



Australian Government
**Department of Industry,
Innovation and Science**

Reform of the Space Activities Act 1998 and associated framework

Legislative Proposals Paper

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1. Legislative Proposals Paper

The aim of this paper is to set out proposed changes to Australia's regulatory framework for civil space activities, in order to reduce barriers to participation and encourage investment and innovation through legislative simplification.

This paper presents findings of the Review of the *Space Activities Act 1998* (the Act), and proposed action in response to these findings. Findings of the review are derived from a variety of sources, and have been considered by the Australian Government.

This paper sets out the preferred approach¹ to addressing identified issues from the review. Comment is invited on the proposals set out in this paper. Based on this feedback, drafting of the new legislation will be undertaken with a view to introduction of a Bill later in 2017.

Please note that this paper includes both findings and proposals. Only comment on proposals is sought. Please provide comments before 18 April 2017.

2. Summary

The main consideration underpinning reform to the Act has been to balance risk and Australian benefit. Australian benefit includes the benefits of increased participation in launches and returns. Risks include potential damage to persons and/or property as well as associated liability. The balance, as it is reflected in existing arrangements, has been examined to determine whether it is appropriate in relation to today's actors and activities, with proposals indicating how it might change.

Before the existing arrangements were put in place, the Explanatory Memorandum for the Space Activities Bill 1998² indicated that the Bill instituted "a comprehensive regulatory framework for space activities in Australia or involving Australian interests. This will enable Australia to attract investment by commercial interests, while

¹ Proposals are for the purpose of discussion. The Findings and Proposals included in this paper do not represent Australian Government policy. Implementation of proposals put forward in this paper are subject to limits on the Commonwealth's constitutional power.

² 1998 The Parliament of the Commonwealth of Australia, the Senate, Space Activities Bill 1998, Explanatory Memorandum, ISBN: 0642 376883. See www.legislation.gov.au/Details/C2004B00230/Explanatory%20Memorandum/Text

ensuring that Australia meets its obligations under United Nations (UN) space treaties and that Australia's national interests are properly safeguarded.”³

More recently, Government has focused on promoting innovation and industry competitiveness. On 7 December 2015, the Australian Government released the National Innovation and Science Agenda (NISA) which will transform Australia into a leading innovative and entrepreneurial nation and position it to seize the next wave of economic prosperity. The NISA indicates support for Australian companies to embrace risk, learn from mistakes, be ambitious and experiment to find solutions.

In this context, it is important to consider the balance between safety of operations and the prevention of accidents; and liability for damage caused by space objects. Due to our experience and improved understanding of risk since the Act was put in place, a greater emphasis on managing safety (for example, through risk identification), rather than potential subsequent damage, may now be the more appropriate approach.

3. Background

The review was publicly announced by the former Minister for Industry, Innovation and Science, the Hon Christopher Pyne MP, on 24 October 2015. The terms of reference were to examine the appropriateness and effectiveness of existing civil space regulation, including whether the Act:

1. Supports innovation and the advancement of space technologies.
2. Promotes entrepreneurship and private investment in Australia, as well as opportunities for Australian firms to compete globally into the future.
3. Appropriately protects the Commonwealth against potential liability claims in relation to current and future civil space activities conducted in Australia or by Australians.
4. Adequately addresses emerging issues such as management of the space environment and technology advancement or convergence.
5. Appropriately aligns with other related Australian legislation and/or Australia's international obligations, and removes unnecessary regulatory burden.
6. Provides the necessary authority to support Commonwealth led civil space activities (government only).

³ <https://www.legislation.gov.au/Details/C2004B00230/Explanatory%20Memorandum/Text>

A stakeholder forum was held at Parliament House on 24 February 2016, attended by the Minister. Public consultations took place between February and April 2016, and are published at www.space.gov.au.

Professor Steven Freeland undertook an analysis of public submissions (the Analysis Report), which is available on request by emailing space@industry.gov.au. Other important inputs include not publically available contributions from the Australian Government and international colleagues; as well as Department of Industry, Innovation and Science (DIIS) analysis, including a paper outlining some preliminary conclusions and presented at the International Astronautical Congress 2016.⁴ This Legislative Proposals Paper does not endeavour to repeat material covered in the Analysis Report.⁵ rather it focuses on outlining a number of key proposals for change to the regulatory framework to respond to issues identified in the review process.

4. Proposed changes to legislation

4.1 General

The current framework includes the Act, *Space Activities Regulations 2001*, and *Space Activities (Approved Scientific and Educational Organisation) Guidelines 2015*.

