

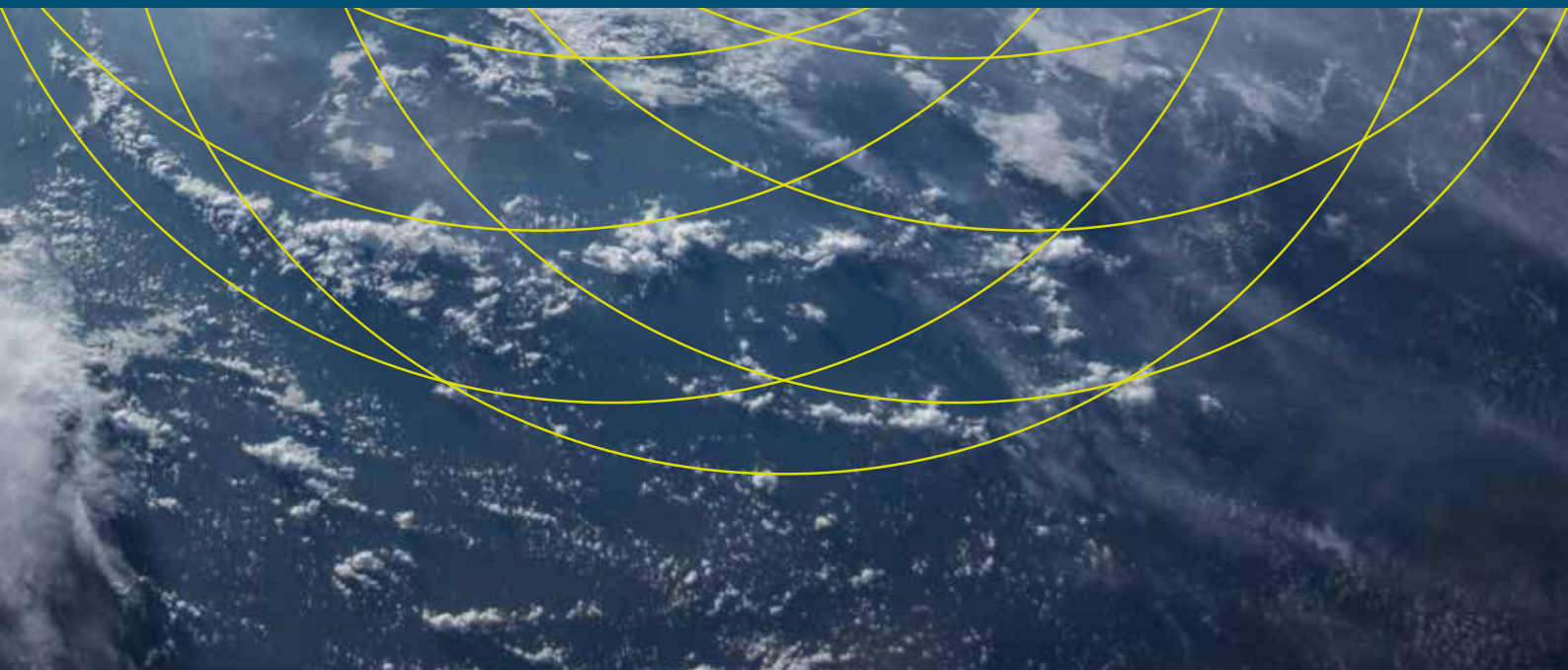


Supporting Australia's Space Industry



Australian Government
Department of Industry,
Innovation and Science

Business
Cooperative Research
Centres Program



The SmartSat CRC is the largest space industry-research collaboration in Australia's history. The CRC has raised \$245 million in Australian Government and industry funding for a seven-year research program in advanced telecommunications, intelligent satellite systems, next generation earth observation and remote sensing analytics.

SmartSat CRC R&D

Under the Cooperative Research Centre (CRC) program, the Federal Government has contributed \$55m to undertake research in the SmartSat CRC.

The SmartSat CRC will contribute to building Australia's Space Industry by transforming the mining, agricultural and other major sectors of the economy. It will also contribute to Australia's Defence and national security needs.

GOAL OF THE SMARTSAT CRC

Develop 'leap-frogging' technologies that will provide Australia with real-time connectivity, surveillance and sensing for its land, maritime, air and space areas of interest.

Advanced communications, connectivity & IoT



Intelligence in advanced satellite systems & sensors



Earth observation next generation data services



The global space industry is growing at a rate of 9.5% compared to the global economy of 2.5%. It is expected to reach more than \$1 trillion in the next few years.

The SmartSat CRC will tackle three major challenges

1. Lack of universal digital connectivity
2. Fragmented space ecosystem
3. Technology-limited earth observation

Key areas of industry focus

- Agriculture and natural resources
- Mining and resources
- Defence and security
- Transport and logistics
- Telecommunications

Why the SmartSat CRC?

- Central to the Australian Space Agency's goals
- Supporting defence and national security
- Building cohesive critical mass
- Building sovereign space capability
- Inspiring the next generation of space scientists and engineers

Current Participant Commitments

The SmartSat CRC has more than 90 participants from industry, research and government who have committed the following resources:

- Cash- \$110 million
- In-kind- \$135 million (includes 300 FTEs)
- Total- \$245 million over seven years

Education and Training

The SmartSat CRC will build Australia's space industry workforce offering opportunities for:

- More than 70 PhDs
- Industry-focused doctoral program
- Skills requirements analysis
- Credential training inspiring young Australians through STEM programs (eg. School Cubesat program)

SmartSat CRC Research Program

Industry-driven and carefully selected, playing to our strengths for Australia to maximise its economic value from space.

PROGRAM 1

Advanced Communications, Connectivity & IoT Technologies

- Laser communications
- Next Generation ground stations & terminals
- Mobile optical antennas
- Quantum cryptography
- Adaptive communications networks
- Spectrum sensing & Cognitive radio
- Next Generation IoT architectures
- Ad-hoc connectivity
- Satellite & terrestrial network integration

PROGRAM 2

Advanced Satellite Systems, Sensors & Intelligence

- MBSE & Digital twins of small satellite systems
- Autonomous, cooperative satellite formations
- Artificial Immune Systems in satellite swarms
- Trusted Autonomous Formations
- Self-healing satellite systems
- Agile & resilient satellites
- Satellite system & data security
- Advanced pointing & manoeuvring
- On-board machine learning models
- Advanced adaptable payloads
- HgCdTeIR Optoelectronic sensors
- Quantum sensors

PROGRAM 3

Next Generation Earth Observation Data Services

- Secure & integrated data intensive space systems
- Customer-centric EO analytics
- EO data fusion architectures
- EO data visualization
- Hyperspectral sensing
- Design methodologies for mission specific services
- Integrations test bed for rapid product development

THEMES

ARTIFICIAL INTELLIGENCE | SECURITY & RESILIENCY | SPACE GOVERNANCE

Ready for Impact

- 13** Global Companies
- 20** Australian Companies
- 30** Start-ups
- 4** Government Agencies
- 17** Universities
- DST, CSIRO**
- 10** International Research Organisations

\$245M
R&D Program

Core Industry Partners



Core Research Partners



Supporting Industry Partners



Supporting Research Partners



Start-Ups



Affiliate Partners/International Collaborators



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