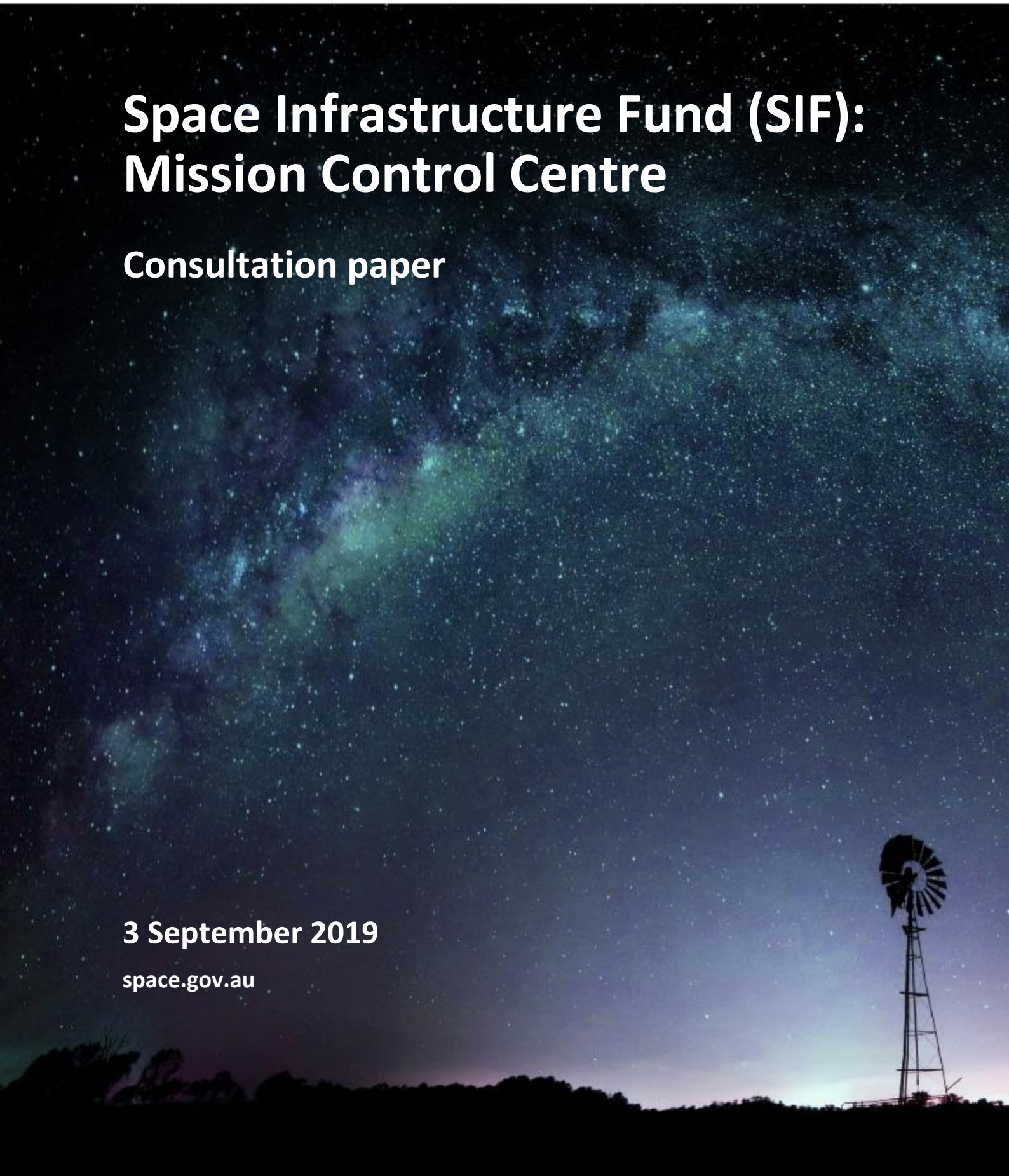
Australian Government

Australian Space Agency

Space Infrastructure Fund (SIF): Mission Control Centre

Consultation paper



3 September 2019

space.gov.au

Contents

Purpose

The Australian Space Agency (Agency) is currently undertaking public consultation to inform the design of the Mission Control Centre grant opportunity guidelines (a grant under the Space Infrastructure Fund (SIF)). The Agency is seeking consideration of the proposed objectives and delivery framework for the Mission Control Centre, and welcomes comments and feedback during the consultation phase.

Introduction

The Agency's purpose is to transform and grow a globally respected Australian space industry that lifts the broader economy and improves the lives of Australians. Under the *Australian Civil Space Strategy 2019-28* (the Strategy), Australia is seeking to significantly grow its space market segment from around 10,000 jobs and a market size of $3.9 billion up to another 20,000 jobs and $12 billion by 2030.

