Internship in ESA's Advanced Concepts Team
On
Accessibility on a Lunar Base

European Space Research and Technology Centre
ESA ESTEC

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

Topic description

With the upcoming plans for a lunar base and ESA's parastronaut feasibility project [1] it is time to look even further. Space is becoming more and more accessible to many people, be it tourists or commercial entities. ESA is now aiming to - for the first time - investigate and consider sending an astronaut with a physical disability to space. This is commendable as space is a notoriously harsh environment.

However, the aims of the parastronaut project are still somewhat limited as it focuses mostly on lower-body limitations such as shorter limbs or overall shorter body height.

Hence, it is time to already start looking beyond this to pave the road for more inclusive and accessible human space flight in the future. The aim of this project is to identify the hardware and design requirements on a lunar base to make it accessible for astronauts with physical disabilities such as visual impairments / blindness, hearing loss or such that require the use of a wheel chair.

Candidate's tasks

For the project, the intern will need to interact with ESA staff, who are knowledgeable or involved in the planning and design of upcoming lunar base missions. It may also be of interest to reach out to the European Astronaut Center and people involved with the parastronaut project. Further, they should reach out to associations or non-profit organizations for people with physical disabilities to collect and understand the daily life requirements people face. Ideally, they should interview people with disabilities on what kind of requirements they would pose on hardware, devices and their surroundings to allow them to operate optimally. Possibly, it may even be beneficial to set up a direct dialogue to get immediate feedback on possible changes to existing equipment or designs to make them more accessible.

In a synthesis of the information gained from ESA staff, people with disabilities and the mentioned organizations, the intern is tasked to create a feasibility study detailing which hardware, device and architectural requirements a lunar base needs to fulfill for various (or one selected physical disability) and how complex it would be to integrate those. Hopefully, the created document can then serve as a foundation for follow-up studies.

References

[1] - https://www.esa.int/About_Us/Careers_at_ESA/ESA_Astronaut_Selection/Parastronaut_feasibility_project