

## EVALUATION GUIDE

### CALL FOR ADVANCED COMPUTING PROJECTS: ARTIFICIAL INTELLIGENCE IN THE *CLOUD*

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

#### Table of contents

1. Introduction.....	2
1.1 About FCT .....	2
1.2 About RNCA.....	2
2. Call for Advanced Computing Projects: Artificial Intelligence in the <i>Cloud</i> .....	3
2.1 Main Aspects of the Applications.....	3
2.2 Computational Models.....	3
2.3 Types of access.....	3
2.3.1 Fixed Access.....	3
2.3.2 Variable Access.....	4
2.4 Areas to be supported.....	4
2.5 Beneficiaries and Project Eligibility Criteria .....	5
2.6 Submissions.....	5
3. Evaluation Criteria.....	5
3.1 Explanation of main criteria .....	6
3.2 Scoring, Formula, and weights .....	7
4. Evaluation process and procedures .....	7
4.1 General Information.....	7
4.2 Constitution of the Panel of External Experts .....	8
4.2.1 Evaluation stages.....	8
4.3 Constitution of the Access Committee.....	8
4.3.1. Ranking of proposals and resources allocation by the AC .....	8
5. Confidentiality and conflicts of interest.....	9
5.1 Confidentiality.....	9

5.2 Conflicts of Interest (Col) .....	9
6. Glossary and translations .....	9
7. Appendix - Applications evaluation calendar.....	10

## 1. Introduction

### 1.1 About FCT

[Fundação para a Ciência e a Tecnologia, I.P. \(FCT\)](#), the Portuguese Foundation for Science and Technology, is the public agency responsible for implementing the Portuguese government's science and technology policy.

FCT funds all areas of knowledge, including exact, natural and health sciences, engineering, social sciences, and humanities.

FCT's mission is to promote the advancement of scientific and technological knowledge in Portugal, exploring opportunities to attain the highest international standards, in any scientific or technological domain, and to stimulate the diffusion of that knowledge and its contribution to improve education, health, environment, and quality of life and well-being of citizens.

FCT pursues its mission by funding fellowships, studentships and scientific employment, research projects, research centres and infrastructures, via competitive calls with international peer-review.

### 1.2 About RNCA

RNCA, the National Network for Advanced Computing ([Rede Nacional de Computação Avançada](#) - RNCA) offers services of advanced computing to research, innovation and public administration communities.

This network was created in 2018 by the Portuguese digital competence's initiative [INCoDe.2030](#). It was integrated in the RNIE - National Roadmap for Research Infrastructures of Strategic Interest, via Dispatch no. 4157/2019 of the minister of Science and Technology, as the Portuguese counterpart of the Iberian Network for Advanced Computing (RICA), in terms of the Agreement signed between Portugal and Spain in 2018, based on the creation of «MACC — Minho Advanced Computing Centre», in collaboration with FCT IP. FCCN, the scientific computation unit of FCT, acts as RNCA's promoter and general manager.

There have already been 2 advanced computing competitions, totalling around 225 projects awarded.

## 2. Call for Advanced Computing Projects: Artificial Intelligence in the *Cloud*

### 2.1 Main Aspects of the Applications

This call is intended to support SR&TD and innovation projects using the Google Cloud Platform offer in artificial intelligence and data analysis algorithms, carried out by a team, namely by the IR and co-IR. The institutions and individuals referred to in Article 3 of the Regulations for Advanced Computing Projects may apply for the allocation of computer resources, either individually or in co-promotion.

### 2.2 Computational Models

The following computing model is available: Cloud Computing.

### 2.3 Types of access

The present call includes the following access typologies:

- Fixed Access - credits up to USD 25,000 with a maximum duration of 365 days.
- Variable Access - credits on PCM up to USD 150,000, with a maximum duration of 365 days.

#### 2.3.1 Fixed Access

The value of credits in the GCP to be awarded per application is 25,000 USD, aimed at fulfilling the objectives expressed in the application.

This type of access is characterised by:

- having a maximum duration of 365 days, not extendable, starting from the date of use of the GCP credit voucher.
- accept applications in the modality of Institutional Support or Individual Support, under the terms of article 4 of Regulation nº 10/2022.
- apply the Instrumentless Account modality on the Google Cloud Platform, without associating a payment method to that same account.

The Instrumentless Account modality on the Google Cloud platform does not associate a form of payment to the Google account, such as, for example, a credit card number. This type of account has the following limitations in relation 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 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 resources reserved globally in the call for this type of access is a minimum of 50% of the contest's resources. If the resources requested for this type of access do not meet the aforementioned quota, the remainder may be allocated to the Variable Access typology.

