NEW ZEALAND SPACE AGENCY

Application Guidance – Payload Permit

Section A – Overview

1. Purpose of this document

The Outer Space and High-altitude Activities Act 2017 (the Act) introduces a permitting regime for payload activities conducted from New Zealand or by New Zealand nationals. The New Zealand Space Agency (the Space Agency) is the lead government agency for space policy, regulation and business development relating to space activities in New Zealand.

If you are intending to launch payloads into outer space from New Zealand, or are a New Zealander intending to launch a payload overseas, this guidance note is intended to help you understand whether you will need a permit, how to apply, and what information should be provided along with your application.

You should familiarise yourself with the Act and the Outer Space and High-altitude Activities (Licences and Permits) Regulations 2017 (the **Licences and Permits Regulations**) before making an application.

2. Do I need a Payload Permit?

Payload permits (see section 15 of the Act) are required for the launch of any object intended to be carried or placed in outer space from New Zealand or by a New Zealander overseas.

Objects intended to be carried or placed in outer space include satellites and other objects intended to orbit the earth, components of a launch vehicle that are specifically designed or adapted for the object, and payloads carried for testing purposes or non-profit activities (including educational or scientific activities). If your payload is part of a satellite (such as a payload sharing a spacecraft bus), you will still require a permit for the payload.

The vehicle your payload will travel on may also require a separate licence (a launch licence) if you will own or operate the launch vehicle. If the launch vehicle is being provided by a third party, that person is responsible for obtaining any necessary licenses.

3. Who can apply for a Payload Permit?

An application for a payload permit can be submitted by or on behalf of the applicant, which is defined in the Licences and Permits Regulation as "*the person or persons applying to hold the payload permit*"

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4. Overseas Payload Permits

An Overseas Payload Permit is required if you are a New Zealand national that wishes to launch a payload from:

+ A Launch Facility outside New Zealand; or
+ A Launch Vehicle that was launched from a Launch Facility outside New Zealand; or
+ A vehicle in the air that was launched from outside New Zealand.

5. Scope and duration of licence

The Minister has the ability, under the Act, to grant licenses that allow for:

+ multiple launches over a period of time; and
+ launches from multiple launch locations; and
+ differences in the composition of the payload; and

If you'd like a permit that gives you flexibility across these areas this should be clearly set out in your application.

Once a permit has been granted any change to the permitted payload may require either a variation to the permit or a new permit, depending on the nature of the change. If you think this may impact you, please contact the Space Agency to discuss this to ensure that all the information we need to make a decision that fits your activity is provided

6. What if my information changes?

If, at any time before the application has been granted or declined, the applicant becomes aware of any new information that is relevant to the application, or, if there is a change to the information already provided that means the information held by the Space Agency is no longer accurate or complete, the applicant must notify the Space Agency.

7. How do I apply for a permit?

You apply for a permit by filling out one of the following forms:

+ APP 100- Payload Permit Application
+ APP 100O-Payload Permit with Overseas Authorisation – Used when the applicant seeks to have a the Minister treat a licence, permit, or other authorisation granted or likely to be granted outside New Zealand as satisfying some or all of the criteria for granting a payload permit.

Complete the relevant application form and send it to the Space Agency by post or by email. Section B below provides detailed guidance to help you complete the Application Form.

Information or evidence referenced within the application form is information typically required for the Minister responsible for the Act to make a determination on the application. The Space Agency may require additional information to complete its assessment.

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8. How much does it cost?

There is no application fee for a payload permit and there are no fees associated with holding a payload permit.

9. How will my application be assessed?

The Act sets out what the Minister must be satisfied of in order to grant a payload permit. These are:

+ That the applicant has taken, and will continue to take, all reasonable steps to safely manage the operation of the payload; and
+ That the applicant has an orbital debris mitigation plan that meets the prescribed requirements; and
+ That the proposed operation of the payload or payloads under the permit is consistent with New Zealand's international obligations; and
+ That there are no national security concerns that mean a permit cannot be granted

Where those tests are satisfied, the Minister may still decline to grant a payload permit if the Minister is **not** satisfied that the proposed launch of a payload is in the national interest.

10. How long will it take for my application to be assessed?

Application processing time will depend on the complexity of your activity, and the completeness of information provided in support of your application. There is no statutory timeframe for processing applications made under the Act. We encourage you to contact the Space Agency before making an application to discuss the intended activity.

