

LAUNCHING FROM 'DOWN UNDER': THE NEW AUSTRALIAN SPACE ACTIVITIES ACT OF 1998

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Abstract

In view of the ongoing privatisation in certain sectors of space activities more and more states become aware that international space law on many counts requires (or at the very least stimulates) domestic implementation by means of national space laws. Thus, on 21 December 1998 Royal assent was given to a Space Activities Act, being "an act about space activities, and for related purposes", drafted by the Australian parliament. Australia thereby became the world's sixth state enacting a transparent and rather comprehensive piece of national legislation exclusively focused on space activities – after the United States, Sweden, the United Kingdom, the Russian Federation and South Africa. In addition, states such as France, Japan, Brazil and Argentina have already developed to some extent coherent quasi-legislative regulation on a national level which is of supreme relevance also for certain space activities.

At a previous occasion I had the opportunity to analyse and evaluate extensively the national space legislation of the five states referred to from this particular perspective (of regulating private space and space-related activities), in addition to the special case of France. The present paper will summarily apply the same methodology and the same parameters to the Australian Space Activities Act of 1998, in order to allow for some conclusions as to its effectiveness and relevance in stimulating the positive effects of private involvement in space activities whilst curbing its negative aspects. In doing so, it will also take the specific Australian situation *vis-à-vis* (private) space activities into account.

Thus, it will briefly analyse to which extent Australia in enunciating its Act has actually followed the core parameters provided at the international level, notably of course Articles VI,

VII and VIII of the Outer Space Treaty, the Liability Convention and the Registration Convention. It will thus evaluate the legal consequences of Australia's international responsibility and international liability once arising, and the usage Australia has made of its jurisdiction to ascertain its interests in that respect, especially with a view to its establishment of a licensing system. Furthermore, it will briefly touch upon a few substantive core issues as emanating from international law – the status of outer space, security aspects, safety aspects, substantive aspects of liability, and the issue of a central national space agency – and the measure of domestic implementation provided for in the Australian case. Finally, a brief conclusion will be offered on the extent to which stimulation of private involvement actually results from the Act, in view of Australia's obligations under international space law.

1. Introduction: the generic role of national space legislation

Prior to dealing with the specific case of Australia, and its recently established national space law, a summary overview of international space law and the generic role of national space legislation within its framework is due. This overview is for a major part summarising an analysis already undertaken in much more detail at another occasion.¹

The present international rules concerning space activities are directed towards states, and, in a subsidiary fashion, to public international organisations. Its public character is evident: most of the rules concerned deal with the military, environmental or safety- and liability-related aspects of space activities. Such global

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public issues, in first instance, can only be regulated adequately by public law.

The same normative system is also applicable to private commercial space activities, which are in principle allowed under space law – albeit subject to authorisation by a state. At least presently, however, private enterprise is not directly bound to those rights and obligations.² Here lies the task which national space legislation has to achieve – the implementation of international space law rules on the domestic level *vis-à-vis* certain private space activities.

International space law itself provides for a framework determining *how* to bind private entities, through national legislation, to the contents of international space law. At *whom*, alternatively at *which activities* should national space legislation be directed? A state will be inclined to exercise any available jurisdiction primarily *vis-à-vis* those particular categories of private activities in respect of which it can be held accountable internationally. This accountability refers to the obligation resting upon a legally relevant entity to be held to answer *vis-à-vis* other legally relevant entities for certain activities or occurrences.

Accountability under international space law conceptually speaking has a twofold character: it comprises both a general accountability in the form of state responsibility, and the specific case of accountability for damage as presented by state liability.³ These two notions have a framework component in that they carry their own definitions regarding the entities *for which* a particular state might be held accountable.

The Outer Space Treaty⁴ contains three important Articles in this respect: Article VI on international state responsibility and Article VII on international state liability as the two relevant forms of accountability, and Article VIII, on jurisdiction with respect to outer space activities.

2. The international legal framework for national space legislation – Articles VI and VIII, Outer Space Treaty

Article VI of the Outer Space Treaty provides that states are internationally responsible for “national activities in outer space”, including cases where these activities are “carried on (...) by non-governmental entities”. This responsibility pertains to “assuring that national activities are carried out in conformity with the

provisions set forth in the present Treaty”. Generally speaking, under Article VI states are responsible for activities undertaken in outer space in case these activities violate obligations under international space law.

