

## **JOB ADVERTISEMENT**

### **Recruitment of 1 Doctorate in the field of Deep-water robotics for scientific exploration and monitoring**

**INESC TEC - Institute for Systems and Computer Engineering, Technology and Science**, a private research institution, is accepting applications to hire a doctorate researcher for an undefined term resolutive contract to work at INESC TEC's Centre for Robotics and Autonomous Systems.

The hiring process will follow what is provided in Decree-Law 57/2016, August 29, approving the Legal Framework on the Scientific Employment, hereinafter referred to as RJEC, as amended by Act No 57/2017 of 19 July by the Executory Decision No. 11-A/2017 dated 29 December by the Labour Code and by other legislation applicable to individual employment contracts, as well as the internal rules of INESC TEC, considering the specific conditions that are specified in the legal regime mentioned above for hiring doctorates under the projects financed by public funds.

The contract will be for an uncertain term on the scope INESC TEC.OCEAN with reference 101136903 funded by the European Commission under the Horizon Europe program for the period 2021-2027, however, INESC TEC can, at any moment, hire the researcher on a permanent basis.

#### **SALARY LEVEL**

In accordance with article 15 of the RJEC and article 2 of Regulatory Decree no. 11-A/2017, of 29 December, the gross monthly base remuneration to be awarded is based on remuneration level of the Investigador Auxiliar category of the Public Scientific Research Career Statute, with INESC TEC applying its own remuneration table for R&D doctoral employees, with a value of € 3640.11 for the equivalent category.

#### **DUTIES TO BE PERFORMED**

Coordination and implementation of R&D projects and knowledge enhancement, preparation of R&D project applications, team management and guidance of junior researchers, scientific production for international journals and conferences, intervention in the scientific and professional communities, as well as coordination and participation in scientific and technological dissemination initiatives, particularly in the field of Deep-water robotics for scientific exploration and monitoring.

Underwater positioning and navigation for deep-water robotic systems.

Sensor fusion for deep-water robotics, including integration of INS, DVL, USBL/LBL, pressure sensors, acoustic

Time synchronization and georeferencing of scientific data acquired by robotic platforms.

Integration of science payloads for biology, geology, geophysics, ecology, environmental monitoring and deep-sea observatory support.

Planning and execution of deep-water scientific cruises using ROVs/AUVs.

Mission planning, operational procedures, risk analysis and cruise documentation.

Organization, validation, storage and traceability of cruise metadata and robotic mission datasets.

Development of methods for associating sensor data with vehicle navigation, time, mission context and environmental metadata.

Robotic inspection and mapping of deep-sea habitats, geological formations, infrastructures and environmental features.



Deep-water perception using sonar, optical imaging, laser scanning, acoustic imaging and multimodal sensing.

Data processing pipelines for mapping, inspection, 3D reconstruction, habitat characterization and science-ready datasets.

Autonomous mission execution, adaptive sampling and decision-support tools for deep-water exploration.

Robustness, fault tolerance and operational reliability of robotic systems in remote and high-pressure environments.

Human-robot interaction and operational interfaces for scientific teams during offshore missions.

FAIR data practices, cruise data curation, digital repositories and long-term management of scientific robotic datasets.

Support to deep-sea observatories, marine protected areas, environmental impact studies and ocean monitoring campaigns.

## WORK PLACE

INESC TEC, Porto, Portugal

**WORK AREA:** Deep-water robotics for scientific exploration and monitoring

Coordination, implementation and technical management of national and international R&D projects in underwater robotics.

Preparation of competitive R&D project proposals, including technical concepts, work plans, budgets, partnerships and scientific/technological impact.

Scientific and technical leadership of activities related to deep-water ROV/AUV systems, underwater navigation, positioning, perception and data acquisition.

Supervision, mentoring and technical guidance of junior researchers, engineers, MSc students and PhD students.

Contribution to the strategic development of research lines, laboratory capabilities and field-operation methodologies in deep-water robotics.

Scientific production, including publication in international peer-reviewed journals and conferences.

Organization, participation and documentation of scientific cruises involving robotic systems, including pre-cruise planning, operational procedures, mission logs and post-cruise reporting.

Coordination of sensor payload integration, calibration, time synchronization, metadata collection and data-management procedures for scientific missions.

Organization and participation in scientific workshops, technical meetings, stakeholder events and dissemination activities.

Active engagement with scientific, technological and professional communities in ocean engineering, marine robotics and deep-sea exploration.

Contribution to scientific and technological dissemination initiatives, including demonstrations, outreach actions, public communication and institutional representation.

## REQUIRED PROFILE

National, foreigner and stateless candidates holding a PhD degree in Robotics, Ocean Engineering, Electrical and Computer Engineering, Mechanical Engineering, Marine Technology, Computer Science, or a closely related area., or related scientific area, and holders of a scientific and professional curriculum showing a relevant profile for the activity to be developed can apply for the tender.

