

Training Opportunity for Swiss Trainees

Reference	Title	Duty Station
CH-2018-TEC-EFE	Characterization of High-Performance Time and Frequency Generation Systems	ESTEC

Overview of the unit's mission:

The RF Equipment and Technology Section is responsible for the support to ESA Projects and the development of technology in the domain of Radio-Frequency and Time & Frequency equipment and associated technologies. This encompasses passive and active devices, equipment, measurement techniques and associated software mainly for the needs of the space segment but also for the related ground segment such as user terminals and gateway stations. The section provides support to most ESA Application Programmes: Telecommunication, Navigation (in particular Galileo and its evolutions), Earth Observation and Space Science.

Overview of the field of activity proposed:

The proposed Training Opportunity will focus on the test and detailed characterization of high performance Time and Frequency generation equipment and subsystems (atomic clocks). Being the core of a number of key ESA missions (in particular Galileo and its evolutions), such subsystems require extensive characterization and performance analysis in a wide range of operational and environmental conditions. More specifically, the activity will include:

- Development and set-up of dedicated test benches for the characterization of Time and Frequency equipment and sub-systems
- Development of analysis tools for the investigation of environmental sensitivity, ageing, long-term performance
- Development and investigations of new methods for the characterization of clocks, Time and Frequency Transfer and timescales
- Contribution to the realisation of the timescale operating and maintained in the section's laboratory

This activity will be executed in the Laboratory operated by the RF Equipment and Technology Section, which includes state-of-the-art test and instrumentation equipment and methods.

Required education:

Applicants should have just completed a University course at Masters Level (or equivalent) in Physics or Electrical Engineering. Experience in RF testing and/or Engineering programming/simulation tools (e.g. Labview, MATLAB, COMSOL) is an asset.