



Australian Government

Department of Defence
Science and Technology

Defence Science & Technology Strategy for Space

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DST

Science and Technology for Safeguarding Australia

Overview

- Defence Strategic Guidance
- Defence S&T Strategy for Space
- Current Activities in Small Satellites & Space Situational Awareness



Buccaneer



WREsat 1967

Strategic Guidance

The Government seeks a more capable, agile and potent future force where priority capabilities include

- Comprehensive situational awareness for superior decision-making
- Communications for a networked force
- Accurate knowledge of position and time for precision effects



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The Defence White Paper 2016 recognises the importance of space systems in achieving this vision



Strategic Guidance

Satellite systems are vulnerable to space debris, which could damage or disable satellites, and advanced counter-space capabilities, which can deny, disrupt and destroy our space-based systems.

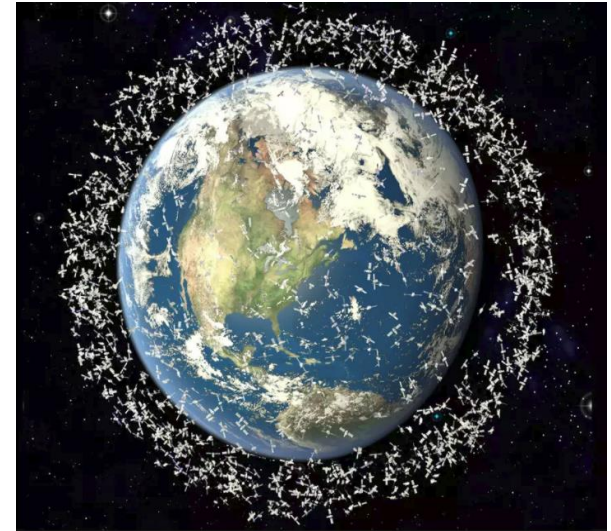


Strategic Guidance

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It is therefore important to be able to **detect** and **track** objects in space so Defence can plan to manage the effects of any possible damage to our space-based capabilities



Australian Space Environment

The Australian space environment is also changing rapidly with the academic, established industry and start-up sectors investing in “new space” technologies that lower the barriers to better, cheaper and more agile space capabilities.



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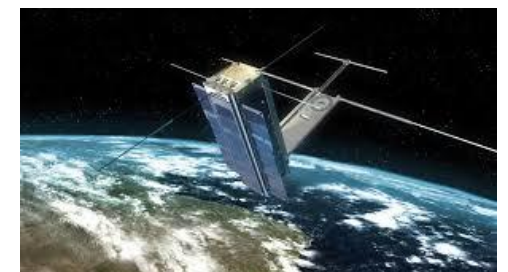


Government has major investments planned

- strengthen Defence space-related capability
- leverage science and technology to prevent technological surprise, maintain capability edge and provide agility.

