

우주 관련 국내 입법 사례 및 필요성 연구

National Space Legislation: Dealing with Private Space Activities

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1. The Rationale of National Space Law: Private Involvement in Space Activities

Even if nowadays also private entities have become interested in carrying out activities in outer space, states still comprise the major category of actors in space. Obviously, however, the public interests in regulating security, safety, liability issues, and the use of outer space for peaceful purposes remain the same in the context of privately conducted activities.

As the particularities of private participation has not been dealt with by international space law as such, the commercialisation and privatisation of space present a clear challenge to the public interests involved in space activities. The present international rules concerning space activities are essentially directed at states, and will continue to be developed primarily at the public level for some time to come. Yet, the same normative system is of course also applicable to private commercial space activities – all the same, presently private enterprise is not directly bound by those rights and obligations.

As a consequence, in view of the increasing involvement of private entities in, essentially commercial, activities in outer space the issue of developing national space-dedicated legislation continues to be of the highest relevance and topicality in the area of space law. There are, essentially, three reasons for that.

Firstly, as mentioned international space law is largely of a public nature, hence national space legislation provides the most comprehensive, transparent and effective instrument to implement on a domestic level *vis-à-vis* private entities the international legal obligations arising from the space treaties. This concerns in particular the 1967 Outer Space Treaty¹⁾, the 1972 Liability

1) 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, entered into force 10 October 1967; 6 ILM 386 (1967); 18 UST 2410; TIAS 6347; 610 UNTS 205.

Convention²⁾ and the 1975 Registration Convention³⁾. The Outer Space Treaty even provides for a specific duty of “authorisation and continuing supervision” with respect to the “national activities in outer space” of non-state entities.⁴⁾ Secondly, for comparable reasons states may, in the light of ongoing or prospective private space and space-related activities, be inclined or even strongly incited to develop national space legislation for the purpose of monitoring and controlling such activities on a national level, as to their national effects. It should be noted that the space treaties for obvious reasons deal with legal effects of private space activities only if these have consequences beyond the borders of the state(s) under whose sway the activities at issue fall.

Thirdly, especially in those states where, in principle, private participation in economic and other activities is considered as a good thing, such legislation would represent the best vehicle for implementing policies of supporting private participation as part of more general national space policies. Thus, interesting stimuluses could be offered in such areas as research and development, financing, taxation and advantageous liability and/or insurance regimes. Domestic legislation presents a possibility here for states to harness private enterprise for the public cause.

Since, in the abstract, national space legislation is the best way to establish legal effects of a system of public rights and obligations for private enterprise, states can and should exercise their sovereignty to control in law the international effects of private space activities and preserve the relevant public interests in such activities.

2) Convention on International Liability for Damage Caused by Space Objects (hereafter Liability Convention), London/Moscow/Washington, adopted 29 November 1971, entered into force 1 September 1972; 10 ILM 965 (1971); 24 UST 2389; TIAS 7762; 961 UNTS 187.

3) Convention on Registration of Objects Launched into Outer Space (hereafter Registration Convention), New York, adopted 12 November 1974, entered into force 15 September 1976; 14 ILM 43 (1975); 28 UST 695; TIAS 8480; 1023 UNTS 15.

4) Art. VI, Outer Space Treaty.

The major reason for enacting any domestic space legislation would thus lie most prominently in a comprehensive system of licensing such activities, which would thereby constitute the centrepiece of any national space law. Establishment of a framework law tying the relevant categories of private space actors into the legal system of rights and obligations provided by international space law should have priority, as the relevant state in turn will be held accountable for those activities internationally.

This certainly is the best way to heed the public-private paradigm in international space law: ensuring that the public rules of international space law, intended to preserve the public interests in space, are also duly implemented *vis-à-vis* private enterprise and private involvement in space activities.

2. International Space Law and National Space Legislation

International space law itself – notably, from the present perspective, the Outer Space Treaty of 1967, the Liability Convention of 1972 as elaborating Article VII of the Outer Space Treaty, and the Registration Convention of 1975 as elaborating Article VIII of the Outer Space Treaty (although the Registration Convention will not be dealt with further in this paper) – firstly calls for establishment of national space legislation, secondly provides for the outlines thereof as to its scope, and thirdly provides for a few broad rules as to its contents.

In short, a state will have 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 relevant entity to answer *vis-à-vis* other entities for certain activities or occurrences. Under space law it 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 the phenomenon of state liability. These two notions carry their own definitions regarding the entities *for which* a particular state might be held accountable.

On state **responsibility**, Article VI of the Outer Space Treaty provides that states are internationally responsible for “national activities in outer space”, including cases where these 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”. States are thus responsible for activities undertaken in outer space in case these activities violate obligations under international space law. Moreover, states are responsible to the same extent for private activities as they are for their own, public activities.