Finding: the Act is considered not well suited to the changing operating environment for space, and is not conducive to providing an appropriate environment for innovation and investment in the sector.

The department considers that, while the existing framework has remained functional for nearly two decades, the operating environment continues to change. This includes both the type of activities being undertaken, as well as the actors involved. In this changing landscape, a focus on achieving Australian benefit is a key consideration. This includes the reduction of barriers to participation, and

⁴ A Seneta, *Maximising Opportunities for Australian Players in Global Supply Chains, paper for the 67th International Astronautical Congress (IAC), Guadalajara, Mexico, 26-30 September 2016*.

⁵ For details, please refer to relevant parts of the Analysis Report. Background information is also provided in relation to more complex issues in this Legislative Proposals Paper.

encouragement of investment and innovation through legislative simplification, as mentioned above.

4.2 Structure

Finding: The complex structure of the current legislation introduces an unnecessary level of inflexibility, resulting in inefficiencies for both applicants and administering agencies. Achieving the desired reforms through amendment of existing instruments is likely to be problematic and produce lesser outcomes, therefore drafting new legislation and associated instruments is the preferred option.

Existing arrangements are in some cases unnecessarily complex. For example, there are detailed requirements for institutions that are clearly educational in nature (for example, universities) to qualify as a scientific or educational organisation for the purposes of the Act, and so have a different fee rate in relation to the licence application (see 4.9 below in relation to fee rates under the Act). Due to the quantum of streamlining of Act provisions being considered, new legislation is considered preferable.

4.2.1 Proposal: That new (rather than amendments to existing) legislation be developed which provide a higher level of flexibility and responsiveness in meeting stakeholder needs and at the same time achieve desirable Government outcomes.

Finding: To improve flexibility and enable timely responses to ongoing technology change, the structure of a new regulatory framework should include an appropriate mix of primary and subordinate instruments.

A tiered structure which includes an Act, subordinate instruments, and supporting guidance material, is proposed. Foundation principles are to be included in the Act, with detail in subordinate instruments (such as legislative instruments), and operational process set out in guidance material. An Act and subordinate instruments are binding, while guidance material is not.

4.2.2 Proposal: Subordinate instruments may deal with more operational issues such as, for example, the application process/requirements.

4.3 Purpose

Finding: The purpose of the existing Act remains relevant to Australia's ongoing legislative requirements and should remain largely unchanged: [that is] To reflect in national law Australia's obligations as a party to the key United Nations' space treaties and thereby provide a legally certain and predictable environment for the development and operation of Australian space launch activities.

While the review process considered the possibility of broadening the purpose of the Act to focus on wider matters, given the Act is the primary mechanism to regulate launch activities from Australia and by Australian nationals anywhere in the world, it is proposed that the scope of new legislation remain the same. This ensures appropriate focus on the activities the Act provides for, that is, the regulation of launches and returns, including consideration of the payload associated with these activities.

4.3.1 Proposal: that the purpose of the legislation remains the same.

4.4 Objects

Finding: The objects of the existing Act remain relevant and should remain largely unchanged.

The objects of the Act address

- establishment of a system for the regulation of space activities carried on either from Australia or by Australian nationals overseas;
- provision for the payment of adequate compensation for damage caused to persons or property as a result of activities regulated by the Act;

- implementation of certain of Australia's obligations under the Space Treaties; and
- implementation of certain of Australia's obligations under specified space cooperation agreements.

While these objects include what is considered an appropriate focus on Australia's obligations under the Space Treaties, and the establishment of a system of regulation for those activities; the question arises whether the emphasis on compensation and space cooperation agreements remains appropriate.

Compensation

Compensation is arguably already covered off by the object addressing Australia's obligations under the Space Treaties. One of the Space Treaties, the Convention on International Liability for Damage Caused by Space Objects (Liability Convention), deals with liability and compensation for damage. Under the Act, these elements are also related, with insurance and compensation values in some cases being the same⁶.

Space cooperation agreements

Under the Act there is one space cooperation agreement in Schedule 6 'Agreement between the Government of Australia and the Government of the Russian Federation on Cooperation in the Field of the Exploration and Use of Outer Space for Peaceful Purposes'. While bilateral arrangements remain important, it may not be necessary to emphasise them in the objects of new legislation.

4.4.1 Proposal: That the objects of the legislation be streamlined, to emphasise appropriately balancing risk and Australian benefit, including a focus on Australia's international obligations and the establishment of a system of regulation for those activities.

