

Job Title: Internal Research Fellow (PostDoc) in GNSS Evolutions Advanced Resilient PNT

Req ID 2801 - Posted 31/07/2018



EUROPEAN SPACE AGENCY

Research Fellowship 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

Internal Research Fellow (PostDoc) in GNSS Evolutions Advanced Resilient PNT

This post is classified F2.

Location

ESTEC, Noordwijk, The Netherlands

Our team and mission

The Internal Research Fellow will be based in the Galileo 2nd Generation System Engineering Unit, Galileo System Procurement Service, Galileo System Office.

Overview of the Galileo 2nd Generation System Engineering Unit

The GALILEO 2nd Generation System Engineering Unit, under the Directorate of the GALILEO Programme and Navigation-related Activities (D/NAV) leads the definition of the GALILEO System capabilities for the next decades. Current activities include the preliminary specification and design of the GALILEO 2nd Generation in the frame of the EGEP and the Horizon 2020 HSNAV Programmes. GALILEO 2nd Generation seeks the improvement in coverage, accuracy, time-to-fix and resilience of the PNT services based on or contributed by GALILEO in the time window between 2025 to 2040.

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

Field(s) of activities/research

Overview of the field of research proposed

A research fellow is sought to engage in independent research in the area of resilient Position Navigation and Time (PNT) considering new GALILEO signal-in-space features, user equipment countermeasures as well as multi-constellation and non-GNSS alternative PNT techniques contributing to the definition of new robustness features in GALILEO 2nd Generation. Focus is expected on, but not limited to, the following areas: spoofing detection and mitigation; analysis and design of navigation message authentication; signal authentication; and complementary user equipment countermeasures. Open service and safety-of-life users will be considered.

The research fellow will work closely with the GALILEO 2nd Generation System Engineering Unit to define the Signal-in-Space and System Evolution according to the expected user needs and user equipment technology improvements. The research fellow is expected to consider the full resilient PNT concept of operation, including the security and trust perimeter for the different user types.

Another important aspect of the work will be to cooperate with the System and Segment teams running the deployment

of the GALILEO 1st Generation, the 2nd Generation Segment teams and the Technical Directorate of ESA, in order to:

- Support the definition of roadmaps for GALILEO-supported resilient PNT, including early deployment of specific features,
- Define experimentation in Resilience PNT test-beds for proof of concept in ESA laboratories

Technical competencies

Knowledge relevant to the field of research
Research/publication record
Ability to conduct research autonomously
Breadth of exposure coming from past and/or current research/activities
Interest in space and space research
Ability to gather and share relevant information

Behavioural competencies

Innovation & Creativity
Continuous Learning
Communication
Relationship Management
Self Motivation
Problem Solving
Cross-Cultural Sensitivity

Education

Applicants should have recently completed, or be close to completion of a PhD in a related technical or scientific discipline.

Additional requirements

Candidates should have research experience in areas related to the proposed research. For example, GNSS Authentication, Secure PNT, Secure Telecom Broadcast Services, GNSS Receiver Processing or Statistical Signal Processing. Applicants will be required to demonstrate competency in the specific skills required to perform the proposed research (e.g. analysis, programming, laboratory etc.) Applicants are required to be able to demonstrate an ability to work in a multidisciplinary environment as part of diverse teams. A proactive approach to identifying opportunities, problem solving and communicating is required. 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.

Other information

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

The Agency may require applicants to undergo selection tests.

The closing date for applications is 28 August 2018.

In addition to your CV and your motivation letter, please add your proposal of no more than 5 pages outlining your proposed research in the "additional documents" field of the "application information" section. Candidates are asked to arrange for 3 reference letters, to be sent by the referees themselves, before the closing date to temp.htr@esa.int. Please ensure your name is mentioned in the subject of the e-mail.

If you require support with your application due to a disability, please email 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 and Slovenia as well as Bulgaria, Cyprus, Latvia, Lithuania, 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