Australia New Zealand Collaborative Space Program

Earth Observation Open Call

(Phase A Feasibility Study)

Australia and New Zealand are seeking to build on our strategic relationship by partnering in Trans-Tasman research initiatives that unlock information about the environment, Earth systems, and climate through the observation of Earth from space.

SmartSat Cooperative Research Centre (SmartSat) and the Ministry of Business Innovation & Employment (MBIE) jointly invite proposals for collaborative feasibility studies between Australian and New Zealand researchers and firms. This investment will harness complementary resources and expertise to develop and pursue cooperative activities. The goal is to grow the space industry in Australia and New Zealand and develop new capability and expertise in the space sector through the advancement of innovative research and development.

This document outlines below:

* objectives
* thematic areas
* funding opportunities
* eligibility criteria
* feasibility study details
* funding coverage
* application timeline
* assessment process and criteria
* outcome notification
* contracting
* proposal template

Contents

[Objectives 3](#_Toc172280531)

[Thematic areas 3](#_Toc172280532)

[Funding opportunity 4](#_Toc172280533)

[What funding is available? 4](#_Toc172280534)

[Who can apply? 4](#_Toc172280535)

[Eligibility criteria 4](#_Toc172280536)

[Submission 5](#_Toc172280537)

[What should the Phase A feasibility study encompass? 5](#_Toc172280538)

[Investment Process 6](#_Toc172280539)

[Timeline 6](#_Toc172280540)

[Assessment 6](#_Toc172280541)

[Assessors 6](#_Toc172280542)

[Assessment process 6](#_Toc172280543)

[Decision 7](#_Toc172280544)

[Conflicts of interest 7](#_Toc172280545)

[What is considered a conflict of interest? 7](#_Toc172280546)

[Assessment criteria 7](#_Toc172280547)

[Notifying you of the outcome 9](#_Toc172280548)

[Contracting process 9](#_Toc172280549)

[Proposal Template 10](#_Toc172280550)

[Key information 10](#_Toc172280551)

[Proposal 11](#_Toc172280552)

[Case for support 12](#_Toc172280553)

[Resources 13](#_Toc172280554)

[Project budget 13](#_Toc172280555)

[Australian research activities 13](#_Toc172280556)

[New Zealand research activities 13](#_Toc172280557)

[Additional Information 14](#_Toc172280558)

[Classifications 14](#_Toc172280559)

# Objectives

Contribute to the growth of the space industry in Australia and New Zealand.

Developing new capability and expertise in the space sector through the advancement of innovative R&D as well as workforce development.

This investment will lead to:

1. enduring partnerships between Australian and New Zealand researchers to establish platforms for larger-scale future research collaborations, help develop talent, joint expertise, support R&D initiatives, and enhance business development;
2. develop scientific capacity in alignment with industry and end user needs to address major environmental, economic, and social challenges for both countries; and
3. foster collaborations which can profile, leverage and expand on Australia and New Zealand’s space advantages such as existing capabilities, southern hemisphere location, clear skies, varied topography, modern regulatory system, reputation for innovation and entrepreneurship, breadth of scientific expertise.

This call for proposals is Stage 1 of a potential 2-stage funding. Applicants who successfully delivered a Phase A feasibility study as part of this call for proposals will be eligible for consideration for Phase B funding.

# Thematic areas

Proposals must address one of the three thematic areas prescribed below:

1. **Crops - Agriculture monitoring for enhanced farming practices:**

Proposals will support the enhancement of farming practices by designing a monitoring system to better understand farm health and yield through satellite imagery and/or drone data, to augment existing models or ground sensor inputs.

Feasibility studies may consider the following:

* Exploration of EO data layers (high-resolution soil moisture, crop health indicators, and microclimate data)
* Development and integration of data layers
* Specific farm-based examples demonstrating improved modelling/forecasting
* Introduction of innovative deep-learning foundational models for precise crop forecast and detection of discrepancies
1. **Indigenous - Supporting Indigenous communities and economies through EO technologies:**

Proposals will support the unique relationship these communities hold with the environment through the use of Earth observation technologies. Research organisations should work in a genuine partnership with the indigenous communities and give effect to the Vision Mātauranga policy and/or the Caring for Country principles as applicable..

Feasibility studies may consider how innovative EO applications could assist Indigenous communities in the following, but not exclusive, areas:

* Biodiversity and environmental conservation
* Land Management and Working on Country
* Monitoring climate change impacts
* Monitoring sites of cultural significance
1. **Pasture Biomass - Advancing pastural condition and biomass mapping**

Proposals will use satellite remote sensing and data fusion (from multiple sources) to advance the condition of pastures and other biomasses that are subject to challenging conditions.