⁶ Compensation provisions under the Act (articulated in sections 66 – 75) indicate that the value of compensation is the same as the value of the insured amount for a launch permit or overseas launch certificate; whereas compensation is unlimited in connection with the return of a space object launched outside Australia by a non-Australian national. The Australian Government is liable to pay compensation to Australian nationals for damage of an amount up to \$3 billion (this \$3 billion is beyond the amount (the insured amount) a responsible party has paid).

4.5 Title

Finding: the generic title of the existing Act conveys the impression that the legislation addresses all space activities undertaken within Australian territory, causing unnecessary misunderstandings.

Given the proposed scope of the legislation, the name of the legislation should reflect its limited function, that is to regulate the launch and return of space objects. That said, given the standing and familiarity of the 'Space Activities Act', a variation on this title, to reflect its limited function, is proposed.

4.5.1 Proposal: for the title of the new Act to be a variant on the Space Activities Act reflecting its purpose to regulate the launch and return of space objects. For example: Space Activities (Launches and Returns) Act.

The focus on launches and returns would mean that it may be only necessary to annex treaties of greatest relevance to the legislation, namely:

- Convention on International Liability for Damage Caused by Space Objects
- Convention on Registration of Objects Launched in Outer Space, and
- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies.

4.6 Varied elements

Various elements of the existing arrangements are proposed for change. These include aspects and scope of some authorisations (see 4.7 below); response to international obligations including space debris, contamination, registration and liability; fees/cost recovery; and national security.

4.7 Authorisations

While the scope of the new legislation would focus on launches and returns, some variations on the type of authorisations and their elements available under the Act are proposed. In summary, the following changes are proposed:

Authorisations under existing arrangements - Space Activities Act 1998	Proposed available authorisations under new legislation
Overseas launch certificate	Payload licence
Space licence	Launch facility licence
Launch permit	Australian launch permit (if authorisation of a launch vehicle itself is needed). Possible variant for hybrid vehicles.
Authorisation of return of overseas-launched space objects	Authorisation of return of overseas-launched space objects
Exemption certificates	Exemption certificates and exemption to elements of the Act

(i) Payload licence

The main change involves the proposed introduction of a payload licence type.

While existing arrangements under the Act were initially designed to authorise launch facilities in Australia and associated launches, the most commonly used authorisation type has been the overseas launch certificate (OLC).

While used to authorise the launch of Australian payloads, possibly due to issues associated with risk and liability (addressed below), the emphasis of the OLC authorisation has been on the facility and vehicle, rather than the payload. It involves authorisation of the launch of a particular space object/s “from a specified launch facility outside Australia using a specified kind of launch vehicle” (section 35 the Act). Requirements include an Australian national being a responsible party for the launch (section 12 the Act). Analysis conducted as part of considering an application for an OLC has included the safety arrangements/record of the facility and launch vehicle.

While aspects of the payload are considered under existing arrangements - for example, manufacturer, proposed orbit, no nuclear weapons (see Space Activities Regulation 4.03), a greater emphasis on these matters is proposed under the new

legislation. As Australian benefit derives from the payload itself, this is considered appropriate.

Payload licence - issues associated with risk and liability

As background, the highest risk element of certain space activities is the launch. This may be why, under the *Convention on International Liability for Damage Caused by Space Objects* (Liability Convention), a launching state is absolutely liable for damage on the surface of the earth or to an aircraft in flight. By contrast, liability for damage caused to a space object by a space object of a launching state other than on the surface of the earth, is fault based.

While Australia has direct involvement in payloads being launched overseas, rather than the launch vehicles used to launch them, it remains liable for any damage the payload's launch vehicle causes. This is because, under the Liability Convention, a launching state includes a state which launches or procures the launch of a space object; with a "space object" including its launch vehicle (Article 1, Liability Convention).

While Australia is potentially liable for the payload *and* the launch vehicle (because of the definition of 'space object'); because of the presence of launch insurance, Australia's liability risk in relation to the launch vehicle may be reduced and/or limited. On the other hand, the payload goes into orbit and Australia's liability continues. Therefore the payload is more likely to be Australia's liability risk and may be emphasised under the new legislation. Focus on the payload itself includes consideration of the 'life cycle' of the payload, including on orbit and end of life. Consideration may include the purpose, testing before launch and power supply.

Information in relation to the launch facility and launch vehicle would be secondary, or in some cases not required (for pre-approved facilities, please see below).

