https://doi.org/10.69646/1csst05

SERBIA'S STRATEGIC PATH TO ESA COOPERATION: ENGINEERING OPPORTUNITIES, CASE STUDIES AND POLICY RECOMMENDATIONS

IGOR STOJKOVIĆ[1] and BILJANA ILIĆ[2]

[1] *Independent researcher, ESA retiree, igor.stojkovic@me.com*
[2] *Research Associate, VTI, Experimental Aerodynamics Division, biljana.ilic@icloud.com*

ABSTRACT

Serbia, as an EU candidate country with a strong engineering talent pool possesses significant untapped potential in space-related engineering and technology. Despite lacking formal European Space Agency (ESA) membership or cooperation status, Serbia maintains active participation in international satellite programs and demonstrates growing capabilities in electronics, communications, software engineering, ground-segment technologies and small-satellite subsystems.

This paper analyses realistic pathways for Serbia to engage with ESA through the European Cooperating State (ECS) Agreement and the five-year Plan for European Cooperating States (PECS) Charter. It emphasizes technical opportunities in engineering domains such as small-satellite subsystems, ground-segment infrastructure, data processing architectures, AI/ML algorithms, telecommunications, and navigation systems. Policy recommendations align with EU accession priorities (Chapter 25: Science & Research), digital transformation goals, and the development of national engineering and technological capacities in the space domain.

Drawing on comparator countries (Czechia, Romania, Poland, Croatia's 2023 ECS/PECS entry, and Malta), the paper highlights economic multipliers, high-tech job creation in engineering sectors, and capability building. Serbia's participation in PECS could transform its engineering strengths into drivers of innovation, technology exports, talent retention, and regional leadership in the Western Balkans. The first space conference in Niš provides the ideal platform to advance this agenda.

Keywords: ESA cooperation, PECS Charter, space engineering, small satellites, ground segment, telecommunications, data processing.