Article VI then begs the question: *which* particular state is to be held responsible on the international plane for *which* categories of private space activities? The answer lies in the two key-terms “national activities” and “appropriate State”. However, no definition of the “national activities” for which a state is responsible, has been provided by international space law. Thus, there is no agreement on the proper interpretation of this term.

The most sensible and effective interpretation of private “national activities” would make states internationally responsible precisely for those activities over which they can exercise legal control. Therefore, a state should be held responsible for those private activities undertaken from within its jurisdiction. ‘Jurisdiction’ in this context would essentially see to three types of jurisdiction.

Firstly, a state can exercise *personal jurisdiction* over any private entity with the nationality of that state. Secondly, a state also has *territorial jurisdiction* over any private entity operating on its territory. Thirdly, as a consequence of Article VIII of the Outer Space Treaty and its provisions on registration and jurisdiction, a state can exercise *quasi-territorial jurisdiction* over space objects that it has registered.⁵

Private “national activities” thus, as the set of private space activities for which a particular state is responsible, should comprise activities undertaken by nationals of that state, activities undertaken from the territory of that state, and activities undertaken with space objects registered with that state.

In addition, Article VI of the Outer Space Treaty contains an important provision on the exercise of jurisdiction over private activities. Under its terms, “the appropriate State” has to authorise and continuously supervise activities undertaken by non-governmental entities. Authorisation and continuing supervision clearly are forms of the exercise of jurisdiction. They also form the underlying basis for any licensing system.

So, “the appropriate State” is required to actually exercise its jurisdiction to that extent. However, this other key phrase of Article VI is not defined either by international space law. Hence, also here uncertainty at the theoretical level arises.

As the “appropriate” state would be obliged to exercise its jurisdiction, it follows that this is the responsible state in case there is only one state to be held responsible in respect of a particular private activity. The term, on the other hand, is explicitly used in its singular form. Therefore, in cases where two (or more) states can be held responsible for the same private activity only one of the responsible states is obliged to exercise its jurisdiction in the aforementioned fashion.

3. The international legal framework for national space legislation – Article VII, Outer Space Treaty

Article VII of the Outer Space Treaty provides that states are “internationally liable for damage to another State (...) or its natural and juridical persons”, if such damage is caused by relevant space objects. Which particular state or states are, respectively, to be held liable in respect of a specific space object causing damage is determined by a fourfold criterion. In a cumulative fashion this concerns the state which “launches” the space object; the state which “procures the launching” of that space object; the state “from whose territory” the launching of that space object occurs; and the state from whose “facility” that space object is launched.

This also applies to cases of private involvement. *A state is liable for a (private) activity and the damage it causes, if (A) that activity involves a space object and (B) the state concerned was involved in the launch of that space object in any of the four modes mentioned.*

As far as the criteria of launch proper, launch procurement and launch facility are concerned, it is at least arguable whether there is a need for any state to derogate international liability obligations to private entities respectively launching, procuring a launch or owning a launch facility used for a launch. In themselves, these activities do not require national space legislation, or in particular, that liability should be dealt with through a licensing system. Of course, on the other hand recourse in principle is desirable for a state to the extent it could be held liable itself under any of the respective *remaining* criteria.

The third criterion for becoming a liable entity as presented by Article VII is fundamentally different. It applies to states only, since only

states can possess ‘territory’ in the international public legal sense of the word. Since, at least until recently, all launches were conducted from some state’s territory, there will always be a state liable under this criterion, even in case of (otherwise) completely private launches.⁶

Such a state might be confronted with surprise claims for liability as a consequence of private launches over which it had no immediate legal and factual control, or of which it did not even have knowledge. Thus, regulation by contract is insufficient to deal with potential international liability that could be incurred by the state in question. As a result, the issue of comprehensive domestic *a priori*-regulation is most pressing for such a state whose territory is used for the launch of a space object.

In conclusion, a particular state is internationally liable for damage caused by private activities as long as the launches involved in such activities are conducted by it, or are procured by it, or are undertaken from either its territory or its facility. The private entities involved in this way in such launches are, therefore, the ones with respect to which a state needs to establish national space legislation in order to deal with its liability.

4. Space law responsibility, space law liability and national space legislation

International space law thus has established a framework for dealing with private space activities. At the same time, the choice regarding *which* rights and obligations should be made binding upon relevant private enterprise does not fall within the exclusive discretion of states legislating domestically either. All international space law might merit analysis here; however, one should focus on the *system* of implementation, rather than on enumerating rights and obligations to be implemented.