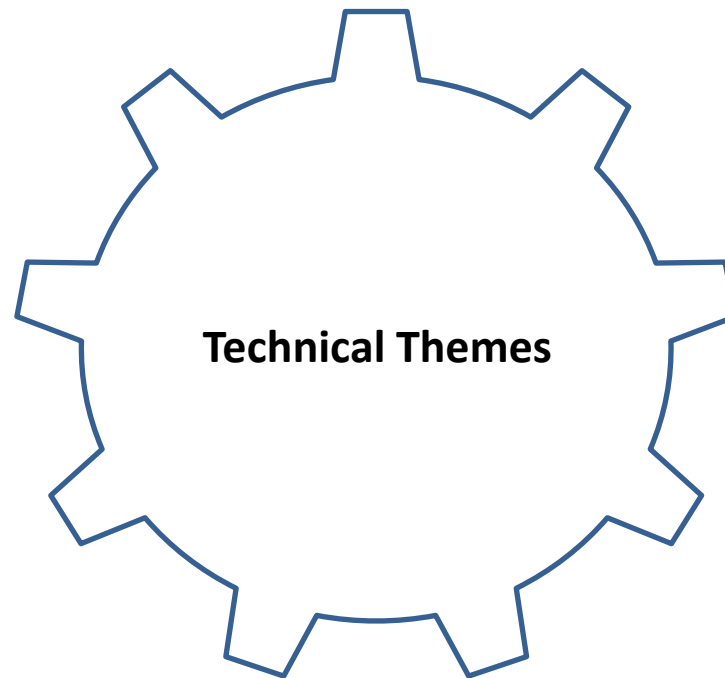


FireOPAL – wide field persistent EO

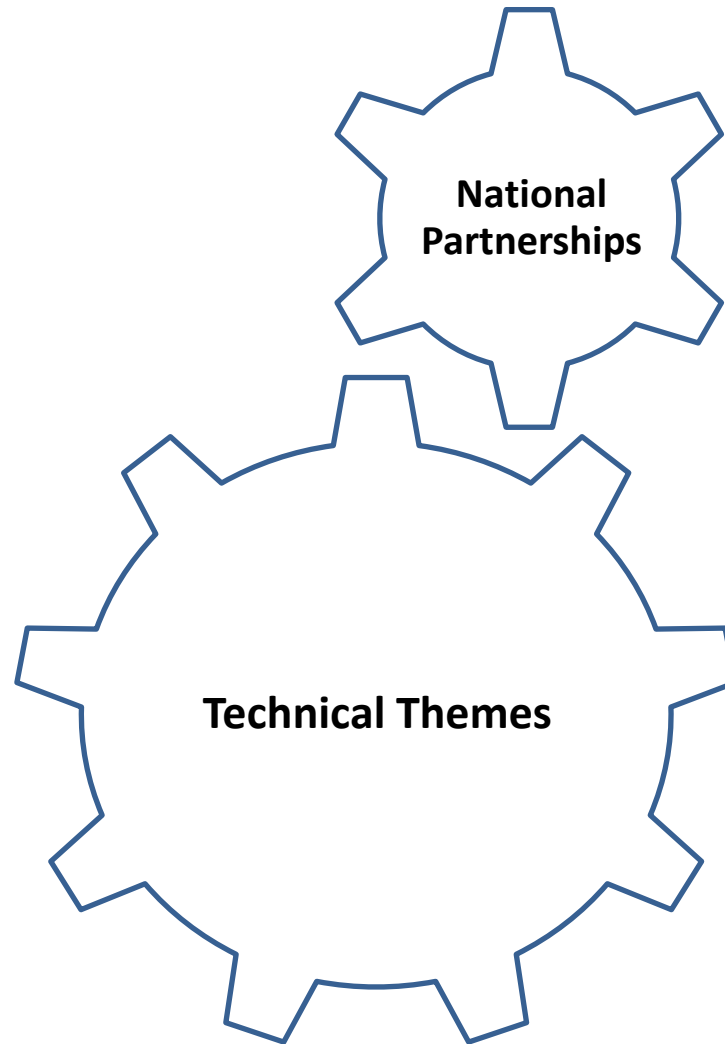


UNSW (Canberra) - RAAF M1

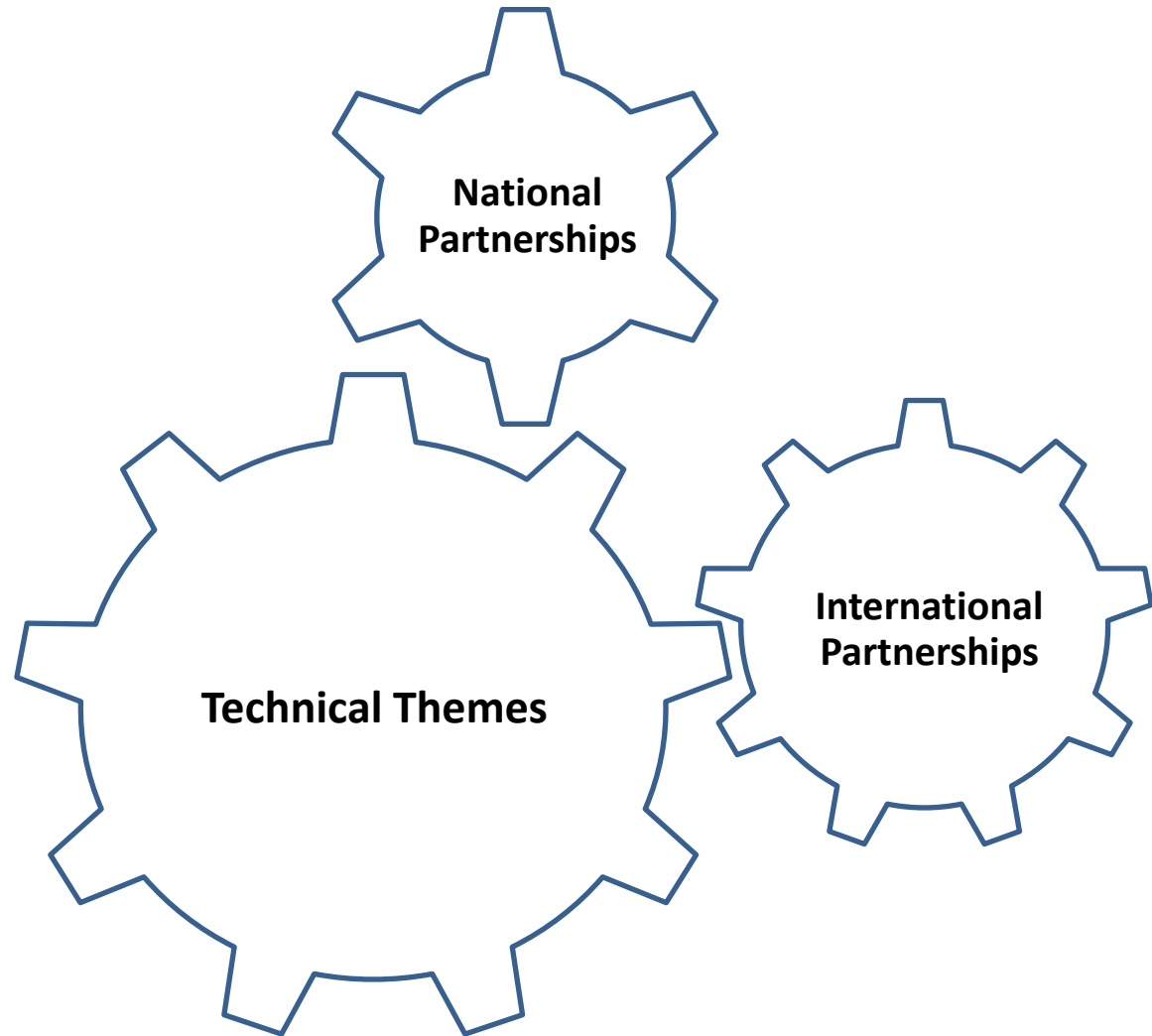
Defence S&T Strategy for Space



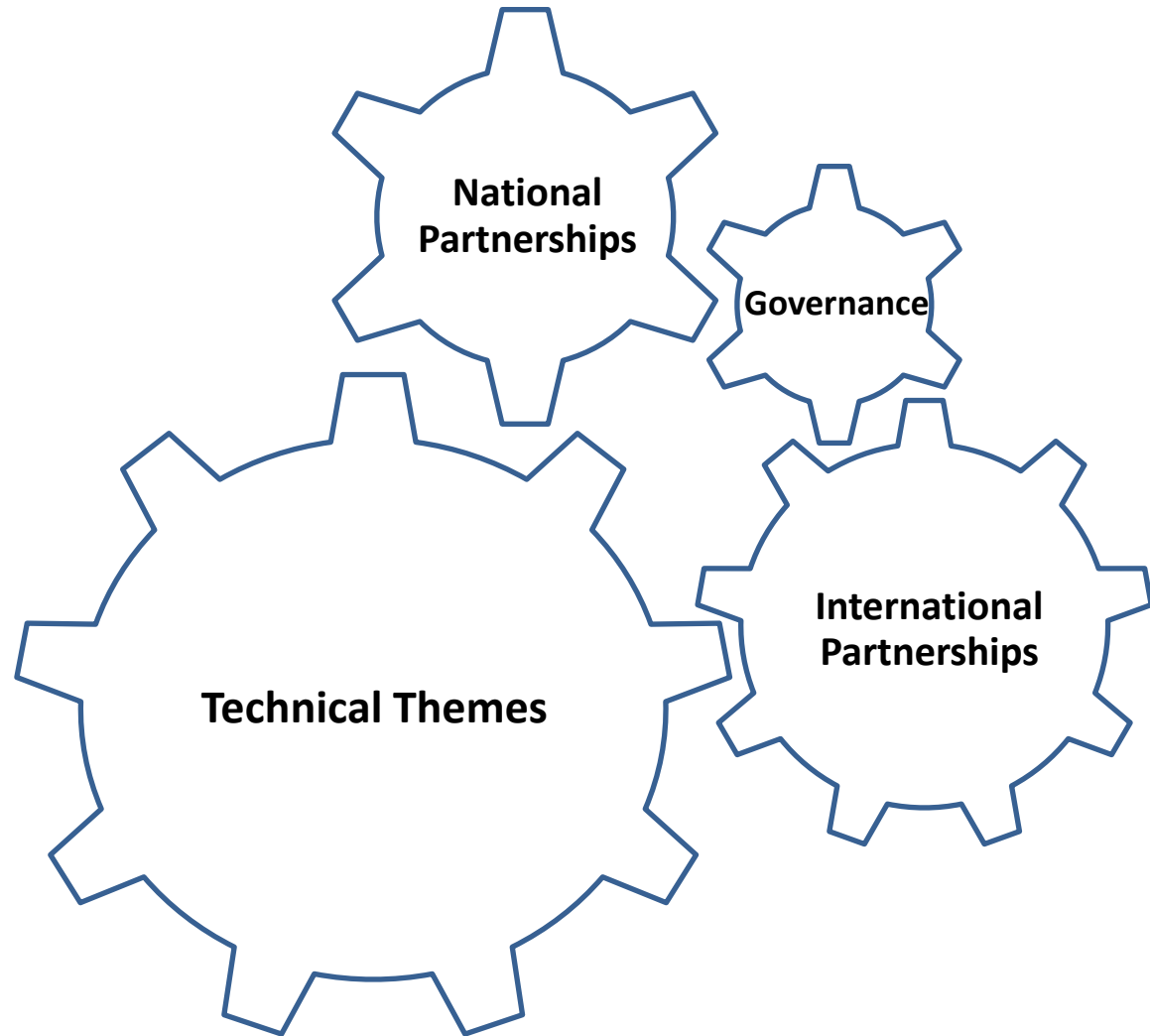
Defence S&T Strategy for Space



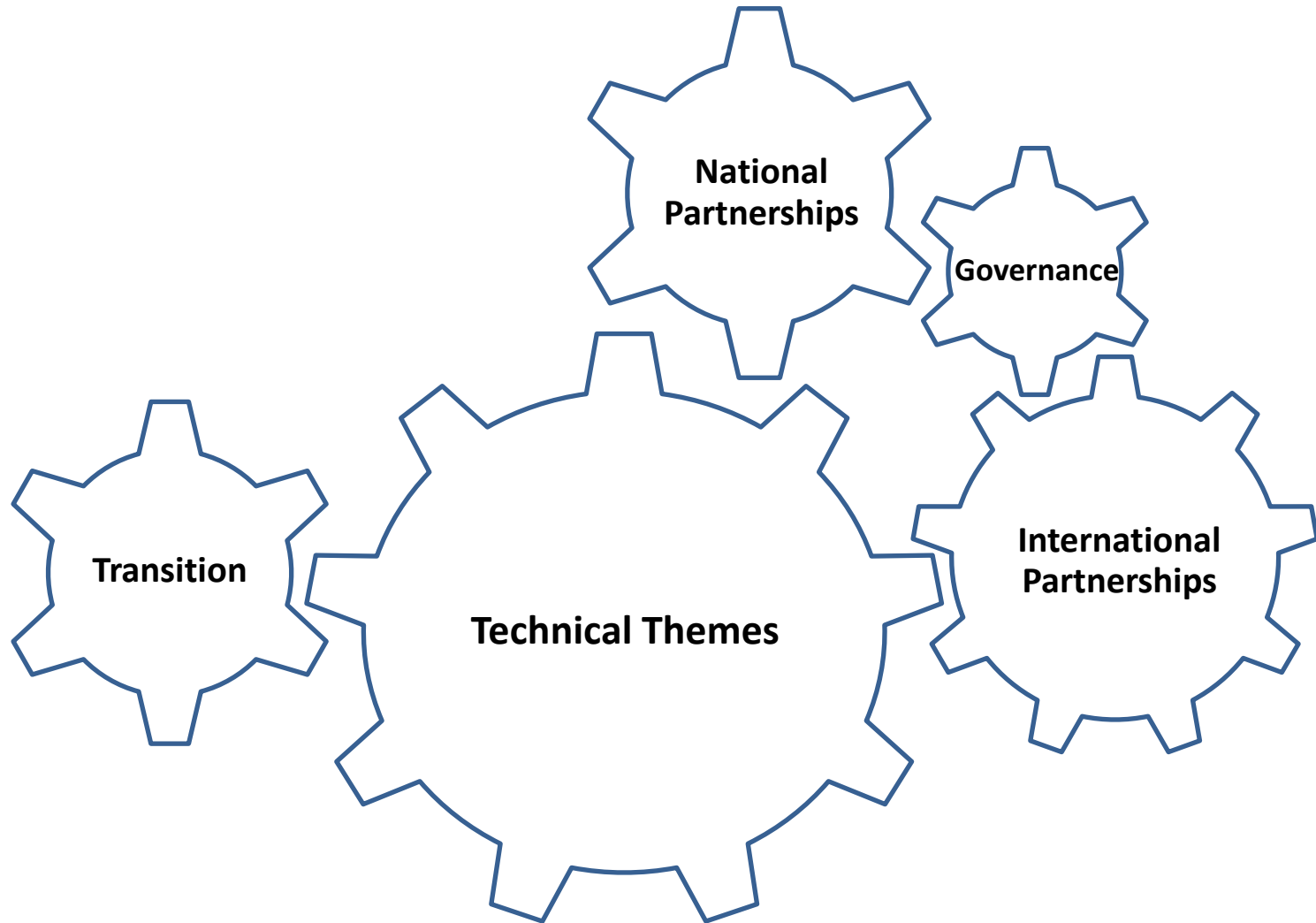
Defence S&T Strategy for Space



