CALL FOR GRANT APPLICATIONS

(AE2026-0188)

INESC TEC is now accepting grant applications to award 1 Research Grant (BI) within the scope of the Multiannual Funding of R&D Units 2025-2029, with the reference UID/50014/2025, Funded by national funds through the Portuguese Foundation for Science and Technology (FCT), I.P.

1. GRANT DESCRIPTION

Type of grant: Research Grant (BI)

General scientific area: ENGINEERING

Scientific subarea: Computer engineering

Area of Work: Robotics - Operations Planning

Grant duration: 5 months 12 days, starting on 2026-07-20, 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: Nuno Miguel Abreu

Workplace: INESC TEC, Porto, Portugal

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:

- Definition of a detailed set of models that characterize the capabilities and limitations of each type of robot in the fleet, including kinematic models, sensor capabilities, communication systems, and command and control functionalities. - Design of a multi-objective algorithm capable of generating optimal mission scheduling strategies for the fleet, considering multiple conflicting objectives (e.g., probability of detection, detection/classification time, and use of global resources), environmental and legal constraints, and vehicle capabilities. - Design of a hierarchical planner, with deliberative and reactive components, that uses AI techniques (e.g., neural networks, reinforcement learning) for behavior selection and dynamic task assignment, allowing an agile response to dynamic environments and threats. - Development of decentralized or weakly centralized coordination mechanisms that ensure the coherence of fleet movement and actions, even under conditions of degraded communication. - Integration of the developed solutions into existing robotic assets and validation through simulations and, if possible, field experiments of system components, demonstrating its effectiveness and robustness.

3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

1. Development of the vehicle behavior specification module. 2. Development of the offline mission planner. 3. Development of the real-time planner with intelligent task assignment. 4. Testing and validation.

4. REQUIRED PROFILE:

Admission requirements:

Bachelor's degree in Electrical and Computer 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:
- Basic programming knowledges;

- Professional experience in a relevant field

Minimum requirements:
- Experience in C/C++ programming;
- Knowledge of machine vision and autonomous navigation applied to robotics;
- Experience with ROS.

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, 0%), 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 (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: Nuno Cruz
Full member: Nuno Miguel Abreu
Full member: Bruno Miguel Ferreira
Substitute member: Marcos Martins

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 2026-06-18 to 2026-07-01

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