As to the principle of *state responsibility*, it results essentially in a mechanism to transpose *all* relevant substantive obligations arising on the public international level to the national private level.⁷ Many elements of international space law however are not of direct relevance for private space activities. For example duties and principles regarding international co-operation, scientific exploration and (for the time being) astronauts as envoys of mankind will probably have little impact on these activities.

Thus, by way of illustration only three sets of public rules that are of paramount importance when protecting the interest of the public at large will be singled out under the heading of responsibility. This should provide sufficient insight into the extent to which any national space legislation, including the Australian one, is successful in its implementation of international space law.

Firstly, this concerns the legal *status* of outer space or celestial bodies forming part thereof. This is, as such, exclusively a public matter. Nevertheless, it leads to further issues of direct importance for private space activities. The status of property in an area not subject to national appropriation, and the conditions attached to its existence or use, are a major example thereof. Also, registration of space objects is part of this issue, since it recognises the non-application of territorial sovereignty to outer space. The obligations imposed upon the registration state flowing from this would be relevant when it comes to the establishing of licensing requirements *vis-à-vis* private entities.

Secondly, the category of rules regarding the *security* of space activities is of interest. Security aspects have both an international aspect (global peace and security) and a national one (survival of the particular state at issue), which are moreover related to each other. Security aspects are inherently public, since they regard questions of strategic balances and military policies. In fact, they are of such an importance that states will guard their options and privileges in this field even against their own private entities.

A third category of public aspects relevant for private space activities concerns the *safety* thereof. There is a clear need to bind private space activities to the safety rules contained in international space law, while allowing private entities to protect their justified interests in the reasonableness of safety requirements. Though strictly speaking hardly following from international space law as of yet, in growing measure this also concerns environmental safety *viz.* protection. As a consequence, measures of *a priori*-control of such activities might have to be established, such as the imposition of certain safety requirements by means of national space legislation and relevant licenses.

The substance of the principle of *liability* also has the aim of enhancing the safety of space activities by stimulating those undertaking them to take such precautions and safety measures as

are considered reasonable. It also, of course, serves the public interest when accidents occur. Therefore it will be dealt with as the fourth set of rules of primary relevance for establishing a balance between the public and the private interest by means of national space legislation.

Finally, it will have become obvious that in order to make any licensing system of substance workable, a dedicated national entity is necessary as *regulator* – that is: without being at the same time a player in those fields where it has to regulate the activities of private might-be competitors. Ideally, such a regulator has to be sufficiently close to governmental authorities to avail itself of legal means of control, monitoring and sanctioning, yet sufficiently distant from government itself not to be unduly subjected to particular political pressures.

5. The Australian Space Activities Act of 1998

Australia's Parliament enacted the Space Activities Act in 1998, which was given royal assent on 21 December 1998, hence entering into force that day.⁸ By doing so, Australia became the sixth nation establishing proper national space legislation, i.e. national legislation (A) dealing *only* with space activities and (B) including as a core a licensing system for *private* space activities *viz.* entities.⁹

The intentions of the Australian government and Parliament in enacting the Space Activities Act in this regard were clearly spelled out. The Act's objectives concerned the establishment of a system for the regulation of space activities carried on either from Australia or by Australian nationals outside Australia, to provide for adequate compensation for damage as a result of such space activities, and more generally to implement "certain" obligations of Australia under the UN space treaties.¹⁰

An Explanatory Memorandum on the Space Activities Bill 1998 provided further details of the background to the establishment of the Act.¹¹ *Inter alia* it makes clear that the licensing authority under the Act will be the Space Licensing and Safety Office (SLASO), acting under supervision and responsibility of the Minister for Industry, Science and Resources, whilst liaising with other Departments.¹²

5.1. The scope of the Act and its licensing system

The licensing system under the Act essentially is of a fourfold nature. A *launch permit* is required for any launch from Australia, as well as for the return to Australia of an Australian-launched space object.¹³ An *overseas launch certificate* is required for the launch by an Australian national outside Australia.¹⁴ An *authorisation* suffices for returning a space object launched outside of Australia to Australia.¹⁵ And finally a *space license* might be required for the operation of a launch facility in Australia.¹⁶

With regard to launch permits, moreover, the option remains open to the licensing authority to provide for *exemption certificates*.¹⁷ A similar exemption *de facto* applies to overseas launch certificates.¹⁸ In both cases, the essence of the possibility to exempt lies in the Minister viz. the SLASO being satisfied that Australia's international obligations, in particular those relating to liability, and other interests such as those related to security and safety issues, have been sufficiently taken care of by other means.

