

## Training Opportunity for Portuguese Trainees

Reference	Specialist Area	Duty Station
PT-2012-TEC-ETM(3)	Power amplification, telecommunications	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 Trainee will work on advanced flexible telecom payload concepts with particular emphasis on Ka-band broadband multimedia and L/S-band mobile scenarios.</p> <p>In particular, he/she will be very active in the simulation and evaluation of different next generation multibeam payload architectures using on board digital processors and flexible output sections offering on board flexibility in terms of bandwidth and power to beam (e.g. active transmit antennas, multiport-amplifiers, flexible travelling wave tubes, etc.).</p> <p>The activity will include analyses, trade-offs and performances assessment (e.g. interference, intermodulation, distortions, etc.) of RF payloads architectures and constituent high power building blocks (i.e. Traveling Wave Tube Amplifiers, Multiport-Amplifiers, etc.).</p> <p>Conventional RF-front-end / antenna architectures and advanced payload concepts based on distributed power amplification configurations will be studied and compared in order to determine the most promising architecture for different application scenarios.</p>		
<p><b><u>Required Education:</u></b></p> <p>MS or BS degree in Telecommunications/Electrical/Microwave Engineering. Good knowledge of RF and microwave systems, signal theory and digital signal processing techniques is required as well as some experience in RF test of microwave equipments. Experience in computer programming and MATLAB is also required. Background knowledge on satellite telecommunications techniques &amp; systems is an asset.</p>		