About the Space Infrastructure Fund

The Australian Government announced the $19.5 million SIF as part of the 2019-20 Federal Budget. This is an infrastructure investment over three years from 2019-20 to help remove some of the barriers to the growth of the Australian space sector. Filling gaps in Australia's space infrastructure allows businesses and researchers to focus on providing space-related solutions for the benefit of Australia.

The SIF specifically aligns with the National Civil Space Priority Areas, and the national and international pillars identified in the Strategy. It targets seven infrastructure related projects. Table 1 shows each project within the SIF, their primary location and the allocated funds.

The Agency is currently designing the framework for each project, with regular updates on each project available through subscription to the Agency's newsletter at www.space.gov.au. Further information on the SIF and the projects are outlined in the **fact sheet**, available online.

Table 1: SIF Projects

Project	Location	Funding*
Mission Control Centre	South Australia	$6.0 million
Pathway to launch	National	$0.9 million
Robotics and artificial intelligence command and control	Western Australia	$4.5 million
Space data analysis facilities	Western Australia	$1.5 million
Space manufacturing facilities	New South Wales	$2.0 million
Space payload qualification facilities	National	$2.5 million
Tracking facilities upgrade	Tasmania	$1.2 million

* A small proportion of funds are for administration purposes

Mission Control Centre

The Mission Control Centre was announced on 18 March 2019 by the Hon Karen Andrews MP, Minister for Industry, Science and Technology. The Australian Government has committed $6 million to the Mission

Control Centre to provide a platform for small and medium sized enterprises (SMEs) and researchers to control small satellite missions and to provide access to space enabled data. The Mission Control Centre will also support joint national and international projects led by the Agency.

In partnership with the Australian Government, the South Australian (SA) Government identified in the Adelaide City Deal that it would also contribute a further $2.5 million to the Mission Control Centre, taking total Government funding to $8.5 million. The Agency is currently working with the SA Government to confirm the scope for the funding. The Australian Government also expects that the successful applicant will contribute funding and in-kind resources.

The project will be delivered through an open grant process. The successful applicant will build and operate the Centre. The phasing of funding is shown in Table 2.

Table 2: Profile of Mission Control Centre funding

Entity	2019-20	2020-21	2021-22	Total
Australian Government	$3.0 million	$2.0 million	$1.0 million	$6.0 million
SA Government	TBC	TBC	TBC	$2.5 million
TOTAL				**$8.5 million**

The Agency plans to deliver the Mission Control Centre grant using an open, competitive process, administered by the Business Grants Hub under AusIndustry. The proposed timeline for delivery is shown in Table 3.

As noted above, the intended aim of the Mission Control Centre is to provide a platform for SMEs and researchers to control small satellite missions and to provide access to space-enabled data. With access to these facilities, start-ups, SMEs as well as researchers and educational institutions will be able to focus on their core businesses activities, and more quickly deliver their products and services. This does not limit larger organisations or satellite infrastructure from potentially using the Mission Control Centre. The primary use of the facilities is intended to be for civilian activities (compared to military).

The Mission Control Centre will be built on the ground floor of the McEwin Building at Lot Fourteen in Adelaide, covering an area of approximately 60m^2, excluding server space in Lot Fourteen in Adelaide. It will complement the new home of the Agency and be closely linked to the Australian Space Discovery Centre. The latter is to be co-located on the ground floor of the McEwin Building at Lot Fourteen.

Proposals might also consider additional uses for the facility that are complementary, but do not inhibit, the primary purpose of the Mission Control Centre. As an example, some stakeholders have noted an interest in co-locating a concurrent design facility.

Table 3: Proposed delivery timeline for the Mission Control (indicative only)

Milestone	Proposed timeline
Stakeholder consultations - website	September 2019
Face-to-face briefing consultation in Adelaide	20 September 2019
Program design and Mission Control Grant Opportunity Guidelines finalised	October 2019
Mission 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

Program Objectives

The Agency supports broad objectives to enable wide usage for a variety of missions. The Mission Control Centre should fulfil the following objectives:

