

## Job Title: Young Graduate Trainee for Galileo Mission Performance and Architecture Engineering

Req ID 3861 - Posted 19/01/2018



### EUROPEAN SPACE AGENCY

Young Graduate Traineeship Opportunity in the Directorate of Navigation.

ESA is an equal opportunity employer, committed to achieving diversity within the workforce and creating an inclusive working environment. Applications from women are encouraged.

#### Post

##### Young Graduate Trainee for Galileo Mission Performance and Architecture Engineering

This post is classified F1.

#### Location

ESTEC, Noordwijk, The Netherlands

#### Our team and mission

The Young Graduate Trainee (YGT) will be part of the Galileo System Engineering Unit, Galileo System Procurement Service, Galileo System Office, Galileo Programme Department, Directorate of Navigation.

The European Space Agency in cooperation with the European Union is developing the Galileo system. Galileo will be an independent, global, European-controlled navigation satellite system.

The Galileo Programme Department is responsible for the design, development and validation of the Galileo Satellite Navigation System, consisting of the Galileo Space, Ground and User Segments. The Galileo System Procurement Service within the Galileo Programme Department is tasked with maintaining the overall system requirements baseline, performance budgets and developing and executing the System and Service verification plans. In addition the System Engineering group (part of The Galileo System Procurement Service) is supporting the Galileo Evolutions Programme by preparing and carrying out early studies and trade-offs on System Architecture and System.

Interested candidates are encouraged to visit the ESA website: [www.esa.int/ESA](http://www.esa.int/ESA)

#### Field(s) of activities

The Young Graduate Trainee will be involved in the Galileo project in the area of Galileo System Performance and System Performance evolution. As part of his/her contribution to the system team tasks the applicant will support the System Engineering Team to address one of the following topics:

##### Long Term Ephemeris:

- Research about user prediction models for long term ephemeris
- Research user algorithms for orbit calculation starting with the short term ephemeris and satellites Solar Radiation Pressure (SRPs)
- Assess clock fitting for long term: complement/cross-checking other Galileo results
- User positioning performance: demonstrate the performance that a user would have with long term ephemeris and clocks until the updated ephemeris are received.
- Generate rinex observables and navigation message files to check the performance achieved by a user and the long term ephemeris
- Perform tests in Spirent with the long term ephemeris by degrading the navigation message
- Use the mass market testing log files to calculate how long a user needs to receive the updated ephemeris from the SIS in challenging environments. This would be included in the previous points calculations.

##### Precise Point Positioning Algorithms and Architecture

- Research into PPP system designs and algorithms
- Define a base algorithm on Galileo and the resulting products
- Develop and prototype the preliminary algorithm with an early processing facility
- Perform field testing of the PPP products
- Model in Service Volume Simulator the performance of a high accuracy user, by adapting the SVS to new engines
- Process the new rural measurements data (PPP Vs ODS accuracy, RTK) from existing measurement campaigns
- Support high accuracy integration with 5G

##### Advanced Architecture, Deployment and Modelling for GNSS:

- Study of advanced GNSS architectures based on composite PVT services using traditional MEO satellites, LEO sats and gap-filler MEO satellites with segregated capabilities improving service, and cost (CAPEX/OPEX)
- Corresponding deployment analysis
- Modelling of those architectures through active usage of system modelling tools".

#### 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

Self Motivation

Communication

Continuous Learning

Cross-Cultural Sensitivity

Teamwork

#### Education

Applicants should have just completed, or be in their final year of a University course at Masters level (or equivalent) in one of the following Engineering or Science disciplines: aerospace engineering, geodesy, telecommunications engineering, mathematics or physics.

#### Additional requirements

A good knowledge of Global Satellite Navigation Systems, orbit and clock determination and prediction as well as GNSS performance parameters is required. Knowledge of Performance Assessment Tools as well as solid background in real data processing for GNSS systems and software development would be highly desirable. Familiarity with GNSS augmentation systems or advanced receiver autonomous integrity monitoring would be an asset.

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.

In addition, applicants should demonstrate good interpersonal skills and the capacity to work both independently and as part of a team.

During the interview the candidates' 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 04 February 2018.**

If you require support with your application due to a disability, please 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, and the UK, or Slovenia as an Associate Member, Canada as a Cooperating State, Bulgaria, Cyprus, Latvia, 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