

## On-Board Data Processing Engineer

**Job Req ID:** 12491

**Closing Date:** 30 June 2021

**Publication:** Internal & External

**Vacancy Type:** Advanced Recruitment

**Date Posted:** 02 June 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, The Netherlands

### Description

On-Board Data Processing 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) concerning turn-key on-board HW data systems solutions with an 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\*;

\*except for RF payloads.

\*\* including artificial intelligence and machine learning algorithms

### Duties

You will report to the Head of Section and your main tasks and responsibilities will include:

- providing expert technical support and consultancy to ESA projects, programmes and studies in the field of on-board processing (implementation, inference, verification and validation of algorithms\*\* on HW platforms) in 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 HW-related data processing R&D activities\* covering both long- and short-term needs with a special focus on the domain of on-board processing algorithms\*\* on on-board HW platforms for space applications.
- developing new application areas in the domain of on-board artificial intelligence and machine learning for multidisciplinary activities, placing emphasis on innovative concepts, cutting-edge technologies, and their implementation on HW platforms within a data handling system architecture\* .
- 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.

\*except for RF payloads

\*\* including Artificial Intelligence and Machine Learning algorithms

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

Hands-on hardware experience

Understanding of related technologies, R&D trends and the industrial landscape

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

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 electronics engineering, signal processing or a related field for this position is required.

### **Additional requirements**

Knowledge in the following fields will be considered as assets:

- familiarity with spacecraft systems
- development of datasets for the verification and validation of HW on-board processing applications
- component (including COTS) benchmarking for on-board processing
- training, implementation, inference, verification and validation of machine learning algorithms on HW platforms (for space or terrestrial applications)
- machine learning experience (HW and algorithms)

## 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 email [contact.human.resources@esa.int](mailto:contact.human.resources@esa.int).

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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.