4.7.1 Proposal: That introduction of a licence type to authorise payloads be considered.

(ii) Launch facility

Based on the principle that it is likely that the launch itself which represents the greatest risk, it is proposed to 'reverse' the emphasis of arrangements under existing legislation, which currently specify extensive requirements for an Australian facility, but lesser requirements for a launch conducted from it.

It is proposed that requirements on the facility itself be reduced; for example, the responsibilities in relation to flight paths, associated risk hazard analysis for a launch, as well as launch vehicles, could become part of launch, rather than facility, requirements.⁷ This would reduce barriers to the establishment of launch facilities without compromising the safety requirements for launches.

We would also propose breaking the current ‘nexus’ that requires that only holders of a licence for a launch facility can obtain a launch permit. While we understand that it may be the same party applying for both a facility and launch permit, the changes are proposed to provide a more ‘phased’ approach to assessing licences, assisting in the potential establishment of launch facilities; as well as allowing for the case where it is not the same party applying for both facility and launches.

4.7.2 Proposal: That requirements currently outlined in the Space Activities Regulations 2001, which are more relevant to launch rather than establishment of a launch facility, be transferred to the proposed new ‘Australian launch permit’ .

(iii) Australian launch permit

Finding: Disruptive technologies are rapidly changing the operating environment and replacement legislation should anticipate further changes, while at the same time continuing to ensure appropriate levels of societal protection.

In relation to disruptive technologies, the miniaturisation of satellites can be addressed by the proposed payload licence type. Attention was also given to the changing nature of launch facilities. Launches from terrestrial and sea platforms are being joined by new kinds of reusable launch vehicles, and release from the international space station. Launch from a scramjet/hypersonic vehicle or aircraft from Australia is also envisaged.

Consideration has been given to these new launch platforms, particularly in relation to what would be covered by an Australian launch permit instead of a launch facility licence with associated Australian launch permits.

⁷ Consideration needs to be given to streamlining of the process in relation to protected assets, and the appropriate location for this in the new framework.

It is proposed that an Australian launch permit (or variant of it) be considered in relation to launches from Australian vehicles in flight. This is a complex issue, requiring understanding of the risks specific to these launches.

It is proposed that space objects travelling to the international space station (for subsequent release) would be covered by the proposed payload licence.

Should a sea launch platform be based in an Australian harbour, it would need to be covered by a launch facility licence. A launch facility licence would continue to be needed for launch facilities based on Australian land.

4.7.3 Proposal: That the launch facility licence provisions include sea launch platforms based in Australian territory; while an Australian launch permit (or variant of it) include a launch from Australian vehicles in flight or (potentially) from Australian airspace.

In addition, under existing arrangements, a launch permit can be utilised for return to Australia of an Australian launched space object. Currently, the definition of a space object includes the launch vehicle (reflecting the Liability Convention). Consideration is needed in relation to whether a payload might return without the launch vehicle.

4.7.4 Proposal: That DIIS consider cases of potential return of Australian launched payloads (without a launch vehicle) to Australia.

(iv) Requirements associated with launch from Australia

Existing arrangements are underpinned by several documents addressing the safety of proposed launch activities from Australia and the determination of the minimum insurance which must be taken out in respect of potential loss or damage.

These documents include, as indicated in the *Space Activities Regulations 2001*, the Flight Safety Code (FSC), and List of Designated and Protected Assets (with associated Administrative Arrangements for the Classification of Assets for Space Launch Activities).

The FSC sets out the requirements of applicants to demonstrate that their proposed launch activities will be safe and effective. As such, it represents a critical element of

evidence to be used to satisfy the Minister that the probability of the launch or launches, and any connected return, causing harm to public health or public safety, or causing substantial damage to property, is sufficiently low. Stakeholders have affirmed the value of the current FSC, with a suggestion that it be refreshed at some stage in the future.

4.7.5 Proposal: That the Flight Safety Code be retained, and refreshed in the future.

The department recognises that readers of the (partly US sourced) FSC require specialised knowledge to interpret it. Consideration by those using the FSC needs to be given to whether the use of specialised knowledge (or ‘know how’), if procured from the United States, would be restricted by the International Traffic in Arms Regulation (ITAR). A good outcome may be the identification and use of Australian capability, particularly by the Government in assessing applications in relation to the FSC.

In relation to restrictions on the transfer of technology more broadly, the department acknowledges that bilateral arrangements as appropriate, particularly technology safeguard agreements, need to remain an option to enable use and secure management of (for example) rocket and satellite technology from other States.