An exemption of a different nature focuses on intergovernmental organisations "whose sole or principal function [it] is to carry on activities in outer space".¹⁹ In case of agreements concerning Australian participation in the activities of such organisations, no permit, certificate, authorisation or license is required. The agreement itself is supposed to cover any potentially applicable liability (and possibly responsibility) of Australia as a consequence of such activities. *Mutatis mutandis* the same applies to agreements of Australia with (an)other launching state(s) of the same space object concerned.²⁰

In terms of activities, it should be noted therefore that in spite of its name and claim to deal generally with space activities, the Act (and its licensing system) really deals only with launch activities (including the operation of launch sites) and the return of space objects to earth. Such other potential targets for private enterprise as satellite communications are, as such, left out of the scope of the Act. The obvious reason for this is the focus of the Act on dealing domestically with international liability issues, which are directly linked to the launches involved.

Another consequence of this focus is the fact that the return of space objects launched outside Australia, i.e. in principle without Australia qualifying as a liable state under Article VII of the Outer Space Treaty, merely requires an authorisation. This inclusion of return of space objects to earth at the same time marks an

interesting novelty in space law (albeit that the United States Commercial Space Act enacted the same year also added "reentry" of space objects to its ambit²¹). It has to do with the factual circumstance that Australia consists for the major part of deserts and deserted areas constituting an ideal territory for space landings.²²

As to the scope in terms of entities addressed by the Act and its licensing system, in summary overview it is quite comprehensive. It applies both to launch activities undertaken from Australian territory and to launch activities undertaken by Australian nationals.²³ Furthermore, the obligation of the Minister to register all space objects launched under the Act means that all Australian-registered space objects *ipso facto* are included in the scope of the licensing regime.²⁴

Regarding 'return' activities, however, the scope of the Act remains confined to those 'ending' on Australian territory.²⁵ The likely reason behind this confinement to territory is the perception that any Australian operating such 'return-of-space object' activities *not* resulting in return to Australia would not involve Australian liability. However, such activities might still invoke Australian space law responsibility, since they would likely qualify as 'Australian national space activities', with all possible consequences in law resulting from that qualification.

The same exclusive application on the basis of the territoriality criterion applies to space licenses for the operation of launch facilities.²⁶ Most likely, any Australian operating such a facility outside Australia would not result in Australian liability under international space law being invoked as such, although in similar fashion as to the return-of-space object operations the question of Australian responsibility would remain.

5.2. *The substance of the Act: reflecting space law responsibilities and liabilities*

The ultimate yardstick for measuring the implementation of international space law within Australia concerns the requirements that are or may be imposed upon any licensee. Here, five categories of issues have been proposed before.

As to the category of *status*-related issues, the Act deals prominently with the registration issue. The Minister has to keep a national register on all space objects licensed under the Act.²⁷ The particulars to be included faithfully follow those contained in the Registration Convention.²⁸ As referred to, the result is full application to

activities undertaken with Australian-registered space objects of the jurisdiction of Australia, respectively of its licensing system.

Nothing, however, is further provided by way of reference for example to the issue of intellectual or other property rights pertaining to an area which essentially – i.e. as to its territorial aspects – falls outside the scope of Australian legislation.

As to the category of *security*-related issues, the Act is rife with references both to international and to national security. A space license may only be granted if “Australia’s national security, foreign policy or international obligations” are not considered as being at risk as a consequence of the licensed activity;²⁹ “foreign policy” and “international obligations” including those on international peace and security.

A similar provision applies to the granting of a launch permit³⁰, an overseas launch certificate³¹ and an authorisation of return of overseas-launched space objects³². In regard of launch permit and authorisation the requirement is added that no “nuclear weapon or (...) weapon of mass destruction of any other kind” is involved.³³ Also, the use of “fissionable material” requires special approval by the Minister.³⁴

As to the category of *safety*-related issues, the Act is equally extensive and explicit in introducing relevant requirements. Thus, the Minister has to be satisfied that the environment is sufficiently protected, and that the risk of “substantial harm to public health or public safety or causing substantial damage to property is sufficiently low” before a space license may be granted.³⁵ More in general, he has to be convinced of the competence of the licensee to operate the launch facility and launch vehicle concerned.³⁶

