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Cybersecurity in space systems, risks and countermeasures (4)

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CYBERSECURITY INNOVATION AND REGULATION FOR MOBILE LAUNCH SYSTEMS: LESSONS ON RESILIENCE AND THREATS

Abstract

Space systems are increasingly recognised as critical infrastructure to a nation's security. This means they are vulnerable to foreign interference, including cyber-attacks. The present research examines the cybersecurity challenges from a technical perspective to demonstrate how regulatory frameworks for mobile launch operations can help or hinder security protections and space operations more broadly. Australia is used as a case study.

By analysing mission control systems and various cybersecurity frameworks employed elsewhere in the world, the paper identifies the main vulnerabilities in mobile launch operations. Proposals are then suggested for enhanced security measures which align with best practices. This is done in a way which considers the balance between entrepreneurship and innovation, national security and the benefits space activities bring to society.

Ultimately, the research's integrated approach to cyber mission assurance addresses both security concerns and regulatory compliance for mobile launch scenarios. The significance of the research is in its guidance for decision makers in government who seek to regulate cybersecurity priorities of space operators.