The List of Designated and Protected Assets (‘the list’) raises different issues. Under existing arrangements, Designated and Protected Assets have special status, being facilities for which third party casualty standards of the FSC 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.⁸ The FSC requires that the applicant ensure that the safety standards for Designated and Protected Assets are met. Designated and Protected Assets are currently determined by the Minister according to the processes set out in the Administrative Arrangements for the Classification of Assets for Space Launch Activities.

Continuation of a framework for identifying designated and protected assets is proposed. To date, there has been difficulty in keeping the list component of the framework up to date.

⁸ Administrative Arrangements for the Classification of Assets for Space Launch Activities 7 June 2002.

4.7.6 Proposal: To retain a framework whereby designated and protected assets can be identified on an as needed basis. Suggestions in relation to identification of assets are requested.

(v) 'High altitude' activities

Finding: Consideration should be given to activity (such as sub-orbital flights) conducted between the upper regulatory limit of controlled airspace legislated under the Airspace Regulations 2007 at 18km, in respect of the regulation of the flight of aircraft, and the lower regulatory limit of the Act which begins at 100km above sea level⁹.

In addition to new legislation, a subordinate instrument is planned in relation to those 'high altitude' activities which are described/specified in the subordinate instrument. At the moment, high powered rockets would be included. This is due to the need to address issues related to safety, insurance, and expertise specific to this activity. In the future, other high altitude activities would be added if considered necessary.

This proposed element of the new framework would address activities below the 100km 'trigger' for existing arrangements.

4.7.7 Proposal: That consideration be given to the drafting of a new subordinate instrument, for 'high altitude' activities as described/specified in the subordinate instrument.

(vi) Accepted launch facilities

As mentioned above, analysis in relation to (overseas) launch facilities is an element of existing arrangements for overseas launch certificates. It is proposed that a list of

⁹ Under the Act, 'launch' means launch of a space object (or an attempt to do so) into an area beyond the distance of 100km above mean sea level.

'standard' launch facilities be established, so that should an applicant for the proposed payload licence be launched from one of these facilities, information associated with the facility does not need to be provided. Assessment of what constitutes a 'standard' launch facility would include the history/record of launches and safety/operations at the facility. A list of launch vehicles is more difficult to prepare, as these change more often.

4.7.8 Proposal: for a list of 'standard' launch facilities to be prepared and made available (in either a subordinate instrument or elsewhere), to streamline the application process.

(vii) Safety officers

Under the Act, a Launch Safety Officer is appointed by the Minister for each licenced launch facility. Functions include ensuring notice is given of launches and associated returns, to ensure that no person or property is endangered by any launch or return, and to ensure compliance with a space licence or launch permit.

Also under the Act, there is a system of investigating the circumstances surrounding any accident or incident, to prevent other accidents and incidents occurring. The Minister appoints an investigator in certain circumstances.

4.7.9 Proposal: that the functions of the Launch Safety Officer and accident safety investigator remain.

4.8 International obligations

International obligations include those relating to space debris, contamination, registration and liability.

(i) Debris mitigation

Finding: Consider introduction of provisions to the legislation which commit Australian space actors to consider the space environment. In delineating clearly the strategic framework from operational aspects and to recognise the evolving international debate on space environmental management, specific operational

requirements for implementation should sit in a subordinate instrument and/or operational handbooks/manuals which are able to be updated and revised more easily than the primary legislation.

Consideration has been given to providing an in principle statement in the new Act, potentially with a requirement in a subordinate instrument for applicants to provide a strategy. Guidance on information which may be provided in a strategy would be available. For example, guidance may include having regard to the Space Debris Mitigation Guidelines, recommended timeframes for de-orbit, inclusion of sails and/or propulsion. Exemption from requirements under the Act and/or subordinate instrument may also be possible, with the Minister's approval.

4.8.1 Proposal: that consideration be given to the new Act including a high level statement committing applicants to consider the space environment. Detail on how this might be achieved may be provided in a subordinate instrument and/or guidance material. The ability for the Minister to provide exemption from this requirement is also proposed.

(ii) Nuclear power sources

It is proposed that a reference be added in relation to the United Nations Principles Relevant to the Use of Nuclear Power Sources in Outer Space.

Under existing arrangements, outlined in the Space Activities Regulations 2001 (4.03 (f)), the Minister's written approval is needed for a space object to contain any fissionable material. Consideration could be given to extend this requirement to include a need to indicate the presence of fissionable material *and* nuclear power sources.

4.8.2 Proposal: that consideration be given to applicants being required to indicate the presence of both fissionable material and nuclear power sources.