Whilst Article VI then begs the question: for which categories of private space activities is *which* particular state to be held responsible on the international plane, it would be beyond the purpose of the present paper to deal with those issues. In any case, the answer to this question would lie in the interpretation of the key-term “national activities”, but no authoritative definition of the (scope of) “national activities” of a state for which it is to be held responsible has been provided by the Outer Space Treaty or elsewhere, and consequently no agreement exists as to the interpretation of this term. From the author’s perspective, the most effective and sound interpretation of private “national activities” would make states internationally responsible precisely for those activities over which they can exercise legal control.⁵⁾ In other words: a state would be held responsible for those private activities undertaken from within its jurisdiction.

As to state **liability**, 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. This clause has been elaborated in further detail by the Liability Convention.

5) Cf. for further discussion the author’s Private Enterprise and Public Interest in the European ‘Spacescape’ (1998), pp. 17-19.

Which particular state or states are, respectively, liable in respect of a specific space object causing damage is determined by a fourfold criterion. As states to be held liable qualify, in a cumulative fashion, 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.⁶⁾

This international liability by implication applies also to damage caused by space objects launched with private involvement. A state would thus be liable for a private space activity and the damage it causes, in case (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.

Thus, from a particular state’s perspective, it would be wise to include launches with involvement by private entities in the scope of its national legislation wherever such launches would lead to that state’s international liability being invoked at the international level, i.e. under the terms of Article VII of the Outer Space Treaty and the Liability Convention.⁷⁾

If the above, admittedly narrow definition of national space law as focused on a licensing system would be followed, essentially nine examples of states having established such framework laws for private space activities can be found: the United States, Norway, Sweden, the United Kingdom, the Russian Federation, South Africa, the Ukraine, Australia and Brazil.

States such as Japan, France, Canada and Argentina do also have both private companies involved in space activities and substantial and quite general national legislation focused on space in place, yet the crucial element of governmental authorisation (‘licensing’) of private space activities seems to be missing. Rather, the approach to fulfilling the obligations of “authorisation and continuing supervision” of Article VI of the Outer Space Treaty has been a ‘spider-in-the-web’ approach, i.e. with governmental space agencies so centrally involved in any relevant space activity with private involvement, that control

6) Cf. also Art. I(c), Liability Convention.

7) See further the author’s *Private Enterprise and Public Interest in the European ‘Spacescape’* (1998), pp. 22-26, 32-35.

over that involvement can be asserted through the particular structure of the project or programme at issue.⁸⁾

For reasons of comprehensiveness and transparency however, this ‘spider-in-the-web’ approach may no longer suffice. As a consequence, these states, joined by others such as India, Germany, Belgium and the Netherlands, currently contemplate or are already in the process of actually drafting a national framework law.

Without claiming in any respect to be comprehensive, the current paper apart from indicating a few general characteristics will deal with the national space laws by focusing on two elements considered of major importance. The first concerns the scope of the relevant legislation: to whom or what is it addressed, in particular in terms of the license obligation. The second concerns the most directly quantifiable aspect of national implementation: how the potential international liability of the relevant state for licensed private space activities is dealt with in terms of reimbursement obligations on the part of the licensee.

3. The United States

The United States has, in addition to a general space law – the National Aeronautics and Space Act of 1958⁹⁾ – three specific sets of national laws in place for each of the three respective areas where private enterprise has become substantially involved in space activities: launching activities, satellite communications and satellite remote sensing.

Furthermore, in 1998 a Commercial Space Act was enunciated which, in addition to other ‘re-shuffling’ of Acts, to some extent amended the three

8) Cf. e.g. for France, the author’s Private Enterprise and Public Interest in the European ‘Spacescape’ (1998), pp. 155-161.

9) National Aeronautics and Space Act, Public Law 85-568, 85th Congress, H.R. 12575, 29 July 1958; as amended through 1983; 72 Stat. 426; Space Law – Basic Legal Documents, E.III.1

specific sets of space acts referred to as well as trying them into a somewhat more coherent framework. For the purpose of easy reference, however, the brief discussion hereunder refers to the original versions and formats.

A. Launching Activities

The Commercial Space Launch Act¹⁰⁾ was enacted on 30 October 1984 specifically to deal with one of the three fields of interest to private enterprise: launching activities. It was directly aimed at inducing involvement of the United States private sector in such activities. Even more pointedly, it was the absence of substantial success in the prodding of private enterprise to enter the business which led to the enactment of Amendments to the Launch Act¹¹⁾ in 1988.

