APPLICATION FORM GUIDE

Call for Advanced Computing Projects (4ᵗʰ edition)

Ref.: FCT/CPCA/2023/01

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I. INTRODUCTION

Framework

This Guide to prepare and submit applications for advanced computing projects is a document designed to clarify aspects of the submission process, to facilitate and guide the preparation of the application and to inform about the evaluation, communication of the decision and prior hearing processes.

It brings together information scattered throughout the FCT (Foundation for Science and Technology) and RNCA (National Network for Advanced Computing) websites, the application form and the applicable legislation without, however, overriding it. It highlights important aspects to which the IR (Responsible Investigator) should pay attention.

The FCT call page at https://www.fct.pt/concursos?tab=open&paged=1# lists the open, planned and closed calls for advanced computing projects. The page for each call provides the Call for Applications (AAC), regulations and application submission portal at https://myfct.fct.pt.

More information on the RNCA and accessible platforms at https://www.rnca.fccn.pt/

II. BEFORE SUBMISSION

PRACTICAL ADVICE FROM THE EXPERIENCE OF OTHER COMPETITIONS

What to do before applying

- Read the associated call documents
- Consult the Call for Proposals and the next submission deadline
- Check eligibility criteria
- Check the evaluation criteria
- Find out more about the platform(s) that apply to your project
- Select the access type that best suits your project:

A0 - Experimental Access

A1 - Development Access

A2 - Regular Access

A3 - Larger Access
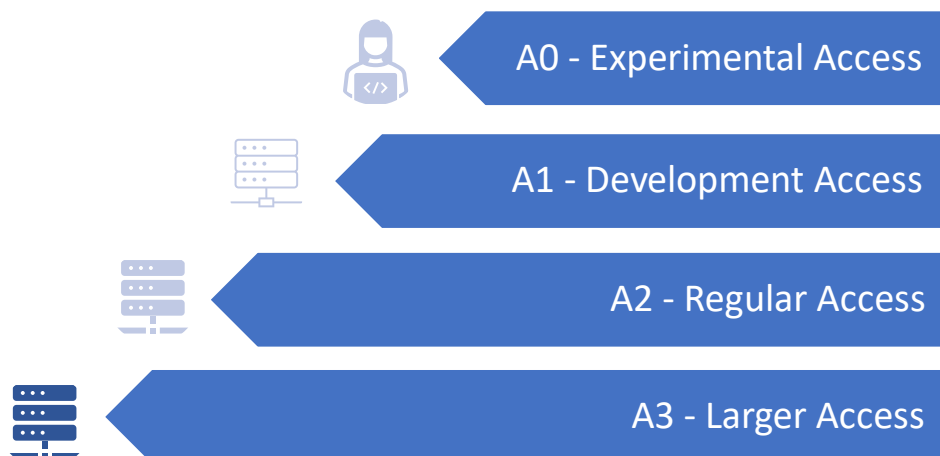
Who can submit applications?

All institutions and candidates who meet the conditions set out in the regulations and call notice. All applicants must have an active CIÊNCIA ID with up-to-date information. For more help check the CIÊNCIAVITAE Guide and the website https://www.cienciavitae.pt/.

Where to submit your application?

In this edition of the call, all applications can be submitted online via the following URL: https://myfct.fct.pt/
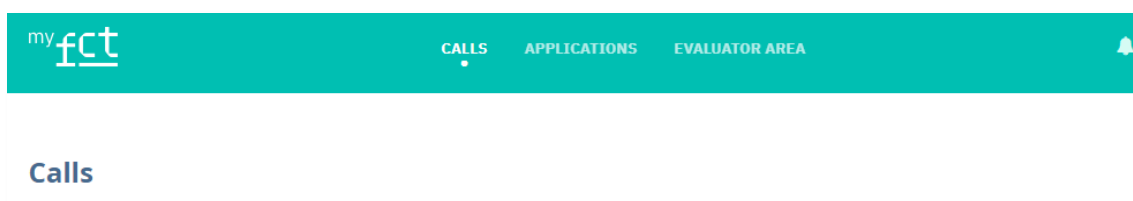
MyFCT login requires updated **CIÊNCIAID** and **CIÊNCIAVitae**. For more information see the **CIÊNCIAVITAE** Guide in the call documents or the URL https://cienciavitae.pt/.