Feasibility studies may consider the following:

* Explore the use of synthetic aperture radar (SAR) and multispectral satellite imagery
* Understand the technical challenges and limitations of current remote sensing options
* Transform pasture assessment and management practices

# Funding opportunity

## What funding is available?

Phase A: Feasibility studies (6-month)

Up to AUD$100,000 per feasibility study for Australian-based research activities.

Up to NZD$100,000 per feasibility study for New Zealand-based research activities.

Phase B Longer-term collaborative research programmes

Applicants who have successfully delivered a Phase A feasibility study as part of this call for proposals will be eligible for consideration for Phase B funding. Feasibility studies will be considered jointly by MBIE and SmartSat against the assessment criteria used for this call for proposals.

Funding will be made available to support up to four longer-term collaborative research projects delivered over three years. Please note the completion of Phase A feasibility studies does not guarantee Phase B funding.

## Who can apply?

This funding opportunity is open to both public and private Australian and New Zealand research organisations. A research organisation is an organisation that has internal capability for carrying out research, science or technology, or related activities.

The proposal must not be made by a department of the public service as listed in Schedule 2 of the Public Service Act 2020.

## Eligibility criteria

This call is for jointly prepared submissions that involve at least one New Zealand-based and one Australian-based research organisation.

Proposals must address one of the three thematic areas outlined in this document.

The proposal must not include employees of any New Zealand department of the public service as listed in Schedule 2 of the Public Service Act 2020.

Proposals must not benefit a Russian state institution (including but not limited to support for Russian military or security activity) or an organisation outside government that may be perceived as contributing to the war effort.

All sections of application must be complete, and applications must be submitted by the due date and means outlined under Submission and Timeline section of this document.

## Submission

Applications must be submitted to research.projects@smartsatcrc.com in Word or PDF format on proposal template provided in this document by deadline outlined under Timeline in this document.

## What should the Phase A feasibility study encompass?

These feasibility studies should cover, but are not limited to the below headings:

**Problem identification** – Cleary identified area which research advancement could add value. Define the value proposition of the research.

**State of the art advancement** – Clearly articulate the current state of the art for the chosen area of research, encompassing technology trends and addressing those of the end application/user. Identify how this work advance the state of the art and differ from current solutions.

**Pathway to utilisation** – Meets well-articulated end user needs and outputs of projects can be demonstrated to end user. How will this research be used for long term growth potential, end user benefits and/or public good pathways.

**Expected/preliminary methodology**– Methodology used to perform this research.

**Resources required to perform the work and allocation –** Clearly define milestones and deliverables to measure and progress and success of collaborative project.Make a budget claim consistent with the objectives and scope of the project that represents value for money, leveraged with additional investment (cash and/or in-kind) by the project partners.

**Barriers to success –** Are there any factors that you envisage at an early stage that you may have to mitigate in order to be successful?

**Potential interfaces with other Australia/NZ collaborations** – Are there any other collaborations that will likely interface with or use your technology going forward?

**Expected output** – To what level to you intend to develop this technology or research i.e. proof of concept, trial with a user etc.

**Aotearoa NZ’s *Vision Mātauranga*-Australia’s *Caring for Country*** – How could the project incorporate relevant activities that either unlock or are likely to unlock the science and innovation potential of Indigenous knowledge resources and people.

**Future partners –** Identify future partners that you will engage to deliver the benefit from the technology advancements.

**Future funding opportunities -** Based on the work done on the project to date, provide a view of the commercial impact you expect to realise from project outcomes. What long term commercial and/or collaborative opportunities has the work opened up? If known, provide an indication of potential funding or co-funding sources you may consider for follow on work.

**Development of a Phase B Project Plan**

As part of the Phase A feasibility study, research teams must also jointly complete a Project Plan and Budget detailing how the project could be progressed into a longer-term collaborative research programme. In this submission, project teams must provide clarity of future Phase B co-funding sources, including letters of support from research providers, industry and/or end users, or future funding schemes they expect to target.

