

THE LIVING PLANET FELLOWSHIP



#EO4SOCIETY

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1 INTRODUCTION

This document describes the main elements of the ESA Living Planet Fellowship (LPF) Call for Proposals 2025.

The LPF aims at supporting the new generation of scientists in ESA Member States to undertake cutting-edge research in Earth Observation and Earth System and Climate Science that may maximise the scientific impact of ESA missions and European EO capacity and respond to the main challenges of the new **ESA Earth Observation science strategy**: [Earth Science in Action for Tomorrow's World](#).

The unique set of grand challenges that humankind is facing requires more than ever that scientists advance their understanding of the planet, its processes and its interactions with human activities and translate that knowledge into novel solutions for society. This will require a quantum leap in our capacity to observe, understand and predict complex and inter-connected natural and anthropogenic processes occurring at different spatial and temporal scales.

Today Europe relies on the most comprehensive and sophisticated space-based observation infrastructure in the world, including an extraordinary and complementary suite of sensors on board of the Copernicus Sentinels series, the ESA's Earth Explorers and SCOUTs, the novel meteorological satellites and different EO observation satellites operated and planned by national space agencies and private operators in Europe.

The unprecedented potential of this exceptional system of systems is far from being reached and the huge synergistic opportunities offered by the combination of the wide range of different observations available is still unexplored. This capacity needs to be unlocked by fundamental science and shall be further amplified by new digital technologies such as big data and artificial intelligence which are leading to major transformations in Earth observation and opening up a wealth of opportunities for Earth Science.

With this call ESA plans to support a new set of research post-doctoral positions to be funded by ESA with a maximum overall contribution of 200KEuro. This call includes also optional opportunities: e.g.,

- Support for dedicated ground-based experiments and in-situ data collection
- A visiting scientist scheme to join the ESA Earth System Science Hub and/or other labs in ESA Member States.
- Access to cloud computing resources and digital platform services

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2 OBJECTIVES

The main objective of the Living Planet Fellowship is:

"to support young scientists, at post-doctoral level, to undertake cutting-edge research in Earth Observation, Earth system science and climate research, maximising the scientific return of ESA and other European EO missions and datasets through the development of novel EO methods, techniques and products, and by delivering excellent scientific results addressing the key science questions of the new [ESA EO science strategy](#)".

The Living Planet Fellowship aims to achieve this objective by:

- Enabling leading edge original research to be undertaken by the new generation of scientists with focus on major scientific challenges and knowledge gaps in EO, Earth system and climate science that may contribute to respond to the urgent societal needs underpinning the European and global environmental and development agendas.
- Maximising the scientific impact of the unique and unexplored opportunities offered by the increasing European space-based observing capacity (Sentinels, Earth Explorers, meteorological missions, national and commercial missions) complemented with 3rd party mission data, existing long-term EO-based data records (e.g., ESA heritage mission data, CCI ECVs), in-situ data and citizen observations.
- Promoting an open science approach where sharing data, results and knowledge is at the core of the scientific value chain.
- Capitalising on novel and emerging technologies, incorporating platform technologies, advances in ICT, data intensive science and Artificial Intelligence as amplifier and accelerator of science.

3 IMPLEMENTATION

The initiative will be implemented through a number of dedicated research projects proposed and carried out by young scientists, at post-doctoral level, hosted by universities, laboratories and technical centres in ESA Member States.

Candidate Eligibility:

- Candidates must have received a Ph.D. research degree and have completed less than 8 years research experience after the award of the PhD (i.e. including any research career breaks).
- Candidates must have a nationality from an ESA Member and Associated State participating to the FutureEO-1 Segment 2 Programme (see [FAQ](#) for Host Organisation country eligibility).
- Only one Candidate will be selected for any single organisation (understood as a faculty or institute inside large research institutions or universities) to maximise the geographical distribution and avoid a concentration of candidates in the same centre.
- Selected candidates will be the Principal Investigators of the research project, while a representative of the Host Organisation (e.g. a full professor, faculty member or a member of the scientific staff of the Host Organisation) shall serve as the principal ESA contact for administrative and contractual matters.

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Host Organisation:

- The initiative will be implemented through 2-year contracts placed with selected Host Organisations (e.g., university, technical centre, laboratory, company) from ESA Member and Associated State participating to FutureEO-1 Segment 2 Programme (Please see [FAQ](#) for Host Organisation eligibility criteria).
- For selected project proposals, ESA will place a contract with the Host Organisation for a maximum of 200KEuro per 2 years, as a contribution to a standard post-doctoral position.
- The Host Organisation shall provide a post-doctoral contract to the selected candidate to undertake the research activity proposed for the 2-year period of the project.
- The Host Organisation shall price the project in line with the full costs of a standard full-time post-doctoral contract (Full-Time Equivalent cost) in their respective countries and institutions.
- **Co-funding is not required.** However, if the cost of the post-doctoral contract is higher than 200KEuro, the Host Institution may cover the difference (using their own funding or funding provided by 3rd parties) as a "contribution" to the activity or may align the number of hours to the budget available.