Advice before you start

- Before starting the filling of the application form, find out about the conditions of access and limits on the allocation of computational resources.
- The schedule of application A0 and A1 will be available, since the call for these types will be open continuously with different technical validation periods for each round of applications. Only applications received by the date set for each of these periods/rounds will be validated.
- Selecting A0 is strongly recommended for anyone with no experience of the software or platform selected.
- Submit your application as soon as you have gathered all the necessary information.

- After submission, all A0 and A1 applications will be checked for their technical suitability and A2 and A3 applications will also be scientifically evaluated. Applicants will be notified of the final decision according to the deadlines indicated in the Advanced Computing Projects Regulations.
    - In the event of approval of the application, applicants will receive an individual report and an acceptance term which they must return signed within the deadlines stipulated in the RPCA. Upon receipt of this document, details will be sent for allocation of computational resources and a single reference of the project. The operational centers will be informed of the approved projects and will provide access credentials to candidates according to their access policies.
    - In case of conditional approval of the application, applicants will receive an individual report and details of the allocation of computational resources, with the conditions described – these may be related to the selected project or platform (temporary unavailability of the machine, software, technical support, just to name a few examples).
    - In the event of non-approval of the application, applicants will be informed. If they so choose, they can make improvements and resubmit their application in the next period or batch of technical suitability.

How to write a good application

- The form will be completed in English.
- All fields marked with asterisk * are required
- The *MyFCT* platform has the possibility to "Consult" / "Edit" / "Remove" your application until the end of the call. If you need to make stops, you can save and come back later.
- Find out more about the available platforms by consulting the technical sheet on the call portal. This will be useful as the form asks for the order of preference of the HPC (*High Performance Computing*) platforms.
- In the "Previous Experience" section of the form, specify any prior experience on the platform(s) to the competition or in others not contemplated by the RNCA (e.g. PRACE). You can mention previous publications or works.
- In the case of A2 and A3, be aware of the assessment criteria and pay special attention to the parts of the form that will contribute most to these criteria. Be clear in the work plan, detailing the various phases of the project, the software to be used, the tasks and especially the justification for the computer resources requested.
- Identify the software that best applies to your project and find out if it is already installed on the selected platform(s). This information will be updated in the fact sheet of this call. If you have any questions about the hardware/software version or other technical detail, please contact RNCA via email.

How to ask questions to RNCA

- Send your questions and suggestions to rnca@fccn.pt. These may be directly answered by the RNCA central services (FCT) or forwarded directly to the operational centers:

Plataforms	URL	Contacts
MareNostrum 5	https://www.bsc.es/marenostrum	rnca@fccn.pt Manager: S. Girona
Deucalion	https://macc.fccn.pt/ https://docs.macc.fccn.pt/	help@support.macc.fccn.pt Manager: R. Oliveira
Navigator **LCA-UC**	https://www.uc.pt/lca	lca_info@uc.pt Manager: P. Alberto
Oblivion & Vision **HPC-UE**	https://oblivion.hpc.uevora.pt	support@oblivion.uevora.pt Manager: M. Avillez
Cirrus & Stratus **INCD**	https://www.incd.pt/ https://wiki.incd.pt	helpdesk@incd.pt Manager: J. Gomes

III. APPLICATION SUBMISSION via myFCT

The current format of the application form is based on similar competitions run by other European advanced computing bodies. **Answers must be written in English**. Mandatory fields are marked with *. The form is divided into 3 sections:

  I. *IR and Co-IR details*
  II. *Application details*
  III. *Technical requirements*

Section 1: *IR and CO-IR details*

This section is intended to identify the project leader (IR) and, in the case of A2 and A3 projects, the co-leader (co-IR). The email address provided will be the preferred contact for communication and notification of results.

Figure 1 - A0/A1 view

Figure 2 - A2/A3 view

Responsible Investigator* - This data will be automatically uploaded from CiênciaID.

> **PLEASE NOTE** that the registered institutional email address must be active and functional in order to receive notifications of the results and be the preferred means of communication with the operational center in the event of project approval.

RI Institution* - After selecting the country, fill in the name of the public or private institution associated with the IR and this project.

Co-Responsible Investigator (only for A2/A3) - Identify a co-responsible for the project with CienciaID, name and email. The Co-responsible Investigator (Co-IR), who will replace the RI when he/she is unable to fulfill his/her duties, according to article 6 of these Regulations. This requirement is mandatory for A2 and A3 types and optional for A1 and A0 types.