# Investment Process

## Timeline

| **Date** | **Stage** |
| --- | --- |
| Wed, 24 Jul 2024 | Applications open |
| Fri, 6 Sep 2024, 5pm (AEST) | Applications close |
| Week beginning 30 Sep | Successful projects announced |
| Mon, 4 Nov 2024 | Feasibility studies commence with duration of no more than 6 months |
| Mid-June 2025 | Completed feasibility studies submitted for assessments by SmartSat CRC and MBIE |

# Assessment

## Assessors

SmartSat and MBIE will identify a joint assessment pool. Assessors will be selected for their ability to contribute to one or more of the following criteria:

* scientific knowledge relative to the range of topics covered by the research areas
* broader international strategic expertise and experience, and
* knowledge about complex international research programmes.

## Assessment process

1. SmartSat and MBIE will undertake an initial review of each proposal to determine compliance against the stated eligibility criteria. Any non-compliant responses will be available to the assessment panel to look at but will not be formally reviewed for funding.
2. Compliant submissions will be individually reviewed by the pool of assessors against the assessment criteria.
3. Assessors will then convene at a virtual panel meeting to discuss the proposals and reach consensus on which applications are recommended for funding. The virtual panel meeting will be co-chaired by a non-voting SmartSat and MBIE employee.
4. Applications for different thematic areas may be separated and assessed by separate assessment panels.
5. Projects from each thematic area may not necessarily be funded.
6. Scores and comments will be collated and will form a recommendation to SmartSat and MBIE as to which proposals merit funding.

## Decision

General Manager, Science System Investment Performance (MBIE) and SmartSat Executive will make the final decision on which projects will receive funding for researcher activities.

## Conflicts of interest

Upon receiving the applications for review, assessors will be required to declare any potential conflicts of interest to SmartSat and MBIE. SmartSat and MBIE will review potential conflicts and mitigation strategies may include excluding the identified assessor from reviewing a submission. Collated scores for that application will be normalised.

## What is considered a conflict of interest?

Conflicts of interest for assessors may occur on two different levels:

A **direct conflict of interest** is where an assessor:

* is directly involved with a proposal (as a participant, manager, mentor, or partner) or has a close personal relationship with the applicant (e.g. family members), or
* is a collaborator or in some other way involved with an applicant’s proposal.

An **indirect conflict of interest** is where an assessor:

* is employed by an organisation involved in a proposal but is not part of the applicant’s proposal
* has a personal and/or professional relationship with one of the applicants (for example an acquaintance), or
* is assessing a proposal that may compete with their business interests.

## Assessment criteria

**Excellence (40%)**

**Will the project lead to the creation of new knowledge through high quality research?**

Assessors will look for evidence of how the proposal:

* Leads to creation of new knowledge which is of the highest calibre and would have national and international scientific impact and recognition.
* Utilises sound research practices and principles, including a well-designed research plan and a credible approach to risk management.
* Is ambitious in terms of scientific risk, technical risk, novelty and/or innovative approaches.
* Is led by world-class science leaders or potential future leaders with the skills and knowledge to deliver the proposed activities.
* Explains the science and innovation opportunities and, where applicable contributions of Indigenous knowledge, people, and resources for the benefit of New Zealand and Australia.
* Provides the mix of complementary skills, knowledge, and resources to deliver the proposed research, science or technology or related activities and to manage risk.

**Connections (30%)**

**Will the project establish an enduring collaboration between New Zealand and Australian researchers?**

Assessors will look for evidence in the proposal of how:

* The New Zealand and Australian research teams have excellent track records of collaborating with other institutions and delivering research results.
* The proposed partners bring a mix of complementary resources, capabilities, and world class expertise to the proposed project, building a connected and high performing research team.
* The research team and its partners have outstanding capabilities and capacity to build and manage a substantive international partnership, to fully realise the international opportunities outlined in the proposal, and to deliver the proposed activities.
* The project partners are building and sustaining connections with leading international research centres, science leaders, and entrepreneurial talent to strengthen science capability and performance.
* The proposed project will give effect to the Vision Mātauranga policy and Australia’s 'Caring for Country’ principle, creating connections with and for Indigenous people in a genuine and meaningful way.

**Impact** **(30%)**

**Will the project deliver benefit aligned to wider economic, social and environmental goals of New Zealand and Australia?**

Assessors will look for how the proposed project plan:

* The proposal has a strong line of sight to expected benefits that are of national and global significance, where the analysis supporting the estimates of benefits and uncertainty is excellent.
* Incorporates Vision Mātauranga and Caring for Country elements, that provide meaningful benefits to Indigenous communities.
* Identifies research areas that will enable the wider New Zealand and Australia research communities to contribute to solving national or global problems
* Has the potential to deliver long-term capabilities through knowledge transfer and develop new ideas, applications, and end users.

