United Nations/Ukraine Workshop on Space Law
"Status, Application and Progressive Development of International and National Space Law"
Kyiv, Ukraine, 6-9 November 2006

State's control and support of private commercial space activities.

By Pr. Dr. Armel KERREST
Professeur des universities
Institut de Droit des Espaces Internationaux et des Télécommunications
President of the Association for the development of Space Law in France.

(First draft to be modified and clarified thank to your comments)

Introduction.
Private commercial activities are becoming more and more important. The framework of space law was not established for private activities but already took them into consideration. An interesting equilibrium has been set. Private –"non governmental"- entities' activities are accepted but are to be conducted under a strict control of a State.

The freedom of exploration and use of Outer Space is recognised for States, not for any other entities. Private activities as "national activities" in Outer space are conducted under the "international responsibility" of a State. They must be authorised and continuously supervised.

Moreover the launching State is liable for the damage caused by a space object, whether operated or owned by a governmental agency or a "non governmental entity".

For these reasons, States must control private activities in Outer Space. If we consider what appends in the high sea, we understand how important this control is. The fulfilment of these obligations is not necessarily easy but it is an obligation which has been proposed and accepted by space faring States. The mechanism set in force by the Outer Space Treaty (OST) and the liability convention is very much victim oriented. It is the honour of space faring States to have accepted theses rules and to maintain them.

In liberal countries, everybody may do what is not forbidden by law. When private activities must be controlled, a law is necessary. It is the reason why domestic space legislation is needed to control private activities.

When passing a law to control space activities, States also consider supporting private activities. When the launching State may have to compensate a damage, domestic legislation usually put a ceiling to the obligation of reimbursement by the private entity. This ceiling is very useful to calculate the risk and to enable insurance. In some cases the support goes further, the State accepts to pay for a damage caused by a private space object even if the

[1] Pr. Armel Kerrest is the alternate head of the French delegation to the UN COPUOS legal sub-committee but the views presented here are in no way the French position on these issues.

obligation to compensate does not come from the liability convention but from any decision of a judge.

I Obligation and necessity of a control

The Outer Space Treaty makes State internationally responsible for national activities in Outer Space which they have to authorise and supervise (point 1); States may also be liable as launching States, they should be able to control and rule these activities in order to avoid or limit the risk (point 2).

1 Responsibility of States for "National activities in Outer Space"

As we know, in Outer Space, like in any other international space like the High Sea, no State can exercise its territorial jurisdiction, only personal jurisdiction applies. Personal jurisdiction is exercised by a State over its nationals when they are abroad or in a territory which is under no other States' territorial jurisdiction.

In that respect, Space Law, as it is set by the Outer Space Treaty, poses special rules which differ from general international law.

According to general international law, a State has an obligation to make international law applicable to its nationals, it has the obligation *"to exercise due diligence to prevent its own subjects, … , from committing injurious acts against other States."*[2]

The Outer Space Treaty goes much further, as far as private entities are concerned. In its article VI it assimilates private entities and governmental agencies within a general notion of "*national activities*". States are responsible for *"national activities in outer space*" as a whole, *"whether such activities are carried on by governmental agencies or by non-governmental entities"*.

States exercise their personal jurisdiction over activities conducted by their nationals in outer space. Nothing original in that. It is already the case in the high sea.[3] What is different is the nature of States' responsibility in that case. Under article VI, the State is not only responsible for its lack of control of the activity; it is responsible for these activities as such; as its own. Private activities are assimilated with governmental ones within *"national activities*". The State has to assure "*that national activities are carried out in conformity with the provisions set forth in the present Treaty*" and thus, international law as a whole (cf. article III of the OST). If it does not, it is internationally responsible.

The State's obligation is therefore an obligation of result (obligation de résultat) not an obligation of means (obligation de moyens). To put it an other way, the State cannot argue that, for any reason, it could not control its "national activities" in outer space and thus its "national's activities", the activities of its nationals. The possible lacunae of its own domestic law are certainly no argument.

This responsibility is not only theoretical. It may have important practical consequences. According to international responsibility rules, the State may have to compensate a possible

[2] Oppenheim's international law 9th ed. Vol. 1 by sir Robert Jennings (Longman 1992 p. 549)
[3] Law of the sea convention Montego Bay 1982 article 94

damage arising from this illegality. In some cases, when it is not possible to obtain compensation through the liability convention, this possibility may be considered by the State of the victim. It may be the case if the liability convention does not apply, for instance if the damage is not directly caused *"by the space object"*, or when the launching State has not committed any fault (damage in outer space).

