# CALL FOR GRANT APPLICATIONS
# (AE2025-0575)

INESC TEC is now accepting grant applications to award 1 Research Grant (BI) within the scope of the Dare SGA 1 - HORIZON-EUROHPC-JU-2024-DARE-SGA-04,Grant Agreement 101202459, Funded by European High-Performance Computing Joint Undertaking, under the powers delegated by the European Commission, and Foundation for Science and Technology, I.P.

## 1. GRANT DESCRIPTION

**Type of grant:** Research Grant (BI)

**General scientific area:** COMPUTER SCIENCE

**Scientific subarea:** Digital systems,Informatics

**Area of Work:** Informatics, Electronics and Digital Systems, Digital Electronics, Microprocessors, Heterogeneous Systems

**Grant duration:** 8 months, starting on 2026-01-15with the possibility of being renewed for a maximum term of two years, in the cases of students enrolled in a master's degree.

**Scientific advisor:** João Bispo

**Workplace:** INESC TEC, Porto, Portugal

**Maintenance stipend:** € 1040.98, 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:

High Performance Computing (HPC) plays a pivotal role in advancing scientific research and industrial applications. Many HPC applications are still written in Fortran, due to its performance characteristics and long-standing use in computational science, and Fortran itself is a language that is still in active development (last version is from 2023). However, optimizing and parallelizing Fortran codebases remains a challenge, especially when adapting to modern parallel architectures.

Objectives:
- Extend a source-to-source technology with support for Fortran
- Apply a novel approach to loop analysis and transformations in Fortran code
- Contribute to a large-scale European project targeting high-performance computing
- Participation in the writing of a co-authored scientific article to disseminate the results obtained.

## 3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

- Literature review about OpenMP parallelization and Fortran refactoring
- Familiarization with the LARA framework, existing compilers and the current code base
- Implement prototype for the Fortran source-to-source compiler Metafor
- Create source-level strategies targeting Fortran loops

- Evaluation of the techniques and experimental results
- Collaboration in writing a scientific article to disseminate results.

**4. REQUIRED PROFILE:**

**Admission requirements:**

Master student in electrical engineering, computer science, or a related field;
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 with structuring or manipulation of ASTs
- Interest in compilers, and specifically source-to-source compilers
- Fluent in Portuguese and English (written and spoken

**Minimum requirements:**

- Programming experience in Node (JS/TS), Java e C++
- Fluency in English (written and spoken)

- Degree in electrical engineering, computer science, or a related field;

**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, 40%), Scientific Publications (PC, 10%), Experience (EX, 40%) 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%).

**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: João Bispo
Full member: Tiago Diogo Carvalho
Full member: Luis Miguel Pinho
Substitute member: João Paiva Cardoso

**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 2025-12-15 to 2025-12-29

**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