The scope of application of the Launch Act and its licensing system in terms of activities encompasses both the operation of launch vehicles and the operation of launch sites. The Act firstly applies to all persons undertaking these activities within the United States. Secondly, it applies to United States citizens, meaning individual citizens as well as juridical persons incorporated in the United States, which undertake these activities outside the United States. Thirdly, it applies in principle to non-United States-incorporated juridical persons under a controlling interest of any United States national or United States-incorporated juridical person. This, provided the entity undertakes the activities in question outside the United States as well as outside any other state's territory and unless, by agreement, the exercise of jurisdiction and control over the activities has been handed over to another state. Thus, only the quasi-territorial jurisdiction of the United States over registered space objects has not been exercised. Launches of United States-registered launch

10) 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.

11) 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, 13 ff.

vehicles outside United States territory by non-United States nationals are not covered by the Launch Act.

The Launch Act in its original version provided for every licensee to take obligatory effective liability insurance without limits, making the United States government the recipient of any insurance which would be paid. Because of the obligation for a licensee to take insurance without any ceiling on compensation, no private entity seriously considered applying for a license under the Launch Act.

This was repaired in 1988, when Section 16 was amended. Licensees still are required to obtain third party liability insurance or to show financial responsibility, allowing the United States government to be reimbursed for any third party liability claim which arises as a consequence of the activities of the licensee. This time, however, the absolute maximum of the insurance coverage (alternatively financial responsibility) to be demonstrated is US\$ 500 million. This ceiling will be lowered furthermore, firstly, if the maximum liability insurance available in the world market at reasonable cost is determined to be less than US\$ 500 million. Secondly, it will also be lowered, if the maximum probable loss would be less than either US\$ 500 million or the aforementioned maximum liability insurance coverage. As a result, the United States government *de facto* acts as an insurer of private launches for the purpose of international third party liability for those parts of claims up to and above the amount of liability insurance required to be taken by the private entity.

Not resulting from international obligations but in a practical sense much more important for private enterprise are the liability arrangements relating to contractual liability. The absence until very recently of operational privately-owned and -operated launch sites in the United States means that private launch providers use the various governmental launch sites available. The contracts for such usage and the actual liability arrangements therefore become of crucial importance. The Launch Act performs the function in this respect of a standard contract between the government and any private user. In its 1984 version, the Launch Act basically provided for full reimbursement of the United States government for any damage suffered by it. *Vice versa* however

the United States government refused to accept any liability for damage suffered by the licensee, except for cases of wilful misconduct or gross negligence.

The Amendments of 1988 changed these provisions in favour of potential licensees. Now, licensees have to demonstrate insurance cover or other financial resources up to a maximum of US\$ 100 million per launch. Furthermore, to the extent that the United States or any of its agencies is involved in a particular launch under a contract, a reciprocal waiver of claims is to be applied. In principle it applies to amounts (as to damage on the governmental side) above the aforementioned maximum, determined under the applicable provisions. Finally, it may be noted that in the relationship between licensees and any of their contractors, subcontractors or customers, a reciprocal waiver is obligatory.

In conclusion, the focus of the international liability regime on launching is mirrored by the extensive care taken by the Launch Act to deal with liability. In this regard, the Launch Act deals not only with third party liability but also with a prominent category of inter party liability issues. Imposing relevant uniform ceilings on inter party liability in the case of the United States was prompted by the desire to promote a level playing field at least within the United States.

B. Satellite Communication Activities

In 1934 the Communications Act¹²⁾ was enunciated in the United States, in order to deal with telecommunications on the federal level. The Federal Communications Commission (FCC) declared in 1970 that the Communications Act applied to space telecommunications as well.¹³⁾

The Communications Act applies its licensing obligations to any person using or operating “any apparatus for the transmission of (...) communications or

12) Communications Act, 19 June 1934; 47 U.S.C. 151 (1988); 48 Stat. 1064.

13) Communications Satellite Facilities, First report and Order, 22 FCC 2d 86 (1970), Appendix C, p. 1.

signals by radio (...) from [a] place in (...) the United States". Thus, only the territorial jurisdiction of the United States is exercised. Potential international responsibility of the United States is not covered in the case where a United States company operates completely outside United States territory, especially if it does not also operate with a United States-registered space object.

Liability, as far as regulated by the Liability Convention, depends upon involvement of a state in the launch of the communications satellite and not on its operations *per se*. Therefore, any damage caused by such operations can incur United States liability only to the extent that the United States is a launching state. As a result, domestic consequences for private entities of such liability arising also depend upon the Launch Act. Thus, the Communications Act essentially ignores international space law liability. The Act only applies on the basis of nationality, not on that of territory. At the same time, potential applicability of Article VI of the Outer Space Treaty is also ignored thereby.