Programmatic Areas:

Candidates shall propose a 2-year research plan contributing to at least one of the following areas:

- Advancing Novel EO Methods and Techniques: Targeted research projects aimed at developing innovative methods, novel algorithms and new EO products and datasets expanding the scientific use of European EO capabilities: e.g., new or coming Sentinel missions, Earth Explorers, ESA long-term data archives, into new scientific areas and application domains. Activities shall establish a solid basis to expand the missions' product portfolio and stimulate novel science results and innovative applications. Priority will be given to develop and validate novel algorithms, data processing techniques, advanced methodologies and new EO-based products that may maximise the impact of novel capabilities offered by new missions and technologies in space (e.g., new ESA's Earth Explorers).
- Advancing Earth System and Climate Science: Cutting-edge scientific activities aimed at maximizing the scientific impact of ESA and European missions in terms of new discoveries and advances in Earth system science addressing the challenges of the ESA EO Science Strategy. Projects shall contribute to answer major open questions in Earth system and climate science, addressing global scientific challenges and community priorities posed by international Earth System Science communities and international science groups (e.g., WCRP, Future Earth, and their projects e.g. SOLAS, GCP, etc...) and respond to the new challenges of the ESA Science Strategy.
- Advancing Data-driven Earth System Simulations and Predictability Science: Scientific activities aiming at advancing the state-of-the-art in data-driven Earth system simulations and predictability science bringing together EO data, advanced models and AI and ML techniques (e.g., foundation models) to deliver a quantum leap in our capacity to simulate and predict the dynamic evolution of the Earth system with special focus on exploring the potential of AI and hybrid approaches to overcome current limitations of existing approaches to simulate the different components of the Earth system with especial focus on extremes events.
- Activities in Support of the Sentinel User Preparation Programme: scientific research aimed at preparing European entities to exploit the opportunities offered by the future Copernicus Sentinel Expansion and Next Generation missions. Projects shall contribute to establishing a solid scientific basis for novel methods, algorithms and products beyond core mission objectives with a special focus on exploring the scientific opportunities offered by the huge synergistic potential across missions in all domains of Earth system science. Activities are expected to be based on "proxy" data (similar sensors and data types that could be used to simulate the coming Sentinel missions), in-situ and airborne campaigns or even simulated data.

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Data and data access:

- Priority will be given to activities that maximise the scientific return of ESA and European EO data including Sentinel, Earth Explorers and Meteo mission data, national missions, the long-term ESA archive and existing EO- based long-term datasets (e.g., ESA project results, CCI data).
- Selected candidates will be responsible for accessing the required ESA and non-ESA data.
- In case of need for Third Party Missions products and other ESA products requiring an ESA approval, product quotas will be decided following standard ESA procedures.
 - <https://earth.esa.int/eogateway/missions/third-party-missions>
 - [ESA Third Party Missions List](#)
 - <https://exploringearth.eo.esa.int/>
- Candidates shall detail in their proposals the complete list of ESA data (including ESA 3rd party missions) that will be required to carry out the project.
- The Candidate or the Host Organisation shall demonstrate in the proposal the availability of all the required data sets to accomplish the proposed work including non-ESA data and/or in-situ data sets.

Scientific communication, outreach, publication costs and conference fees

The candidate shall maximise the impact of the project results through a scientific communication plan. This shall include the promotion and communication of the results through dedicated publications in peer reviewed journals and presentations in international conferences and workshops.

The candidate shall also ensure he/she is acknowledged as an ESA Living Planet Fellow in public presentations and promote the ESA Living Planet Fellowship through appropriate acknowledgement in any journal paper and conference proceedings containing results obtained in this framework.

Additionally, the candidate shall have a dedicated space on the Living Planet Fellowship website (hosted and maintained by ESA) and shall be responsible for providing all the necessary relevant content updates (publications, project results, any other news relevant to the project) throughout the duration of the project.

Candidates shall provide in their proposal both a preliminary list of expected publications and a plan related to conferences and workshops participation to promote the project and its results.

Travel, conference costs and publication costs can be requested to ESA, up to 10KEuro, as part of the post-doctoral project costs and within the overall 200KEuro limit.

The project results in terms of final reports, scientific results, algorithm, geo-information products, etc., shall be publicly available through the relevant ESA web sites.

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Managing and reporting:

- The Candidate shall participate (mandatory) to the following review meetings (to be included in the work and travel plan):
 - Kick-off Meeting to be organised by teleconference at T0 (start date);
 - Mid-Term Review (potentially in a workshop format) at the end of the first year of activity (T0+12);
 - Final Review (potentially in a workshop format) at the end of the activity (T0+24).