### **2.3.2 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 must be supported by the estimate obtained by the applicant through the Google Cloud Pricing Calculator tool. The parameterisation of this tool must be carried out in order to meet the objectives expressed in the application.

This type of access is characterised by:

- having a maximum duration of 365 days, non-extendable, starting from the date of use of the GCP credit voucher.
- accept applications in the Institutional Support modality, under the terms of article 4 of Regulation no. 10/2022.
- apply for a Billing Ids & Safeguarding account on the Google platform, with association of a payment method under the applicant's responsibility.

In the Billing Ids & Safeguarding account modality 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 GCP platform and does not have the limitations of the Instrumentless Account type, mentioned above.

The resources reserved globally in the call for this type of access is at least 50% of the call resources. Should the resources requested for this type of access not meet the aforementioned quota, the remainder may be assigned to the Fixed Access typology.

During the evaluation of the application, a reduction of the resources requested may be indicated, namely due to insufficient justification for all the resources requested.

### **2.4 Areas to be supported**

The present call intends to support research and development projects that use 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 areas of Natural Language Processing (Natural Language Understanding) and Ethics in artificial intelligence (Ethical Artificial Intelligence);
- A minimum of 20% of the resources are reserved for the remaining scientific areas with use of 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 should indicate the main scientific area where the computational project is inserted.

## 2.5 Beneficiaries and Project Eligibility Criteria

Eligibility criteria, both for beneficiary entities and projects, follow the applicable Regulations, and will be subject to an administrative review to be carried out by FCT. Eligibility is thus not part of the evaluation process.

More on eligibility criteria can be found on Article 6 of Regulations on Advanced Computing Projects. All applications will be subject to an administrative validation prior to the evaluation process.

Each application must include the following information to be provided via online form:

- **the USD value resulting from the application of the Google Cloud Pricing Calculator** tool parameterised with the computational requirements to meet the application objectives. Information must be provided on the total duration of the project and not only on a reference period of the project. For example: if the project lasts 6 months, Google Cloud Pricing Calculator information must be provided from month 1 of the project to month 6. In the respective field in the online form the applicant must indicate a link where the information is available, such as a link to a file in 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 respective 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.

## 2.6 Submissions

Applications for the **Fixed Access** should be submitted, in the English language, from **30 March 2022 until 18 May 2022**, on a separate form at:

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

Applications for the **Variable Access** should be submitted, in English, from **30th March 2022 until 18th May 2022**, using the form at

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

The applications are composed by the electronic form and its annexes indicated by the links filled in the form. 3.

## 3. Evaluation Criteria

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

The selection criteria are as follows:

- **T1:** Technical suitability to the requested resources (50%)
- **T2:** Computational resources planning, reasonableness, and work plan (40%)
- **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 (10%)

### 3.1 Explanation of main criteria

#### *T1 - Technical suitability to resources requested*

##### **sub-criterion**

Is it clear the link between the project objectives and the cloud resources requested?	40%
Are the requested resources comprehensively described and justified?	30%
Do the requested resources completely solve the computational problem?	20%
Are the proposed methodologies consistent with the objectives?	10%

Intermediate values can be used for in between situations.

#### *T2 - Computational resources planning and reasonableness and Work Plan*

##### **sub-criterion**

Are tasks fully and comprehensively identified and described to meet the objectives proposed? Does it include the task of writing the final report to FCT?	40%
Are the necessary resources (human or other) and their competencies identified? Are they identified by person of the project team or by anonymous profile? (Who does what when)?	30%
Are the tasks linked to each other? (Identification of dependencies)	20%
The work plan has a specific task to extract work done to the outside of the technical platform before resource or time exhaustion? (In case the applicants intend to continue using the GCP account beyond google credits award, the maximum score should be given)	5%
Is the duration of the project consistent with the work plan?	5%

Intermediate values can be used for in between situations.

#### *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.*

##### **sub-criterion**

Are the scientific or technological objectives of the application clear and innovative?	50%
If a scientific or technological project, with independent evaluation of merit, by a competent national or European entity, is associated with the advanced computing application?	10%

Should be given to all applications, considering that every application has a scientific or innovation project associated given the general call notice rules. 40%

Intermediate values can be used for in between situations.

### 3.2 Scoring, Formula, and weights

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, with increments of 0.1. Final scores may be rounded to 2 decimal places. A minimum threshold of 5 for each criterion is applied.

In case two or more proposals present the same "Final Score", because of the application of the evaluation criteria, the one with the highest score in criterion T1 will be considered higher, 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 about the consistency 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 panel of experts generates an ordered list of applications per type of access, 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 computing resources according to the quotas described in 3.

