

CALL FOR GRANT APPLICATIONS

(AE2026-0236)

INESC TEC is now accepting grant applications to award 1 Research Grant (BI) within the scope of the project INOCULUM with reference 15032 (NORTE2030-FEDER-00868400) co-funded by the ERDF - European Regional Development Fund through North Regional Program - NORTE 2030 under the scope of Portugal 2030 and by National Funds through the FCT - Fundacao para a Ciencia e a Tecnologia, I.P. (Portuguese Foundation for Science and Technology).

1. GRANT DESCRIPTION

Type of grant: Research Grant (BI)

General scientific area: COMPUTER SCIENCE

Scientific subarea: Informatics

Area of Work: Operating Systems

Grant duration: 3 months, starting on 2026-09-02, with the possibility of being renewed for a maximum term of one year, in cases where the grant has been awarded to students who are enrolled in non-award courses, or up to two years, in the cases of students enrolled in a master's degree.

Scientific advisor: Tânia Esteves

Workplace: Braga

Maintenance stipend: € 1090.98, [according to the table of monthly maintenance stipend for FCT grants](#), paid via bank transfer. Grant holders may be awarded potential supplements, according to a quarterly evaluation process (Articles 19, 21 and 22 of the [Regulations for Grants of INESC TEC](#) and Annex II), up to a maximum limit of 50% of the monthly maintenance stipend.

INESC TEC supports costs with registration, enrolment or tuition fees, during the grant duration, under the terms established in the internal document: [Payment of Tuition fees to grant holders](#).

The grant holder will benefit from health insurance, supported by INESC TEC.

2. OBJECTIVES:

The main objective of the work to be developed during the grant is the design and implementation of a SQL-to-eBPF compiler that allows querying and correlating information about the state of the operating system. The work also aims at the optimization and experimental evaluation of the solution, so that query execution plan decisions better reflect the cost of executing code in kernel space versus user space.

Such a solution will be essential for equipping modern operating systems with expressive, low-overhead observability mechanisms, enabling the state of the kernel (e.g., processes, network, files) to be queried through a high-level declarative language. This capability will make it possible to identify, in real time, the factors that affect system security and to build customized observability solutions that help gather essential information for detecting cyberattacks (e.g., ransomware) that exploit many key components of the operating system.

3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

The work plan for this fellowship includes the following main activities:



1. Design and implementation of the SQL-to-eBPF compiler: definition of the architecture that translates SQL queries into eBPF programs, and implementation of a prototype capable of generating, from SQL queries, eBPF code executable in the kernel.
2. Query planner optimization: definition of a cost model that estimates the execution cost of each operation in kernel space versus user space, and integration of this model into the query planner, so that it selects the most efficient execution plan for each query.
3. Integration and experimental evaluation: validation of the compiler through representative use cases, analyzing the performance and effectiveness of the solution, and comparing the results with existing state-of-the-art solutions.

The tasks described in this work plan demand the application and development of concepts and techniques in the areas of Computer Science and Informatics Engineering, which are usually introduced in curricular units included in the curricula of BSc courses in Computer Science and Informatics Engineering.

4. REQUIRED PROFILE:

Admission requirements:

BSc Degree in Computer Science or Informatics Engineering.

The awarding of the fellowship is dependent on the applicants' enrolment in study cycle or non-award courses of Higher Education Institutions.

Preference factors:

- Solid understanding of Linux kernel structures;
- Experience with the POSIX API and system calls.

Minimum requirements:

- Solid knowledge of operating systems;
- Knowledge of storage systems;
- Proven experience with eBPF technology and the libbpf library, supported by technical evidence (such as code repositories, projects, functional prototypes, articles, or theses), including public URLs to these materials or by submitting them as attachments to the application;
- Proven experience with SQL, supported by technical evidence (such as code repositories, projects, functional prototypes, articles, or theses), including public URLs to these materials or by submitting them as attachments to the application.

5. EVALUATION OF APPLICATIONS AND SELECTION PROCESS:

Selection criteria and corresponding valuation: the first phase comprises the Academic Evaluation (AC), based on the criteria referred to in Article 12 of the [Regulations for Grants of INESC TEC](#), while the second phase comprehends the Individual Interview (EI). All factors are evaluated on a scale of 0 to 100, taking into account the applicants' merit, suitability and conformity with the preference factors.

The weight of the AC factors are as follows: Academic Qualifications (FA, 70%), Scientific Publications (PC, 10%), Experience (EX, 10%) and Motivation Letter (CM, 10%).

Candidates who score less than 50 points in the AC average will be considered excluded on absolute merit. The top five candidates approved on absolute merit will be qualified for the individual interview. The Final Grade (CF) is obtained by the weighted average of AC (80%) and EI (20%).

DISABILITY INCENTIVE

Candidates who present a degree of disability equal to or greater than 90% will benefit from an incentive (20) in the score of the CV Assessment.

Candidates who present a degree of disability equal to or greater than 60% and less than 90% will also benefit from an incentive (10) in the score of the CV Assessment.

Said score may, in these cases, exceed 100 points.

Candidates must demonstrate the degree of disability during the application, namely through the submission of the Multi-Purpose Medical Certificate of Disability, issued in accordance with Decree-Law no. 202/96, of October 23 currently in effect.

Candidates must declare, in the application form, the type of disability used throughout the selection process, in order to proceed with the required adaptations.

The Selection Jury is composed of the following members:

President of the Jury: Tânia Esteves
Full member: João Tiago Paulo
Full member: Ricardo Gonçalves Macedo
Substitute member: Cláudia Vanessa Brito

Release of results and prior hearing: the results of the selection process, as well as the terms and procedures for prior hearing, will be released to the applicants by email, under the terms referred to in Article 13 of the Regulations for Studentships and Fellowships of INESC TEC.

6. FORMALISATION OF APPLICATIONS:

Application Documents:

1. Motivation letter;
2. Curriculum Vitae (must include the list of previous fellowships, their type, beginning and end dates, funding entities and host institutions);
3. Certificate or diploma degree;
4. Proof of enrollment in a degree awarding study cycle or in a non degree awarding Higher Education program.
 - The proof of enrollment may be presented just during the grant hiring stage.
5. Signed declaration stating the infringement of the grant holder's duties (article 14, no. 4)
6. Documental evidence to support the country of residence, residence permit or other legally equivalent document, in cases where the applicant is a foreigner or non-resident in Portugal - valid until the beginning of the grant.
7. Other supporting documents relevant to the final assessment.

Failure to deliver the required documents within the 90-day period after the date of the notice of the conditional awarding of the grant implies its cancellation.

Application period: From 2026-07-30 to 2026-08-12

Submission of applications: the application will be formalised by submitting the form available in the *Work With Us* section of INESC TEC website.

7. BINDING LEGISLATION AND REGULATION

The hiring process shall comply with the current legislation regarding the Research Grant Holder Statute, approved by Law no. 40/2004 of August 18, in its current wording, as well as by the [Regulations for Grants of INESC TEC](#) and for [FCT Grants Regulation in force](#).

For more information, please check the [Regulations for Grants of INESC TEC](#) and relevant annexes at www.inesctec.pt/bolsas



INESC TEC

Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência

Associação privada sem fins lucrativos declarada de utilidade pública

Pessoa Coletiva 504 441 361 - CRC Porto

Campus da FEUP

Rua Dr. Roberto Frias

4200 - 465 Porto

Portugal

T +351 222 094 000

F +351 222 094 050

info@inesctec.pt

www.inesctec.pt