

# Job Title: Young Graduate Trainee for Propagation and Environmental Effects on Navigation

Requisition ID 12113 - Posted 01/02/2021



## EUROPEAN SPACE AGENCY

Young Graduate Trainee Opportunity 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.

### Post

#### Young Graduate Trainee for Propagation and Environmental Effects on Navigation

This post is classified F1.

### Location

ESTEC, Noordwijk, The Netherlands

### Our team and mission

The RF Payload and Technology Division's Wave Interaction and Propagation Section focuses on analysis of the interaction of electromagnetic waves (microwaves to optical wavelengths) with the natural environment, providing support to telecom, navigation and remote-sensing activities. This includes theoretical modelling and experimental data analysis, as well as the development of statistical models and of mitigation or retrieval algorithms. The Section works in close collaboration with other areas in the Agency.

Interested candidates are encouraged to visit the ESA website: <http://www.esa.int>

### Field(s) of activity/research for the traineeship

Wave propagation is a critical element where the aim is to assess the impact of atmosphere and environment on the performance of space communications links or on the accuracy of satellite navigation solutions. This covers the development of electromagnetic propagation models with the environment (atmosphere, ionosphere, vegetation, buildings, etc.), and their use to support system design, performance assessment (e.g. link budget) as well as the development of processing and mitigation algorithms.

Within this framework, the specific field of activity of this traineeship is the characterisation and mitigation of ionospheric and environmental effects on navigation solutions. Possible fields of investigation include:

- Implementation and design of testing setups for GNSS receivers of environmental impairments (including multipath, ionospheric scintillation, interference, etc.);
- Characterisation of propagation environment for EGNOS/Galileo reference stations based on radio frequency propagation models and experimental data;
- Expansion of the usability of software tools performing precise ionosphere estimates (such as the ESA Unified GNSS Ionosphere) to multiple configurations (.e.g. include data from Low-Earth Orbit satellites)
- Studying new ionospheric products and data for scientific exploitation (i.e. for polar region), in coordination with GNSS Science Support Centre (GSSC) at ESAC.

### Technical competencies

Knowledge of relevant technical domains  
Relevant experience gained during internships/project work  
Breadth of exposure coming from past and/or current research/activities  
Knowledge of ESA and its programmes/projects

## **Behavioural competencies**

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

## **Education**

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You should have just completed, or be in your final year of, a university course at Master's level in a technical or scientific discipline related to the traineeship.

## **Additional requirements**

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Having acquired the programming skills necessary for scientific software implementation and/or some experience with laboratory navigation equipment is an asset.  
You should have good interpersonal and communication skills and should be able to work in a multi-cultural environment, both independently and as part of a team.  
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.  
During the interview motivation and overall professional perspective/career goals will also be explored.

## **Other information**

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

**The closing date for applications is 1 March 2021.**

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](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, and the United Kingdom. Nationals from Latvia and Slovenia, as Associate Member States, or Canada as a Cooperating State, can apply as well as those from Bulgaria, Cyprus, Lithuania and Slovakia as European Cooperating States (ECS).

Priority will first be given to candidates from under-represented Member States.

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