

Training Opportunity for Belgian Trainees

Reference	Title	Duty Station
BE-2021-OPS-SWb)	Space Weather Service Performance Assessment	ESOC
<p><u>Overview of the mission:</u></p> <p>The goal of ESA's Space Safety Programme is to contribute to the protection of our planet, humanity and assets in space and on Earth from threats originating in Space and to contribute to Europe's ability to safeguard its affected infrastructure from such threats as a service to its society. The Space Weather Office within the Space Safety Programme is addressing the risks associated to the activity of our Sun with the goal of providing owners and operators of critical spaceborne and ground-based infrastructure timely and accurate information that will enable mitigation of the adverse impacts of space weather. The term space weather refers to the environmental conditions in the Earth's magnetosphere, ionosphere and thermosphere due to the Sun and the solar wind that can influence the functioning and reliability of space-borne and ground-based systems and services or endanger property or human health.</p> <p>ESA's Space Weather Office is responsible for developing a network of space weather products and services geared towards mitigating the effects of space weather on infrastructure located in space and on ground and defining and implementing European space based observation systems to enable operational space weather services.</p> <p>In order to provide reliable products and services to end-users, it is crucial to understand the strengths and potential limitations of the various elements underpinning these products and services, including the scientific assumptions and algorithms on which they may be based. Both existing prototypes and newly developed products, must undergo comprehensive testing and validation in order to ensure that information presented to the service users is accurate. As part of the Space Weather service network development, thorough testing and validation of all products is needed as new elements are progressively integrated.</p>		
<p><u>Overview of the field of activity proposed:</u></p> <p>This training opportunity falls within the scope of the ESA Space Weather Service Network development activities and will focus on performance analysis and testing of space weather prototype products and services available via ESA's Space Weather Service Portal (https://swe.ssa.esa.int).</p> <p>This challenging project will start with a comprehensive assessment of the existing validation work which has already been carried out for a given set of service products. The project will then focus on further evaluation and assessment under variety of conditions. A range of statistical techniques currently in use by both the space weather and meteorological communities will be evaluated for their applicability and the trainee will also be involved in functional testing of a new online collaborative validation platform providing access to such tools. Following conclusion of the project, recommendations made for improvements to the SWE Service Network's overall validation guidelines and approach shall be produced.</p>		

Required education and skills:

- Master's degree in a technical or scientific discipline.
- Space physics and/or statistics background 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