EUROPEAN SPACE AGENCY

On-Board Computer and Data Handling Engineer

Job Req ID: 11990
Closing Date: 18 October 2021
Publication: Internal & External
Vacancy Type: Permanent
Date Posted: 20 September 2021

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. For this purpose, we 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
On-Board Computer and Data Handling Engineer in the On-Board Computer & Data Handling Section, Data Systems, Microelectronics & Component Technology Division, Electrical Department, Directorate of Technology, Engineering & Quality.

The On-Board Computer & Data Handling Section provides functional support to ESA projects and carries out technological research (R&D) what concerns turn-key on-board HW Data Handling solutions with emphasis on:

- platform and payload data handling architectures and their building blocks (equipment/units, modules and key components);
- units such as on-board computers, mass memories, remote terminals, instrument control units*;
- digital and analogue signal processing electronics for payload/platform functions;
- front-end acquisition and processing chain electronics*;
- on-board data transfer interfaces, buses and associated protocols (high and low speed);
- platform data handling functions related to security, data authentication, encryption, compression;
- use of microelectronics devices.
- implementation, inference, verification and validation of algorithms** on processing HW platforms for space applications* in close collaboration with other discipline experts (software, microelectronics and applications engineers).

* except for RF payloads.
** including Artificial Intelligence and Machine Learning algorithms.

Duties
You will report 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 platform and payload data handling systems throughout all project phases;
- participating in feasibility studies, project reviews and 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;
- fostering new application areas for multidisciplinary activities, placing emphasis on innovative concepts, cutting-edge technologies and system architectures;
- laboratory 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.

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

Technical competencies
General background and specific experience in the technical domains covered by the position (data handling system engineering and data handling units development)
Hands-on hardware experience
Experience in the development and verification of space hardware
Understanding of and practical experience with related technologies, R&D trends and the industrial landscape
Project support experience in a relevant domain
Spacecraft systems knowledge
Experience in the preparation of procurement activities for technology development and innovation (statements of work, proposal evaluation, etc)

Behavioural competencies
Result Orientation
Operational Efficiency
Fostering Cooperation
Relationship Management
Continuous Improvement
Forward Thinking

Education
A Master's degree in computer science, networks, electronics, telecommunications or a related field is required.

Additional requirements
t least 5 years of professional experience in the fields of space hardware design, simulation, manufacturing and testing of platform and payload data handling equipment, modules and boards is required. This includes the ability to design, review and simulate analogue and digital electronics for data handling units (use of FPGA/processors/micro-controllers, single-point-failure-free circuitry, failure containment techniques and use of COTS with radiation mitigation techniques).

Knowledge in the following fields will be considered as assets:

- Design of data handling electrical ground support equipment.
- Design of COTS based analogue and digital electronic boards for test purposes such as functional tests, radiation tests, etc.
- Implementation, inference, training, verification and validation of machine learning algorithms on HW platform (for space or terrestrial applications).

Other information

For behavioural competencies expected from ESA staff in general, please refer to the ESA Competency Framework.

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 at 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 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 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.

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.