Curriculum vitae (only for A2/A3) - This field will integrate the information from the current version of your CV on the CIÊNCIAVITAE platform. You must, therefore, confirm that you have the updated CV before integrating it in your application. In order for your CIÊNCIAVITAE CV to be available to FCT and the evaluators you must select for each section the privacy level "Public" or "Semipublic". Confirm that you have your CV updated before clicking "get CV from CIÊNCIAVITAE". CienviaVitae tutorials here.

Section 2: Application details

This section asks for a description of the advanced computing project you intend to carry out and seeks identification of the project and funder supporting this advanced computing project application (which does not award funding, but rather computational resources).
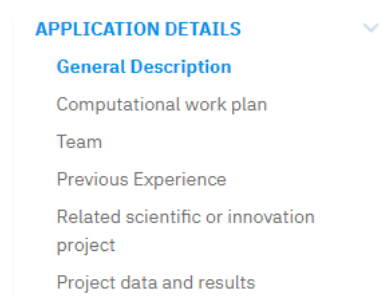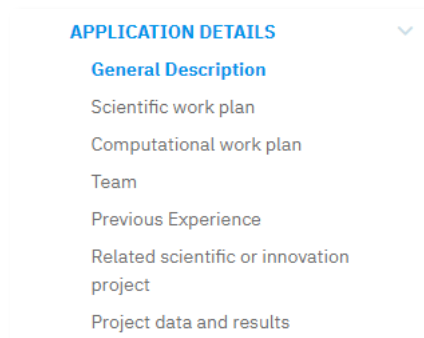

Figure 3 - A0/A1 view

Figure 4 - A2/A3 view

General Description

Title * (free text up to 255 characters) – Phrase with the title of the project

Abstract * (free text, 0-2000 characters) – *Short Public Abstract* or summary of the project, where you can briefly describe the objectives, hypothesis, motivation and need for computational resources. The plan for disseminating the results and previous experience can be described in the proper fields in this section 2. The computational resources and justification for their use will be detailed in section 3.

Project Scope (optional) (free text, 0-5000 characters) – State of the art and context of the computational project, where you can describe what is known on the subject, previous work, as well as aspects of innovation and societal, economic and scientific impact.

Keywords* (text) – Three to five keywords

Domain, Scientific Area and Subarea* (dropdown) - select the options that best fit your project, even if the academic training area is different.

Scientific work plan (only for A2/A3)

Scientific work plan* (text 0 to 5000 characters) – Describe in detail the phases or milestones in points 1, 2, 3, 4, etc. In this scientific work plan, the objectives should be divided into the various phases of the project, as well as a description of the methods, human resources and any experimental data to be obtained outside of the computational field. It should include a methodological approach, with a description of the tasks and the relationship between them, sequence and timetable. It can also include a contingency plan, should unforeseen circumstances arise in obtaining and accessing experimental data (if applicable).

Computational work plan

Tasks, milestones and computational deliverables* (text 0 to 3000 characters) – This is a fundamental field of the application, and it will be reviewed in the technical evaluation phase. Here you can describe in detail the tests already carried out or to be carried out, the phases of the project, the execution deadlines, time management and computer resources management, the users of the project, the necessary training and education, the storage plan, the plan for disseminating the results, and a possible extension/request for continuation.

Team
Adding team members * **-** For each team member, fill in their first and last name, institution and task. You should add as many members as will have access to the computing platform. The task must correspond to the phases described in the scientific and/or computational work plan described above.

Previous Experience
Previous Experience * (options and description) – answer the question "Have you used HPC or HTC platforms or scientific cloud before?" and select one or more options. In the requested description, you can summarize your previous experience including dates, software, platform and summary of results obtained. Optionally, you can include references to projects approved by FCT/EuroHPC/PRACE/other entities and associated reports.

Associated scientific/innovation project
Will this submission, if approved, contribute to an existing project? * (dropdown Yes/No) - Here you must select an option. Only answer yes if that scientific or innovation project has been subject to prior independent evaluation by a competent authority. Otherwise, answer "no".

Funding entity (dropdown) – If you answered "Yes" to the previous question, please select one of the answers or click on "Other" and specify the funding entity in the appropriate field. In the case of "Other", fill in the Name in the new box that appears with that option.

Funded project reference (text) – State the unique funding identification code. Fill in this field in case of "Other" Funding Entity.

URL (text) – Here you can indicate the URL of the funding entity or of the competition/project itself.

