



**CALL FOR PROPOSALS FOR**

**ADVANCED COMPUTING PROJECTS:**

**ARTIFICIAL INTELLIGENCE IN THE *CLOUD***

**IN THE PREFERRED AREAS OF NATURAL LANGUAGE PROCESSING AND ETHICS IN ARTIFICIAL INTELLIGENCE**

Ref.: FCT/CPCA-IAC/2022/01

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Under the terms of the Regulations for Advanced Computing Projects (Regulation no. 10/2022), published in the 2nd series of the Diário da República on 6th January 2022, the allocation of computing resources through the National Network for Advanced Computing is carried out following a call whose terms are published on the website of the Foundation for Science and Technology, I. P. (FCT).

This Call for Applications, hereafter referred to as AAC, has been prepared under the terms of article 12 of the Regulations for Advanced Computing Projects.

## 1. Objectives and priorities

The consolidation and strengthening of the National Scientific and Technological System (SCTN) are priorities of science and technology policy. These priorities aim to contribute to the national and international competitiveness of science and technology, promote innovation and knowledge transfer, as well as contribute to the achievement of global aspirations set out in the United Nations Sustainable Development Goals (SDGs). In this context, FCT seeks to promote the strengthening of skills of scientific and technological institutions through their participation in advanced computing projects.

The FCT has the task of managing advanced computational means available online and promoting their accessibility to the different entities of the Educational System and the National Scientific and Technological System, regardless of their public or private nature.

As part of its growing effort to support research excellence in Portuguese academia, Google has made available to FCT credits on the *Google Cloud Platform* (GCP) worth 1M USD (one million US dollars) [<sup>1</sup>].

FCT manages the [National Network for Advanced Computing](#) (RNCA), seeking to aggregate national advanced computing resources, promoting cooperation between the various centres involved and developing national and international partnerships with other entities.

The RNCA was integrated into the National Roadmap of Research Infrastructures of Strategic Interest by Order No. 4157/2019, of the Minister of Science, Technology and Higher Education.

Thus, FCT opens this Call for Advanced Computing Projects, to support research and development projects in the preferred areas of "*Natural Language Understanding*" and "*Ethics in artificial intelligence*" and other scientific areas.

Keywords: RNCA, CPCA, Advanced computing, High performance computing, AI - *Artificial Intelligence*.

## 2. Nature of beneficiaries

The universe of candidates for the allocation of computer resources is defined in Article 3 of the Regulations for Advanced Computing Projects. Applicants may apply individually or in co-promotion.

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<sup>1</sup> [https://www.fct.pt/noticias/index.phtml.en?id=687&ano=2021&mes=7/FCT\\_and\\_Google\\_cooperate\\_to\\_support\\_Portuguese\\_research\\_in\\_AI](https://www.fct.pt/noticias/index.phtml.en?id=687&ano=2021&mes=7/FCT_and_Google_cooperate_to_support_Portuguese_research_in_AI)

## 3. Types of computer resources and areas to be supported

### 3.1. Computational model

The computing resources available are *Cloud Computing*.

### 3.2. Types of access

The present call includes the following access typologies, applicable to each application:

- **Fixed Access** – GCP credits of **USD 25.000**, with a maximum duration of 365 days.
- **Variable Access** - GCP credits up to **USD 150.000**, with a maximum duration of 365 days.

It is the applicant's sole responsibility to select the type of access to which he applies in the application form, considering the characteristics of each type. In the case of variable access, the applicant must associate to the GPC account a form of payment of its own responsibility, even if the use of GPC will not generate requests for payments in the context of this call. If the use of the GPC generates requests for payments within the context of this call, then these will be the responsibility of the GPC account holder, and FCT shall not assume any responsibility in this regard.

#### 3.2.1. Fixed Access

The amount of GCP credits to be awarded per application is **USD 25,000**, intended to meet the objectives expressed in the application.

