

COMMONWEALTH OF AUSTRALIA
SPACE ACTIVITIES ACT 1998

Administrative Arrangements for the Classification of Assets for Space Launch Activities

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1. Introduction

Designated Assets and Protected Assets have a special status in the safety regime for space activities in Australia. Persons wanting to undertake space activities in Australia need to achieve specific safety standards for these assets.

These assets are facilities for which the third party casualty standards of the Flight Safety Code would not sufficiently mitigate the risk of space debris impact on a part of the facility causing damage that could lead to a catastrophic chain of events.

These assets may include, for example, remotely located energy production facilities, such as oil or natural gas platforms, that are in the vicinity of a proposed space vehicle flight path.

Designated Assets and Protected Assets are determined by the Minister for Industry, Tourism and Resources according to criteria and processes set out in this document.

2. Connection to the Space Safety Regime

The Flight Safety Code under the Space Activities Regulations 2001 of the *Space Activities Act 1998* refers to Designated Assets and Protected Assets. The Flight Safety Code requires the applicant to ensure that the safety standards for Designated Assets and Protected Assets are met.

Trigger debris is space debris of a particular shape, weight, velocity or explosive potential that is capable of triggering a catastrophic chain of events on a Designated

Asset or Protected Asset. The Flight Safety Code describes the process for determining trigger debris for a particular launch and Designated Asset or Protected Asset.

The probability of trigger debris impacting a Designated Asset must not be higher than 10^{-7} (1 in 10 million) per launch and must not be higher than 10^{-6} (1 in 1 million) per year. There are also safety standards set in relation to the probability of non-trigger debris impacts on a Designated Asset.

A Protected Asset must be at least 10km away from the corridor defined by the 10^{-7} (1 in 10 million) trigger debris impact probability isopleth. That is, a Protected Asset has a further 10km buffer zone over and above the protection from trigger debris it would enjoy as a Designated Asset.

3. Criteria for Identifying Designated and Protected Assets

3.1 Designated Assets

In identifying a particular facility as a Designated Asset, the Minister will have reference to the following criteria:

- a) the third party casualty safety standards of the Flight Safety Code would not sufficiently protect a facility and/or the people on it from space debris that could cause damage capable of triggering a catastrophic chain of events; or
- b) national security; or
- c) other criteria the Minister may determine.

In determining what constitutes a catastrophic chain of events, the Minister will have reference to the following criteria:

- (i) the assumptions of the casualty expectation calculations in the Risk/Hazard Analysis Methodology of the Flight Safety Code are not applicable, in particular, the assumption that casualties result from debris striking persons either directly as inert debris or as explosive debris and as overpressure effects in the event of an explosion; or
- (ii) the destruction or severe disablement of the asset would appreciably compromise strategically significant economic activity, export markets, investor confidence, or national security; or
- (iii) other criteria related to extraordinary consequences of the asset being destroyed or disabled that the Minister may determine.

A facility that is in or near an extended area of significant population density (i.e., a town or city), or that is regularly occupied by people, would normally be sufficiently protected by the third party casualty safety standards of the Flight Safety Code. A launch would not be able to proceed if the total casualty risk posed by the launch were more than 10^{-4} (1 in 10,000), nor if a person in or near that facility faced a casualty risk of more than 10^{-7} (1 in 10 million) on a per launch basis, or 10^{-6} (1 in 1 million) on a per year basis.

The kinds of facilities which might be candidates for Designated Assets are those that are remote from an extensive area of high population density and:

- contain high entrained energies; or
- contain substantial volumes of flammable, explosive, toxic or hazardous materials; or
- would be extraordinarily difficult, time consuming or expensive to repair or replace; or
- are of a kind where a relatively small incident might set in motion an unpredictable chain of events leading to a catastrophic system failure, for example as a result of the system being highly complex and interconnected.

Environmental criteria are not considered in the criteria for Designated Assets. Space licence holders are required to obtain all environmental approvals required by Australian law as part of the process of applying for a space licence.