11. Other regimes that may impact your activity

New Zealand has a range of legislation that may dictate how you carry out your operations.

12. Collection and use of information

Information provided with your application is treated confidentially but may be subject to release under the provisions of the Official Information Act 1982. If this is the case, we may consult with you before the material is considered for public release.

The personal information you must include in this form is needed to process your application under the Act. You have the right under the Privacy Act 1993 and/or the Official Information Act 1982 to access information held about you by the Ministry of Business Innovation and Employment and request that this information be corrected if necessary.

The Act allows the sharing of information both from the Ministry of Business Innovation and Employment to other agencies, and from other agencies to the Ministry of Business Innovation and Employment in order to assist the Minister in the performance or exercise of its functions, duties, or powers under the Outer Space and High-altitude Activities Act 2017.

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13. Completing your payload permit application form

All questions in the application form must be answered. There may be circumstances under which you may not be able to provide an answer. Regulation 6 of the Licences and Permits Regulations sets out how to deal with this situation.

We have provided guidance for the following frequently queried areas that may require further elaboration to ensure that you are able to answer the questions fully. The Space Agency is available to discuss questions you may have when completing your application form. Please contact 0508 THENZSPACEAGENCY (0508 843 697).

Applicant Details.

Information required from applicants that are natural persons

Address for Service (physical address): This is an address where documents can be personally delivered to (such as a legal notice). It will usually be your primary residence but it might be your lawyer's address if you have instructed a lawyer to accept service on your behalf.

Evidence of identity:

We will need to verify your identity. In order to facilitate this please attach a photocopy of the photo/details page of your passport. See the example below.

If you have changed your name (for example through marriage or by deed poll), it will help us process your application if you include details of any other names you have known by and the date of the name change.

Information required from applicants that are body corporates

Legal Name: The legal name of the body corporate is the name as it appears in the state of incorporation, or its constituting documents (such as the company constitution). If the body corporate trades under a different name, the trade name should also be included.

Addresses: The application should include both the registered office of the entity, as well as the address used for service of process (if different).

State of Incorporation: The state of incorporation is the country or department thereof (such as a state or territory) under the laws of which the body corporate was lawfully formed or organised.

Unique Number: The Unique Number is any official number or designated identifier that uniquely identifies the entity in the official records of its place of incorporation. In New Zealand, this is the New Zealand Business Number (NZBN).

Information required from applicants that are entities other than body corporates

Entity Name: The legal name of the entity is the name as it appears in the state of organisation, or its constituting documents (such as the constitution). If the entity trades under a different name, the trade name should also be included.

Form of Organisation: The form of organisation is the legal form the organisation takes. This could be unincorporated bodies, partnerships, government agencies, crown research institutes or any other form of organisation other than a body corporate or natural person.

Country of Jurisdiction: The country of jurisdiction in which the entity is organised is the country or department thereof (such as a state or territory) under the laws of which the entity was lawfully organised.

Unique Number: The Unique Number is any official number or designated identifier that uniquely identifies the entity in the official records of its place of formation. In New Zealand, this is the New Zealand Business Number (NZBN).

Ownership and control interests

10% ownership or control is defined in the **Regulation 3** of the Licences and Permits Regulations as:

> *"a person has a 10% or more ownership or control interest in an applicant, if the person has—*
>
> *a) a beneficial entitlement to, or a beneficial interest in, 10% or more of the applicant's securities; or*
> *b) the power to control the composition of 10% or more of the governing body of the applicant; or*
> *c) the right to exercise or control the exercise of 10% or more of the voting power at a meeting of the applicant."*

Foreign licences, permits or applications

Under **Regulation 11** of the Regulations applicants may seek that the Minister treat a licence, permit, or other authorisation granted or likely to be granted outside New Zealand as satisfying some or all of the criteria for granting a permit.

In support of your request, you will need to provide copies of your full overseas license, permit, or authorisation.

Once your application has been received you will be notified as to whether the Minister is considering treating your overseas authorisation as satisfying some or all of the information required to assess your application.

