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AN ANALYSIS ON THE CURRENT ENVIRONMENT AND POTENTIAL METHODS TO IMPROVE
REGIONAL SPACE COLLABORATION IN OCEANIA**Abstract**

Space sector cooperation between Australia and Pacific Island Nations (PINs) is essential to address shared challenges to promote sustainable development and stability in today's increasingly globalised and dynamic world. Despite the potential benefits, current diplomatic structures in regional forums, such as the Asia-Pacific Region Space Agency Forum, along with past space sector collaborations have overlooked the contribution and needs of PINs. This paper explored the cooperation of public and private industry sectors, academia, and students to provide tangible steps to grow the regional space sector.

The topic of Regional Space Collaboration in Oceania and Southeast Asia was explored in Team Casuarina within the youth-led Astra Program - an initiative by the Australian Youth Aerospace Association, that provides a platform for young professionals and students to engage with subject matter experts, QA panels, and mentoring sessions. The platform allows emerging professionals to voice concerns and provide fresh perspectives on issues, some of which are systemic. The paper has analysed the background of space sector collaborations associated with the themes of development, climate, and security, as well as their benefits towards the Australian space sector, and it has also provided a review of current strategies.

Key recommendations include: (1) Increasing space collaboration through integrating academia, industry, and government, ensuring access to launch sites, creating sustainable revenue models and establishing

a STEM education initiative to engage youth to engage in space industries; (2) Instituting quarterly track 1.5-like sessions amongst nations to facilitate more effective discussions on how space technologies can address climate change and ecological monitoring with an emphasis on PINs; (3) Deploying CubeSats equipped with satellite imagery and AI-driven analytics to enhance Maritime Domain Awareness across the region, including to improve dark vessel detection and Illegal, Unreported and Unregulated fishing.

Expanding Australia-New Zealand space collaboration to be more inclusive of PINs addresses regional shared challenges through constructive dialogue, capacity building, and economic support. The analysis suggests recommendations for fostering sustainable development and stability, orienting Australia as a global leader in space innovation and multilateralism. The proposed guidelines would enhance the space sector capabilities in the PINs, and their collaboration with Australia, enabling nations to address their shared and critical challenges more effectively.