With the exception of environmental risks, identically phrased requirements apply to launch permit and authorisation of return of overseas-launched space objects.³⁷ The interesting inference from this is that probably launches as such are not considered to create environmental hazards in addition to (viz. not yet covered by) the launch site operations, or in the alternative would fall under the general international obligations referred to by the Act.³⁸ In respect of the overseas launch certificate, only the requirements regarding public health, public safety and damage to property are provided for.³⁹ The Act also deals extensively with *liability* issues, which is not surprising in view of its purported aims and focus. The requirement to deal in a proper manner (as spelled out by the Act

and eventual implementing regulations) with liability applies to launch permits, overseas launch certificates and authorisations of return of overseas-launched space objects.⁴⁰ In other words: for space licenses no such requirement is included, as any international liability claim regarding such a license would effectively be already covered by the launch permit which is always (also) involved.⁴¹

Equally logical are the provisions allowing for some measure of relief from the relevant obligations to the extent that other states may assume liability and the duty to indemnify Australia in case of any international liability claim, as is the case with the launch permit, the overseas launch certificate and the authorisation of return of overseas-launched space objects.⁴²

In respect of the overseas launch certificate, a final exemption from the relevant liability obligation concerns the case where the Minister is satisfied “that, having regard to the nature and purpose of the space object or space objects concerned, it is not necessary to insist” upon application of the liability requirements.⁴³

These liability requirements are spelled out in detail in Part 4 and Division 7 of Part 3 of the Act. The Act *inter alia* refers to liability issues as between Australia and any licensee, or as between any licensee and third party victims within Australia, i.e. falling outside the scope of the Liability Convention and rather being a matter for Australia to deal with at its discretion. These issues however will not be considered here as the focus of the current analysis is on the *domestic implementation of international rules*.

In this regard, the provisions of Part 4 faithfully and extensively copy or reflect the relevant terms of the Liability Convention.⁴⁴ For example, Australia explicitly accepts “any obligation to pay compensation under the Liability Convention, or otherwise under international law”, regardless of any other provisions in the Act.⁴⁵ Part 4 in this respect mainly details the liability-related license aspects as to the differences following from the distinction between launches and returns of Australian-launched, respectively returns of non-Australian launched space objects.⁴⁶ Most importantly, in either case generally the licensee “is liable to pay compensation for any damage the space object [concerned] causes to a third party”.⁴⁷ This purportedly includes reimbursing the Australian government in case the latter is actually paying any international liability claims in conformity with the Liability Convention and

other rules of international law.⁴⁸ In case of launch permits or overseas launch certificates, this reimbursement is then limited to the insured amount,⁴⁹ effectively turning the Australian government into a re-insurer of the licensee for any amount of damage over such insured amounts.⁵⁰ Noteworthy, of course, is that the return of overseas-launched space objects is excluded from this limitation of liability, apparently leaving it to the licensee to approach his own government to cover for compensation of claims to the extent above the limit or itself to cover such compensation claims.

Division 7 of Part 3 of the Act further deals with the reimbursement of the Australian government by licensees of any international liability claims paid for by Australia, and related requirements. Essentially, in case of launch permit, overseas launch certificates and authorisations of the return of overseas-launched space objects, the holder should either satisfy the insurance requirements or show direct financial responsibility (i.e. the possibility to reimburse any relevant sums from the licensee's own purse). This obligation is then limited to "the amount of the maximum probable loss that may be incurred in respect of damage to third parties", unless future regulations "will set out a different method of determining a minimum amount for the purposes of this subsection".⁵¹

Finally, as to the *regulatory* issues the Minister in general has sufficient instruments – envisaged to be actually used by the SLASO, as the proper national regulatory body – to ascertain that the requirements introduced in licenses and the licensing process are actually monitored, adhered to and, if necessary, sanctioned. For example, space licenses and launch permits may be varied, revoked, transferred or suspended if the circumstances underlying their granting have substantially changed, or if the licensee contravenes any of the license provisions.⁵² Suspension is linked also to "reasons relevant to Australia's national security, foreign policy or international obligations".⁵³ Similar provisions apply to the overseas launch certificate⁵⁴ – but interestingly enough not to the authorisation of return of overseas-launched space objects.

