

CALL FOR GRANT APPLICATIONS

(AE2026-0250)

INESC TEC is now accepting grant applications to award 1 Research Grant (BI) project MOBOT2, with reference 24264 (NORTE2030-FEDER-02961400) Co-funded by ERDF - European Regional Development Fund through the NORTE 2030 Regional Program under the scope of Portugal 2030.

1. GRANT DESCRIPTION

Type of grant: Research Grant (BI)

General scientific area: COMPUTER SCIENCE

Scientific subarea: Informatics

Area of Work: Informatics

Grant duration: 4 months, starting on 2026-09-14, 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: Ana Nunes Alonso

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:

This grant falls within the scope of the MOBOT 2.0 project, in the development of fault tolerance mechanisms in an industrial environment. The objectives are:

- to broaden knowledge of the state of the art in the specific scientific area of the studentship;
- to identify and select the methods appropriate to the study in question;
- to develop research skills through the application of the selected methods;
- to exercise critical judgement in evaluating the research process and the results obtained.

3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

The growing adoption of autonomous mobile manipulators in industrial environments shifts to software the responsibility for decisions that were previously local and deterministic: fleet coordination, mission assignment and synchronization. With production management systems now depend on distributed components and on the network connecting them. When those components rely on 5G communications, they gain low latency and wide coverage,



but they also inherit the failure modes of a shared infrastructure outside the factory's direct control. In this context, the unavailability of a task manager, the loss of the state of an ongoing mission or a momentary interruption of the connection may have direct consequences on the production line and/or give rise to inconsistency in the system. Ensuring fault tolerance in these systems should be an operational requirement: critical data must survive failures and essential services must recover without human intervention, within a time window compatible with the operation.

- Review of the state of the art in fault tolerance applied to distributed industrial systems, with particular attention to 5G network communication contexts.
- Survey and analysis of the resilience and operational continuity requirements of the system's critical components, namely the Task Manager and the Production Manager.
- Identification and characterisation of the relevant failure modes, including component failure, communication failure and partial unavailability of the 5G infrastructure.
- Design of fault tolerance mechanisms at the data level, using replication techniques, ensuring the persistence and integrity of critical data.
- Design of fault tolerance mechanisms at the service level, including state monitoring, failure detection and automatic re-instantiation of components.
- Preparation of technical documentation and contribution to the project's reports and deliverables, as well as to any scientific publications.

4. REQUIRED PROFILE:

Admission requirements:

A bachelor's degree in Informatics 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:

- Practical experience with data replication and distributed agreement mechanisms.
- Experience with containers and orchestration (Docker, Kubernetes) and with service monitoring.
- Experience with fault injection methodologies and experimental evaluation of systems.
- Familiarity with the Robot Operating System (ROS).
- Familiarity with industrial communication protocols.

Minimum requirements:

- A pass mark of 15 or above (0–20 scale) in a curricular unit in the area of fault tolerance or intrusion tolerance, or in a distributed systems curricular unit with a demonstrable component in these topics.
- Knowledge of database management systems.
- Knowledge of data replication and distributed agreement mechanisms.
- Command of the English language, written and spoken.

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, 50%), Scientific Publications (PC, 20%), 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 (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: Ana Nunes Alonso

Full member: João Marco

Full member: Fábio André Coelho

Substitute member: João Tiago Paulo

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 2026-08-13 to 2026-08-26

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



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INESC TEC

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