Australian
Space Agency

Space Infrastructure Fund: Robotics, Automation, and Artificial Intelligence Command and Control Centre

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Australian Space Agency

Stakeholder consultations
23 September 2019

House Keeping

EVACUATION

Emergency exits are located next to the toilets on each side of the floor. There is an alert alarm and an evacuation tone for emergencies. Unless unsafe to do so, Wardens will come and collect you in case of any emergency

ACCESS

Public access to meeting room on level 25, however other areas are controlled

TOILETS

Need to use visitor access cards, some provided for use.

Men's – Turn left, Ladies – to the right and follow toilet signs

TELECONFERENCE

Due to high interest, there are participants joining via phone. Please keep this in mind when holding discussions

Purpose of today

- Seeking feedback on the design of the Robotics, Automation and AI Command and Control Centre program

- We would like your feedback through discussion today. Suggestions and feedback should be submitted via www.consultation.industry.gov.au by COB 24 September 2019. Questions and enquiries can be directed to: consultation@space.gov.au

- These consultation sessions are intended for the broader space industry and those who intend to apply under the SIF initiative.

- Should media be interested in a briefing, contact: media@space.gov.au

About the Space Infrastructure Fund

Background

The Space Infrastructure Fund is a $19.5 million investment in seven infrastructure projects to drive the growth of Australia's space sector.

Filling gaps in Australia's space infrastructure allows businesses and researchers to focus on providing space-related solutions to drive economic benefit across the whole economy.

Alignment with Strategy and Values

The projects form an important element of the Australian Civil Space Strategy. It will deliver staged investment across the nation, spanning a range of national civil space priorities and strengths

Robotics, automation and AI command and control ($4.5m)

Space data analysis facilities ($1.5m)

Space manufacturing capability ($2m)

Mission Control facilities ($6m)

Tracking facilities upgrade ($1.2m)

National projects

Space payload qualification facilities ($2.5m)

Pathway to Launch ($0.9m)

Promotion and communications

Primary source of information about the SIF will be www.space.gov.au.

Grant opportunities and successful projects will be promoted through:

- **Agency's website**
- **Agency's social media channels**
- **Agency's newsletter**
- **www.business.gov.au**
- **Grant Connect**
- **Minister's media releases**

Australian Civil Space Strategy 2019-2028

Space Infrastructure Fund (SIF): Robotics, Automation and AI Command and Control ● Stakeholder Consultations

Strategic Space Pillars

VISION

INTERNATIONAL
Open doors

NATIONAL
Increase capability

RESPONSIBLE
Regulation, risk and culture

INSPIRE
Build future workforce

Civil Space Priorities

Positioning, navigation and timing

Earth observation

Communications technologies and services

Space situational awareness and debris monitoring
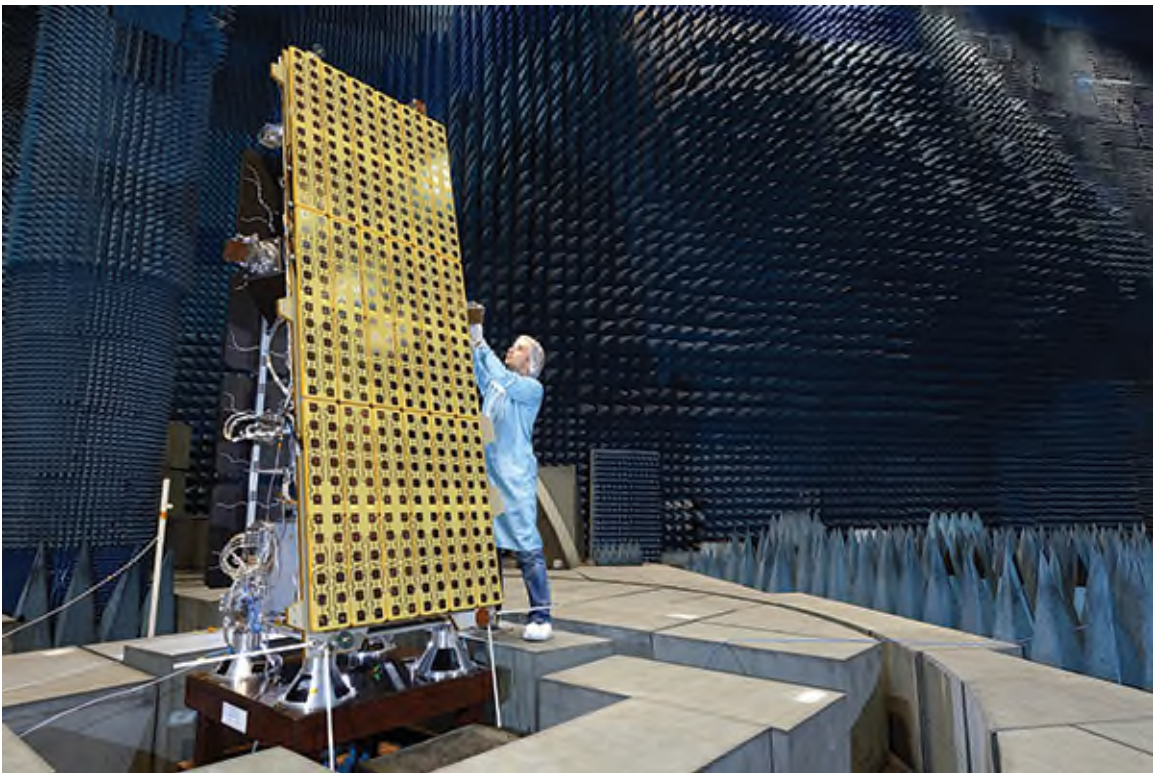
Leapfrog R&D