1. Establish a platform for SMEs (including start-ups) and researchers to control small satellite missions, national or international joint missions, provide access to space-enabled data, and participate in training, research, and development.
2. Support the Australian Space Agency national and international joint missions.
3. 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.
4. Provide an enduring, accessible operating model for industry and other organisations to access the capability of the Mission Control Centre, including beyond the last instalment of Australian Government funding in 2021-22.
5. Inspire and educate the public through engagement and coordination with the Australian Space Discovery Centre and other complementary facilities on the ground floor of the McEwin Building. For example, the Mission Control Centre needs to have capacity for direct public viewing under controlled conditions when appropriate.
6. Provide a model for users of the Mission Control Centre to access (buy, build, lease or other) dish capability. The Mission Control Centre grantee may wish to procure their own dishes or use existing and planned dishes around Australia through appropriate connectivity. Users must be able to communicate to (control and command) and from (downloading data) satellites and other space craft through the dishes.
7. Provide connectivity between Mission Control Centre and dishes in a way that is flexible to the needs of missions in terms of bandwidth, resiliency, duration, and the number of dishes that can simultaneously connect to the Mission Control Centre.
8. Ensure activities performed in the Mission Control Centre are lawful and do not breach the international obligations of Australia.
9. Offer the required security and data integrity environment to conduct space operations.

Capabilities

10. Mission Control Centre will provide the following capabilities:
    a. Acquire and track satellites
    b. Track vehicles and payloads launched from Australia
    c. Support Australian missions for flexible durations, including once only, regular intervals or ongoing
    d. Ability to connect to international space agencies for joint missions
    e. Support missions in all orbits: low, middle and geostationary Earth orbits as well as Deep Space
    f. Perform downlink and uplink communications for data exchange and satellite control
    g. Display data through a public interface available to visitors of the Australian Space Discovery Centre
    h. Ability to acquire and display live video feed from space (e.g. the International Space Station and the Lunar Gateway).
11. Support activities that expand Australian space industry capability and capacity, and explore avenues that involve Australian businesses or Australian products and services. Some examples of such activities are as follows:
    a. Research and development (R&D)
    b. Training
    c. Testing and validation
    d. Collaborative R&D.

Governance and Processes

The Agency proposes that the application process would involve a single-stage application to be lodged online. Depending on the number of applications received, and subject to sufficient quality against the assessment criteria, the Agency proposes to allocate all funding through a single grant under one funding round.

Applications for grants will be assessed against assessment criteria outlined in the final Mission Control Centre Grant Opportunity Guidelines as informed through this consultation. The successful applicant will need to demonstrate how they meet these criteria in their grant application.

The Agency proposes that the assessment criteria would include:

- How well the proposal meets Mission Control 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).

An expert panel will be formed to provide advice to the program delegate. The expert panel is expected to comprise around 4-5 representatives. Experience of panel members will include:

- Expertise relating to mission control facilities and operations;
- Business model development and/or
- Expertise relating to the space industry.

The panel will also comprise a representative from the SA Government.

The panel will assess eligible applications and make recommendations for funding to the program delegate. The Grants Hub will ensure that any actual, perceived or potential conflicts of interest are appropriately managed through Conflict of Interest processes.

Successful applicant(s) to the Mission Control Centre will need to enter into a funding agreement with the Commonwealth, which will confirm milestones, payment, and reporting arrangements.

The Agency will undertake monitoring and evaluation of the Mission Control Centre grant and the SIF as a whole. This will include an evaluation of the grant to measure how well the outcomes and objectives have been achieved. The Agency may use information from the application and project reports for this purpose. The Agency may also interview the grantee, or request more information to help understand how the grant impacted the process and to evaluate how effective the program was in achieving its outcomes.

The Agency may contact the grantee up to two years after completion of the project for more information to assist with this evaluation. The Agency would ensure that the specific information required will be appropriate, involve a minimal administrative burden for the program participants and the Agency, and respect the confidentiality and privacy of all parties involved. The SA Government would also be involved in the evaluation process and have access to monitoring and evaluation results.

Conclusion

The Agency values feedback and comments during consultation and is seeking written comments on this paper and proposed program design. Submissions can be uploaded into the Department of Industry, Innovation and Science consultation portal. The online portal will be open until 11:59pm AEST on 24 September 2019, with a face-to-face consultation to occur on 20 September 2019 at Lot Fourteen in Adelaide. Further enquiries can be sent via email to Consultation@space.gov.au or by calling +61 2 6276 1166.

The Agency suggests responding to any or all of the following questions:

- Are there objectives of the Mission Control Centre that should be amended, removed or added to ensure the Centre enables the growth of Australia's space industry?
- What mission types would potential users like the Mission Control Centre to be able to support (for example launches to different orbits, size of satellites and missions in deep space)?
- Would different levels of resilience and secure communications be required depending of the type of mission (national versus international, crewed versus un-crewed, etc.)?
- Are there program design features of the Mission Control Centre that are considered overly restrictive, or, are there design features that are too ambiguous that would prevent the program objectives being met?
- Are there other concerns or suggestions not identified?