C. Satellite Remote Sensing Activities

In 1984, the Land Remote Sensing Commercialization Act¹⁴⁾ was enacted to stimulate the commercial development of space remote sensing especially by private enterprise. Involvement of the United States government in the development, construction, launch and operation of the Landsat remote sensing satellites increasingly should be taken over by private enterprise. However, the cost of operating comprehensive space remote sensing systems remained far above what could be reasonably recovered in any commercial market. The only company at the time actually involved in commercial remote sensing in the United States, Eosat, confined its activities to the marketing and sale of remote sensing data from the Landsat satellites. In order to remedy this situation, in 1992 the Land Remote Sensing Policy Act¹⁵⁾ was enacted,

14) Land Remote Sensing Commercialization Act, Public Law 98-365, 98th Congress, H.R. 5155, 17 July 1984; 98 Stat. 451; Space Law - Basic Legal Documents, E.III.4.

15) Land Remote Sensing Policy Act, Public Law 102-555, 102nd Congress, H.R.

repealing the first Remote Sensing Act. Both Acts can however be taken together for the purpose of analysis.

The structure of the Acts and the licensing systems provided in terms of scope is rather more satisfactory than that of the Communications Act, as the former cover all entities falling under the jurisdiction of the United States (personal as well as territorial) as opposed to those merely having United States nationality. Minor flaws relate to the uncertainties regarding the use of the term “control” by the Acts as contrasted with jurisdiction, and the consequences of registration by the United States.

Under the second Act, the license, which presumably also deals with the registration issue, operates as a form of authorisation and supervision. By virtue of such a license, the United States transforms the activities concerned into “national activities” as relevant under Article VI of the Outer Space Treaty. Hence, it also assumes international responsibility for them. Such responsibility would attach not on the basis of territory or nationality, but on the basis of the legal document(s) formalising the control and the accompanying registration. Liability as an issue has not really been dealt with at all, in consequence of the international space law liability regime being focused so much on launching.

4. Norway

The 1969 Norwegian act on space activities¹⁶⁾ is the most concise of all national space laws, boasting only three paragraphs – but at the same time, at least under the narrow definition of ‘national space law’ used in the present paper, also the oldest¹⁷⁾. However concise, the magic words were there: anyone launching an object into outer space from Norwegian territory or

6133, 28 October 1992; 15 U.S.C. 5601; 106 Stat. 4163.

16) Act on launching objects from Norwegian territory into outer space, No. 38, 13 June 1969; National Space Legislation of the World, Vol. I (2001), at 286.

facilities requires a permission from the Minister of Trade and Industry.

It should be realised that at that time neither the Liability Convention nor the Registration Convention had yet been concluded. Norway ratified the Outer Space Treaty on 1 July 1969 – two weeks after entry into force of the Norwegian Act. Consequently, Norway is also the only state so far whose enactment of a national space law even precedes becoming party to the Outer Space Treaty, in respect of which the former supposedly provides for implementation.

During the process of ratification the Ministry of Justice and the Ministry of Trade and Industry realised that it further required national implementing legislation to be enacted: already seven years before ratification launching activities from Andøya had started. However, the drafting fathers of the Act were of the opinion that it was not necessary to establish an elaborate law to satisfy the requirements of the Outer Space Treaty; a summary act would suffice.

The essence of the Norwegian Act is that one needs permission to launch objects into outer space from Norwegian territory (including Svalbard and Jan Mayen), or anything which may be considered as such. Under the last category the Norwegian Act understands Norwegian “outposts” (i.e. including Norwegian bases on Antarctica!), Norwegian vessels, Norwegian aircraft and the like. Finally, if any Norwegian citizen or permanent resident undertakes a launch falling within the material scope of the Act, when this occurs from outside any state’s territorial sovereignty he or she also requires permission. Consequently, in terms of Article VI of the Outer Space Treaty, the authorisation- and continuous supervision-requirement is applied both to Norwegian territory, and to Norwegian nationals where no other state’s territorial sovereignty applies: a rather comprehensive scope of the Act *ratione personae* is the result.

17) With the US FCC in 1970 declaring the 1934 Communications Act including its licensing system for private communication system operators to be applicable also to space communications, the United States could probably be said to have a national space law under the narrower definition used here from that moment onwards only.

The Act itself does not specify what the requirements or conditions for obtaining permission are. Paragraph 1 merely mentions that certain terms might be established for such permission, further to which paragraph 2 provides the Ministry with the competence to actually issue regulations on control of the activities concerned. Apparently, in the absence of any detailed regulation as to which terms should or might be imposed, the Ministry retains full discretion in every particular case to demand certain conditions to be fulfilled or not. This, of course, includes any elaboration on liability, e.g. as to a possible duty for any licensee to reimburse the Norwegian government for international claims, which is therefore neither established nor excluded at the outset.

5. Sweden

On 18 November 1982 a national space act was promulgated in Sweden, followed by an implementing decree.¹⁸⁾ National implementation of obligations for Sweden deriving from the *corpus juris spatialis internationalis* relating for example to the implementation *vis-à-vis* private enterprise of relevant international rules provided the dominant motive.