(iii) Contamination

States Parties (including Australia) to the *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies* (Outer Space Treaty), under Article IX,

shall pursue studies of outer space, including the moon and other celestial bodies and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose

In relation to such activities, there is a requirement for a State Party to consult with other State Parties in particular circumstances -

If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space, including the moon and other celestial bodies, it shall undertake appropriate international consultations before proceeding with any such activity or experiment. (Article IX, Outer Space Treaty).

Article 7 of the *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies* (Moon Agreement), to which Australia is a party, indicates that

In exploring and using the moon, States Parties shall take measures to prevent the disruption of the existing balance of its environment whether by introducing adverse changes in that environment, by its harmful contamination through the introduction of extra-environmental matter or otherwise. States Parties shall also take measures to avoid harmfully affecting the environment of the earth through the introduction of extraterrestrial matter or otherwise.

The Committee on Space Research (COSPAR) has a Planetary Protection Policy addressing issues of potential contamination. The COSPAR policy¹⁰ is non-binding; however, it provides guidelines to guide compliance with Article IX of the Outer Space Treaty and other relevant international agreements. In light of Australia's treaty obligations under the Outer Space Treaty and Moon Agreement, it may be prudent for reference to be made to the COSPAR policy.

4.8.3 Proposal: Consideration be given to applicants having regard to the COSPAR Planetary Protection Policy, as appropriate.

(iv) Registration

Consideration has been given to reflecting the registration requirements of the *Convention on Registration of Objects Launched into Outer Space* (Registration Convention) in the new legislation. Updating and streamlining access to the domestic register of space objects (see Part 5 of the existing Act) is recommended. Currently the Minister must make the Register available for any person to inspect it at times and places published in the Gazette. Reasonable access to a computer terminal is also currently allowed.

4.8.4 Proposal: that access arrangements to the domestic register be updated and streamlined.

(v) Liability and associated insurance requirements

Australia's obligations

Australia has treaty level obligations in relation to space objects which cause damage.

Under the *Convention on International Liability for Damage Caused by Space Objects* (Liability Convention), launching states¹¹ are absolutely liable to pay

¹⁰ See <https://cosparhq.cnes.fr/sites/default/files/pppolicy.pdf>

¹¹ A launching state means a state which launches or procures the launch, or a state from whose territory or facility a space object is launched.

compensation for damage caused by its space object on the surface of the earth or to aircraft in flight.

Damage caused elsewhere is fault based -

In the event of damage being caused elsewhere than on the surface of the earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible. – Article III Liability Convention.

Domestic arrangements addressing Australia's obligations

Under the Act, the holder of a

- domestic launch permit (or return authorised by a launch permit),
- overseas launch certificate or
- return of an overseas launched space object

must satisfy insurance/financial requirements to an amount of not less than \$750 million AUD or the amount of maximum probable loss (MPL), whichever is the lower amount. Instead of insurance, the applicant may also demonstrate direct financial responsibility for an amount of not less than 750 million AUD or MPL.

For a launch (or return authorised by a launch permit) or return of an overseas launched space object, the holder of the permit or authorisation must be insured against liability to pay compensation, or show direct financial responsibility in relation to liability to pay compensation for any damage to third parties that the launch or return causes, and the Commonwealth is insured, or otherwise protected (by the applicant) against liability under the Liability Convention or otherwise under international law.

In relation to an overseas launch certificate, the Commonwealth is to be insured (by the applicant) against liability under the Liability Convention or otherwise under international law, to pay compensation for any damage to third parties that the launch causes.

Finding: The existing legislative requirements for insurance/financial cover are higher than the levels required by other space-faring nations and a potential

inhibitor/disincentive to innovation and investment in Australia. An alternative approach which appropriately balances risk against broad Australian benefit may enable greater participation and innovation in the space sector.

Finding: Consideration could be given to establishing scaled indemnity levels on the basis of a risk assessment process undertaken by the DIIS based on information provided by the applicant.

Proposed steps

An alternative approach would change the proportion of risk carried by the Commonwealth and is a complex matter, requiring further analysis. A subordinate instrument, addressing insurance and fees, is proposed.

4.8.5 Proposal: To allow greater flexibility in relation to updating as need arises, that consideration be given to insurance and fees being located in a subordinate instrument.

Other matters

In addition, consideration needs be given to cases where Australia may not be liable under the Liability Convention, as it is not a launching state; but where Australia may be responsible under general international law principles of State Responsibility or Article VI of the Outer Space Treaty which indicates –

States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the moon and other

celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty.

4.8.6 Proposal: That DIIS consider cases, including the likelihood of cases, where Australia may be responsible under the Outer Space Treaty, but not liable under the Liability Convention.