This type of access is characterized by:

- have a **maximum duration of 365 days**, not extendable, starting from the date of use of the credit voucher at GCP.
- accept applications in the modality of **Institutional Support or Individual Support**, in accordance with Article 4 of Regulation 10/2022.
- apply the **Instrumentless Account** mode on the Google platform, without associating a form of payment to that same account.

In the Google platform **Instrumentless Account** mode, no form of payment is associated with the Google account, such as, for example, a credit card number. This mode has the following limitations compared to the **Billing Ids & Safeguarding** type of access: 1) the account is automatically closed when the credits run out and it is not possible to recover data or applications that were hosted there after the closure; 2) it is not possible to increase the credits initially defined; 3) it is not possible to change the type of account to another type that is more flexible; 4) it does not have access to GPUs.

The quota of resources globally reserved in the call for this type of access is a minimum of 50% of the call's resources. Should the resources requested for this type of access not meet the quota, the remainder may be allocated to the Variable Access type.

### 3.2.2. Variable Access

The total maximum limit of GCP credits to be awarded per application is **USD 150,000**, intended exclusively to meet the objectives expressed in the application. This value shall be supported by the estimate obtained by the applicant through the *Google Cloud Pricing Calculator* tool. The parameterization of this tool must be carried out to meet the objectives expressed in the application.

This type of access is characterized by:

- have a **maximum duration of 365 days**, not extendable, starting from the date of use of the credit voucher at GPC.
- accept applications in the **Institutional Support** modality, in accordance with article 4 of Regulation 10/2022.
- apply the **Billing Ids & Safeguarding** account modality on the Google platform, with the association of the payment method being the candidate's responsibility.

In the **Billing Ids & Safeguarding** account mode on the Google platform the candidate associates a payment method to the Google account, such as a credit card number, even if the use of the GPC will not generate payment requests in the context of this competition. The form of payment must be made available by the applicant. FCT does not provide any form of payment to associate with accounts of this type. This type of account is considered the normal case of access to the GPC platform and does not have the limitations of the **Instrumentless Account** type, mentioned above.

This type of account allows you to configure a billing safeguard that consists of using the credits without charging the credit card used. In this case the payment method associated to the GPC account would only be used to activate the account. It is the responsibility of the IR to configure this type of safeguard, should he/she wish to do so. More information at: [https://cloud.google.com/billing/docs/how-to/notify#cap\\_disable\\_billing\\_to\\_stop\\_usage](https://cloud.google.com/billing/docs/how-to/notify#cap_disable_billing_to_stop_usage).

Even with this type of safeguard configured, the beneficiary should plan a careful use of the GCP account in order to be able, at the end of the project, to extract, free of charge, all data and other work products.

The quota of resources globally reserved in the call for this type of access is a minimum of 50% of the call's resources. Should the resources requested for this type of access not meet the quota, the remainder may be allocated to the Fixed Access type.

A reduction in the resources requested may be indicated at the application evaluation stage, notably because of insufficient justification for all the resources requested.

### 3.3. Areas to be supported for each type of access (fixed or variable)

The present call for proposals aims to support research and development projects using the GCP offer in artificial intelligence and data analysis algorithms, according to the following maximum quotas:

- A minimum of **80% of the resources** are reserved for the areas of *Natural Language Understanding* and *Ethical Artificial Intelligence*.

- A minimum of **20% of the resources** are reserved for the remaining scientific areas using the GCP offer in artificial intelligence and data analysis algorithms, or more if there are not enough applications to fill the quota mentioned in the previous point.

Should the resources requested in the aforementioned areas not exhaust the computational resources available in the call, the remaining part may be allocated to applications in any other areas.

The application must indicate the main scientific area where the computational project is inserted.

## 4. Form of support

The support to be granted under the present call exclusively takes the form of credit assignment for the use of PCM computer resources.

"GCP is a set of cloud computing services that run on the same infrastructure Google uses internally for end-user products like Google Search, Gmail, YouTube, etc. GCP provides a reliable place to compute and store data and helps developers build, test and deploy applications., in the areas of Artificial Intelligence & Data Analytics."