The Swedish Act applies to space activities defined as including “activities carried on entirely in outer space” as well as “the launching of objects into outer space and all measures to manoeuvre or in any other way affect objects launched into outer space”. This definition includes launching, satellite communications and satellite remote sensing activities, with the exception of the launch of sounding rockets, which is excluded even if they might reach outer space. Procurement of launches is excluded for reasons of not constituting a space activity.

18) Act on Space Activities, 1982: 963, 18 November 1982; Space Law - Basic Legal Documents, E.II.1; 36 Zeitschrift für Luft- und Weltraumrecht (1987), at 11; resp. Decree on Space Activities, 1982: 1069; Space Law - Basic Legal Documents, E.II.2; 36 Zeitschrift für Luft- und Weltraumrecht (1987), at 11.

As to its scope (and that of its licensing obligations) in a legal sense, the Swedish Act firstly applies to all activities undertaken from Swedish soil, and secondly to all activities undertaken by Swedish natural or juridical persons “anywhere else”.

Any claim against the Swedish government as a consequence of licensed activities entailing its international third party liability will need to be fully reimbursed by the licensee. Only if “special reasons tell against this”, the Swedish government, read the National Board on Space Activities (NBSA), may, *ex ante* or *ex post*, decide to waive this right to unlimited recourse.

6. The United Kingdom

On 18 July 1986 the United Kingdom promulgated its Outer Space Act.¹⁹⁾ The major reason for such legislative action was the growing need to implement domestically the relevant rules of international space law *vis-à-vis* private enterprise. The Act itself repeatedly refers to the international obligations of the United Kingdom in this respect.

The Act in practical terms applies to the launching, or procuring of launching, of a space object, the operation thereof, or “any activity in outer space”. The inclusion of procurement should be especially noted. It is relevant, as a non-space activity, in terms of international space law liability. Even more sweepingly, carrying on an activity in outer space is defined as “caus[ing] it to occur or [being] responsible for its continuing”. An individual involved anywhere down the chain of causation or responsibility could find himself included in the scope of the Act. As a consequence, he might be obliged to refund the government for any international liability claims awarded – this, moreover, without a right to assist in the proceedings itself.

As to space activities proper, the Act encompasses *inter alia* launching,

19) Outer Space Act, 18 July 1986, 1986 Chapter 38; Space Law – Basic Legal Documents, E.I; 36 Zeitschrift für Luft- und Weltraumrecht (1987), at 12.

satellite communication and remote sensing activities. Satellite communication activities, to be more precise uplink and downlink activities, were already undertaken by British Telecom and Mercury Communications. Depending on whether DBS or other telecommunication activities were concerned, licenses under other Acts were required additionally.

In terms of the legal scope of the Act as well as its licensing regime, it applies to “United Kingdom nationals, Scottish firms, and bodies incorporated under the law of any part of the United Kingdom”. In view of the exclusive reliance on personal jurisdiction, activities undertaken by non-United Kingdom nationals from British soil do not fall within the scope of the Act.

One important requirement for licensees which is likely to be imposed – though formally speaking not obligatory! – is to take out insurance to provide the means for substantiating the obligation to provide full indemnification for the United Kingdom government once the latter is confronted with international third party liability claims. No reference is made to the possibility of providing a ceiling for such indemnification in this respect. In the cases of AsiaSat-2 and the two Apstar satellites, launched from the territory of and by the People’s Republic of China, special arrangements were made to deal with the liability issue. Under a June 1994-agreement any compensation claims against the United Kingdom for damage arising from the launch phase would be indemnified by China.

7. The Russian Federation

On 20 August 1993, the President of the Russian Federation signed the Russian law regarding space activities into force.²⁰⁾ Included within the aims of the Law is the regulation of any potential private involvement in the

20) Law of the Russian Federation on Space Activities, No. 5663-1, 20 August 1993, effective 6 October 1993; National Space Legislation of the World, Vol. I (2001), at 101.

activities under consideration. While it should be noted that many issues are explicitly deferred to further future legislation, at this point from the perspective of private enterprise the following picture arises.

The scope of the Russian Law in practical terms – as does the license obligation – first of all comprises all activities “immediately connected with operations to explore and use outer space”. Space communications and space remote sensing are expressly enumerated as examples, while launch activities undoubtedly fall within the general circumscription as provided. Also included, however, by the relevant term “space activities” are the creation, use and transfer of “space technics, space technology, and other products and services necessary for carrying out” space activities. Thus, the construction of spacecraft or financial arrangements relating to space activities such as loans and leases would also fall within the scope of the Russian Law. Hence, the Russian Law’s provisions in this regard go much further than even the procurement included in the United Kingdom Act.