### Minimum requirements:

Minimum of 5 years of postdoctoral experience in R&D activities.

Proven experience working with deep-water robotic systems, particularly ROVs and/or AUVs.

Experience in the organization and/or participation in scientific cruises involving robotic systems.

Experience in deep-water scientific exploration or monitoring, for example in biology, geology, geophysics, ecology or environmental sciences.

Experience in underwater positioning, navigation, sensor integration, sensor fusion, time synchronization or georeferencing of scientific data.

Experience in preparing R&D proposals for competitive national or international funding calls.

Previous involvement in externally funded research projects in the area of deep-water robotics or closely related fields.

Scientific track record including:

at least one peer-reviewed scientific article as first author in a Q2 journal or higher;

at least one peer-reviewed scientific article as co-author in a Q1 journal.

Participation in at least 5 international conferences in ocean engineering, underwater robotics, marine technology, marine science instrumentation or related fields.

Ability to coordinate technical activities, interact with multidisciplinary teams and contribute to project reporting and documentation.

Excellent written and oral communication skills in English.

### Preferred qualifications:

PhD thesis directly related to underwater robotics, marine robotics, deep-water systems, underwater navigation, sensor fusion or robotic systems for ocean science.

Strong programming skills, preferably in Python, C/C++, MATLAB, ROS/ROS 2 or similar tools used in robotic systems.

Experience with ROV/AUV payload integration, field testing, sea trials or offshore operations.

Experience with underwater acoustic positioning systems such as USBL, LBL, DVL-aided navigation or INS/DVL integration.

Experience with synchronization, calibration and georeferencing of heterogeneous scientific sensors.

Experience with scientific data workflows, metadata standards, data repositories or FAIR data practices.

Experience with sonar, optical imaging, laser scanning, hyperspectral imaging, environmental sensors or other payloads for marine science.

Experience in mission planning, risk assessment, cruise logistics, operational procedures and post-cruise reporting.

Experience supervising junior researchers, MSc students, PhD students or technical staff.

Demonstrated capacity to lead work packages, technical teams or research tasks in collaborative projects.

Experience in international collaborations, European projects or large multidisciplinary consortia.

Experience in scientific dissemination, outreach, stakeholder engagement or technology transfer.

Knowledge of deep-sea science applications, such as benthic habitat mapping, hydrothermal vents, submarine canyons, seamounts, geology, biodiversity monitoring or environmental impact assessment.

Ability to bridge engineering and marine science communities, translating scientific requirements into robotic system specifications and operational procedures.

## FORMALISATION OF THE APPLICATIONS

The applications will be formalised by submitting a specific form in [INESC TEC's website](#). The form is available in the icon "Apply now".

In the same form, each candidate must upload the following documents:

**- Motivation letter:**

for the job position, addressed to the President of the Executive Commission of INESC TEC, including an activity and career development plan for a maximum period of 6 years. The description should reveal the compliance of this plan with INESC TEC's strategy (see Chapter 2 of [INESC TEC's Activity Plan](#) for 2026) and the duties to be performed and should not contain more than 2000 words and no more than 5 pages;

**- Curriculum Vitae:**

highlighting all the higher education, the scientific and technological production, the activities of crucial research, applied or based on practice, the activities of extension and dissemination of knowledge and the science management activities in the last five years, that the candidate considers more relevant or with greater impact in order to allow the corresponding relevance, quality, timeliness and adequacy.

**- Copy of certificates or diplomas degree**

**- Other documents** that you consider relevant for the evaluation of the scientific and curricular journey.

Those candidates who formalise their application incorrectly or do not fulfil the demanded requirements will be excluded from the tender.

The jury has the power to require any candidate, if in doubt, to present supporting documents for their statements. The false statements made by the candidates shall be penalised by law.

## EVALUATION AND SELECTION PROCESS

The evaluation is carried out in two phases, which will result in a final classification between 0 and 100 points.

### First phase: Curricular assessment

The selection is made through the evaluation of the motivation letter, which will include the activity and career development plan, and of the scientific and curricular journey, focusing on the scientific production and professional activity in the last five years that the candidate considers more relevant. This five year period may be extended by the jury, at the request of the candidate, if reasoned on suspension of the scientific activity for socially protected reasons, namely for parental leave, serious and protracted illness, and other legally protected situations of unavailability for work.

It is intended to assess the scientific and professional curriculum of the candidate focusing on the relevance, quality and timeliness of the factors referred to in Article 5 (2) (a) to (d) of the RJEC and of the motivation letter in the subject area(s) of the tender, considering the specific requirements and the adequacy for the duties to be performed.

F1 - Scientific, technological, cultural or artistic production that the candidate considers more relevant.

F2 - Activities of applied research or based on practice that the candidate considers with greater impact.

F3 - Activities of extension and dissemination of knowledge, namely in the promotion of the culture and the scientific practices that the candidate considers more relevant.