No funding or specialized services for the development or support of computer applications will be granted within the scope of this call.

## 5. Allocation of computational resources

The computational resources of this call are constituted by credits in the GCP with a total value of 1M USD. The resources will be distributed according to the quotas defined in section 3.

Detailed information about the computational offer can be found here: <https://rnca.fccn.pt/concurso-cpca-iac/>.

## 6. Eligibility criteria for projects and beneficiaries

The eligibility conditions for applications are those indicated in Article 6 of the Regulation for Advanced Computing Projects (Regulation No. 10/2022), and those indicated in the present AAC.

### 6.1. Advanced Computing Project

Applications are accepted in the areas of Natural Language Understanding, Ethical Artificial Intelligence, and other areas in the field of scientific research and innovation. Quotas of resources per area are reserved, as mentioned in item 3.3.

Each **application** must include the following information to be provided through an *online* form:

- the **amount in USD** resulting from the application of the *Google Cloud Pricing Calculator* tool parameterized with the computational requirements to satisfy the application objectives. The amount in USD must be relative to the total duration of the

project. In the respective field of the online form the applicant must indicate a *link* where the information is available, for example a link to file on Google-Drive, Dropbox, OneDrive or other similar *file sync and share* system. This link must be unique and must be accessible without *login* or password. If the link is not accessible during the processing of the application the corresponding information will not be considered in the processing. It is not possible to change the link after submitting it in the application form.

- title and brief description of the advanced computing project.
- a **work plan** and a **justification** for the resources requested.
- the main **scientific area of** the project.
- brief **description of the work team**.
- other elements indicated in the application form.

Regarding applications from **companies** as beneficiaries, advanced computing projects should:

- occur in the context of pre-competitive research and innovation, with no market value yet for the objects addressed in the application
- together do not exceed 50% of the total computational budget available for this call.

## 6.2. Responsible Investigator

The Responsible Investigator (RI) of the project:

- a) Should, at the moment of application, update and make available his **CienciaVitae**, associated to CiênciaID, to FCT.

A co-responsible person for the project must be identified, who will be the co-Responsible Investigator and will substitute the IR in his/her absences and impediments.

**Each IR may submit a maximum of ONE application per access typology, always subject to resource availability.**

## 6.3. Beneficiaries

Each beneficiary, which under the terms of Article 3 of the Regulations for Advanced Computing Projects can be a proposing institution or a proposing natural person, may present an unlimited number of applications in this call, without prejudice to the previous point, which limits each PI to presenting a maximum of ONE application per typology, always subject to the availability of resources.

# 7. Allocation of computer resources

As stated in article 9 of the Advanced Computing Projects Regulation, (Regulation no. 10/2022), access to resources will be using computer resources available at the PCM. Access to resources will be provided for a limited period, as indicated in this notice, namely in paragraphs 3.2.1 and 3.2.2.

For each application approved and eligible to be supported, credits will be allocated in the PCM in the account relating to the approved application.

## 8. Selection method

In accordance with Article 14 and 15 of the Advanced Computing Projects Regulation, (Regulation No. 10/2022), all applications received will be assessed against the following criteria, which are densified and detailed in the evaluation guide.

The **selection criteria** are as follows:

- **T1:** Technical suitability to the resources requested
- **T2:** Computational resources planning and reasonableness and Work Plan
- **T3:** Existence of a scientific or technological project associated to the advanced computing project application, with independent evaluation of scientific or technical merit, by a competent national or European entity.

The evaluation of proposals will be carried out by a panel of external experts according to the defined criteria and applying the following formula:

$$\text{Final score} = 50\% \times T1 + 40\% \times T2 + 10\% \times T3$$

The **scoring of the criteria** is based on a quantitative scale from 0 to 10, in increments of 0.1. The final scores may be rounded to 2 decimal places. A minimum threshold of 5 is applied for each criterion.