As to the scope of the Russian Law in legal terms, it applies to “space activities under the jurisdiction of the Russian Federation”. This jurisdiction includes both territorial and personal jurisdiction with respect to the licensing regime. The exercise of Russia’s jurisdiction is even expressly extended to include Russian-registered space objects. Finally, to the extent that Russian private entities are de facto involved in international space activities, the Russian Federation provides for the need to conclude additional agreements, allowing the authorities to cover any potential international responsibility arising with respect thereto.

From the requirements provided by the Law related to the safety of space activities a general duty for the licensees of arranging for compulsory insurance coverage inter alia covering third party property damage may be deduced. As is the case with other rules, however, this leaves rather much leeway for discretion, even arbitrariness of the governmental authorities – resulting in uncertainty on the side of private enterprise. Furthermore, the role of the Russian Space Agency – the central licensing authority – can be circumscribed on many, ill-defined occasions by the competencies of the

Ministry of Defence, which is not a good sign for the transparency and uniformity of the legal practice which should arise eventually.

8. South Africa

On 6 September 1993, the Space Affairs Act of the Republic of South Africa entered into force.²¹⁾ The Act largely was a response to the growing interest of South African industrial and service sectors in space.

The Act deals with “space activities”, being “activities directly contributing to the launching of spacecraft and the operation of such craft in outer space”. Launching operations, satellite communication and remote sensing activities are therefore clearly included in the relevant licensing obligations. Furthermore, “spacerelated activities”, defined as “all activities supporting, or sharing mutual technologies with, space activities”, also fall within the scope of the Act.

South Africa’s territorial jurisdiction has only been asserted with respect to the activities of launching itself and – presumably – operating a launch facility. The assertion of personal jurisdiction on the other hand is comprehensive, and applies to all space activities entailing obligations for South Africa under applicable international treaties.

The licensee generally speaking may be required to reimburse the South African government for any international third-party liability claim to the full. At the same time, the governmental discretion seems to allow for only partial reimbursement or non-reimbursement, if the South African interest would so require. Next to this international third-party liability following from the Liability Convention, in principle all other liability issues could be dealt with under the Act. Conditions may be inserted into the license as to the licensee’s

21) Space Affairs Act, 6 September 1993, assented to on 23 June 1993, No. 84 of 1993; Statutes of the Republic of South Africa - Trade and Industry, Issue No. 27, 21-44; National Space Legislation of the World, Vol. I (2001), at 413.

domestic liability for any damages occurring, and the financial security to be provided with respect thereto. How this will work out in practice remains yet to be seen, however.

9. The Ukraine

The Ukraine established its national law on space activities²²⁾ in 1996, adopted for the regulation of national activities in accordance with international obligations. It is underlined that the Ukraine provides for the fulfillment of the international obligations in the field of space activities and is responsible in accordance with universally recognised principles of international law and provisions of international agreements to which the Ukraine is a party.

The National Space Agency of the Ukraine (NSAU) is the central governmental body, responsible for realisation of the state's policy in the field of space activities. The NSAU was established in 1992 according to the Presidential Decree No. 117. It has most prominently the authority to administer licenses, subject to further elaboration of the activities which may be licensed in the first place and of the procedures of licensing, to be developed by the Government.

Both licensing and certification are the important components of the state's regulation of space activities, especially when it comes to private entities – both domestic and foreign. It is established that any subject, willing to provide space activities in the Ukraine, or if outside of the Ukraine, under its jurisdiction, must obtain a license from the NSAU. In other words: all activities undertaken from Ukrainian territory or by Ukrainian nationals.

The liability following from international space law is covered quite well by these provisions, allowing for legal control over space activities possibly

22) Law of the Ukraine on Space Activities, No. 502/96-VR, 15 November 1996: National Space Legislation of the World, Vol. I (2001), at 36.

leading to claims for compensation against the Ukraine. Apart from the Law of 1996, provisions as for regarding the necessity of space activities licensing are existed in arise from the Law on Entrepreneurial Activities of 1991 and the Law on Licensing of Certain Types of Commercial Activities of 2000.

Finally, the future arrangement of obligations for licensees to insure their activities was provided for, in order to actually give substance to any reimbursement obligation to be included in future licenses. It may be noted here also, that the Law delegates the issue of whether any limit would be imposed upon the possibility for the Ukrainian Government to be reimbursed by a licensee in appropriate cases to future legislation.

10. Australia

On 21 December 1998, the Australian parliament assented to the Space Activities Act.²³⁾ The objects of the Act were mentioned as regulating space activities either from Australia or by Australian nationals from outside Australia, as well as to implement the United Nations treaties on space. Upon closer look, however, the Act deals solely with launching and related activities (return of space objects to the earth), in order especially to deal with the possibility of international liability arising for Australia as a consequence of such activities. For example satellite communication activities are not covered in and of themselves by the Act. Also, undertaking space activities with space objects registered with Australia under the Act do not lead to triggering any licensing obligation.

