

Training Opportunity for Portuguese Trainees

Reference	Specialist Area	Duty Station
PT-2010-TEC-EDS	Onboard Communications	ESTEC
<p><u>Overview of the Division missions:</u></p> <p>The Data Systems Division is responsible for technology developments and project support related to on-board data handling and processing systems (essentially control computers, data handling computers, specialized processors for payload data processing, solid state mass memories, microelectronics devices, ASICs, command and control busses, high and very high speed on board networks and corresponding support software).</p> <p>The division is, besides activities related to the specification and validation of data systems, also actively involved in the design of the required building blocks. These elements must comply with high reliability and availability requirements combined to specific immunity to the space environment, in particular related to radiation induced effects.</p> <p>The division hosts several laboratory facilities (for Avionics and Payload Data systems) that allow hands-on experience with the newest electronic developments designed for use in space.</p>		
<p><u>Overview of the field of activity proposed:</u></p> <p>The Data Systems division and in particular the On-board Communication Unit (TEC-EDS) is executing several Technology Research Programs related to the standardisation of onboard hardware and software architectures, individual devices, major building blocks, and the interfaces and protocols used for interconnection. Activities also include the development and prototyping of advanced network layer protocols (DTN), mass memory access protocols, plug and play protocols and many more.</p> <p>To support these objectives the Data Systems Division is maintaining the so-called Reference Architecture System Test-bed for Avionics (RASTA) This infrastructure is an end-to-end reference system used to integrate and validate the resulting hardware and software building blocks from the Technology Research Programs.</p> <p>As a Trainee in the Data Systems Division the candidate will have the opportunity for hands-on contributions to a number of activities related to RASTA:</p> <ul style="list-style-type: none"> • Definition and development of a Test Suite for the CANbus (based on Can-Open) • Definition and development of a standard Mass memory network access protocol • Evaluation of Plug and play access protocols • Assessment of Delay tolerant networking protocols • Participation in Delay tolerant networking (DTN) experiments with NASA and European test-beds <p>Assessment of end to end protocols and the mapping of ground and flights communication services and protocols</p>		
<p><u>Required Education:</u></p> <p>Applicants should have just completed, or be in their final year of a University course at Masters level in Electrical/Computers Engineering. Candidates must be fluent in English and/or French, the official languages of the Agency. Candidates should have a high degree of autonomy together with an attitude to work in a team environment. They should have good communication skills and an interest into innovative technologies. Specific skills:</p> <ul style="list-style-type: none"> • Software/Hardware engineer, languages and tools • Knowledge of communication protocols <p>Knowledge of embedded software and embedded hardware</p>		