Accordingly, SmartSat and MBIE may decide to either:

* approve your proposal
* decline your proposal
* approve your proposal with conditions that must be met before or during the contract, or
* approve your proposal for an adjusted amount of funding

If applications do not sufficiently address the criteria or do not represent excellent science and innovation, SmartSat and MBIE may choose not to fund any proposals in Phase A or B.

# Notifying you of the outcome

When a decision about your proposal has been made, SmartSat will advise the contact person listed in the application by email.

Following notification, SmartSat and MBIE will publish their decisions and may announce these with a press release. The details SmartSat or MBIE may make public are the:

* name of organisations participating in the project
* names of project team members
* title of the project
* description and public statement of the proposed project
* total amount of funding applied for and awarded
* duration of the project, and
* sector to which research related

# Contracting process

The New Zealand-based researchers of successful feasibility studies will be contracted through MBIE’s secure online portal - Pītau. Further information on accessing Pītau is available from MBIE:

[Pītau Investment Management System Portal | Ministry of Business, Innovation & Employment (mbie.govt.nz)](https://www.mbie.govt.nz/science-and-technology/science-and-innovation/funding-information-and-opportunities/process/pitau-investment-management-system-portal)

The Australian-based researchers successful feasibility studies will be contracted through SmartSat.

Australia New Zealand Collaborative Space Program
Earth Observation Open Call

(Phase A Feasibility Study)

# Proposal Template

Each section of this template must be completed in accordance with instructions.

Red guiding text to be removed.

**Important Note:** Applicants must follow their organisation's internal review procedures before submitting to SmartSat. For example, university applicants should have their research office review and approve the proposal prior to submission.

## Key information

|  |  |
| --- | --- |
| Project Title |  |
| Project Summary | *Provide a short, plain English description that summarises the project, it’s key aims and intended outcomes. It is important to capture the essence of your research in a way that can be understood by a wider audience and can be used for media purposes. You may include, if required, publishable contact details that can be used by members of the public or the media. Do not include confidential information or references, hyperlinks, video, or audio files.**(max 300 words)* |
| Project Duration | *Please enter a start date and an end date for your proposal. The maximum project duration is 6 months.* |
| Funding Request – Australian research team (AUD) | *Enter the total amount of funding being requested by the Australian research team.* |
| Funding Request – New Zealand research team (NZD) | *Enter the total amount of funding being requested by the New Zealand research team* |
| Australian Organisation | *Name of lead Australian research organisation.* |
| New Zealand Organisation | *Name of lead New Zealand research organisation.**If successful – MBIE will enter into a funding contract with this organisations.*  |
| Primary Contact Person Australia | *Name, role, phone number and email address* |
| Primary contact Person New Zealand | *Name, role, phone number and email address**This contact must have the authority to discuss the proposal with us and will receive MBIE communications and updates.* |
| Thematic Area | 1. *Crops - Agriculture monitoring for enhanced farming practices; or*
2. *Indigenous - Supporting Indigenous communities and economies through EO technologies; or*
3. *Pasture Biomass - Advancing pastural condition and biomass mapping.*

*(as prescribed under Thematic Areas)* |
| Eligibility Confirmation | *Confirm that this proposal satisfies all the eligibility criteria set out in this document* |

## Proposal

|  |  |
| --- | --- |
| Problem statement | *Problem Identification: Clearly state the problem that this research aims to address. Describe the intended outcome and the value that this research will bring in solving the problem, recognising that the feasibility study should pave the way for Phase B.**(max 300 words)* |
| Background | *State of the Art Advancement: What is the state of the art and limits of current practice and how your work will advance it? Refer only to publications that are widely available. Include information about recent national and international progress in the field of research and its application in relevant areas.**What makes this research unique: Differentiate your approach and outcomes from existing solutions, understanding that this phase will inform the potential for Phase B activities.**(max 300 words – you may include reference list as an annexure to this application)* |
| Research Plan | *Expected Methodology: Outline the methodology you will use for your research.* *International Synergy: Outline what each partner is contributing to the research, how they’ll work together and how it builds to a uniquely greater product.**Expected Outputs: Define the outputs of this phase A and the intended level of technology or research development (e.g., proof of concept, trial with a user).**Project Management: Define milestones and deliverables to measure progress and success against outcomes. Outline how the international teams are going to engage and integrate for success.* *Barriers to Success: Identify potential factors that may need mitigation for successful completion.* *Future Development: Identify why this feasibility study is needed for a possible Phase B extension and how that follow-on phase would build on it.**(max 1000 words)* |
| Vision Mātauranga / Caring for Country | *Explore how your project can incorporate relevant activities that unlock or are likely to unlock the science and innovation potential of Indigenous knowledge resources and people.**(max 200 words)* |
| Pathway Utilisation | *Potential Users and Collaborators: Who will use or benefit from these outcomes and highlight any collaborations that may use your technology in the future, considering their relevance to a potential Phase B integration.**Future Impact: Provide a high-level description of the impacts you expect and how the Australian and New Zealand teams will work together to achieve it, considering Phase A and B outcomes.* *Future Funding Opportunities: Based on your project's progress, provide an outlook on the commercial or funding contributions to support a potential Phase B.**(max 200 words)* |

