Image Signal Processing (ISP) at Universitat de València (VEG) - Support for Remote Collaboration</b>	Recognizing the importance of remote collaboration, especially in a post-pandemic world, ISP has invested in virtual collaboration tools and platforms that allow researchers and collaborators to work together seamlessly from different locations. This aspect of the infrastructure is particularly important for international collaborations and projects that involve multiple institutions. More information <a href="#">here</a> .	ISP@UVEG	València
<b>Image Signal Processing (ISP) at Universitat de València (VEG) - Contribution to the Scientific Community</b>	ISP's infrastructure not only supports its own research activities but also contributes to the broader scientific community. The group makes its research outputs and tools available to other researchers and practitioners, facilitating further research and development in the fields of imaging and signal processing More information <a href="#">here</a> .	ISP@UVEG	València
<b>NM3 Platform</b>	The platform includes three specialized facilities for micro- and nano-fabrication (NFL) equipment located in dedicated clean room spaces, nano-characterization equipment (NCL), and microscopy equipment and super-resolution optical imaging (SLN), as well as general R&D facilities such as the Chemistry (BCL), Biology (BBL), Post-Processing (PPL) laboratories and advanced mechanical and electronic engineering services (AEL). More information <a href="#">here</a> .	ICFO	Castelldefels

Name	Description	Partner	Location
<b>BSC facilities</b>	Access to MareNostrum5 and other BSC research infrastructures is articulated through the competitive calls of the Spanish Supercomputing Network (RES) and EuroHPC JU, dedicated to open research projects. Private sector is generally allowed under the same terms and conditions, that is to perform open R&D activities. In the near future, EuroHPC JU will update their access policy and engage in an industry track with detailed conditions, specifically designed for the private sector. As part of the EuroHPC JU network, MareNostrum5 will adhere to this industry track as well. The BSC will offer Phi-lab users guidance to obtain computing time through RES or EuroHPC initiatives. More information <a href="#">here</a> .	BSC	Barcelona
<b>Menut and GENE0-02 LEO Missions</b>	The Menut (NORAD ID 55010, International Designator 2023-001B) will be operational until 2027, extendable until 2029. The construction and operations of the mission are managed by the company OpenCosmos Europe under a service contract with the IEEC. The mission provides VNIR data at 5 m resolution with a swath of 17 km and an operations model focused on the region of Catalonia. In 2024, IEEC signed a contract with OpenCosmos Europe for the fourth mission, aimed at EO, GENE0-02. This mission consists of a main satellite manufactured in Spain, to start operations in 2026 and provide multispectral VNIR data at 2.5 m resolution, SWIR data at 11 m resolution and a swath of 19 km. The main mission is complemented by two additional missions that will provide similar data. The three missions will provide for 4 years (extendable for 2 more years) a revisiting time with a frequency of less than 20h and a territorial coverage of 32,108 km <sup>2</sup> each month, corresponding to the region of Catalonia for baseline observations, and an emergency data acquisition service extending to a distance of 100 km from the region. The services also include a second IoT/5G communications payload to provide simultaneous data to help improve the extraction of information from the imagery.	IEEC	LEO SSO (530km of orbital altitude aprox.)
<b>Montsec Ground Station</b>	The IEEC has promoted the construction of an S/X-band station with a grant of 450 k€ in 2024 that will be operational in 2025. The station has a direct benefit for EO LEO missions that require a higher volume of data download than IoT communications. The grant agreement includes priority access to the station for research activities and reduced rates for 180 min/day use of the ground station for S-band telemetry.	IEEC	Sant Esteve de la Sarga

Name	Description	Partner	Location
<b>Small satellites space centre</b>	<p>Facilities in Puertollano, contributing co-funding to its cost.</p> <p>These facilities, that represent a complete space centre for small satellites, include a clean room, functional test facilities, satellite control centre and a space ground station, that, together with the support of our space systems design and engineering team located at the site, will certainly be a valuable asset for entities participating in the initiative.</p>	Deimos Space S.L.U	Puertollano