In the case of a satellite sold in orbit to a company of the nationality of a State which is not a launching State for this launch, this State is not a liable launching State under the liability convention. But nevertheless the activity conducted by the new owner of the satellite is a *"national activity in outer space"* and thus the State of this entity is internationally responsible according to article VI. If a damage occurs, it may be possible to use this responsibility to obtain compensation from the *"appropriate State"*. It shall be more difficult than under the liability convention. A breach of international and/or space law must be proven; the procedure should be the classical international responsibility settlement of dispute mechanism and not the Claims Commission set by the liability convention.[4]

2 Liability of the launching States for private space objects

Much has already been written on this issue. I will not examine it thoroughly another time. We know that the liability convention is quite accurate for damages on earth but that it is much less the case when the damage occurs in outer space.

A State which may be liable because of a damage caused by a privately owned space object would have a great interest to control this activity. Contrary to what we have seen in the first point, this control is not an obligation; it is only practically very useful. If a State does not control the activities of its private companies when they may qualify it as a launching State according to the liability convention, it does not change its liability. But in order to minimise the risk, States should control this activity to be sure that the activities of launching or procuring the launch of a space object are seriously and securely conducted.

This confirms the interest of the current rule of the liability convention. Not only it protects the potential victim but it makes Outer Space a safer place because it plays a preventive role. Being financially liable, launching States would have an interest in controlling the activity and thus limiting the risk of accident.

Nevertheless, in practice, it seems that the risk of liability of the launching State for private satellite operators is rather low. The most dangerous moment in space activity is the launch phase. Most of the time the damage does not fall into the legal framework of the liability convention as it is mostly caused to nationals of the launching State. In any case, launching activities *stricto sensu* is often a governmental activity; given its dangerousness for the surroundings, it is always well controlled.

[4] Of course this procedure would be very long and difficult. It will not be used if a private action may be efficiently pursued before a domestic judge. (same remark than for the liability convention, see later).

C Registration of private activities in space

Registration of every space object is compulsory according to the registration convention.

This obligation applies to governmental and private objects.

Which State will register private owned satellite ?
The main purpose of the registration is to make known at least a launching State of a space object in order to enable victims to know which State has launched it. Thus only a launching State may register.

When there is more than one launching State, which is currently very frequent, only one State can register, the convention does not precise which one will. It only provides for an agreement between launching States : "*they shall jointly determine which one of them shall register the object"*.

The registration of a space object does not intervene on the quality of "launching State". The State which registers is no more liable than any other one. Nevertheless the State of registration is in a special position. For want of anything better; I would qualify it as a "first rank" liable State. Having registered a space object, a State has accepted its status of launching State. It will be easier for a victim to sue this State, as it will not have to prove this status.

The registration gives the State the right and obligation to "*retain jurisdiction and control over such object, and over any personnel thereof, while in outer space"*. (OST article VIII)

Articles VI, VII and VIII of the OST establish links between activities and States in charge of controlling them or liable for them. At the beginning of space era, the same State holds these three positions. It is no more the case. Responsible State of national activity, liable launching State, State of registry may be different. (even if the State of registry is always a launching State it is not the only one).

If we consider that every State may have its own policy regarding registration it may be a real cacophony. It should be useful to harmonise and to agree on a common policy. I hope that our current work within Copuos will help finding a solution.

Many possibilities are open. The State of the territory may be more able to know the space objects having been launched. The State of the facilities may also be used. But when the satellite is launched they have often very little control on it during its stay in orbit.

These solutions if chosen would increase the plurality of control which may be detrimental to efficacy.

A proposal of the US delegation to the COPUOS goes in the right direction. The US delegates to UN COPUOS legal subcommittee presented the US policy regarding registration of space objects. They clarified the US position toward registration of private space objects: the US register according to the nationality of the company. They register every space object of their companies whether they have been launched from the US territory or not. If they launch a space object of a non-US company, they don’t register it.

This is a very good solution. Instead of increasing the plurality of control, it reduces it and put the "jurisdiction and control" provided for by registration to a State which is the most able to exercise this control : the State of the *"national activities"*. As far as private activities are concerned, if the State of nationality of the company registers the object, we have, on the same State, a conjunction of the three links :

- State of "national activity", internationally responsible, (article VI),
- State of registry having "jurisdiction and control" (article VIII)
- "*first rank*" liable Launching State (article VII).

This does not modify the fact that more than one State may be a liable launching State but it clarifies the situation. If agreements between launching States are passed according to article V of the liability convention, the situation may be really clearer. The control over a private space object may be efficient, concentrated on one State and nevertheless protective of the rights of potential victims.

II Means and ways of the control for private activities: the domestic legislation.

When drafting a domestic space legislation many difficulties occur. The State's obligations according to international treaties are not always quite precise as in many cases there is no precedent. Let us point out some of these difficulties:

The extend of the control

Authorisation and licence of private operators.
To my understanding authorisation is a punctual decision to a precise activity, licence is a more general decision applicable to an operator or an installation. Both may be connected. At the end an authorisation to launch is needed.