+ If you are advised that the Minister is not considering treating your overseas authorisation, as satisfying some or all of the criteria for granting a payload permit. You will need to complete the **APP 001 Application for Payload Permit** form.
+ If you are advised that the Minister is considering treating your overseas authorisation as satisfying some or all of the criteria for granting a payload permit. You will, at a minimum, be required to provide the information set out ain the remainder of this form (sections 3-10). While not required at the time this application form is submitted, providing this information at the outset is likely to expedite the assessment process.

Information about the payload

Mission and purpose of the launch and operation of the payload:

The applicant must provide an overview of the mission and purpose of the payload. This should include a description of the ultimate objectives of putting the payload into space, and a description of how the payload contributes to that objective.

If the payload or payloads will be part of a broader system of outer space objects, such as a constellation, the overview should also include the name of the system or services provided using the system, a description of the system and its purpose (including the ultimate size of the proposed system), and an overview of the other outer space objects and payloads making up the system. For example, if the permitted payloads are intended to form part of a larger system of satellites composing multiple orbits, the number, size, purpose, and a general description of the capabilities of the system should be provided.

If components of the system are already present (such as pre-existing payloads launched from a foreign jurisdiction or under a previous New Zealand Payload Permit), please describe the number of operational components already in place.

Where this information is already described in business proposals, marketing materials, or investment materials, you may provide copies of the materials with the application in order to meet this information requirement.

Manufacture:

Spacecraft and their components are often subject to a number of protections and restrictions on export. The provenance of the payload or its components – that is, the place of manufacture or assembly of a payload - may therefore require additional conditions in order for New Zealand or the applicant to comply with relevant laws.

Please provide the name of the entity or person primarily responsible for the design, manufacture, build, and testing of the payload, and the place in which these services are performed. You do not need to disclose the manufacturer of all subsystems or components of the payload.

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Integration services:

If a third party is to provide payload integration services, the applicant must provide details (where known) about integration activities, such as integration to the launch vehicle and separation systems and fuelling.

Security measures:

The applicant should provide an overview of the physical security and cybersecurity measures in place to protect:

+ the payload command and control systems
+ enhanced and raw remote sensing data
+ systems commanding remote sensing systems and sensor tasking

Where applicable, the overview should include a description of the plan for the protection of command uplink, downlink, and any data links. If the security measures include protections to override commands issued by any operations centres or ground stations, an overview of these measures should be included.

The measures or policies to protect unenhanced and raw remote sensing data should include high-level overview of how that data is protected in transit (for example, from ground station to processing facility) and at rest (for example archive protection and retention processes). This information may be taken from, or included by reference to, a data protection plan for remote sensing data.

Where these security measures are set out in separate documentation (such as in a data protection plan), a reference to and attachment of this documentation will suffice.

Description of ground stations:

The description of ground stations should include the location of any ground stations the applicant uses for communicating with or otherwise controlling the satellite, their designated name or unique identifier (if they have one), and the functions they provide (e.g. communication of commands from the control centre, obtaining systems data or other monitoring activities, downloading data obtained by experiments or sensors on the payload).

Information is only required in relation to ground stations that are tasked or authorised by the applicant to communicate with the payload.

In some cases, the ground stations used to communicate with the payload may be selected dynamically and therefore will change over time. The applicant should describe their approach or arrangements in place or proposed for communicating with the payload, such as a description of the commercial contracts or entities with whom they will be obtaining ground station services. The applicant should ensure that the information provided is sufficient for the Space Agency to be able to understand the circumstances under which ground stations located in foreign countries and controlled by a party other than the applicant will be able to communicate with the payload.

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Information about the launch facility

If you do not yet know what launch facility you will be using to launch the payload, give as much information as you can, i.e., a list of facilities you are considering.

If you are applying for a permit for multiple payloads, and plan to use multiple facilities please explain this in your application and provide details of all the proposed facilities

Information about payload capability

Overview of the payload, subsystems and capabilities:

The overview should include a description of the key payload subsystems and a general description of their function and capabilities, including:

+ the payload (spacecraft) structure and its physical dimensions and weight (dry and wet weight, if appropriate);
+ the power subsystem;
+ the command or on-board data handling (OBDH) subsystem;
+ the propulsion subsystem (if any);
+ the attitude and orbital control subsystems (AOCS);
+ the communications subsystems used for telemetry, tracking and control (TT&C), data transfer, or other mission purposes, including protocols supported and the types of transmitters or receivers and associated aerials required for communication with terrestrial stations or between spacecraft
+ any mission-specific subsystems, such as payload scientific experiments, and their objectives and purpose (if not included in the Mission and Purpose overview previously provided).