Depending upon the type of licenses - of which there are essentially four - either the territorial criterion or the nationality criterion or both are used to define the scope of the relevant requirement. Launches from Australia require

23) An act about space activities, and for related purposes, No. 123 of 1998, assented to 21 December 1998; National Space Legislation of the World, Vol. I (2001), at 197.

a launch permit or exemption certificate; an overseas launch requires an overseas launch certificate. In addition, space licenses are required for the operation of launch sites in Australia. Whilst the launch permit involves the need to fulfil requirements related to third-party liability under Article VII of the Outer Space Treaty and the Liability Convention, this need is absent in the case of a space license.

The relevant rules of the Liability Convention are duly incorporated into the liability-related provisions of the Act. They give rise to insurance obligations (or in the alternative the duty to provide proof of sufficient financial responsibility) to cover, in principle, the maximum probable loss - largely along the lines of the United States Commercial Space Launch Act. The Commonwealth explicitly is mentioned as the insured entity. The discretion remains, however, to provide, by means of implementing regulations, for a different method of imposing reimbursement obligations upon the licensee.

The focus of the Australian Act on launching is obvious, in light of the direct connections between launching and liability; however, it may not be sufficient in the light of the uncertainties surrounding especially the practical implications of state responsibility. Its novelty in dealing with the return of space objects on the other hand is interesting in view of the specific Australian situation - large deserts offering themselves as landing spots for returning spacecraft.

11. Brazil

The most recent addition to the list of state with a proper national space law is Brazil, where in 2001 an Administrative Edict was issued dealing with the most prominent aspects of private participation in outer space activities.²⁴⁾ In doing so, Brazil became the first developing nation with proper national space

24) Administrative Edict No. 27, 20 June 2001: National Space Legislation of the World, Vol. II (2002), at 377.

legislation, which causes it to be of special interest from the perspective of globalisation and ‘normalisation’ of space activities.

The Edict which was issued by the Brazilian Space Agency (AEB) under the authority of the Ministry of Science and Technology actually consists of two parts. The Edict is a binding piece of law under the Brazilian legal system, and may for example be directly invoked before a court. The Edict proper contains four operative Articles, of which the first one is the most important. It provides for approval of the Regulation which is enclosed and which in turn deals with the substance of private involvement in space activities.²⁵⁾ Further to the Edict, the Office for Standards and Licensing may enact implementing regulation on technical and administrative actions related to the licensing procedures.

The first aspect which draws attention when scrutinising the Regulation is that it focuses exclusively on *launching* activities. It may be noted that as far as satellite communications as a space activity is concerned, in general terms it would fall within the scope of authority of the Brazilian Ministry of Communications, and within the scope of applicable Brazilian legislation on telecommunications. The intention of Edict and Regulation however clearly is to focus on the possibilities offered by Brazil’s operating launch site Alcantara in Maranhão (and possibly also the launch site at Barreira do Inferno in Natal) to attract and generate interesting economic activities and the related economic development.

The Brazilian Space Agency AEB has the competence to issue such licenses, as well as controlling and supervising them, and if necessary, taking enforcement action with respect to them. The scope of Edict plus Regulation and the ensuing licensing obligations is confined to launching activities from Brazilian territory.

It may be noted further, that licenses shall “only be granted to juridical persons, single as well as associations or consortia, having headquarters or a

25) Regulation on Procedures and on Definition of Necessary Requirements for the Request, Evaluation, Issuance, Follow-up and Supervision of License for Carrying out Space Launching Activities on Brazilian Territory (hereafter Regulation). See Art. 1, Edict.

representation in Brazil”. The first category - having headquarters in Brazil - actually reflects the traditional general international law-criterion for the nationality of a private juridical entity. In other words: the Regulation refers here to Brazilian private entities recognised as such under international law. The second category - having a representation in Brazil - refers consequently and by contrast to non-Brazilian private companies, which are thus offered an interesting opportunity to join in activities involving Alcantara.

Under the Liability Convention Brazil qualifies as a “launching state” - and hence as a liable state - in respect of every space object launched from Brazilian territory. The consequences of such international liability of Brazil in respect of every launch, including every private one, from Alcantara is obvious. In the case of Brazil, there seems to be room for granting a cap to the reimbursement obligation in a given case.

The AEB may “assess liabilities” in case of an application for a license. Also, the “economic and financial qualification” of a particular license applicant will be considered in the licensing process. In this context finally the “purchase of insurance to cover possible damages to third parties, according to the degree of risk of the activities to be carried out by the applicant, where appropriate, in the value previously established by the AEB” has to be proven. For proper juridical certainty, however, one would have to wait for a new and broader law currently under discussion, where the tendency seems to be towards adopting the ‘maximum probable loss’ approach known from United States and Australian national space legislation.