In case two or more proposals present the same value of "Final Score", because of the application of the evaluation criteria, the one presenting the highest score in criterion T1 will be considered the highest ranked, followed by T2. If two or more proposals still have the same "Final Score", the one with the oldest submission date and time will be selected.

The panel of experts may issue an opinion on the coherence of the scientific area indicated in the application and the content of the application, and may propose, with justification, the reclassification of the scientific area of the application.

The external expert panel generates an ordered list of applications per access typology, according to the defined criteria and weightings. The RNCA access committee (as defined in article 10 of the Internal Regulations, published in the DR under no. 1049/2020) integrates and distributes the computational resources according to the quotas described in 3.

## 9. Submission of applications

Applications of the Fixed Access type must be submitted, in English, from **30 March 2022 until May 18 2022**, on a separate form at:

<https://rnca.fccn.pt/candidaturas-iac-acesso-fixo/>

Applications of the Variable Access type must be submitted, in the English language, from **30 March 2022 until 18 May 2022**, on a separate form at:

<https://rnca.fccn.pt/candidaturas-iac-acesso-variavel/>

The applications are composed by the electronic form and its annexes indicated by the links filled in the form. The maximum number of applications per PI is defined in point 6.2 of this AAC.



## 10. Optimization of the use of computational resources

FCT may set new deadlines for submission of applications, by announcement on the FCT website, until all computing resources are allocated.

## 11. After approval of the applications

Each approved application will have an associated unique reference, which will be known to the PI. The formalization of the allocation of computer resources will be made by signing a term of acceptance under the terms of article 21 of the Regulations for Advanced Computing Projects.

Publications resulting from the use of the computer resources covered by this notice or other results should include in the support section a reference to the FCT I.P. to the identifier assigned to the project and to the computer platform used, in this case the GCP.

According to Article 24 of the Regulations, beneficiaries must 1) ensure open access to publications, namely by depositing them in one of the repositories of the RCAAP network; and 2) ensure open access to data, in compliance with the FCT Research Data Policy, namely by preparing and maintaining the research data management and sharing plan.

FCT I.P. may publish the application information referred to as public.

It is the responsibility of the PI and co-IR to manage the data arising from the technical project, including making any backup copies to a location other than the main computing platform.

The IR must agree to the terms of use of the GCP and the management of his/her *login* on that platform. FCT is not responsible for those terms, their execution, or the management of *logins* on GCP. More information at: <https://cloud.google.com/terms?hl=en>.

FCT does not assume financial or other liability if the user in the PCM exceeds the allocated quota of resources.

The user should carefully plan the use of the resources on the GPC platform leaving scope for resources in the context of the credits provided, for the timely extraction (download) of data and other products of their work.

In the case of variable accesses, the terms of this call for proposals do not require the closing of the recipient's PMG account after completion of the call for proposals, and the FCT shall not assume any responsibility for the management or maintenance of these PMG accounts. In the case of fixed accesses, the accounts in the PCM shall be closed automatically after the conclusion of the call for proposals, through consumption of credits the deadline.

## 12. Publication and further information

The present AAC and other relevant documents and information, namely the Advanced Computing Projects Regulation, are available at:

<https://www.fct.pt/apoios/Computacao/computacaoavancada/IAcloud/index.phtml.en>

Additional information and clarifications, namely on how to fill in the application form, may be requested through the email address: [rnca@fccn.pt](mailto:rnca@fccn.pt) indicating "FCT/CPA-IAC/2022/01" in the subject.

It is recommended to read the tender documents in advance, namely:

- [Regulation of Advanced Computing Projects;](#)
- [Information about the Google Cloud Platform;](#)
- [Application Guide;](#)
- [Evaluation Guide;](#)
- [CienciaVitae Manual;](#)

### 13. Acronyms and definitions

- "AAC" = Call for Proposals
- "IP" = Proponent Institution
- "PSP" = Proponent Singular Person
- "IR" = Responsible Investigator
- "GCP" = Google Cloud Platform
- "USD" = United States Dollar



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