

Training Opportunity for Belgian Trainees

Reference	Title	Duty Station
BE-2021-EOP-ΦMP	EO End-to-End Mission Performance Simulator Engineering	ESTEC

Overview of the mission:

The role of the Future Missions and Instruments Division is to prepare the Earth observation (EO) missions, instruments and technologies of the future, encompassing a wide range of scientific missions (Earth Explorers, Missions of Opportunity, and the Scout missions based on small satellites) and operational missions (Copernicus Sentinels together with the EU and meteorology missions together with EUMETSAT). The work carried out is mainly related to the end-to-end definition of space missions, including system engineering, orbits and mission analysis, instruments, platforms, end-to-end performance, data flow, launcher interfaces, and ground processing to meet the observation requirements. The definition is carried out in close cooperation with specialists in the different domains as well as with the scientists and/or data users proposing the mission or expected to use its result.

Candidates interested are encouraged to visit the ESA website: www.esa.int/ESA

Overview of the field of activity proposed:

You will contribute to support the work of the Division in the definition and development of End-to-End Mission Performance Simulators suitable for the assessment of the end-to-end mission performance. In particular you will perform the following activities:

- Participate to the development of new End-to-end Mission Performance Simulators of future EO missions.
- Participate to the evolution and development of the existing end-to-end Mission Performance Simulators
- Participate in the maintenance, running and documentation of new or existing end-to-end mission performance simulators.
- Use new or existing end-to-end mission performance simulators for system trade-offs, preliminary sizing and performance evaluation of a selected set of future EO missions
- Participate in the end-to-end system definition of missions under preparation in the Division.

For details of the scope and purpose of Earth Observation end-to-end mission performance simulators please consult the following references accessible in the internet:

- Biomass end-to-end mission performance simulator, Lopez Dekker, P. et al. IGARSS 2011. DOI: 10.1109/IGARSS.2011.6050169
- FLEX end-to-end mission performance simulator. Vicent, J. et al. IEEE Transactions on Geoscience and Remote Sensing (Volume: 54, Issue: 7, July 2016). DOI: 10.1109/TGRS.2016.2538300

Required education and skills:

- Master's degree in a technical discipline (e.g. Physics, Optical Engineering, Radio Frequency Engineering, Space system engineering)
- Good knowledge of a programming language (e.g. Matlab or Python)
- Knowledge of EO remote sensing techniques or EO instruments would be an asset
- Experience in modelling and simulation of Earth Observation systems would be an asset
- 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