CALL FOR GRANT APPLICATIONS
(AE2025-0201)

INESC TEC is now accepting grant applications to award 1 Research Initiation Grant (BII) within the scope of the GreenAuto funded by IAPMEI with reference 54 Co-financed by Component 5 - Capitalization and Business Innovation, integrated in the Resilience Dimension of the Recovery and Resilience Plan within the scope of the Recovery and Resilience Mechanism (MRR) of the European Union (EU), framed in the Next Generation EU, for the period 2021 - 2026.

1. GRANT DESCRIPTION

Type of grant: Research Initiation Grant (BII)

General scientific area: ENGINEERING

Scientific subarea: Electrical engineering

Area of Work: Mobile Robotics

Grant duration: 6 months 16 days, starting on 2025-06-16.

Scientific advisor: Héber Miguel Sobreira

Workplace: INESC TEC, Porto, Portugal

Maintenance stipend: € 651.12, 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:

INESCTEC is seeking to hire a researcher in the area of ■■mobile robotics, with a view to conducting experimental tests in a real context, within the scope of fleet management composed of heterogeneous mobile robots.

The selected candidate will join a multidisciplinary team dedicated to the development, integration and validation of innovative solutions for the coordination and operation of autonomous robots in a collaborative environment. The work will focus especially on the interaction with a fleet management system, ensuring the execution of tasks in real scenarios.

3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

1. Initial training in ROS1/ROS2 and simulation environments (GAZEBO, Webots)
2. Study of the current architecture of the existing solution
Detailed analysis of the currently implemented system, with a view to its comprehensive understanding and preparation for the ongoing operational demonstration. This process will include identifying weaknesses, limitations or opportunities for improvement in the current state of the system.
3. Operationalization of the current demonstration and implementation of identified improvements
Based on the study of the existing solution, practical preparation for the functional demonstration will be carried out, including the implementation of technical improvements that enhance the robustness and performance of the system in a real or controlled environment.

4. Extension for management of heterogeneous robot fleets
Development and integration of coordination and control mechanisms applicable to multiple robots with different capabilities and operational profiles. This phase includes:
o Definition and implementation of communication interfaces between the fleet management system and the different robots;
o Adaptation or development of planning and task assignment algorithms in a multi-robot context;
o Assessment of fleet performance in different operating scenarios (simulated and real), considering metrics such as time, efficiency, energy consumption and robustness.
5. Experimental validation and analysis of results
Conducting experimental tests using the robot fleet, with data collection, performance analysis and adjustments to the implemented strategies, with a view to optimizing the overall system.
6. Dissemination of results
Support in the preparation of technical reports, internal documentation and possible scientific publications or conference papers, contributing to the dissemination of the results obtained

4. REQUIRED PROFILE:

Admission requirements:
The candidate must be enrolled in a master's degree in electrical 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:
• Proven experience in the use and programming of mobile robots;
• Participation in robotics competitions;

Minimum requirements:
The candidate must be enrolled in a master's degree in electrical engineering;

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, 45%), Scientific Publications (PC, 5%), Experience (EX, 45%) and Motivation Letter (CM, 5%).
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: Héber Miguel Sobreira
Full member: Manuel Santos Silva
Full member: Marcelo Petry

Substitute member:

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 not having benefited from any other research fellowship (Article 5, no. 5)
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 2025-05-15 to 2025-05-28

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

PRR Plano de Recuperação e Resiliência
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