Robotics and automation

Access to space

2018-2019

2019-2020

2021-2028

Implementation timeline

Proposed Robotics, Automation and AI Command and Control

Budget & Context

Profile of Robotics, Automation and AI Command and Control Centre funding

Entity	2019-20	2020-21	2021-22	Total
Australian Government	$1.0 million	$2.0 million	$1.5 million	$4.5 million

Proposed Robotics, Automation and AI Command and Control Centre Objectives

1. Establish a platform for SMEs (including start-ups) and researchers to develop, test and operate and support the application of robotics, automation, AI and remote management activities in space, being in-orbit servicing, satellites, gateways, space stations, the Moon, Mars or beyond.

2. Support the Agency to deliver on national and international joint missions in robotics, automation and AI.

3. Establish partnerships with organisations to conduct and support operations either in space or on Earth.

4. Provide consideration of the degree to which Australian industry benefits from the outcome of the project, as well as in the delivery of the project.

Proposed Robotics, Automation and AI Command and Control Centre Objectives

5. Provide an enduring, accessible operating model for industry and other organisations to access the capability of the Command and Control Centre, including beyond the last instalment of Australian Government funding in 2021-22

6. Provide infrastructure to operate technology in space

7. Establish a development and test centre for remote technology which are to be operated in remote, extreme and humanly unsafe environments in space and on Earth

8. Provide an Earth-based test facility with potentially representative operating environments and interface modules to support remote live operations

9. Provide secure and robust communication links to ground stations for space communication

Proposed Robotics, Automation and AI Command and Control Centre Capabilities

The centre may provide the following capabilities:

1. Capability for reliable and robust communications between Earth, gateways, space stations, other spacecraft or celestial bodies

2. Capability for managing communication delays with equipment in space or on Earth

3. Capability to test a full range of robotic operations, in remote, extreme and humanly unsafe environments and cater for anticipated communications paradigms included disconnected autonomous operations

4. Capability to integrate with South Australia's Mission Control Centre

Grant Opportunities and Assessment Criteria

- Single stage, online application process

- Successful projects will need to demonstrate:

  - How well the proposal meets the Centre objectives
  - Capacity and capability to deliver
  - The impact of grant funding and alignment with the Strategy's investment principles, including leveraged funding or co-investment (excluding other Commonwealth funding)

- Expert Panel to make recommendations to the Program Delegate (decision-maker)

- Successful applicants enter into a funding agreement with the Australian Government.

Timeline

Proposed delivery timeline for the Command and Control (indicative only)

Milestone	Proposed Timeline
Stakeholder Consultations – Website	September 2019
Face-to-face briefing consultation in Perth	23 September 2019
Program design and Robotics, Automation and AI Command and Control Centre Grant Opportunity Guidelines finalised	October 2019
Command and Control Centre grant open for application	November - December 2019
Applications submitted and assessed	January - February 2020
Applicants notified; Successful applicant(s) announced; successful applicant(s) enter into funding agreements with the Australian Government	March - April 2020
Projects undertaken, with regular reporting	April 2020 - February 2022

Questions for your consideration
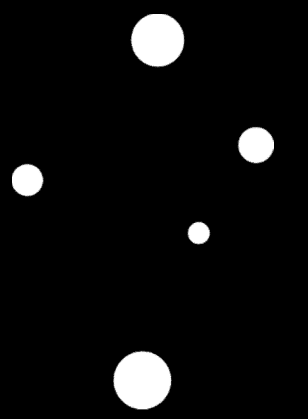
1. Are there objectives of the Command and Control Centre that should be edited, removed or added to ensure the Centre enables the growth of Australia's space industry?

2. What mission types would potential users like the Command and Control Centre to be able to support (for example launches to different orbits, size of satellites and missions in deep space)?

3. Would different levels of resilience and secure communications be required depending of the type of mission (national versus international, crewed versus un-crewed, etc.)?

4. Are there program design features of the Command and Control Centre that are considered overly restrictive, or, are there design features that are too ambiguous that would prevent the program objectives being met?

5. Are there other concerns or suggestions not identified?

Questions?

enquiries@space.gov.au

space.gov.au

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