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Defence S&T Strategy for Space



R&D Approach

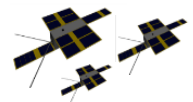
Resilient Space Capabilities

- Addressing Defence user requirements
- Inform the technical & partnership aspects of the program
- Develop critical knowledge
- Provide evidence-based advice

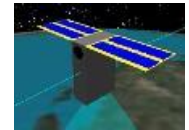
Provide technology options that significantly enhance the way Defence can more effectively task, access, manage & exploit space capabilities to support Defence goals



HF Wide Field of View SSA



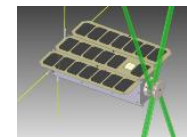
Constellations



ISR



Comms

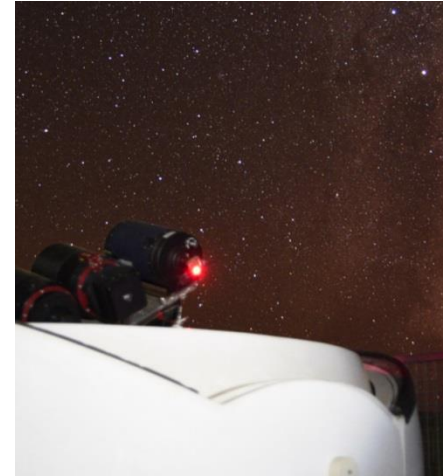


Agile SDR

Recent Achievements

Space Situational Awareness

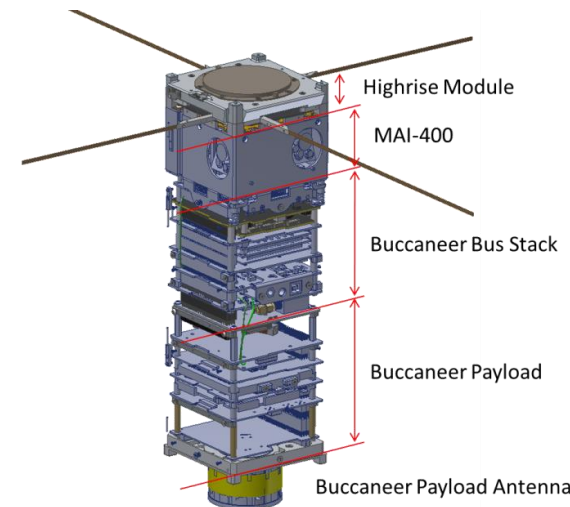
- Multi-Sensor trial at Woomera in March
- Successful risk reduction activity for Australian capabilities
- Demonstrated tracking hand off between systems



Narrow Field of View EO

Buccaneer Risk Mitigation Mission

- DST – UNSW (Canberra) collaboration
- Maintained regular communications since launch
- Structured program to commission subsystems
- Expect to achieve primary mission goals by late April



Questions

Buccaneer on-board
camera images



DST Ground Station Antennas