Report of scientific or innovation evaluation (if applicable) (upload) **-** optionally attach the associated scientific or innovation project report (if applicable)

Project Data and Results

Dissemination of project results (optional) (text 0-3000 characters) – Describe the plan for disseminating and exploiting the results of the project, including article publications in ISI journals, theses, patents or presentations at conferences. It may also include possible applications for other funding.

Data Management Plan Delivery (PGD/DMP)* (dropdown) – answer Yes/No. As of this edition of the call, the PGD/DMP must be submitted via the Argos platform at https://argos.openaire.eu/. Approved projects must make this plan available to the FCT within 6 months of signing the Acceptance Agreement.

Section 3: Technical requirements

In this section complete all the technical data relevant to the advanced computing project. There are currently 4 national platforms offering HPC and only 1 platform offering Cloud or VRE. **Read carefully and answer the first 2 questions before moving on**. The use of these computing resources in A2 access may occur up to a maximum of 12 months (or 24 months for VRE), extendable for an equal period, being non-refundable and without any costs for the user. In case of doubt, please consult the Regulations and Call Notice or contact the RNCA.

TECHNICAL REQUIREMENTS ⌄

Computing Models

High Performance Computing

Scientific Cloud / VRE

Additional technical questions

Computing Resources

Figure 5 - A0/A1/A2/A3 view

Computational Models

1. Do you need High Performance Computing (HPC) resources?*

2. Do you need Scientific Cloud computing or VRE resources?*

(each contains a Yes/No dropdown)

 - The yes answer is pre-defined, but you should only answer "yes" if there is a need. By answering "Yes" a set of questions associated with each access modality will appear.

High Performance Computing (if applicable)

This subsection will only be present if you answer "yes" to the questions on HPC. Answers must be written in English.

Preferred HPC platform* (drag and order) - drag to order the 4 platforms according to your preference (top to bottom). In case you have no preference, select the "any platform" field.

Number of concurrent CPU cores required and **Total number of clock hours required** * (numeric field) – - fill in the number of concurrent CPU cores and total number of clock hours required. The **Total CPU core.hours required field will automatically calculate** the CPU core.hours value. Check the limits for each type in the call for proposals.

RAM requirements in GB per CPU core (optional) **-** state total RAM per CPU_core.

Does the project require the use of GPU? * (options yes/no/don't know) – select one of the options. Check the call datasheet to know which platforms have GPU.

Application Software (template download & upload) **–** download the file and on the first sheet mention the main application used - name, version, licensing, relevant observations. Consult the software available for the platforms in the template, here: https://rnca.fccn.pt/?page_id=607 or contact the operational centers directly.

Provide software scalability chart (only for access types A2 and A3)**.**

Average CPU cores per job/computing job (optional) – fill in the average number of CPU cores used by each computational run/job.

Total amount of disk, in GB, required to support HPC or storage jobs – fill in the total amount of storage (in GB) that you will need for processing, storing and post-processing the generated data.

Scientific Cloud or Virtual Research Environment (VRE) (if applicable)
This sub-section will only be present if you answer "yes" to the question about Cloud Computing or VRE. Only INCD provides Cloud and VRE services. The answers should be written in English.

Total vCPU.hours required * (numeric field) **=** Number of vCPU required x Total number of clock hours required

Number of VMs (virtual machines) required* (text) – -number of virtual machines required.

Total number of vCPUs needed* (text) – number of processors required. You can specify details.

Does your project require GPU usage?* **-** select yes/no. If you select 'yes', fill in the required fields (number of GPU cards needed, Total number of clock hours needed) and indicate the type of GPU you need. Check the call technical sheet to find out which platforms have GPUs, and which types are available (T4, A100, V100, others).

Application Software - refer to the main application used - name and version. Consult the software available on the Stratus platform at https://wiki.incd.pt/shelves/cloud-user-documentation

Other tools and software (optional) (text) - describe additional applications, libraries and tools.

Total amount of disk, in GB, required (number) – describe amount of disk required per VM and total, in GB -gigabytes.

Total amount of RAM, in GB, required* (text) – total amount of RAM, in GB - gigabytes.

Operating systems (opcional) (text) – name and version of the operating system(s)

Additional technical questions
This sub-section will always be present. Answers must be written in English.

Any requirements for technical support, software and tools (optional) (text) - Describe technical support needs for operators and/or support in configuring and accessing the system.

