

## Training Opportunity for Belgian National Trainees

Reference	Title	Duty Station
BE-2023-HRE-LHV	Lunar Gateway AIT	ESTEC, Noordwijk

### **Overview of the mission:**

The Lunar Gateway, a vital component of NASA's Artemis programme, will serve as a multi-purpose outpost orbiting the Moon that provides essential support for long-term human return to the lunar surface and serves as a staging point for deep space exploration. The International Habitat Module (I-HAB) will be the Gateway's second habitable module, following NASA's HALO. It will complement habitability functions such as life support systems, a crew sleeping area, a galley (with a food warmer, water dispenser and dining area), and additional research facilities.

I-HAB will have a radial docking port for the crew and scientific airlock accommodation, a back-up radial docking port for the lunar human lander module, and an axial docking port where Orion will dock once on the Gateway. As its full name indicates, I-HAB is an international project that has received significant contributions from other agencies participating in the Gateway programme. The European Space Agency, the Japan Aerospace Exploration Agency, the Canadian Space Agency, and NASA are all contributing to common Gateway equipment.

The I-HAB Baseline, Verification and AIT Team is responsible for maintaining the I-HAB module's technical baseline, safeguarding a complete, timely and thorough implementation of I-HAB assembly, carrying out integration verification and validation activities, coordinating project activities related to the definition of the I-HAB In-Orbit Commissioning Plan, and monitoring I-HAB tools and models compatible with needs during the operational phases, which will include the simulation/troubleshooting capabilities in Europe and, at NASA, Gateway-level facilities.

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

### **Overview of the field of activity proposed:**

As a Belgian National Trainee, you will have the opportunity to actively contribute to the development and verification of the I-HAB module as part of the Lunar Gateway station. As a member of the I-HAB Baseline, Verification and AIT Team, you will carry out activities related to the human system integration aspects and its verification and validation challenges. This will include the following tasks:

- Overseeing the creation and maintenance of an I-HAB human system integration plan in consultation with I-HAB prime industry, ESA, and NASA experts;
- Safeguarding the documented traceability of verification activities to ensure that

compliance to Gateway human system integration requirements can be demonstrated;

- Coordinating the compilation of an I-HAB human-in-the-loop verification plan, including the definition and planning of activities that are to be executed on I-HAB physical mock-up models;
- Supporting the definition and configuration of I-HAB physical mock-up models to be used for human-in-the-loop testing in order to satisfy I-HAB validation and verification needs;
- Organising the I-HAB virtual reality activities in support of the preparation of human-in-the-loop tests;
- Monitoring the execution of the human-in-the-loop test activities and ensuring thorough reporting; and
- Presenting outcomes and lessons learned to the I-HAB and Gateway teams.

**Required education and skills:**

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