Notice of opening for the recruitment of 1 PhD Research position in the area of Real-time computing systems and embedded systems

Opening of a selection procedure for the recruitment of 1 doctorate under numbers 1 and 2 of article 23 of the Decree-Law No. 57/2016, of August 29, amended by Law No. 57/2017, of July 19.

1 - By order of the President of the Instituto Superior de Engenharia do Porto in 21/08/2018, published as Despacho No. 8299-A/2018, in Diário da República, 2ª Série, No. 162, of 23/08/2018 with the jury composition and nomination, and under article 24 of Decree-Law No. 124/99 (Statute of the Scientific Research Career) amended by Law No. 157/99 of September 14th , the opening of an international selection tender was authorised for 1 Doctorate Assistant Researcher in the scientific research career for the pursuit of research activities in the area of Real-time computing systems and embedded systems, in order to develop research work at CISTER – Research Centre in Real-Time and Embedded Computing Systems, in Instituto Superior de Engenharia do Porto (School of Engineering of Porto Polytechnic Institute) hereafter identified as ISEP.

2 - Applicable legislation: Decree-Law No. 124/99 of April 20, which approves a Statute of the Scientific Research and the general law of work in public functions (known as LTFP), approved in annex to the Law No. 35/2014, of June 20, in its current composition.

3 - The positions are open complying to article 23 (1) of Decree-Law No 57/2016 of August 29, amended by Law No 57/207 of July 19, which approves a plan for the recruitment of doctorates aimed at stimulating scientific and technological employment in all areas of knowledge (known as RJEC), for functions carried out by persons with PhD that had a scholarship and fulfil the eligibility requirements at the date of August 31, 2018.

4 - The contracts to be concluded shall be remunerated in accordance with Level 2 of the Auxiliary Researcher ("Investigador Auxiliar") category and the social benefits generally applicable to public servants.

5 - The workplace is located on the premises of ISEP, Rua Dr. António Bernardino de Almeida, 431, 4249-015 Porto, Portugal, and/or other locations necessary for the development of research activities.

6 - Applicants can be national, foreign and stateless candidates who hold a doctoral degree in Electrical and Computer Engineering, Computer Science or related areas; and holders of a scientific and professional curriculum that demonstrate a suitable profile for the positions offered.

7 - General requirements for admission are defined in No 1 of article 10 of Decree-Law No 124/99 of April 20 and the special requirements are laid down in the preceding paragraph.

8 - The evaluation of the scientific and curricular merits of the candidates focuses on the relevance, quality and actuality:

a) of the scientific and technological production of the last five years considered more relevant by the candidate;

b) of the applied research activities, or applied-based, developed in the last five years and considered to be of greater impact by the candidate;

c) of the activities of extension and dissemination of knowledge produced in the last five years, in particular in the context of the promotion of culture and scientific practices, considered to be of greater relevance by the candidate;

d) of the activities of management of science, technology and innovation programs, or of the experience in observing and monitoring the scientific and technological system and higher education, in Portugal or abroad.

9 - The five-year period, referred to in paragraph 9, may be increased by the jury at the request of the candidate, when based on suspension of scientific activity for socially protected reasons, in particular for reasons of parental leave, prolonged serious illness, and other situations of legally-protected work unavailability.

10 - The evaluation process may include an interview with all the candidates at the jury decision.

11 - The candidate classification system is expressed on a scale of 0 to 100 points.

12 - Within the selection procedure, the positions stated in the following paragraphs are open.

13 - Reference CISTER-2018.2-IALC: 1 position of PhD Assistant Researcher in the area of Real-time Computing Systems, in order to contribute to the progress of CISTER's research, in the different aspects of its strategic project, focused on the challenges posed by topics such as: (i) analysis and algorithms to enable safe timing execution of high-performance real-time applications on complex heterogeneous platforms, including multi and many-core platforms, GP-GPUs and FPGA accelerators; (ii) analysis and communication mechanisms for dense and highly connected sensor and actuator systems, able to provide timely information and control, even with complex topologies, based upon latencies and timelines as structuring concerns; (iii) time and space isolation mechanisms for safety-critical and mixed-critical systems, build on top of complex embedded computing platforms (multi-core and many-core); (iv) energy and temperature aware real-time systems. (v) methodologies and mechanisms for incorporating quality of service and service level agreements as a structural component at all layers of complex cyber-physical systems and internet of things frameworks; (vi) algorithms and middleware for performance and predictability of interoperable components of distributed embedded frameworks; (v) contribute to the integration of CPS systems (e.g. robots, drones, smart homes, ...) and cloud with satisfaction of non-functional constraints (time, energy, security) and quality of services. (vi) analysis and definition of MAC level protocols for wireless sensor networks and 5G networks; (vii) analysis of communication mechanisms for dense and highly connected sensor and actuator systems, able to provide timely information and control, even with complex topologies, based upon latencies and timelines as structuring concerns; (viii) secure and dependable wireless communications, with optimized cross-layer design for wireless 4G/5G networks in terrestrial, aeronautic and other safety-critical applications. (ix) methodologies and algorithms to enable analysis and configuration from model-based specification of systems, and systems of systems, thus enabling validation of timing properties to be performed early in the development process, considering multiple stakeholders; (x) methodologies and algorithms to enable to formally monitor timing behaviour and adapt to changing operation conditions; (xi) analysis of safety of CPS and design of appropriate approaches to ensure their functional safety.

