

Training Opportunity for Portuguese Trainees

Reference	Title	Duty Station
PT-2014-EOP-PES	Mission and System analysis for LEO	ESTEC
<p><u>Overview of the Unit missions:</u></p> <p>The System Support Division supports the overall ground system implementation, performs mission and system analysis and provides post launch support for satellite projects in the Earth Observation Projects Department.</p> <p>Within this division, the Earth Observation System Support Office provides detailed analyses to the various Earth Observation projects, in all their development phases, in particular regarding system performance, geometry calculation and mission planning. The geometry includes the orbit, attitude and geolocation of products.</p> <p>A variety of software tools are used to support these analyses, both off-the-shelf and custom made by the office staff.</p> <p>The office also maintains an operational orbit and geometry calculations library, which is used in the ground segment of all Earth Observation projects supported by the Division.</p> <p>All analyses are systematically documented with quantitative and qualitative assessment of the analyses results, and presented to the concerned project staff.</p>		
<p><u>Overview of the field of activity proposed:</u></p> <p>The selected Trainee will be involved, within the Mission and System analysis team, in the selected activities as follow:</p> <ul style="list-style-type: none"> - Orbit and attitude analysis: orbit definition, manoeuvre strategy, delta-V calculations, baseline analysis for interferometry. Orbit transfer strategies; - Visibility analysis for instrument: coverage & revisit analysis, field of view geometry; - Visibility analysis for ground stations: data latency, on-board memory usage; - Geolocation accuracy; - Mission planning and Observation & Communication scenario review. <p>Preferably the results are to be presented in a geometrical (information system) context.</p> <p>The activities may also include the coding of any ad-hoc software tools required, and the validation of the obtained results.</p> <p>Another specific contribution for the trainee will be to review the data filtering & smoothing techniques used in the division's orbit and geometry calculations library, to select a method to improve the results, prototype the selected method in the form of software code, and to analyse and to report on the results.</p> <p>Tutor: Montserrat Pinol & Berthyl Duesmann</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 (or equivalent) in a technical or scientific discipline. More specifically knowledge of data filtering / smoothing, orbital mechanics , missions analysis or software engineering is an asset. The Applicant should have good computing and programming skills for coding algorithms (e.g. in C, C++, Java) and / or the analysis of data (e.g. Matlab, IDL, Perl, Ruby).</p> <p>Applicants should have good interpersonal and communication skills and should be able to work in a multi-cultural environment, both independently and as part of a team.</p> <p>Applicants must be fluent in English.</p>		