

Training Opportunity for Portuguese Trainees

Reference	Specialist Area	Duty Station
PT-2010-TEC-ETN(5)	GNSS based Timing Service experimentation	ESTEC
<p><u>Overview of the Division missions:</u></p> <p>The RF Payload Systems Division is responsible for space instrumentation and communication systems, subsystems, equipment and technologies. This covers:</p> <ul style="list-style-type: none"> • Communication systems and subsystems design and validation; • Radio Navigation systems, subsystems and equipment (GPS, EGNOS, GALILEO); • Systems for TT&C communication, remote sensing and scientific applications; • Satellite payloads (e.g. repeaters for telecommunications or navigation instruments for earth remote sensing or scientific applications) • Microwave and millimetre wave equipment and technologies; • Complex on-board payloads for communications and remote sensing, and processing core of such systems, including optically based implementations; • Systems testing for performance evaluation or validation. <p>The expertise of the Division is essentially used for :</p> <ul style="list-style-type: none"> • Preparation and implementation of various ESA R&D programmes • Support to ESA projects • Consultancy to customers outside ESA • Training and supervision of students, graduates, research fellows • European Standardisation of technologies • Organization of workshops and conferences <p>The trainee will be integrated into the Radio Navigation Systems and Techniques Section. The section is involved in:</p> <ul style="list-style-type: none"> • Radio navigation systems studies • Support to the EGNOS and Galileo projects for system design, development and testing • Advanced research and development in the field of radio navigation techniques and technologies • Development of receivers for GPS, EGNOS and Galileo 		
<p><u>Overview of the field of activity proposed:</u></p> <p>Time transfer is one of the main application of GNSS. GALILEO will offer GALILEO system time, GPS to GALILEO and UTC to GALILEO parameter as part of the Navigation Message/Signal based on the physical realisation of the GALILEO system time in the PTF. Evaluation of the initial provision of the service, particularly during the IOV to FOC transition, experimentation of the steering mechanism, analysis of improved algorithm based on distributed clocks alternative to the physical clock realisation are topic today of high attention.</p> <p>The trainee will work in the following areas:</p> <ul style="list-style-type: none"> • Performance evaluation of initial timing service provision • Analysis and development of algorithm for system time generation, Time Steering, etc. • Prototyping of critical functionalities in Matlab and C/C++ • Lab testing of prototyped functionalities in the European Navigation Lab at ESTEC 		
<p><u>Required Education:</u></p> <p>Degree in Telecommunications or Aerospace Engineering or similar C/C++ and Matlab programming ability Previous knowledge of radionavigation would be desirable Background in statistics</p>		