Internet bandwidth (Mbit/s) required for the computational project (optional) – Internet bandwidth (Mbit/s) required for the project.

Expected volume of Internet data to be transferred (GB) per month (optional) – amount of data in GB (gigabytes) to be transferred per month via the Internet.

Locations for high-bandwidth Internet communications (optional) – select one or more options. If you are part of the national academic network, it is likely that you are covered by RCTS and/or GEANT. Check here for more information.

Does your project require resources for post-processing (visualization)? (dropdown yes/no) –

These resources include GPUs and other visualization tools. You can consult the available resources at https://rnca.fccn.pt/centros-de-competencias/. If you answer 'yes', fill in the number of GPU.hours required (GPU cards x the number of hours), other tools (up to 500 characters) and justification (up to 2000 characters).

Estes recursos incluem GPUs e outras ferramenta de visualização. Pode consultar os recursos disponíveis em https://rnca.fccn.pt/centros-de-competencias/. Caso responda que sim, preencha número de GPU.horas necessárias (placas GPU vezes o número de horas), outras ferramentas (até 500 caracteres). e justificação (até 2000 caracteres).

Additional documents (if applicable) – If you need to add additional information or justify previous options, you can attach documents here (PDF, max. = 20MB)

Request for computational resources
Computational resources (automatic completion) - here is a summary of the CPU core.hours, vCPU.hours and GPU.hours requested in the previous menus.

Justification for computational needs * (text 0-3000 characters) - here you should justify the time and computational resources requested. (mandatory for A2 and A3).

Starting date * (date) - fill in the project start date. In some cases it can be as early as possible, but there are reasons that can delay the start of the project such as hiring staff, acquiring a software license, collecting all the data for the project, among others.

End date* (date) - preencha a data de fim do projeto.

Additional comments (texto) – in this field, justify previous options and leave suggestions for the RNCA

Without detriment to Article 23(2) of the regulation, do you accept the following information being used in RNCA-related publications? * (dropdown) Select one option - "yes" or "no". If yes, you declare that you accept the publication of the data on the list in RNCA publications, such as annual and progress reports.

Validate and Submit
Submit form - when you press the button, a new window will show you if you succeeded in submitting the application. If any mandatory fields are missing, please complete, review and resubmit. The PI and co-IR should receive a copy of the submitted application via email. If you have problems with submission, save the application and contact the RNCA.

IV. OVERVIEW OF THE APPLICATION

After submission

Via *MyFCT* it is possible to see the Overview of the Application, as well as export it to PDF. Automatically after submission, each applicant will receive an e-mail from the *MyFCT* Portal with the application reference. During the open application period, you can edit the application even after submission. If you choose to edit, please note that the status of the application will be reverted to draft and you will need to resubmit it after editing. You can check your application details at any time in the applications area of *MyFCT*.

After approval

In the event of approval, and within the legal deadlines set, the FCT will ask you to sign an acceptance form. Upon receipt of this document, each approved application will be assigned a unique project reference. Keep it, because in the event of a request for an extension or the submission of a new project, this reference will be requested.

After signing the Acceptance Agreement, the beneficiary must contact the operational center and start the computer work within a date agreed between the parties, up to 6 months after signing the Acceptance Agreement.

Each user must respect the Access Policy of the operational center operating the selected platform. Please note that each user is responsible for backing up their data during and after using the platforms.

After the end of the project, the data must be stored in a location to be defined by the RI. Beneficiaries must submit a simple final report within 30 days of the end of the project, the template or form will be shared timely.

Legislation and Documentation

- Call webpage
- Notice for Submission of Applications (AAC)
- Advanced Computing Project Regulation
- Application script
- Evaluation Guide
- CIÊNCIAVITAE script to obtain or update SCIENCE ID
- Computational Resources fact sheet

For further questions and suggestions, please contact rnca@fccn.pt

Acronyms

AAC – Call Notice
Co-IR - Co-Responsible Investigator
CV - Curriculum Vitae
FCT - Foundation for Science and Technology, I.P.
FCCN - FCT National Scientific Computing Unit
HPC - High Performance Computing
IC&DT - Scientific Research & Technological Development
IP - Proposing Institution

IR - Responsible Investigator
MCTES - Ministry of Science, Technology and Higher Education
RNCA - National Advanced Computing Network
RPCA - Advanced Computing Project Regulation
SCC - Scientific Cloud Computing
VRE - Virtual Research Environment

Resources allocated to the call:

Supported by: