

## Training Opportunity for Lithuanian Trainees

Reference	Title	Duty Station
LT-2019-TEC-MME	Transportable low cost optical communications telescope	ESTEC
<p><b><u>Overview of the unit's mission:</u></b>            The research will be performed within the Optoelectronics section of the European Space Agency, responsible for the definition and implementation of activities in the field of optical communications at the Agency. For example, the Optoelectronics section is supporting the development and procurement of the Laser Communication Terminals embarked on the European Data Relay System, as well as research activities in deep space optical communications and optical communications through the atmosphere. The Optoelectronics section laboratories include standard optical facilities and clean room facilities to manufacture and test optical setups and instruments, and an optical ground station in Tenerife (Canary islands), which is widely used to support experiments in the areas of optical communications and quantum communications.</p>		
<p><b><u>Overview of the field of activity proposed:</u></b>            The field of activity is to procure, assembly and test a transportable low cost telescope for optical communications. In the last years, laser communications is getting much attention for space communication between satellites but also between satellites and optical ground stations. At present most of the optical ground stations are either fixed stations with ~1m telescope diameter or very expensive transportable optical ground stations with ~10's cm telescope diameter. Advances in amateur / semi-professional astronomical telescopes are progressing very rapidly. Nowadays, several vendors commercially advertise computerized 20-40cm diameter telescopes with automatic initial star calibration and automatic tracking control at relative low price. This offers the possibility to expand the use of these telescopes also for laser communications beyond astronomical purposes. In this context, the Young Graduate Trainee will participate in the development and test of a low cost telescope for optical communications (including assembly, software programming for initial stars calibration and acquisition &amp; tracking control, software for transmitter / receiver communications equipment)</p>		
<p><b><u>Required education:</u></b>            The Applicants should have good (proven) skills in Python and Matlab (or Labview or C) programming languages. The Applicants should have a good background on control systems, mechanisms and control electronics. Knowledge on optics, optoelectronics and laser communications is an asset</p>		