

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Lift Off: Primary and Secondary Education (1)

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FROM PIXEL TO INTEL:
FOSTERING STEAM ENGAGEMENT AND CLIMATE ACTION THROUGH SPACE EDUCATION

Abstract

In an era where climate change poses challenges to our planet, the need for innovative approaches to environmental education has become paramount. The Ramon SpaceINT is a unique space educational program designed to cultivate space-based climate intelligence among learners in the Tenth grade within their schools.

This integration aims to enhance students' understanding of climate science by using satellite data and technology to monitor, analyze, and address environmental issues. By incorporating satellite technology into climate change education, students can gain practical insights into real-world applications of scientific principles, promote multi and interdisciplinary learning, and develop skills in data analysis, critical thinking, and problem-solving. This approach facilitates a more holistic and comprehensive understanding of climate change and empowers students to contribute to sustainable solutions for environmental challenges.

SpaceINT achieves its objectives by demonstrating in a hands-on manner how "From Pixel to Intel" is applied and by so engages secondary school students in an immersive learning experience that explores Earth's climate systems through satellite imagery and data analytics. By deciphering pixel-level data and transforming it into actionable intelligence, participants develop a deep understanding of climate phenomena and their global implications, as well as remote sensing theory and practice.

Furthermore, the integration of this topic into the existing Israeli Ministry of Education curriculum, specifically as an alternative assessment within the physics curriculum, underscores its importance. While engaging with high school students and institutions, challenges arise, including schools' reluctance to introduce subjects not covered by standardized matriculation tests. However, collaborating with the Ministry of Education to integrate the program as part of the alternative assessment in physics has effectively increased school engagement.

Overall, this climate-intelligence space program leverages spatial data analysis and visualization techniques to enhance climate change awareness, improve decision-making processes, and facilitate understanding of the world around us using Earth observations. In this presentation, we'll outline the program, showcase achievements, and discuss lessons learned and future directions for the program.