F4 - Project management activities and programmes of science, technology and innovation, or experience in observation, monitoring and evaluation of the scientific and technological system or higher education in Portugal or abroad. Included here are the activities of preparation and submission of applications for science, technology and innovation projects.

F5 - Motivation letter, including the activity and career development plan, integrated and consistent with the duties to be developed under the strategic project of INESC TEC.

The evaluation of all candidates in the first phase must be completed within a period of no more than one calendar month after the applications are received.

The candidates who have obtained less than 70 points in the average of the curricular assessments of the members of the jury will be considered not approved in absolute merit.

The top five candidates in the average of the curricular assessments that were approved in absolute merit will be qualified for the second phase, consisting of an individual interview, either face-to-face or through videoconference. The interview will weight, at most, 10% of the final classification. The candidates who don't qualify for the second phase will have a classification of 0 in the interview.

#### Second phase: Interview

In accordance with Article 5(5) of the RJEC, as it stands, the Jury will individually interview each candidate that were qualified to the second phase.

During the interview, the members of the Jury will stimulate an open debate about the quality and the innovative and creative nature of the research and professional activity of the candidates, considering the requirements and the subject areas of the specific tender procedure.

The interviews will be conducted within a period not exceeding 10 working days after the decision of the Jury.

### **FUNCTIONING OF THE JURY**

Each member of the Jury will assess all the candidates in all the factors from F1 to F5 between 0 and 100 and must present the reasons for the scores attributed. Abstention is not allowed. A similar procedure will be followed regarding the candidates that are called for the interview. The candidates that are not called for an interview will have 0 points in the second phase.

The curricular assessment (CA) of each candidate is obtained according to the average of the factors (F) that is evaluated by the weights of the following formulation, expressed to the first decimal.

$$AC = F1*30 + F2*40 + F3*15 + F4*10 + F5*5$$

The final classification (FC) of each candidate is obtained according to the average of the final results of the curricular assessment and of the interview (I) that is evaluated by the weights of the following formulation, expressed to the units.

$$CF = AC*90 + E*10$$

After completing the application of the selection criteria, each member of the Jury will sort the candidates according to the final classification assigned to them. Based on this sorting, the Jury will sort the candidates by successive clearance to the first place and following places (each member of the jury follows their personal sorting). The clearance is carried out when a candidate obtains more than half of the votes. If this doesn't happen in the first voting for a particular place, the least voted candidate is eliminated and the procedure is repeated with the remaining candidates (with tiebreakers based on the average of the final classifications).

The Jury will advise the hiring of the candidate approved in absolute merit sorted in the first place.

A minute is drawn up after the jury's meetings, containing a summary of what has arisen from them, as well as the assessments made by each one of the members and their reasons, and shall be made available on request to the candidates.

### **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.

### **SELECTION JURY**

In accordance with article 13 of RJEC, the jury is composed of the following members:

President of the Jury: Nuno Cruz

Full Member: Bruno Miguel Ferreira

Full Member: Nuno Miguel Abreu

Substitute Member: José Carlos Alves

Substitute Member: Marcos Martins

### **APPLICATION PERIOD**

**Application period:** From 2026-07-16 to 2026-07-29

### **NOTIFICATION OF THE RESULTS, PRIOR HEARING AND FINAL DECISION OF THE RESULTS**

The results of the selection process will be disclosed to the candidates by email.

After being notified, the candidates have 10 working days to comment on the results of the selection process under their right to a prior hearing. The final decision of the jury will be given within 10 days from the deadline for the decision under the right to a prior hearing.

The present tender is exclusively for occupying the indicated vacancy, expiring once the position is filled.

### **NON-DISCRIMINATION AND EQUAL ACCESS POLICY**

INESC TEC actively promotes a policy of non-discrimination and equal access, so that no candidate can be privileged, benefited, harmed or deprived of any right or exempted from any duty, on basis of origin, age, sex, sexual orientation, marital status, family situation, economic situation, education, social origin or condition, genetic heritage, reduced capacity for work, disability, chronic illness, nationality, ethnic origin or race, region of origin, language, religion, political or ideological convictions and trade union membership.

The candidate with a disability has preference under conditions of equal classification. Candidates must declare on the application form, under word of honour, the respective degree of incapacity, the type of disability and the means of communication to be used in the selection process, in accordance with the abovementioned diploma.

The Executive Commission of INESC TEC approved this job advertisement in the meeting of 2026-07-14, also being responsible for the final decision on hiring.



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**INESC TEC**

**Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência**

Associação privada sem fins lucrativos declarada de utilidade pública

Pessoa Coletiva 504 441 361 - CRC Porto

Campus da FEUP  
Rua Dr. Roberto Frias  
4200 - 465 Porto  
Portugal

T +351 222 094 000  
F +351 222 094 050  
info@inesctec.pt  
www.inesctec.pt