## Case for support

|  |  |
| --- | --- |
| Excellence (40%) | *Will the project lead to the creation of new knowledge through high quality research?**(max 200 words)* |
| Connections (30%) | *Will the project establish an enduring collaboration between New Zealand and Australian researchers?**(max 200 words)* |
| Impact (30%) | *Will the project deliver benefit aligned to wider economic, social and environmental goals of New Zealand and Australia?**(max 200 words)* |

## Resources

|  |  |
| --- | --- |
| Australian Principal Investigator |  |
| New Zealand Principal Investigator |  |
| Team capability | *Outline the research capability, providing a description of each team member’s role in the project and the tasks they will be responsible for, the expertise they bring to the project and why those skills are necessary in order to deliver the project. Include names and email addresses for all team members.**(max 200 words)* |

## Project budget

### Australian research activities

|  |  |  |
| --- | --- | --- |
| **Type** | **Value AUD** | **Description** |
| Salary |  | *List each resource on a separate line, together with the amount of time proposed, charge rate, and provide a brief justification for the resources requested.**A competitive bid is expected to request salary funding at base (cost-like) rates rather than commercial rates.* |
| Other |  | *a brief justification for the resources requested.* |
| Total Cash Budget Request | AUD |
| In-kind support (resources funded from other sources or by participating organisations) | In-kind (staff) | *Provide details of any staff in-kind being provided on the project, if any. Include name (if known), organisation and position, time commitment for the project (expressed in person weeks).* |
| In-kind (non-staff) | *Prove details of any non-staff in-kind you propose to make available to the project, including a brief description and value.* |

### New Zealand research activities

NZ teams please consult MBIE website for allowable expenditure.

|  |  |  |
| --- | --- | --- |
| **Type** | **Value NZD** | **Description** |
| Salary |  | *List each resource on a separate line, together with the amount of time proposed, charge rate, and provide a brief justification for the resources requested.**A competitive bid is expected to request salary funding at base (cost-like) rates rather than commercial rates.* |
| Other |  | *a brief justification for the resources requested.* |
| Total Cash Budget Request | NZD |
| In-kind support (resources funded from other sources or by participating organisations) | In-kind (staff) | *Provide details of any staff in-kind being provided on the project, if any. Include full legal name of the name (if known), organisation and position, time commitment for the project (expressed in person weeks).* |
| In-kind (non-staff) | *Prove details of any non-staff in-kind you propose to make available to the project, including a brief description and value.* |

## Additional Information

|  |  |
| --- | --- |
| Intellectual property management | *Outline how you will identify, protect, and share any intellectual property (IP) generated by the project in accordance with the investment goals and to ensure maximum benefit to Australia and New Zealand. This includes management of IP between collaborators.**If the success of your project is dependent on access to existing IP, outline the agreements you have in place to use it.**(max 200 words)* |

## Classifications

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Research theme | *An* [*ANZSRC code*](https://www.mbie.govt.nz/science-and-technology/science-and-innovation/research-and-data/anzsrc/) *is a standard classification that allows research and development activities to be categorised according to their intended purpose, outcome and/or discipline.**Select up to FOUR from (FOR) ANZSRC codes to categorise the research activities associated with your application. The relative proportion of total expenditure attributed to each of these should add up to 100%. Please use as few codes as* possible.*Enter your 6-digit codes here…*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Code |  |  |  |  |
| Percentage  |  |  |  |  |

 |
| Socio-Economic Objective | *Select up to FOUR from* [*Socio-Economic classifications Objectives*](https://aria.stats.govt.nz/aria/) *(SEO) ANZSRC codes to categorise the research activities associated with your application. The relative proportion of total expenditure attributed to each of these should add up to 100%. Please use as few codes as possible.**Enter your 6-digit codes here…*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Code |  |  |  |  |
| Percentage  |  |  |  |  |

 |