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Author: Mr. RICCARDO INGROSSO
Italian Space Agency (ASI), Italy

EUROPEAN STUDENT EARTH ORBITER (ESEO) A CONSOLIDATE INSTRUMENT TO TRAINING NEW WORKFORCE

Abstract

In just over three decades, the space economy has grown from an handful of space-faring nations to over 60 nations active in space field, including private companies, academia participations, industry and citizens involvement. Such rapid and constant transformation calls for new approaches to funding and supporting space ventures. To meet these challenges, the ESA has develop a new vision recently captured in the notions of Space 4.0 paradigm. This "Vision" focuses on the interconnection between science, industry, politics and society in new ways. The main goal is the transition from a "system of innovation" to an "ecosystem of innovation". The transition should be able to create a new form of relationship between ESA and other public and private institutions across the entire innovation chain. This process starts from basic research, to applied research, including early financial resource for small innovative companies, interested in space activity, and demand side policies that can scale up such initiatives. Today, one of the ESA's challenge is develop its future WorkForce and orient its existing expertise and capabilities toward these goals. To strengthen European space industry and future Space Workforce, ESA plans to act with two different approaches. The first one is a vertical policies approach, which focuses on the direct investments for specific technologies and sectors. The second one is based on the horizontal policies, more focused on the background conditions required for the innovation. This paper will concentrate on the second approach and specifically on the ESA's horizontal instrument for developing a new space workforce. In particular, the European Student Earth Orbiter (ESEO) is an micro-satellite project with an educational objective: for the participating university students to acquire hands-on experience of a real space project, in order to prepare a well-qualified technical workforce for the European space sector. This was achieved by offering the student the opportunity to develop the payload, key satellite subsystems and the ground segment, under the coordination of ESA and SITAEL, responsible for the satellite platform, system integration and testing, and the technical coordination of the student teams. Ten Universities from eight ESA Member States have participated, with more than 600 university students involved in the project since its inception. Through ESEO and the other ESA Academy educational projects, ESA acts in support of Europe to inspire, engage and better prepare students to undertake scientific and technological careers and become better prepared as future professionals in the space sector.