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IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
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ZENIT AEROSPACE SPACE 101: A STUDENT INITIATIVE TO AEROSPACE EDUCATION PROMOTION

Abstract

The process of choosing what to do in college is a challenge for high school students in Brazil. It is very common that Brazilian students do not attempt to choose aerospace engineering. This happens for two factors, first one they do not know about this major or they see it as too difficult to graduate. As a result it is possible to find many mechanical engineering mastering in aerospace engineering instead of majoring it.

Facing this problem, a group of students from University of Brasilia created Zenit Aerospace 101 (Escola Espacial Zenit Aerospace). It is an educational solution created by Zenit Aerospace Junior Enterprise of Aerospace Engineering, a student chapter of University of Brasilia that has the main goal to show to high school and middle school students what is aerospace engineering and why it can be a choice for their major, as well as stimulating their interest for STEM. The program consists in two levels, Aerospace 101 and Applied Aerospace Science.

The Aerospace 101 consists in two parts: a group of lessons and a hands-on workshops. The lessons teach young students about five areas of aerospace and aeronautical engineer: rockets science, satellites, drones, aircrafts and astronomy. The lessons also presents the past, present and future of aerospace engineering and the participation of Brazil in those areas. The hands-on workshops bring a mindset of aerospace engineering mission planning through a brief practical part of it. The project teach the teenagers the principles of an aerospace project, concept missions, teamwork, decision analysis, and the physical problems on the spacecrafts operation.

The Applied Aerospace Science aims through a hands on activity bringing on a new level of complexibility to an aerospace project. It challenges the students to build functional and semi-functional projects such as drones and cansats using electronic components and recycled materials for the base structures. As the introduction is given on Aerospace 101, this part of the project only support the students that participated on the introduction program.

So far the result achieved at the Zenit Aerospace 101 reached more than a thousand students of Brasilia from public and particular school. Some students already ingressed at aerospace engineering graduation or STEM related graduation and also has a positive comeback from educators that participated at the program. This paper show all the result achieved with this program and it also gives the importance of stimulating students into STEM fields.