For the purpose of monitoring licensed launch facilities, the Minister should appoint Launch Safety Officers under his responsibility, with the power "to do all things that are reasonably necessary or convenient to be done for the performance of his or her functions".⁵⁵ This includes the possibility to give "directions to

stop the launch or destroy the space object (whether before or after it is launched)".⁵⁶

In case of an accident or incident, procedures are provided for by the Act to investigate, including the appointment of an Investigator (obligatory in case of accidents, optional in case of incidents).⁵⁷

Finally, appeal against any decision of the Minister (and presumably, in accordance with due delegation of powers, of SLASO to the extent relevant) is possible before the Administrative Appeals Tribunal.⁵⁸

5. Conclusion

The present analysis of the Australian Space Activities Act of 1998 of necessity is very summary, and focusing on domestic implementation of Australia's international obligations only. From this perspective, the Act may be seen as a rather elaborate national space act. It contains a substantial licensing regime, including as a relative novelty the possibility to be licensed to return space objects to Australia. Extensive provisions deal with the security and safety issues involved, as well as with the registration of space objects. Detailed provisions are given on procedural matters, such as those related to investigation of accidents and incidents and the wide-ranging and dedicated powers of the Minister viz. the Space Licensing and Safety Office (SLASO) and the Launch Safety Officer. Finally, liability is dealt with in a manner providing a seemingly fair balance between the public interests in providing for effective third party liability coverage and the honouring of Australia's international obligations, and the interests of private enterprise in a transparent licensing and liability(-reimbursement) system with workable limits included as to the requirements for compensation *casu quo* reimbursement.

The major criticisms which might be levelled at the Act are therefore twofold, related to the scope in terms of activities and in terms of private entities addressed.

Firstly, the Act only deals with launch and return activities; any private satellite communications operator (whether Australian or not) interested in operating from Australia for example can not apply to a license under this Act. This means that the Act only promotes private involvement in launch and return activities. Perhaps logical from

the perspective of Australia's special situation and immediate interests, this is nevertheless to be deplored. No doubt in the not too far future further legislation may be necessary to cope with non-launch-related private space activities which could also present both risks and benefits to the Australian public as well as internationally.

Secondly and closely related to this, the Act in focusing on launching and the Liability Convention, does not cover even launch-related activities which may invoke the international space law *responsibility* of Australia, as "national space activities" of Australia under Article VI of the Outer Space Treaty. As referred to, this might in theory even lead to claims for compensation of damage which neither the Liability Convention nor consequently the Act itself are covering to the extent desired. Of course, it remains to be seen to what extent these theoretical reflections will turn out to be a practical problem.

In any case, the Australian Act on Space Activities is an interesting and generally positive contribution to the national implementation of international space law, as well as to dealing with private space activities in a balanced and fair manner.

Notes

¹ See the author's Private Enterprise and Public Interest in the European 'Spacescape' (1998), esp. Chapters II (on the framework of international space law) and III (on its relevant contents).

² See also e.g. P.L. Meredith & G.S. Robinson, *Space Law: A Case Study for the Practitioner* (1992), 58, 67.

³ See also extensively N.L.J.T. Horbach, *Liability Versus Responsibility Under International Law* (1996), 20-34, dealing with the two concepts as they relate to each other.

⁴ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (hereafter Outer Space Treaty), London/Moscow/Washington, adopted 19 December 1966, opened for signature 27 January 1967, entered into force 10 October 1967; 6 ILM 386 (1967); 18 UST 2410; TIAS 6347; 610 UNTS 205.

⁵ Art. VIII, Outer Space Treaty, provides for the 'retention' of jurisdiction over objects launched into outer space under the registration of a state. In other words: it refers to a jurisdiction already in existence. This would essentially refer to territorial jurisdiction, such

'retained' jurisdiction in view of the quasi-territorial character of space objects and similar concepts with regard to aircraft and ships qualifying as quasi-territorial jurisdiction.

⁶ The exception of course concerns Sea Launch, which as of 1999 launches from a transportable platform on the high seas near the equator and outside of any state's territorial jurisdiction. Since the United States has, as a consequence of Boeing's leading position within the Sea Launch consortium (in spite of its share being a minority one of 40%), required Sea Launch to take a license under the US Commercial Space Launch Act (Public Law 98-575, 98th Congress, H.R. 3942, 30 October 1984; 98 Stat. 3055; Space Law – Basic Legal Documents, E.III.3.; in conjunction with Commercial Space Launch Act Amendments, Public Law 100-657, 100th Congress, H.R. 4399, 15 November 1988; 49 U.S.C. App. 2615; 102 Stat. 3900; Space Law – Basic Legal Documents, E.III.3, at 13 ff.), in this particular case the threatening gap in international space law liability has been covered satisfactorily.

⁷ After all, state responsibility can be incurred for *any* transgression of international space law, i.e. relates to *all* substantial rules; as argued *supra*, para. 2.