In principle the workshops above will be organised in an ESA establishment (normally in ESRIN). Specific details on the venue will be communicated in due time to the selected candidates.

- The following reports shall be submitted through a dedicated ESA online tool (link and access credentials will be provided to the Candidate after the Kick-off meeting):
 - Bi-monthly Progress Report: short management document describing the main progress and status of the project, problem areas and proposed solutions.
 - Mid-term report: Scientific report (due at K0+12 months) describing in detail the work carried out and scientific results obtained during the first year of activity.
 - Final report: Scientific report to be publicly available describing in detail the overall activity, methods developed, and final scientific results obtained throughout the project. This should include a list of publications produced.

4 SUBMISSION AND SELECTION PROCESS

Please see cover letter for detailed information on the Submission,
Deadlines and Selection Process

5 ADDITIONAL OPTIONS

In order to support the proposed activity and further contribute to the scientific formation of the candidate, ESA offers the following additional options to be considered on a case-by-case basis. These options can be submitted to ESA at the time of the Scientific Proposal or at any time during the project execution.

The scientific success of the project shall not depend on the approval or not of these options and proposal evaluations will not take these options into consideration. However, the candidate is required to provide in their proposal a preliminary indication of their preference for any of the options below.

ESA reserves the right to consider or not these options depending on ESA priorities and funding available. If approved by ESA, they will be implemented as a Change Contract Notice (CCN) to the main contract.

Option 1 – Visiting Scientist at ESA Earth System Science Hub in ESRIIN:

During the execution of the project, candidates are strongly encouraged to join the ESA EO science team and work at the ESA Earth System Science Hub in ESRIIN, Frascati (Rome) as Visiting Scientists.

Candidates are encouraged to submit a proposal to ESA to implement an additional work package as part of a scientific visit of 3 to 12 months to be undertaken in a single period or different shorter periods to be agreed with ESA.

The Science-Hub (sciencehub.esa.int) is an advanced Earth System Science facility in ESA working as a core centre and laboratory for networking and scientific collaboration among world class researchers in MSs and worldwide. The proposed facility will bring together young and senior scientists of different disciplines in Earth Observation and Earth system science to work together and undertake collaborative research addressing main science challenges of our decade.

At the Hub, candidates will have an opportunity to join the ESA EO science team and interact with and connect to a large network of ESA experts distributed across all ESA establishments and involved in major ESA and international scientific programs and projects.

The ESA contribution to cover the cost of the Visting Scientist visit shall not exceed 2,000 Euros per month for a maximum overall cost of 24,000 Euro. Please, note that the overall costs of both Option 1 and 2 together shall not exceed 24,000 Euro.

Option 2 – Research Visits:

In order to support networking and collaborative research, candidates in agreement with their host institutions can submit at any time proposals to undertake research periods up to 12 months as visiting scientists at research institutions in a different country from the Host Organisation (Preferably in an ESA Member State). During this period, selected candidates shall complete part of the proposed work in collaboration with relevant researchers of the visited organisations.

Candidates are encouraged to submit proposals for scientific visits for a duration up to 12 months to be undertaken in a single period or different shorter periods to be agreed with ESA and the host and visiting institutes.

The ESA contribution to cover the cost of the visits cannot exceed 2,000 Euros per month for a maximum overall cost of 24,000 Euro. Please, note that the overall costs of both Option 1 and 2 together shall not exceed 24,000 Euro.

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Option 3 - Contribution to in-situ data collection and ground experiments

During the execution of the project, selected candidates can submit at any time proposals to ESA to undertake dedicated in-situ campaigns and ground-based experiments to complement the project and enhance the proposed research.

This may include dedicated field experiments, collection of in-situ data or contributions to 3rd party campaign activities: e.g., by adding an additional experiment to a larger existing campaign.

The Candidate or Host Organisation shall detail in the proposal the experiment proposed as well as the resources required to achieve the scientific objectives of the experiment.

If approved by ESA, an additional maximum amount of 15,000 Euros will be provided to cover the costs associated to Option 3 in the form of a change to the ESA contract and related payment plan.

Option 4 - Access to cloud computing resources and digital platform services

During the execution of the project, selected candidates may submit at any time proposals to ESA to access cloud computing resources offered through the ESA Network of Resources (NoR) (<https://nor-discover.org/>).

The Candidate or Host Organisation shall detail in the proposal the processing resources required to achieve the scientific objectives of the study proposed and the associated cost.

If approved by ESA, an additional maximum amount of 10,000 Euros will be provided to cover the costs associated to Option 4 in the form of a change to the ESA contract and related payment plan.

The maximum contribution from ESA for Option 4 shall not exceed 10,000 Euros.

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Any additional questions relating to this Call shall be submitted to EOScience@esa.int not later than two (2) weeks before the Closing Date.

Please refer also to the [Frequently Asked Questions](#)