4.9 Fees

Under the Act, fees are as follows

Comparison of space activity fees (current as at the date of the 2015 Guidelines)		
Activity	Fee - General	Fee - Approved scientific or educational organisation
Space Licences	AU\$300,000 application fee and an AU\$190,000 annual fee	AU\$3,000 application fee and a AU\$1,900 annual fee
Launch Permit	AU\$40,000 application and AU\$10,000 for each additional launch after the first launch	AU\$400 application and AU\$100 for each additional launch after the first launch
Overseas Launch Certificate	AU\$10,000	AU\$100
Authorisation of return of overseas-launched space objects	AU\$10,000	AU\$100
Variation Authorisation	AU\$10,000	AU\$100
Exemption Certificate	AU\$10,000	AU\$100

Finding: to encourage innovation and allow relevant activities to be undertaken by a range of entities (including commercial firms), consideration may be given to the rules for obtaining approval as a scientific or educational organisation being amended to focus on the nature of the activity, rather than the type of organisation.

Finding: That consideration be given to a sliding scale of fees for commercial (non-scientific/educational) activities; recognising the comparatively limited resources available to small firms. This may encourage participation, innovation and investment in the space sector.

The Explanatory Memorandum for the 1998 Bill¹² indicates that existing fees were based on a cost recovery model. However, what has been charged since the advent of the existing Act has not amounted to true cost recovery. While this has been possible when assessment can be carried out ‘in house’, it is more difficult to argue when a technical expert would need to be contracted, particularly in relation to assessment associated with the establishment of potential launch facilities in Australia.

Since 1998, the Australian Government’s charging framework has moved on. In April 2015, the Australian Government agreed to implement a charging framework¹³ to apply to non government entities. The Framework provides that where an individual or organisation creates the demand for a government activity, they should generally be charged for it, unless the Government has decided to fund the activity.

As mentioned previously, it is proposed that consideration be given to insurance and fees being addressed in a subordinate instrument; which would be consulted on at a later time.

4.9.1 Proposal: that an appropriate charging model be developed.

¹² 1998 The Parliament of the Commonwealth of Australia, the Senate, Space Activities Bill 1998, Explanatory Memorandum, ISBN: 0642 376883.

¹³ Australian Government Charging Framework, Resource Management Guide No. 302, July 2015 at <https://finance.gov.au/resource-management/charging-framework/charging-framework/>

4.10 Exemption

During the course of application of the Act, at times changes to the framework itself have been requested, as exemption has not been possible. While a framework which requires a specific process for change provides certainty, flexibility is also needed.

Finding: Consider exemption of certain activities from compliance with elements of the legislation. This may include activities performed by a private contractor on behalf of the Government for the purpose of national security or foreign relations, or launch activities conducted overseas under certain conditions.

Under existing arrangements, exemption certificates can be issued by the Minister, covering specific conduct otherwise prohibited under sections 11, 13 or 15 of the Act (which relate to launch facilities in Australia, launches from Australia, and return of Australian launched items to Australia)¹⁴. Overseas launch certificates and return to Australia of foreign launched objects, are not included. Exemption certificates require consideration of certain factors (emergency, safety and liability), and must be tabled in Parliament. They are an alternative to requirements set out in sections 11, 13 and 15.

What is proposed for new arrangements is that the Minister, having regard to certain matters, may provide an exemption in entirety from each of the authorisations under the legislation. Factors for consideration may be as before, with the exemption being required to be tabled. In addition, it is proposed that the Minister may be able to exempt element/s in relation to each authorisation, based on considerations including emergency, safety and liability.

4.10.1 Proposal: that exemption in entirety from each of the authorisations and in addition, in relation to element/s associated with each authorisation, based on considerations including emergency, safety and liability be considered.

¹⁴ Discussion can be found in the Analysis Report, see page 54.

Finding: there is a growing trend towards partnering between civil (commercial and/or research) and State operators (including military) to conduct activities. Legislation should have sufficient flexibility to recognise joint public/private partnerships.

While the Australian Government (and its agents under s16 of the Act) do not require approvals under Division 1 of the Act, this has raised issues in relation to joint Government/civil activities. For example, insurance may be addressed quite differently by civilians operating under the Act as compared with the Government in relation to the same space object, and information will be provided to DIIS by the civil party as required, but by the Commonwealth on an as needed basis.

4.10.2 Proposal: That the Australian Government be invited to be guided by the new legislation, as it considers appropriate. That the Government be invited to provide information consistent with that of a non- Government entity (as appropriate), when authorisation is in relation to a public/private partnership.