⁸ An Act about space activities, and for related purposes (hereafter Space Activities Act), No. 123, 1998. See esp. Sec. 1, 2. Text in: Working Documents, Workshop on Legal Issues of Privatising Space Activities, 19 July 1999, Vienna, Austria, Institute of Air and Space Law of the University of Cologne *et al.*, at 71.

⁹ The five states preceding Australia in this regard were the United States (as far as licensing proper of private space activities was concerned as per 1970 with the declared application of the 1934 Communications Act to satellite communications), Sweden (1982), the United Kingdom (1986), the Russian Federation (1993) and South Africa (1993). See further the author's Private Enterprise and Public Interest in the European 'Spacescape', Chapter IV.

¹⁰ See Sec. 3, resp. (a), (b) & (c), Space Activities Act.

¹¹ Explanatory Memorandum on the Space Activities Bill 1998, circulated by authority of the Minister for Industry, Science and Resources, ISBN: 0642 376883. Text in: Working Documents, Workshop on Legal Issues of Privatising Space Activities, 19 July 1999, Vienna, Austria, Institute of Air and Space Law of the University of Cologne *et al.*, at 138.

¹² Such delegation is allowed for under Sec. 104, Space Activities Act.

¹³ See resp. Sec. 11 and Sec. 13, Space Activities Act. Further details on the launch permit are provided in Secc. 26-34.

¹⁴ See Sec. 12, Space Activities Act. Further details on the overseas launch certificate are provided in Secc. 35-41.

¹⁵ See Sec. 14, Space Activities Act, in conjunction with Sec. 43 spelling out i.a. the authorisation requirements. Further also Secc. 42, 44-45.

¹⁶ See Sec. 15, Space Activities Act. This requirement applies to the launch site operator to the extent he is another entity than the launch services provider and not related closely enough by contract to him to be already covered by the provisions of the launch permit; see Secc. 15(b), 9. From the other end, as long as the launch facility specified in a launch permit is in Australia, the launch permit holder should also hold a relevant space license in order to be allowed to operate; see Sec. 27. Further details on the space license are provided in Secc. 18-25.

¹⁷ See Secc. 11(c), 13(d), 46, Space Activities Act.

¹⁸ Cf. Sec. 12(b), Space Activities Act.

¹⁹ Sec. 17(1), Space Activities Act.

²⁰ See Sec. 26(4), Space Activities Act.

²¹ Commercial Space Act (Public Law 105-503, 105th Congress, 27 January 1998; text in Working Documents, Workshop on Legal Issues of Privatising Space Activities, 19 July 1999, Vienna, Austria, Institute of Air and Space Law of the University of Cologne *et al.*, at 1); see Sec. 102, amending the Commercial Space Launch Act of 1984.

²² Actually, recently a number of (US) companies has become engaged in discussions with the Australian government on making use of this specific feature of Australia. In the end, they did not pursue this issue once they realised that Australia, as one of the parties to the Moon Agreement (Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, New York, adopted 5 December 1979, opened for signature 18 December 1979, entered into force 11 July 1984; 18 ILM

1434 (1979); 1363 UNTS 3), might approach their particular ventures rather negatively, legally speaking.

²³ See Secc. 11(a) resp. 12(c), Space Activities Act; also Secc. 3(a), 18, 26(1)(b), 35(1).

²⁴ See Sec. 76(2), Space Activities Act.

²⁵ Cf. Secc. 13(a), 14(a), 26(2), Space Activities Act.

²⁶ Cf. Sec. 15, Space Activities Act.

²⁷ See Sec. 76(1) & (2), Space Activities Act.

²⁸ See Sec. 76(2), Space Activities Act; also 76(3), as well as Sec. 77. The particulars called for by the Registration Convention (Convention on Registration of Objects Launched into Outer Space, New York, adopted 12 November 1974, opened for signature 14 January 1975, entered into force 15 September 1976; 14 ILM 43 (1975); 28 UST 695; TIAS 8480; 1023 UNTS 15) are found in Art. IV(1) of the Registration Convention.

²⁹ Sec. 18(e), Space Activities Act. Cf. also Sec. 25(1)(b).

³⁰ See Sec. 26(3)(g), Space Activities Act. Cf. also Sec. 34(1)(b).

³¹ See Sec. 35(2)(c), Space Activities Act.

³² See Sec. 43(3)(e), Space Activities Act.

³³ Sec. 26(3)(f), also Sec. 29(b) (in respect of the launch permit), resp. Sec. 43(3)(d), also Sec. 44(1)(b) (in respect of the authorisation), Space Activities Act.

