

Training Opportunity for Luxembourgish Trainees

Reference	Title	Duty Station
LU-2023-OPS-SC	Space Safety – Clean Space	ESTEC, Noordwijk, the Netherlands

Overview of the mission:

The ESA Space Safety Programme Office takes care of all potential hazards from or in space, which can impact human activities on Earth or in space. The spectrum of tasks involves developing at basic understanding of space hazards originating from our Sun, man-made space debris, or asteroids potentially colliding with Earth. The Office also examines basic approaches to mitigating these hazards and implementing space systems end-to-end in a sustainable and eco-compatible way. Moreover, several corner stone missions are underway to demonstrate basic methods of space weather forecasting, asteroid deflection and active space debris removal from orbit.

ESA's Clean Space initiative aims to protect the environment on Earth and in space and ensure continued access to space for future generations. The team's work is focused on the three following areas:

- Ecodesign for Space: providing a framework for embedding environmental sustainability within space mission design, defining goals for achieving the overall objective of a Green Space through the development and use of green technologies.
- End-of-Life Management: developing technologies to prevent the creation of future debris and implementing system activities to promote the integration of these technologies in future missions, striving to achieve solutions for a zero-debris approach for ESA missions by 2030.
- In-Orbit Servicing: enabling commercial missions aimed at servicing other satellites, through active debris removal, repairing, refuelling or even recycling, as the cornerstone of a vital new European business.

You are encouraged to visit the ESA website: <http://www.esa.int>

Overview of the field of activity proposed:

As a LuxYGT, you will support the Space Safety Office in research and implementation in the various Clean Space themes, namely: eco-design for space, end-of-life management and in orbit servicing.

In particular, you will contribute to the topic of eco-design by:

- assisting with preparatory tasks by supporting the improvement of the life cycle assessment (LCA) framework;

- understanding and summarising the environmental impacts of ESA missions and projects by reviewing LCA models (e.g. Copernicus Expansion missions and the Galileo Transition Satellite);
- enhancing LCA and ecodesign methodology within ESA and Member States.

Furthermore, in the topic of end-of-life management, you will support:

- the definition of zero-debris approach and the assessment of impacts at system level;
- the development of end-of-life technologies;
- the zero debris system-level activities (platform and technologies)

Required education and skills:

- You should have just completed or be in the final year of your Master' s degree in Aerospace engineering.
- 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