12. Conclusion

The aforementioned, extremely brief analyses of the few pieces of national space legislation existing around the world point out the major issues to be solved by national space legislation as much as the main justifications for establishing such national space legislation.

At the Second United Nations/Republic of South Korea Workshop on Space Law²⁶⁾, it was affirmed in this respect that:

- ① a fundamental *duty* existed under Article VI of the Outer Space Treaty to provide for authorisation and continuing supervision of private space activities, the form of which was in principle left to the state concerned, but that, in view of the comprehensiveness and transparency of such an approach, a strong *recommendation* arose for such authorisation and continuing supervision to be incorporated into a broader licensing regime as part of a national (framework) law;
- ① similarly, a strong *impetus* to establish national space legislation including a licensing system was seen to arise from Article VII of the Outer Space Treaty and the Liability Convention, in view of the possibility of the states concerned to be held liable to pay compensation for damage caused by relevant categories of private space activities and the ensuing desirability for such a state to have a mechanism in place *inter alia* ensuring reimbursement up to the desired level;
- ① furthermore, another strong *impetus* for the establishment of national space legislation arose under Article VIII of the Outer Space Treaty and the Registration Convention, as presenting the best way to establish a national registry for relevant space objects and thus further ensuring jurisdiction and control over such space objects and the operators thereof; and
- ① finally, especially from the liability requirements an indirect but nevertheless strong *impetus* arose to include in the licensing systems to be established by national space laws requirements for insurance to be taken by relevant licensees since otherwise the reimbursement

26) Second United Nations/Republic of South Korea Workshop on Space law, held in Daejeon, Republic of South Korea, 3-6 November 2003; for more information, see the website of the United Nations of Outer Space Affairs, at <http://www.oosa.unvienna.org/index.html>.

obligations suggested before might turn out to be partly hollow, if licensees themselves would be unable to reimburse.

Furthermore, analysis confirms that at the international level a number of important uncertainties arise as to the principles and concepts crucial for domestic implementation. This has in practice indeed led to a number of varying solutions on the national level.

One of the few common features arising in all cases concerns the central role played by the licensing system in dealing with liability, especially third-party liability. Effectively, liability is probably the only international space law-concept sufficiently concrete and directly relevant, for private enterprise as well as the public at large, to warrant extensive elaboration in a national space law. On most other issues, the mechanism of national space agencies monitoring at any moment in time the status quo of the actual rights and obligations to be discerned under international space law, seems to be the most effective and reasonable one to deal with domestic implementation. The need for domestic implementation as such, however, is beyond any doubt.

Most importantly, in the license a derogation clause may be inserted, essentially obliging the licensee in applicable cases to reimburse any international third-party liability claim which the government concerned would be obliged to honour under the Liability Convention. So far, two general approaches to the derogation issue can be distilled from the existing examples of states which have established some form of national space legislation.

Either reimbursement is statutorily comprehensive, allowing at best for the option on the part of the government to *ad hoc* desist from claiming full reimbursement, or a statutory limit to compensation is provided for. In the latter case, the clear intention of the governments is to stimulate private launch activities by offering launch service providers a realistic possibility to either self-insure or obtain commercial insurance, and consequently accepting that in catastrophic cases quite likely the national treasury will have to be called upon to bear the part of the claim over and above the maximum.

Secondly, the license may provide for obligatory insurance - usually up to a maximum amount - in order to ensure that in any real-life case the financial

resources would be there to actually reimburse the government – at least to the extent of the maximum insurance. This approach is followed by some if not all of the national space laws so far enacted.

In most cases, finally, one should note the general level of discretion with the responsible governmental authorities as to imposing actual and detailed conditions upon (prospective) licensees. On the one hand, this obviously stems from the desire or even need to judge each request for a license on its own, usually rather individual merits. In other words, much will depend upon further practice. On the other hand, however, it is likely also the result of some prevailing uncertainties at the international level as to such key concepts as “national activities” and the “launching State”.

In conclusion, for the purpose of heeding the public-private paradigm in space law, national implementation by means of a national law with a licensing system at its core presents the most feasible and comprehensive option. It would, indeed, tie private space entrepreneurs and their activities to the international space law framework in a *bona fide* and mutually advantageous manner. It would offer such private entrepreneurs a fundamental level of legal certainty and transparency and a general commitment of the public authorities to the interests of private enterprise, and in a number of cases additional incentives to join the human space endeavour – and lessen financial governmental burdens in that respect. Last but not least, it represents the most comprehensive implementation of the obligation under Article VI of the Outer Space Treaty of “authorisation and continuing supervision” of private “national activities in outer space”.

As a consequence, in all states where it is currently allowed or contemplated for the near future for private enterprise to become involved in space activities in a substantial manner, the establishment of national space laws is to be highly recommended, if it is not, indeed, outright mandatory.