

EUROPEAN SPACE AGENCY

Robot Navigation System Engineer

Job Req ID: 15021

Closing Date: 18 May 2022

Publication: Internal & External

Vacancy Type: Permanent

Date Posted: 20 April 2022

Vacancy in the Directorate of Technology, Engineering and Quality.

ESA is an equal opportunity employer, committed to achieving diversity within the workforce and creating an inclusive working environment. We therefore welcome applications from all qualified candidates irrespective of gender, sexual orientation, ethnicity, beliefs, age, disability or other characteristics. Applications from women are encouraged.

This post is classified A2-A4 on the Coordinated Organisations' salary scale.

Location

ESTEC, Noordwijk, Netherlands

Description

Robot Navigation System Engineer in the Automation and Robotics Section, Mechatronics and Optics Division, Mechanical Department, Directorate of Technology, Engineering and Quality.

The Automation and Robotics Section provides functional support to ESA projects and carries out technological research (R&D) in the field(s) of space robotics systems (from manipulators to autonomous vehicles) and laboratory supporting automation and robotics in manned and unmanned missions.

The Section is specialised in System Engineering of Space Automation and Robotics Systems. Space Robotics is a highly multidisciplinary subject. It depends heavily on the underlying space disciplines of structures, mechanisms, avionics, on-board software, ground operations and communication. However, packing tightly together all these disciplines in a single system that moves, interacts physically with its environment and with humans with a certain degree of autonomy, creates a complexity that is in itself a new discipline.

System Engineering of Space Automation and Robotics Systems is the discipline of specifying, designing and ultimately validating space automation and robotic systems that fulfil utilisation needs under defined environmental and operational constraints.

Robot Navigation is the technology that allows mobile robots to move in a planetary environment, towards a goal, while avoiding obstacles and keeping adequate knowledge of their position.

If selected for this post, you will be expected to take a leading role in the development of robot navigation systems in the research and development phase as well as for ESA planetary exploration projects.

Duties

Reporting to the Head of Section and within the technical fields described above, your main tasks and responsibilities will include:

- providing expert technical support and consultancy to ESA projects, programmes and general studies in the field of space robotics systems throughout all project phases;
- participating in feasibility studies, project reviews and the evaluation of procurement proposals;
- identifying critical development problems and assisting in their resolution;
- contributing to the definition of technology development requirements and work plans for the Agency's technology programmes;
- defining, initiating and managing R&D activities covering both long- and short-term needs;
- leading field test activities to validate and verify robot navigation systems of R&D and project origin;
- leading and performing laboratory test activities, as required;
- monitoring applicable scientific and technological trends and maintaining state-of-the-art expertise;
- contributing to the dissemination of the results of the activities performed and the transfer of knowledge across the Agency.

Duties may also include supporting other activities within your field of competence.

Technical competencies

General background and experience in the technical domains covered by the position
Understanding of related technologies, R&D trends and the industrial landscape
Multi-year experience with laboratory and field testing of robotic navigation systems and their ground truthing

Project support experience in planetary robotics

Experience in the preparation of procurement activities for technology development and innovation (statements of work, proposal evaluation, etc)

Experience in the management and monitoring of industrial activities, including participation in reviews

Behavioural competencies

Result Orientation

Operational Efficiency

Fostering Cooperation

Relationship Management

Continuous Improvement

Forward Thinking

Education

Master's degree in an engineering discipline relevant to the subject.

A PhD in Rover Navigation or Perception finalised to navigation will be considered an asset.

Additional requirements

Experience in coding robotic navigation systems also by means of robotics frameworks (ROS, ROCK).

Experience in perception means used in navigation (stereovision, LIDAR, IMU).

Experience in project reviews.

Other information

For behavioural competencies expected from ESA staff in general, please refer to the [ESA Competency Framework](#).

For further information please visit: [Professionals](#), [What we offer](#) and [FAQ](#)

The working languages of the Agency are English and French. A good knowledge of one of these is required. Knowledge of another Member State language would be an asset.

The Agency may require applicants to undergo selection tests.

At the Agency we value diversity and we welcome people with disabilities. Whenever possible, we seek to accommodate individuals with disabilities by providing the necessary support at the workplace. The Human Resources Department can also provide assistance during the recruitment process. If you would like to discuss this further please contact us email contact.human.resources@esa.int.

Please note that applications are only considered from nationals of one of the following States: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, the United Kingdom and Canada, Latvia, Lithuania and Slovenia.

According to the ESA Convention, the recruitment of staff must take into account an adequate distribution of posts among nationals of the ESA Member States*. When short-listing for an interview, priority will first be given to internal candidates and secondly to external candidates from under-represented or balanced Member States*. (<https://esamultimedia.esa.int/docs/careers/NationalityTargets.pdf>)

In accordance with the European Space Agency's security procedures and as part of the selection process, successful candidates will be required to undergo basic screening before appointment conducted by an external background screening service.

Recruitment will normally be at the first grade in the band (A2); however, if the candidate selected has little or no experience, the position may be filled at A1 level.

*Member States, Associate Members or Cooperating States.