3.2 *Protected Assets*

In identifying a particular facility as a Protected Asset, the facility shall first be a Designated Asset and the Minister will have reference to the following additional criteria:

- (a) the facility underpins the economic activity of a whole region, state or nation; or
- (b) the facility underpins national security; or
- (c) other criteria the Minister may determine.

4. **Processes for Determining Designated and Protected Assets**

Designated Assets and Protected Assets will be determined by the Minister for Industry, Tourism and Resources. The *List of Designated and Protected Assets* will be published by the Department of Industry, Tourism and Resources, and incorporated into the *Space Activities Regulations 2001* as a referenced document. The List will be particular to the space launch projects under development at the time of its publication and will be revised to take account of new projects as they arise. In recognition of the need for certainty by applicants for licences and permits, the classification of assets will take place prior to the submission of an application and supporting material for a space licence or a launch permit.

4.1 *Process to Amend the List of Designated and Protected Assets*

Once the Space Licensing and Safety Office (SLASO) becomes aware of a firm proposal for a new space launch facility and an impending application for a space licence in respect of the facility, it will review the *List of Designated and Protected Assets* to determine whether the List needs to be revised or whether the assets already classified are appropriate to the proposed facility.

The *List of Designated and Protected Assets* may also be reviewed in response to the development of a new facility or asset near an existing space launch facility or its flight paths (see also Section 5. **Proposed Developments**).

Revision of the *List of Designated and Protected Assets* will be undertaken according to the following process:

1. The SLASO will obtain the details of the location of the proposed facility and proposed flight paths, or a proposed development.
2. The SLASO will consult with relevant Commonwealth agencies, State and Territory governments, industry associations, owners of major assets, launch proponents and other interested parties on the revisions to the List.
3. Interested parties will receive a copy of the proposed revisions to the List and, after a period to consider the amendments, the SLASO will convene a meeting of all interested parties to discuss the proposed classification of assets. An independent mediator may be engaged where it is evident that the parties are unlikely to agree on the additions to the list. The mediator will be knowledgeable about Australia's high-value assets. Interested parties will have a further period following the meeting to finalise and submit written comments to the SLASO.
4. Following the meeting of interested parties and consideration of written submissions, in conjunction with the other areas of ISR and taking account of the criteria set out in Section 3 of this document, the SLASO will advise the Minister on the classification of nominated assets. The revisions to the *List of Designated Assets and Protected Assets* will be submitted by SLASO to the Minister for approval.

4.2 Notification

Following the Minister's approval of revisions to the List, the SLASO will recommend that the *Space Activities Regulations* be amended to give legislative effect to the new List. The SLASO will also advise:

- Each owner of a major asset within the vicinity of the project of the classification afforded the facility, including advice that the asset was not classified and reasons why;
- The launch proponent of all facilities which have been classified as a Designated Asset or a Protected Asset;
- Industry associations, including where appropriate the Australian Petroleum Production and Exploration Association, of any assets which have been classified as a Designated Asset or Protected Asset, and all proposed assets which were not classified and reasons why;
- The Government of the State or Territory in which the launch facility is located (or the Commonwealth Department of Territories and Western Australian Government in the case of Christmas Island) and any State or Territory Government in which the Designated Assets and Protected Assets reside.

5. Proposed Developments

The *List of Designated Assets and Protected Assets* determined by the Minister for Industry, Tourism and Resources may provide, as an advisory appendix, a list of Proposed Designated Assets and Proposed Protected Assets.

Proposed Designated and Protected Assets are facilities under development or construction that:

- (a) are expected to meet the criteria for their respective classification; and

(b) have been granted a “consent to construct and install” or similar government approval, but are not yet operational.

Facilities on the list of Proposed Designated Assets and Proposed Protected Assets would be assessed for inclusion in the *List of Designated and Protected Assets* once a “consent to use” or similar government approval to operate the facility has been granted. Where appropriate, the *List of Designated and Protected Assets* would be amended according to the process set out in Sections 4.1 and 4.2 as soon as practicable following the granting of a “consent to use” or similar approval.

The Assets Safety Standards or the Flight Safety Code standards only apply to facilities on the *List of Designated and Protected Assets*; they do not apply to Proposed Designated or Protected Assets.

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