

## Training Opportunity for Portuguese Trainees

Reference	Specialist Area	Duty Station
PT-2012-TEC-ETM(6)	Deployment and Characterization of ESTEC Timing Station	ESTEC
<p><b><u>Overview of the Division missions:</u></b></p> <p>The RF Payload Systems Division is responsible for space instrumentation and communication systems, subsystems, equipment and technologies which cover the following domains:</p> <ul style="list-style-type: none"> <li>- Communication systems and subsystems design and validation;</li> <li>- Systems for TT&amp;C communication, navigation, remote sensing and scientific applications;</li> <li>- Satellite payloads (e.g. repeaters for telecommunications or navigation instruments, earth remote sensing instruments for scientific applications);</li> <li>- Microwave and millimetre wave equipment and technologies;</li> <li>- Complex on-board payloads for communications and remote sensing, and processing core of such systems, including optically based implementations;</li> <li>- Systems testing for performance evaluation or validation;</li> <li>- Laboratories to test/proof concepts soundness and validation</li> </ul>		
<p><b><u>Overview of the field of activity proposed:</u></b></p> <p>The objective of the work is to contribute to implementation and testing of the timing station at ESTEC. This station is comprised of ensemble of precise atomic clocks (Hydrogen masers and Caesium clocks), RF measurement and distribution equipment and time transfer equipment (GPS/Galileo receiver...). The purpose of the station is to provide a reliable and stable timescale for the users in ESTEC and to link it to the internal time reference Universal Coordinated Time (UTC) by regularly providing GNSS measurements to the archive of the the International Bureau of Weights and Measures (BIPM). The Portuguese Trainee tasks will be:</p> <ul style="list-style-type: none"> <li>- to contribute to testing of the clocks and RF measurement equipment by performing measurements of the input/output signal characteristics (10MHz and 1 Pulse-per-Second signals) e.g. with a digital oscilloscope</li> <li>- to document and evaluate test results with respect to the equipment specification</li> <li>- to develop software/scripts to retrieve observation data and telemetry from the measurement equipment and GNSS receiver (using a serial or LAN interface)</li> <li>- to develop software scripts to regularly submit GNSS measurement data to an external FTP server</li> <li>- to contribute to evaluation of the measurement data in order to assess the characteristics of the ESTEC timescale and optimise them</li> </ul> <p>Programming language:</p> <ul style="list-style-type: none"> <li>- Matlab C</li> </ul>		
<p><b><u>Required Education:</u></b></p> <p>BsC/MsC in Electrical Engineering/Physics.</p>		