## 4. Evaluation process and procedures

### 4.1 General Information

- All applications will be analysed according to criteria mentioned above in 3.1.
- FCT is responsible for verifying the eligibility requirements of each project according to factual and legally binding criteria.
- A ranked list and an evaluation report will be produced, comprising all applications eligible.
- Whenever a particular expertise is not covered by the access committee members, they may ask advice to external counselling.
- The reviewer must declare any Conflict of Interest identified for any application.
- The access committee will issue a final report on its activities containing the following elements:
  - The score and comments for each of the evaluation criteria
  - A recommendation section for adjusting computational capacity.
- The access committee members are asked to give support to FCT during the period spanning the evaluation meeting and the final decision (i.e., analysis of potential appeals of technical nature presented by the applicants).

- There is an allocated FCT team for the evaluation process.

## 4.2 Constitution of the Panel of External Experts

The technical merit of the applications (criteria T1, T2 and T3) will be evaluated by an external review panel coordinated by an element designated by FCT, I.P.

Reviewers will receive guidelines on how to access the applications, sign the Terms of Responsibility, declare any conflicts of interest (see point 5.2 below) and evaluate each application.

### 4.2.1 Evaluation stages

To access technical merit there will be 3 stages: Individual, Pre-consensus and Panel meeting.

- **Individual stage:** Before accessing each application, the reviewer must declare whether a Col is identified for that application. Each reviewer carefully analyses and grades each of their allocated applications. Each application will be reviewed by 2 different evaluators from the same panel. One is appointed as first reader of each application. The allocation of the applications to Panel Members necessarily takes into consideration any declared Conflict of Interest (Col), as well as the matching of professional and scientific expertise within the topic of the application.
- **Pre-consensus:** In preparation for the panel meeting, 1<sup>st</sup> readers will join both individual evaluations for each application. If the 1<sup>st</sup> reader is unable to reach a pre-consensus report based on the two individual reviews, the Panel Coordinator should settle the differences.
- **Panel meeting:** All evaluations from the same panel will meet (remotely) and a panel ranked list will be produced according to pre-consensus graded applications. The panel coordinator will be responsible for managing this meeting and any discrepancies that might arise from the ranked list. The panel must ensure that each application receives a fair judgement and is discussed appropriately. The panel must settle the final scores for each criterion, as well as the comments to be conveyed to the applicants, and ensure that the scores agree with the comments.

## 4.3 Constitution of the Access Committee

- The access committee (AC) is composed of a coordinator nominated by FCT
- AC is established by the Internal RNCA Regulations, published under no. 1049/2020 in the official law gazette (*Diário da República*).

### 4.3.1. Ranking of proposals and resources allocation by the AC

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 point 03 of the AAC.



## 5. Confidentiality and conflicts of interest

### 5.1 Confidentiality

The confidentiality of written applications must be protected. All reviewers involved in the evaluation are asked not to copy, quote, disclose or otherwise use material contained in the applications. All reviewers are requested to accept a statement of confidentiality relative to the contents of the applications and to the results of the evaluation.

### 5.2 Conflicts of Interest (Col)

Access committee members that have submitted any application to the present Call, as PI, co-PI, team member or consultant to the project, may have to decline participating in the evaluation process.

Moreover, the scientific evaluators on myFCT platform must fill in the conflict statement for those applications assigned to him. Col subtypes:

- Personal or financial interest in the application's success.
  - a) Have a family relationship with the Responsible Investigator (IR) or co-Responsible Investigator (co-IR).
  - b) Have a scientific or personal conflict with the IR or co-IR.
  - c) Have a financial interest with the IR or co-IR.
- Current or planned close scientific cooperation.
  - a) Have ongoing scientific collaboration with the IR or co-IR.
  - b) Have published scientific papers with the IR or co-IR.in the three years prior to the opening date of the application period
- Dependent employment relationship or supervisory, within the last 3 years before the opening date of the call.
- To be in any other situation that may raise doubts, either to you or to third parties, to the candidate, regarding your ability to evaluate the application impartially.

## 6. Glossary and translations

- Col = Conflict of Interest
- Co-Ir = Co-Responsible Investigator
- FCT-FCCN = unidade de Computação Científica Nacional da FCT
- IR = Responsible Investigator
- R&D = Research and Development
- R&I = Research and Innovation
- RNCA = National Advanced Computing Network, acronym for Rede Nacional de Computação Avançada
- SR&TD = Scientific Research and Technological Development
- TA – Technical adequacy

## 7. Appendix - Applications evaluation calendar

For both types of access, the competition will be open from 30 March 2022 until 18 May 2022.

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.

Preliminary calendar:

Evaluation stages	Latest submission date
1st round	18th May, 23:59 (Lisbon time)

