

## TT&C Communications Engineer

**Job Req ID:** 12745

**Closing Date:** 26 October 2021

**Publication:** Internal & External

**Vacancy Type:** Permanent

**Date Posted:** 28 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. 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**

TT&C Communications Engineer in the TT&C & PDT Systems & Techniques Section, RF Systems Division, Electrical Department, Directorate of Technology, Engineering and Quality.

The TT&C & PDT Systems & Techniques Section handles both spacecraft Telemetry, Tracking and Command (TT&C) and Payload Data Transmission (PDT) techniques and technologies, space link communications (RF, hybrid RF/optical systems, signal coding/modulation, ranging techniques, radio science experiments) and proximity links, providing support to ESA projects and performing related research and development.

### **Duties**

You will report to the Head of Section and, within the above technical areas, your main tasks and responsibilities will include:

- assessing the techniques and technologies for present and future spacecraft communication systems necessary for the development of TT&C subsystems and their related equipment (e.g. receivers, transmitters, transponders), in particular: modulation, signal synchronisation, digital signal processing, error control coding, and RF/microwave technologies;
- assessing techniques and technologies for PDT subsystems and their related equipment (e.g. very high data rate transmitters), in particular: modulation, error correction coding, combined (adaptive) modulation/coding, digital signal processing, and RF/microwave technologies;
- assessing end-to-end TT&C and PDT systems, including system level design, (dynamic) link budget assessment, and data flow analysis, including interaction between different link layers and between transponder/transmitter and avionics equipment; assessment of related encryption

and authentication functions;

- generating technical requirements and Statements of Work for the tasks to be performed by industry, from early conceptual studies through to full development of hardware, in the area of TT&C;
- technical follow-up and monitoring of contracts with industry for the development of TT&C equipment and subsystems;
- providing expert technical support and consultancy to ESA projects, programmes and general studies in the area of TT&C communications throughout all project phases;
- participating in feasibility studies, project reviews and preparation/evaluation of procurement proposals;
- participating in the preparation of relevant standards in the frame of ECSS and CCSDS;
- mission analysis and participation in Concurrent Design Facility work;
- supporting the above, as required, with internal activities involving signal/data processing and software-based analytical, design, and validation tools;
- monitoring applicable scientific and technological trends and maintaining state-of-the-art expertise;
- contributing to dissemination of the results of the activities performed and the transfer of knowledge across the Agency.

Your duties may also include providing support for other activities within your area of competence.

### **Technical competencies**

General background and specific experience in the technical domains covered by the position  
Understanding of related technologies, R&D trends and the industrial landscape

Project support experience in a relevant domain

Experience with laboratory or field testing of relevant technical equipment

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

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**

A master's degree in telecommunication engineering for this position is required.

### **Additional requirements**

A good background in communication system engineering applied to space is required.

Solid experience and expertise with TT&C spaceflight hardware development and testing is desirable.

You must be eligible for security clearance by your national security administration.

### **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, 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 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.

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