

Training Opportunity for Portuguese Trainees

Reference	Specialist Area	Duty Station
PT-2010-EOP-SF	Space System Engineering	ESTEC
<p><u>Overview of the Division missions:</u></p> <p>The role of the EOP-SF Division is to prepare new missions and technologies for the ESA Earth observation (EO) programmes. The Division work includes preparatory studies for new Earth Science and Earth Application missions, implemented with both external and internal activities. External activities, carried out by industry and institutes, are defined, guided and verified by the staff of the EOP-SF Division. Internal activities range from basic mission analysis to specific research of critical elements, e.g. about means to observe a geophysical phenomenon in a new, more performant way. The Division work includes also the coordination of EO technology activities performed within the whole of ESA and the definition and execution of specific technology research and development.</p>		
<p><u>Overview of the field of activity proposed:</u></p> <p>In general, the work will be mainly related to the end-to-end definition of a space mission, including orbit, platform, instruments, end-to-end data flow, launcher interfaces, ground processing to meet observation requirements. This definition is carried out in close cooperation with specialists in the different satellite and instrument domains and also in cooperation with the scientists and/or users proposing the mission. An interesting aspect of the work is that it can provide a system-oriented, generalist perspective, where the conflicting needs of the users and the technical and economic constraints have to be balanced to provide first an overall architectural analysis (phase 0) and later an overall design, detailed enough to provide credible cost, schedule and definition of the key mission elements (phase A).</p> <p>The trainee shall work with the technical officer of a phase A or phase 0 and, depending on her/his qualifications and interests, shall be involved in areas related to satellite configuration, attitude control, mission analysis, ground station, and overall data flow. Active participation in internal activities and in concurrent design sessions may be required. In particular, it is envisaged that the trainee could also perform increasingly autonomous activities related to the design, performance assessment and simulation of imaging at high resolution, e.g. from a geostationary satellite, and associated issues (e.g. geolocation, distorsion correction) and similarly for the on-board control to implement such capabilities, in order to complement the work performed in the preparatory studies of future satellite concepts. Work in the domain of the end-to-end system performance evaluation for other types of EO missions or new technologies for future EO missions is also of interest.</p>		
<p><u>Required Education:</u></p> <p>A degree in engineering is preferred. Experience with CAD or mission simulation tools, e.g. STK or MATLAB, will be a strong asset. Some post-graduate work on space system design will be an ideal asset.</p>		