

CALL FOR GRANT APPLICATIONS (AE2021-0065)

INESC TEC is now accepting grant applications to award 3 Research Grant (BI) within the scope of the PassCert funded by National Funds through FCT - Portuguese Foundation for Science and Technology, I.P., project (reference CMU/TIC/0006/2019)

1. GRANT DESCRIPTION

Type of grant: Research Grant (BI)

General scientific area: COMPUTER SCIENCE

Scientific subarea: Informatics

Grant duration: 6 months, starting on 2021-05-01, with the possibility of being renewed until the end of the project.

Scientific advisor: José Bacelar Almeida

Workplace: INESC TEC, Braga, Portugal

Maintenance stipend: € 805,98, 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.

Costs attributable to INESC TEC may include registration, enrolment or tuition fee stipend, either directly or through reimbursement, during the grant duration.

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

2. OBJECTIVES:

- Develop research skills through the application of selected methods;
- Actively participate in and contribute to PassCert's activities and regular meetings.

3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

Each grant of this announcement is associated to the certified implementation of a cryptographic component to be integrated on the Password Manager adopted for the proof of concept of the PassCert project. The identified components concern the password generation mechanism and the encrypted secret store. The adopted programming language is Jasmin (<https://github.com/jasmin-lang/jasmin>), and the correctness proof shall be conducted in Easycrypt (<https://www.easycrypt.info/trac/>). Specifically, these projects shall comprise:

- Implementation of a reference implementation in Jasmin, based on a specification from a standard or a research article;
- Refinement of the code to an high-speed implementation, possibly resorting to vectorised instructions extensions (e.g. AVX2);
- Prove correctness guarantees in Easycrypt;
- Write the activity report.

The above task ask for the application and development of basic concepts and techniques from the area of Informatics Engineering, typically lectured on nuclear courses from MSc programs in Informatics.

4. REQUIRED PROFILE:

Admission requirements:

Graduation degree in Informatics, or equivalent

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

Preference factors:

- Experience in low-level programming (assembly) - Experience in program verification based on interactive theorem provers (e.g. Coq, Easycrypt); - Previous contact with the tools adopted by the PassCert project (Jasmin language, and EasyCrypt theorem prover). - Acquaintance in english language.

Minimum requirements:

- Graduation mark of 12 or higher.

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, 60%), Scientific Publications (PC, 10%), Experience (EX, 20%) 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 (70%) and EI (30%).

The Selection Jury is composed of the following members:

President of the Jury: José Bacelar Almeida

Full member: Alexandra Sofia Mendes

Full member: Alcino Cunha

Substitute member: Maria João Frade

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 duly recognised in Portugal;
 - Documents proving the awarding of academic degrees and diplomas, or the according recognition - in cases of academic degrees or diplomas granted by a foreign higher education institution - can be dismissed in the application process, and replaced by the applicant's declaration of honour, with the verification of said condition taking place during the grant's hiring stage. The submission of the certificate is mandatory when signing the contract.
 - Academic degrees or diplomas awarded by a foreign higher education institution require an authentication by a Portuguese higher education institution, and the corresponding registration on the DGES platform, in conformity with Decree-Law no. 66/2018, of August 16, and Ordinance no. 33/2019, of January 25. More information available on the website <https://www.dges.gov.pt/pt/pagina/reconhecimento?plid=374>
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 2021-03-31 to 2021-04-14

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

