

# Suitcase Satellites: The rise of CubeSats and their Impact on Environment and Climate Monitoring in Australia.

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## SUMMARY

The proliferation of CubeSats, small satellites the size of a suitcase, is transforming environment and climate monitoring by lowering the barriers to space access. With reduced launch costs, CubeSats enable a new era of space-based Earth observation, allowing more organisations and countries to participate. CubeSat constellations provide higher revisit times, enabling accurate and timely tracking of Australia's changing environment and hazards and provide spatial information to better adapt and mitigate the impact of climate change.

The integration of onboard Artificial Intelligence (AI) further enhances data processing, enabling real-time analysis and decision-making. AI-powered CubeSats can identify patterns, detect anomalies, and prioritise data transmission, improving monitoring efficiency and effectiveness.

For Australia, with its vast and diverse environment, the implications are profound. The country stands to benefit from enhanced monitoring capabilities offered by CubeSat constellations and onboard AI. While Australia is developing its sovereign capability, with initiatives like the Australian Space Agency's investment in local industry, there is a need to accelerate development to fully leverage these technologies and address unique environmental challenges.

This presentation will explore the rise of CubeSats, their impact on environment and climate monitoring, and Australia's current sovereign capability, including the SA space mission Kanyini, and the opportunities and challenges associated with these emerging technologies.

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