

Training Opportunity for Belgian Trainees

Reference	Title	Duty Station
BE-2017-DG-SE(2)	Support to CubeSat Activities	ESA Redu Centre

Overview of the unit's mission:

Aiming to motivate and better prepare young Europeans to pursue a space related career, the ESA Education and Knowledge Management Office offers, in the frame of the ESA Academy:

- a portfolio of training courses, in all areas of ESA's expertise, delivered at the ESA Academy's Training and Learning Centre;
- a number of opportunities for university students to gain hands-on involvement in space-related projects, which include satellite projects, and experiments to be conducted on platforms reproducing special environmental conditions (such as sounding rockets, stratospheric balloons, drop towers, hyper-gravity centrifuges, and parabolic flights).

Information on the activities of the ESA Education Office can be found at <http://www.esa.int/education>.

Overview of the field of activity proposed:

The National Trainee will support the undertaking of CubeSat related activities within the ESA Academy at the ESA Redu Centre. In particular, under the supervision of the coordinator of the CubeSat activities, he/she will:

- Support the development and bringing into use of a CubeSat Laboratory, aimed at organising integration and test campaigns for university CubeSat teams in a cleanroom environment. The national trainee will:
 - Support the engineering activities related to the cleanroom preparation and test equipment installation;
 - Familiarise with laboratory control and test equipment (e.g. cleanroom control, vibration shakers, shock table, thermal-vacuum chamber) and support the calibration and bringing into use of the equipment;
 - Support facility operators and student teams during satellite test campaigns (i.e. functional tests, vibration tests, thermal-vacuum tests, etc.);
 - Assist in the maintenance of the test equipment and the cleanroom.
- Assist the ESA Academy in the development of a training course on space engineering making use of satellite models for hands-on training (hardware models representing a satellite with the typical subsystems). This encompasses following activities:
 - Get acquainted with the satellite model hardware and software, the ground support equipment (GSE), and the satellite model control system;
 - Prepare exercises on the various technical functionalities of the satellite model;
 - Developing and implementing additional functionality in the satellite models through the creation of dedicated software code (optional, depending on trainee background);
 - Interface with ESA technical experts;
 - Support the development of the training content and material for a space system engineering course and similar courses making use of the satellite models;
 - Take part in the training sessions making use of the satellite models.
- Support the "Fly Your Satellite!" project team in the development and organisation of training courses aiming to prepare and support student teams engaged in CubeSat projects. To that purpose the national trainee will:
 - Get acquainted with ESA working practise for small-satellite projects, including the application of ECSS standards;
 - Liaise with ESA experts from various engineering disciplines to define the objectives and lecture content for training courses focussing on following satellite development phases (tailored for CubeSat missions):
 - Phase A – Mission concept definition and feasibility study
 - Phase B – Preliminary Design of the CubeSat System (flight segment and ground station)
 - Phase C – Detailed Design of CubeSat System (flight segment and ground station);
 - Assist in the preparation of the Call for Proposals, the evaluation of applications and the selection of student teams;
 - Support the preparation and organisation of the training courses.

In addition to his/her tasks, the national trainee will have the chance to attend several training courses for university students organised in the framework of the Training and Learning Programme.

The National Trainee may also contribute to other educational opportunities created by the ESA Education Office.

Required education:

Applicants should have a background in an engineering field, preferably with a strong orientation in space technology, with a good general understanding of satellite systems engineering aspects.

Past experience or knowledge of CubeSat systems will be considered an asset.

Applicants should have good interpersonal and communication skills and should be able to work in a multi-cultural environment, both independently and as part of a team.

Applicants must be fluent in English and/or French, the working languages of the Agency. A good proficiency in English is required.