Where this information is set out in other materials (such as promotional materials, published papers or proposals, marketing materials, investor materials, or other documentation) these may be provided as attachments to the application, and cross-referenced in the application form.

If the payload or its key systems or subsystems are commercial off-the-shelf products, you can refer to the make and model of the systems.

Third party contracts:

The applicant must provide information on any arrangements with a third party entity responsible for the management, oversight, or control of significant payload operations. Examples include payload tasking, control or operation of any scientific experiments carried on the payload, processing or management of data downloaded from the satellite, or management of the ground segments.

If no contracts to provide services are in place at the time of application, please indicate whether there is an intention to contract a third party.

If there is intent to contract a third party at a later date please provide a description of the services being contracted.

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Information about remote sensing payload capability

Remote sensing capabilities:

The specification of remote sensing capabilities should cover any ability to sense by any means the surface of the Earth or objects in outer space, or to sense or track the movement of objects (land-based vehicles, ships, aircraft or missiles) on, under or above the surface of the Earth

Please note that payloads that undertake remote sensing are the subject of international guidelines, and may require the imposition of additional conditions on the applicant.

In describing the remote sensing capabilities of the payload, the applicant should provide a basic description of the type and spectral coverage of passive sensors (all bands) and details of any active sensors (e.g. radar).

In describing the geolocation accuracy of the remote sensing systems, reference should be made to the systems used to support the accuracy of the observations, such as through GPS systems and other calibration methodologies.

"Persistence" will include details of:

+ persistence over a particular area of the earth;
+ area covered by an individual satellite view;
+ operational time over an area;
+ tasking if available (what additional visibility/frequency this can provide); and
+ frequency of revisit - individually and if part of a constellation what the full constellation will offer

Where the remote sensing capabilities are of high resolution or include novel or particularly advanced or innovative technologies (such as hyperspectral sensors or synthetic aperture radar systems), or will provide high-frequency revisits and near-real-time remote sensing data, additional information is likely to be required. Applicants are encouraged to provide additional information in relation to such capabilities as part of their originating application. The Space Agency is able to provide some guidance on what additional information may be required in the preliminary meetings prior to submission of the application.

Remote sensing data:

The summary must include the following:

+ any customers or classes of customers who will have access to enhanced remote sensing data; and
+ whether the applicant will provide any raw data to any customers or classes of customers; and
+ any plans to make the raw data generated by the payload available to—
    - governments whose territories have been sensed; or
    - for non-commercial, scientific, educational, or other public benefit purposes

You should also provide information about when remote sensing data, either in raw or processed form, will be made available to customers, such as whether the data is available on a near-real-time basis.

Orbital debris mitigation

Orbital debris plan:

Requirements for an orbital debris mitigation plan are set out in **Regulation 13** of the Regulations as:

An orbital debris mitigation plan must,—

- *a) if the applicant is following a standard or guidelines of an international or any other body that relates to the mitigation of orbital debris, specify the standard or guidelines; and*
- *b) if the plan has been assessed by a person or body that is independent of the applicant, specify that person or body and the result of the assessment; and*
- *c) specify the mitigation measures taken or intended to be taken that relate to orbital debris, which measures must be sufficient to ensure that—*
  - *i. the release of debris during the normal operations of the vehicle or, as the case may be, the payload is limited; and*
  - *ii. the potential for break-up of the vehicle or, as the case may be, the payload while in orbit is minimised; and*
  - *iii. the potential for the vehicle or, as the case may be, the payload to collide with debris other than debris released in the course of the activity to which the licence or permit relates is minimised; and*
  - *iv. at the end of the activity to which the licence or permit relates, the vehicle or, as the case may be, the payload is disposed of in a way that minimises risks to, or in, Earth's environment and in the space environment (including the risk of collisions).*

Safe operation of the payload

The description will include any measures taken to ensure that the operation of the payload in space will be safe.

Spectrum Authorisations

Information on spectrum licences can be found at https://www.rsm.govt.nz/licensing/types-of-licences.