4.11 Application process

Streamlining of the application process is of benefit to both applicants and those assessing them. Most application requirements are proposed to be set out in a subordinate instrument, with additional guidance in guidance material as needed.

Finding: Improve efficiency by transferring delegation for authorisation of low risk applications to senior departmental officials (noting that the Act already enables this option).

Under existing arrangements, the Minister may, by signed instrument, delegate to another person any or all of his or her powers under the Act, if the Minister considers that the person is suitably qualified to exercise the powers concerned (section 104).

4.11.1 Proposal: that the ability for the Minister to delegate his powers, be provided for in the new legislation.

Finding: Consider introduction of a staged application process which gives applicants early indication of the likelihood of meeting the requirements of the legislation.

Payload licence

In relation to the proposed payload licence, in order to provide an early indication of risk, an applicant would provide summary information against the following suggested criteria:

Suggested early indicator criteria for proposed payload licence

That the probability of the launch causing substantial harm to public health or public safety or causing substantial damage is sufficiently low.

That having regard to the nature and purpose of the space object the insurance/financial requirements will be met.

That there are no reasons relevant to Australia's national security, foreign policy or international obligations for not granting the payload licence.

That there are no nuclear weapons or a weapons of mass destruction of any other kind.

That requirements relating to fees will be met.

Launch facility licence

In relation to a space licence under the Act, currently the period for assessment commences when a complete application is received. For the new legislation, for a 'launch facility licence', a 'modular' approach is proposed. Three stages of

submission and assessment are proposed, to assist in providing early indication of the likelihood of success of meeting requirements of the legislation. For example –

Stages

1. Program management plan, financial standing, environmental plan.
2. Organisational structure, technology security plan, technical recognition plan, emergency plan.
3. Acquittals plan.

4.11.2 Proposal: that provision be made in relation to payload and launch facility authorisations for establishing a phased application process.

Finding: Consider the introduction of systems which recognise certain information previously provided by an applicant (that does not require updating) in order to minimise duplication of effort.

In essence, this already occurs. When an applicant submits an application that relies on information already held by DIIS, and that information remains current, DIIS requests permission to re-use that information and provides a list of additional information required to be provided by the applicant.

4.11.3 Proposal: That DIIS continue its current practice of utilising information already provided by an applicant with their permission; while requesting additional information as needed.

5. Guidance material

Finding: Improve the ease of the application process and applicant understanding of compliance requirements by increasing guidance material available on DIIS' website.

Finding: Develop an online network of information which enables applicants access to consistent information on the Commonwealth's space regulation requirements, regardless of which agency is first contacted.

DIIS aims to coordinate summary information regarding the roles and responsibilities of the various Australian Government agencies that an applicant may need to approach in relation to an activity.

This summary information would then be accessible through one 'portal' or contact point, regardless of which agency of the Government an applicant contacts first.

5.1 Proposal: That DIIS coordinate summary information from the Australian Government (and make it available in one place).

6. Australian Government coordination

Finding: The Act needs to be recognised as part of a suite of Commonwealth space legislation. Strong interagency collaboration will help ensure that Australia's needs are appropriately addressed, while easing the regulatory burden on space sector participants.

The Review of the Act included consultation with colleagues from other Australian Government departments and agencies. Work was undertaken to identify Australian laws relevant to Australian space activities, as well as gaps in space regulation, and ways to better approach and coordinate Government oversight were considered.

7. National Security

Finding: Commonwealth national security agencies work together and in consultation with regulatory agencies to develop a framework for assessment of national security and foreign relations matters. The framework could be anchored in the Act.

Under existing arrangements, applications are considered in relation to national security matters. A high level description of the framework used and or factors considered, is proposed for inclusion in the legislation.

8. Next steps

The next step is for interested parties to make submissions in relation to the proposals in this paper, before 18 April 2017. Following consideration of those submissions, DIIS will draft a Bill to replace the existing Act. Following this, work would commence on the preparation of subordinate instruments.

The Act will remain in force for the duration of this process until the new legislation comes into effect. DIIS is considering options for transition from 'old' to 'new' arrangements, understanding the importance of continuity for stakeholders.

9. Conclusion

The proposed reforms to the Act take a balanced approach to managing risk, noting the Australian benefit that will be derived from increased participation due to reduced barriers. New legislation is proposed, including a sharpening of purpose and streamlining of structure and requirements, with the aim of striking the right balance for Australian space activities into the future.