Training Opportunity for Luxembourgish Trainees

Reference	Title	Duty Station
LU-2023-EOP-PES	**Earth Observation Mission Analysis**	**ESRIN, Frascati, Italy**

Overview of the mission:

The EOP-PES System Analysis office provides mission and system support to all Earth-Observation missions in all phases of the life of a spacecraft, from early studies through development to operations.

Most of the tasks are related to classical mission analysis work with special emphasis on:

- Feasibility studies, mission definition and consolidation of mission analysis requirements;
- Constellation design and formation flying;
- Selection and definition of operational orbits;
- Orbit / constellation acquisition;
- Orbit propagation and maintenance strategies;
- De-orbiting and space debris mitigation requirements compliance, re-entry, etc.

Additional task are related with:

- Geolocation, attitude (models);
- Review of mission status and verification of mission and system requirements, including delta-v budgets, performance and design consistency;
- Provision of improved strategies and new concepts, identifying and solving critical problems throughout all mission phases;
- Support to simulations campaigns and LEOPs (Launch and Early Orbit Phase) for Sentinels and Earth Explorers missions;
- Support to launcher trajectory analysis and reviews (VEGA C, Ariane 6 and SpaceX)

Overview of the field of activity proposed:

Synergy between Earth-Observation projects is used more and more frequently.
In the wake of core missions like Sentinels, several spacecrafts are being conceived to fly in tandem to benefit from a co-registration or to receive a reflected signal (e.g. Bistatic SAR).

EOP-PES actively supports the projects who require such a (tandem) constellation.
For that support orbit maintenance strategies need to be conceived, simulated and validated.

Primarily, the Trainee will be involved in proposing strategies for orbit maintenance of projects like Harmony and Rose-L, to demonstrate the performance and to interact with project engineers and flight dynamics specialists on this aspect.

The Trainee may also be allocated to other tasks within the perimeter of the EOP-PES office (as described above), as needed.
Required education and skills: • You should have just completed or be in the final year of your Master' s degree in a technical or scientific discipline. • Good knowledge of orbit propagation • Good general knowledge of mathematics, physics, and simulation techniques • Software coding experience • Good interpersonal and communication skills • Ability to work in a multi-cultural environment, both independently and as part of a team • Fluency in English and/or French, the working languages of the Agency