³⁴ See Sec. 29(c) (in respect of the launch permit) resp. Sec. 44(1)(c) (in respect of the authorisation), Space Activities Act.

³⁵ See resp. Sec. 18(b) & (d), Space Activities Act.

³⁶ See Sec. 18(a), Space Activities Act.

³⁷ See Sec. 26(3)(c) & (e), also Sec. 29(a) (for launch permits), resp. Sec. 43(3)(a) & (c), also Sec. 44(a) (for authorisations), Space Activities Act.

³⁸ As per Sec. 26(3)(g), Space Activities Act.

³⁹ See Sec. 35(2)(b), Space Activities Act.

⁴⁰ See resp. Secc. 26(3)(d) and 20(d) (for the launch permit), Secc. 35(2)(a)(i) and 41(1)(b) (for the overseas launch certificate), and Sec. 43(3)(b) and 44(1)(d) (for the authorisation), Space Activities Act.

⁴¹ One might perhaps note, that in any case Sec. 18(e), Space Activities Act, refers to the “international obligations” of Australia, which might serve as a safety-net clause for the Minister (viz. SLASO) to yet insert relevant obligations in the license conditions in case he might perceive the launch permit not to provide sufficient practical coverage for the potential liability of Australia on the international level.

⁴² See resp. Secc. 26(4), 35(3) and 43(4), Space Activities Act.

⁴³ See Sec. 35(2)(a)(ii), Space Activities Act.

⁴⁴ Convention on International Liability for Damage Caused by Space Objects (hereafter Liability Convention), London/Moscow/Washington, adopted 29 November 1971, opened for signature 29 March 1972, entered into force 1 September 1972; 10 ILM 965 (1971); 24 UST 2389; TIAS 7762; 961 UNTS 187. See e.g. the definition of damage as provided by Sec. 63, Space Activities Act, which also makes Part 4 applicable to damage and compensation issues whether the launch or return was authorised under the Act or not. Also, the distinction between damage on earth/in the air and damage to other space objects is duly reflected; see Secc. 67 and 68.

⁴⁵ Sec. 64(2), Space Activities Act. Especially the reference to possible obligations to pay compensation “otherwise [than under the Liability Convention] under international law” is interesting, in view of the possibility for third states to claim compensation under the heading of state responsibility for “national space activities” of Australia, i.e. not necessarily activities covered under the Space Activities Act. See further on this issue in general the author’s Private Enterprise and Public Interest in the European ‘Spacescape’, 57-9.

⁴⁶ Cf. resp. Secc. 66-69, and Secc. 70-71, Space Activities Act.

⁴⁷ Secc. 67(1), 68, 71, Space Activities Act.

⁴⁸ Cf. Art. 64(2), Space Activities Act, also n. 45 *supra*.

⁴⁹ See Sec. 69(3), Space Activities Act.

⁵⁰ This is of course similar to the constructions provided for by the Commercial Space Launch Act (Sec. 16(a)(1) of the 1988 amended version) in the United States and by the relevant documents in case of Arianespace in Europe (amounting to reimbursement of France by Arianespace up to a limit of FF 400 million per launch).

⁵¹ Sec. 48(3)(a), resp. (b), Space Activities Act. This method is rather similar to the one followed by the US Commercial Space Launch Act, albeit that neither an absolute maximum (in the case of the Commercial Space Launch Act as amended in 1988 US\$ 500 million per launch) nor the availability at the world market of insurance at reasonable cost is provided for.

⁵² Cf. Secc. 24 & 25 (on space licenses) and Secc. 33 & 34 (on launch permits), Space Activities Act.

⁵³ See Secc. 25(1)(b), resp. 34(1)(b), Space Activities Act.

⁵⁴ See Secc. 40, 41, Space Activities Act.

⁵⁵ Sec. 52(1), Space Activities Act, see also Secc. 50, 55. Secc. 52(2), 56 and 57 spell out in somewhat more detail the powers of the Launch Safety Officer.

⁵⁶ Sec. 52(2)(c), Space Activities Act.

⁵⁷ See generally Secc. 84-103. The respective meanings of accidents (involving death of or serious injury to persons or destruction of or serious damage to space objects) and incidents (basically anything else (potentially) affecting the safety of the operations involved) are spelled out in Secc. 85 and 86. Secc. 88-91 and 99 in particular deal with the Investigator’s wide-ranging powers in any investigation.

⁵⁸ See Sec. 61, Space Activities Act. Cf. also Sec. 104.