Training Opportunity for Portuguese Trainees

Reference	Title	Duty Station
PT-2019-TEC-EFE(4)	Co-design for RF, thermal and mechanical issues	ESTEC

Overview of the Unit missions:

The RF Payloads & Technology Division is responsible for RF payloads, instruments and technologies for space and ground applications, including all equipment having a RF space/ground interface and its associated laboratories. The Division supports the definition, specification and development/procurement of laboratories either for ESA projects and technology programmes or external customers.

Within the Division, the RF Equipment and Technology Section provides functional support to ESA projects and carries out technological research (R&D) in the fields of RF equipment and building blocks, active and passive components, technologies and related design and characterisation tools.

Overview of the field of activity proposed:

Additive manufacturing has matured in the last years up to a point where it becomes a promising solution for RF/Microwave parts. However, current design approach is mostly replicating conventional topologies mostly oriented for classical manufacturing techniques such as milling. Additionally, RF, mechanical and thermal designs are mainly optimized separately which results in a non-efficient final design.

This training opportunity aims to develop optimization approaches considering aspects such as RF, mechanical and thermal but also fabrication constrains. Techniques such as topological optimization will be studied and their applicability for a multi-physic co-simulation will be assessed.

The selected candidate will be offered a task related to current challenges within one of the domains indicated above. Considering the multi-disciplinary nature of the field, high level of interaction with mechanical design, manufacturing, material, processes and thermos-mechanical engineers is expected during the study.

The candidates background will be taken into account in the selection of the task.

Experience in RF/Microwave waveguide modelling and design as well as in payload measurement and test techniques would be highly desirable.

Required Education:

Applicants should have just completed a University course at Masters Level (or equivalent) in an Engineering or scientific field, with emphasis on electromagnetics or physics.

Applicants 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.

Applicants must be fluent in English and/or French, the working languages of the Agency. A good proficiency in English is required.