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EDUCATING THE NEXT GENERATION OF AEROSPACE ENGINEERS: THE ROLE OF ORBIT  
NTNU, A VOLUNTEER STUDENT ORGANIZATION

**Abstract**

Volunteer student organizations can play a crucial role in inspiring and educating the next generation of aerospace engineers. Orbit NTNU, a student organization at the Norwegian University of Science and Technology (NTNU), is a prime example of how such organizations can inspire students to pursue careers in the aerospace industry. Through its diverse range of projects and initiatives, Orbit NTNU provides students with opportunities to develop technical skills, gain hands-on experience, and work collaboratively on innovative projects.

One of Orbit NTNU's primary goals is to educate and inspire students to pursue careers in the aerospace industry. The organization achieves this goal by providing students with a range of opportunities to engage in projects related to space technology and exploration. For example, Orbit NTNU's CubeSat projects involve designing, building, and launching small satellites into orbit, which provides students with practical experience in all aspects of spacecraft design and engineering. For this reason, orbit aims to have satellites in all phases of development, and therefore has five satellite projects under development: SelfieSat in Orbit, FramSat-1 in phase D, FramSat-1.5 in phase C, FramSat-2 in pre-phase A and BioSat in phase A/B.

This requirement for several satellites stems from the unique challenges that Orbit NTNU has experienced when trying to educate space engineers as an independent, volunteer student organization, with a naturally high turnover. Orbit NTNU has a high retention rate but will always be limited by students finishing their degrees or going on exchanges. The organization, therefore, has unique challenges which it has overcome, and can serve as a learning experience for the industry.

Overall, Orbit NTNU's role in educating the next generation of aerospace engineers cannot be overstated. By providing students with self-defined practical experience, exposure to cutting-edge technologies, and opportunities to collaborate with industry partners, Orbit NTNU is helping to shape the future of the aerospace industry. As such, volunteer student organizations like Orbit NTNU play a critical role in ensuring a sustainable and innovative future workforce.

This paper explores how Orbit NTNU has managed to engage and educate a growing number of students through a unique self-defined way of allocating work. Further, it will explore the structures necessary for this system to function. Throughout this, there will be a focus on what Orbit does differently than the industry, and what the industry can learn from this.