Training Opportunity for Portuguese Trainees

Reference	Title	Duty Station
PT-2015-EOP-SEI	**Earth Observation based products and services**	**ESRIN**

Overview of the Unit missions:

The Industry section within the Services and Exploitation Division, of the Science, Applications and Future Technologies Department, works closely with the European EO services sector (mostly small value-adding companies), and potential new user communities for EO-based products and services. The main aim is to further strengthen the competitive position of this sector as suppliers of marketable EO services. It does this through a wide range of activities carried out under the Value Adding Element (VAE) of the Earth Observation Envelope Programme (EOEP).

Currently the main user communities being addressed under the VAE include : Oil & Gas operators, Renewable Energy operators (solar, wind, wave), Re/Insurance, Waste management (inland & coastal), Ecosystems valuation, Civilian Law Enforcement agencies, and International Development Banks.

The potential for using EO-based information within these user communities is being explored for a very wide range of EO products, using both optical and radar sensors. Examples are : **Land** (urban infrastructure, Land Use / Change mapping, Forest, Crops, Soil conditions, In-land water extent and quality, topography, Surveillance monitoring), **Marine** (Oil spill, coral ecosystems, coastal change, coastal habitats, ocean currents) and **Risk** (flood mapping, land motion histories).

Overview of the field of activity proposed:

Given the user communities and types of EO products being explored within VAE, there are currently 4 separate opportunities for activity to be carried out, as given below. In all cases, the scope of the activity to be carried out would be to investigate the potential of specific EO products within the context of on-going ESA activities with users.

In support to Civilian Law Enforcement / Surveillance :
ESA has completed 6 initial demonstration activities for a range of civil security aspects. EO products include mainly very high resolution (VHR) surveillance monitoring (feature extraction) using both SAR and Optical. Follow-on activities will be started early in 2015.

In support to Geo-Hazard Risk assessment :
ESA is starting early 2015 new activities with the users and practitioners of satellite EO for geo-hazards. This concerns analysing the contribution of EO to risk assessment (seismic, volcanoes, subsidence, etc). The main application areas concerned are INSAR and PSinSAR processing. The main topics of interest are: science users & their needs; EO data (primarily SAR); processing methods, tools & processors in particular open source processing to derive precise deformation mapping.

In support to International Development projects :
ESA is starting 16 new activities for World Bank projects and 12 new activities for Asian Development Bank projects in last half of 2014. The main EO thematic areas being covered are : vessel detection (illegal fishing), coastal mapping, geo-hazard risk mapping, lake water quality, river basins mapping, urban mapping, forest mapping, basic land use / land change mapping.

In support to Renewable Energy :
ESA is starting demonstration activities to consolidate the potential of EO products in the domain of solar, wind, wave, hydropower renewable energy, in last half of 2014.

Required Education:

Degree in remote sensing / environmental sciences.