

## Training Opportunity for Belgian Trainees

Reference	Title	Duty Station
<b>BE-2019-HRE-XE</b>	<b>Spaceship EAC – Supporting Energy at EAC activities</b>	<b>EAC</b>
<p><b><u>Overview of the unit’s mission:</u></b>            Within the Directorate of Human Spaceflight and Robotic Exploration, the European Astronaut Centre (EAC) at Cologne, Germany, hosts the European astronaut corps and is responsible for astronaut training and astronaut medical operations. In order to prepare for future (human) space exploration missions, EAC created the “Spaceship EAC” project, which aims at developing innovative technologies and concepts relevant for exploration on the Moon. The Spaceship project is part of the European Exploration Envelope Programme, under the ExPerT (Exploration, Preparation, Research and Technology) team.            The implementation of related projects is often done in cooperation with institutes of the German Aerospace Center (DLR), which has its headquarters and major facilities surrounding the EAC in Cologne, and with other external European partners and commercial entities.</p>		
<p><b><u>Overview of the field of activity proposed:</u></b>            At EAC, we are currently engaged in a large collaborative project, ENERGY@EAC, which aims to provide a standalone power system to supply electricity to our habitat module under development at the centre. This project is in collaboration with DLR, CNES and other energy sector commercial initiatives and companies. The graduate trainee position would be aimed at supporting both the Spaceship EAC project, and this specific energy project.</p> <p><b>Tasks:</b>            Within this opportunity, a number of tasks are envisioned. These include:</p> <ul style="list-style-type: none"> <li>• Become familiar with the project elements, constraints and technological components (solar panels, inverters, Fuel Cell, Electrolyser) available to meet project goals</li> <li>• Use modeling and estimation software (both in house and COTS/Open Source) to continue to develop an operational estimate of usage, including assumptions for losses due to equipment, electrical losses, shading and degradation</li> <li>• With the support of ESA personnel and in the context of ExPerT, explore potentially disruptive and innovative energy technologies and how they could be applied to human spaceflight activities in the near term</li> <li>• Convert specifications and operational experience with these systems into a robust documentation, for use by the centre to support the ENERGY@EAC project</li> <li>• Use best known industry standards (ISO, etc.) to enhance the project, taking into account requirements and constraints such as scope, budget and location.</li> <li>• Familiarisation and support for the "Spaceship EAC" project and - as far as relevant – with ESA's exploration technology programme</li> <li>• Support the Spaceship EAC project and activities within the centre</li> <li>• Liaise with the management team on the ENERGY@EAC project, via meetings and discussions</li> </ul>		
<p><b><u>Required education:</u></b>            Applicants should have just completed, or be in their final year of a University course at Masters Level (or equivalent) in a technical or scientific discipline.            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.            A candidate is sought with educational experience/skills relating to energy systems, renewable energy, aerospace energy or similar. Practical demonstrated experience within these domains that are relatable to this opportunity are particularly desirable.            Applicants must be fluent in English and/or French, the working languages of the Agency. A good proficiency in English is required.</p>		