

<https://doi.org/10.69646/1csst27>

## **BUILDING THE FUTURE OF SPACE EXPLORATION: HOW STUDENTS IN SERBIA ARE DEVELOPING SPACE SYSTEMS**

VUK MAKSIC<sup>1</sup>

<sup>1</sup> *Argo, University of Belgrade, Serbia, [vuk.maksic@argorobotics.rs](mailto:vuk.maksic@argorobotics.rs)*

### **ABSTRACT**

Space exploration has long been perceived as the exclusive domain of well-funded national agencies and big industrial players. Argo, a student organization at the University of Belgrade, challenges this assumption by demonstrating that university students in Serbia can design, build, and operate space systems, from autonomous planetary rovers to the first student-built sounding rocket on the Western Balkans.

Founded on the belief that the next generation of aerospace engineers should not wait to contribute, Argo brings together students from diverse technical disciplines to work on real, mission-driven hardware. Our flagship project, the Serenity planetary rover, is built to compete at the European Rover Challenge, one of the most prestigious student space robotics competitions in the world, where teams simulate surface operations in a Mars analogue environment. Through this project, students gain hands-on experience in systems engineering, autonomous navigation, astrobiology, and spacecraft-grade embedded systems development, skills that are otherwise rarely accessible at the undergraduate level.

Alongside the rover, Argo is developing Excalibur, a high-power sounding rocket targeting a flight envelope previously unreachable by any student team in the region, and Hyrax, a custom flight computer designed to serve as the avionics backbone for both ground and aerial vehicles. These projects are not isolated efforts. They share architecture, talent, and vision, reflecting how a small but motivated student team can build an integrated space systems program from the ground up.

This paper reflects on the organizational, technical, and motivational journey of building such a program in Serbia. We discuss how student-led

space initiatives can thrive even in environments with limited institutional support, how international competitions serve as a powerful driver of technical excellence and team cohesion, and how the experience of building systems that must work reliably, autonomously, and in harsh conditions, shapes engineers who are ready to contribute to the global space industry.

The story of Argo is ultimately a story about what becomes possible when students are given the freedom to aim for orbit.