The positions are opened in accordance with article 23 (1) of the RJEC, in particular taking into account the scholarship with reference P-SOCRATES/BCC/01/16 (under the FP7-ICT-611016 project), and the contract to celebrate will be paid according to Level 2 of Research Assistant category, currently with a value of 3437.34 Euros per month.

13.1 - Requirements to be fulfilled by candidates are as follows:

a) have at least 3 years of post-doctoral experience or have a very relevant scientific postdoctoral curriculum that includes scientific leadership;

b) have experience of participation in European or National projects of research, preferably as a leading researcher, leader of a work package, task leader or other positions of responsibility and technical-scientific leadership;

c) have high quality publications in scientific conferences and journals of the area;

d) have experience of supervision or co-supervision of PhD students (preferred) or MSc students;

e) have experience of participation in programme committees or other positions in the organisation of conferences in the scientific area;

f) demonstrate the ability to lead or participate in the elaboration of project proposals or to obtain competitive funding.

13.2 - the criteria for the evaluation and ranking of the candidates are as follows:

a) Scientific and technological production (0 - 45 Points);

b) Applied research activities, or practice-based (0 - 30 Points);

c) Activities of extension and dissemination of knowledge (0 - 20 Points);

d) Activities to science management, technology and innovation programs, or experience in observing and monitoring the scientific and technological system or higher education (0 - 5 Points).

13.3 – The jury, according to Despacho No 8299-A/2018 referred in No 1 of this call, has the following composition:

President – Adjunct Professor, Chairperson of the Board of Directors of ISEP, Maria João Monteiro Ferreira Viamonte, Instituto Superior de Engenharia do Porto do Instituto Politécnico do Porto.

Members:

Full Professor Henrique Santos do Carmo Madeira, Faculdade de Ciências e Tecnologia da Universidade de Coimbra.

Associate Professor Luis Miguel Pinho de Almeida, Faculdade de Engenharia da Universidade do Porto.

Associate Professor with Aggregation Jorge Miguel de Matos Sousa Pinto, Escola de Engenharia da Universidade do Minho.

Coordinate Professor Eduardo Manuel de Médicis Tovar, do Instituto Superior de Engenharia do Porto do Instituto Politécnico do Porto.

14 - Applications must be formalized through the web site https://www.isep.ipp.pt/concursos including an explicit mention to the reference of the position.

The application must include: full name, affiliation, number and date of the identity card, the citizen ID, or civil identification number, taxpayer identification number, date and place of birth, marital status, occupation, residence and contact address, including email address and telephone contact.

15 - The application shall include all supported documents proving the conditions laid down in points 7 and 8 for admission to this tender procedure, in particular:

a) Electronic Application Form;

b) Certificate or Diploma attesting the conferring of a doctorate degree;

c) Curriculum of the candidate, detailed and structured in accordance with the scheme presented in the "evaluation of the scientific and curricular course" section of this document for the position in question;

d) Research project proposal (including scientific publications plan, dissemination activities and capture of competitive national and international funding) related with the position, up to a maximum of four A4 Pages.

16 - The deadline for applications is 30 (thirty) weekdays after the following day of publication of this document in the official journal.

17 - Candidates who present their application incorrectly or who do not fulfil the general requirements of a position shall be excluded from admission to the position. In case of doubt, the jury is entitled to request any candidate to submit additional documents supporting their statements.

18 - Candidates shall not be selected, for lack of absolute merit, if they do not obtain a final classification equal to or greater than 50 Points.

19 - The minutes and the final ranked list will be sent to candidates by email, with delivery notification receipt. The final ranked list will be displayed in the premises of ISEP, located at Rua Dr. António Bernardino de Almeida, 431, 4249-015 Porto, and published in https://www.isep.ipp.pt/concursos.

20 - Preliminary hearing and final decision deadline: in accordance to article 121 of the Administrative Procedure Code, after notified, the candidates have 10 working days to respond. Jury's final decisions are pronounced within a period of 90 days, from application deadline.

21 - This tender is intended solely to fill the indicated positions and may be terminated until the approval of the final ranked list of the candidates, expiring with the respective occupation of the position on offer.

22 - Non-discrimination and equal access policy: ISEP actively promotes a policy of non-discrimination and equal access, so no candidate may be privileged, benefited, impaired or deprived of any right or exempt from any duty, namely due to ancestry, age, sex, sexual orientation, marital status, family situation, economic conditions, education, origin or social condition, genetic heritage, reduced working capacity, disability, chronic illness, nationality, ethnic origin or race, territory of origin, language, religion, political or ideological convictions and union membership.

23 - Pursuant to Decree-Law No. 29/2001 of February 3, the disabled candidate has a preference in the case of equal classification, which prevails over any other legal preference. Candidates must declare in the act of application, under commitment of honour, their degree of disability, the type of disability and the communication media/expression to be used in the selection process, in accordance with the abovementioned diploma.

24 - This document shall be disseminated in the following terms:

a) in the 2nd series of the Journal of the Republic;

b) in the Public Employment exchange, www.bep.gov.pt, on the first working day following the publication in the Journal of the Republic;

c) on the Internet site of the ISEP, www.isep.ipp.pt;

d) In two daily newspapers of national circulation.

August, 27th, 2018. - The President, Maria João Viamonte.

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