What are "activities in Outer Space"?.
Most activities in outer space are not fully conducted there. They take place in outer space but are conducted from the earth. Moreover, as a matter of principle, law does not apply to a satellite; it does not apply to inanimate things but to human beings, to human activities. The activity takes place in outer space, but, as, for the time being, the people conducting this activity are not in outer space, the rules applies to people on earth. Then, territorial and personal jurisdiction of States must be considered. Both must implement the rules of Space law. It is obvious for launching activities as both the State of territory and the State enjoying personal jurisdiction are launching States according to the liability convention. How does it work for other space activities such as using satellites for telecommunication remote sensing … and so on ? It may be useful to make a distinction between "activities in outer pace" strictly speaking, **space operations** and activities on earth using space devices, **space utilisations**. Only the first category would be subject to systematic authorisation or licence.

What is "outer space"?
For the time being, it did not appear indispensable to delimitate outer space as orbits where considered as an appropriate definition. The zone of incertitude, a zone where no plane can fly and no satellite can orbit exists but was not to be used. This situation may change when non orbital launches will be proposed to private tourism. A more precise definition and thus

delimitation will be a necessity. As far as a space launch is no more an orbital launch or an attempted orbital launch, the altitude of launch becomes an important element of the definition of Space and as a consequence of the Space object and then to application of space law.

For this launches the main issue is liability of the launching State. Registration is not required and "national activity in Outer space" is very short (only a few minutes).

What is a "national activity". Commercial space activities are mainly conducted by international consortia. It is not easy to clarify the nationality of the company. In the US Commercial Space Launch Act the notion of US citizen which must ask for a licence is greatly widen by a reference to non US companies controlled by US citizen[5]. In France we stood on the usual nationality rules applicable for instance for tax matters.

What is the extend of the liability of the launching State for damage in outer space. If the damage is caused in outer space, the launching State *shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible.*

There is a difficult interpretation here: what means "the fault of persons for whom it is responsible". Is it a reference to general international law as considered in the draft of a *"convention on Responsibility of States for Internationally Wrongful Acts"* and thus to the agents of the State[6] or is it a reference to special space law especially to article VI of the OST and then includes any "national activity" including the private ones? It should be logical to choose the second one.

The control of private space activities after the launch.
A licence or an authorisation is given at the time of the launch i.e. at the very moment when a control may be efficient. When the satellite is in orbit it is much more difficult to control the activity. Nevertheless a continuous control must be maintained during all the duration of the activity in Outer space i.e. in practice until the return on earth. This obligation of control is a consequence of the express obligation of article VI of the OST, but also a consequence of the liability of the launching State. This State must for instance control the re-orbiting of the geostationary satellite to a graveyard orbit before it has no more capacity to change orbit. If it does not, it may hold liable for a damage to an other satellite on the GEO. The basis of this obligation is disputable it may be the obligation of control under article VI of the OST if the re-orbiting is compulsory, it may be as a launching State due to the fault of non re-orbiting.

---

[5] US code sec 70102 definitions (C) an entity organized or existing under the laws of a foreign country if the controlling interest (as defined by the Secretary of Transportation) is held by an individual or entity described in subclause (A) or (B) of this clause.

[6] RESPONSIBILITY OF STATES FOR INTERNATIONALLY WRONGFUL ACTS
Chapter II Attribution of conduct to a State
Conduct of organs of a State
Conduct of persons or entities exercising elements of governmental authority
Conduct of organs placed at the disposal of a State by another State
Excess of authority or contravention of instructions
Conduct directed or controlled by a State
Conduct carried out in the absence or default of the official authorities
Conduct of an insurrectional or other movement
Conduct acknowledged and adopted by a State as its own

III Supporting space activities: sharing the risk.

When space activities are conducted, some States become liable launching States according to the liability convention. If the activity is carried on by a "non governmental entity", the State which shall be liable for should have the ability to recover from this entity the money it may have had to pay according to its obligations. Most space laws provide for that purpose.

It is the reason why the current domestic space laws mostly stipulates this obligation:
Sweden[7] and UK[8] laws are quite clear. So does the Hong Kong "Outer Space Ordinance" in favour of the government of China.[9]. The private entity "*shall indemnify … (*the *government) against any claims brought against the government in respect of damage or loss*… (UK law)

The law of the Ukraine refers to domestic rules[10].
The South African law refers to the licensee in a way that may be unclear[11]. It refers to *"liability of the licensee resulting from international conventions, treaties and agreements*

---

[7] Sweden (Act on space activities , 1982): *Section 6*
If the Swedish State on account of undertakings in international agreements has been liable for damage which has come about as a result of space activities carried on by persons who have carried on the space activity shall reimburse the State what has been disbursed on account of the above-mentioned undertakings, unless special reasons tell against this.[7]

[8] The UK : Outer space act, 1986)
10.-*(1) A person to whom this Act applies* [8] *shall indemnify Her Majesty's government in the United Kingdom against any claims brought against the government in respect of damage or loss arising out of activities carried on by him to which this Act applies.*
(See: BNSC informations for appliquants for a licence.: www.bnsc.gov.uk/assets/new_guid.pdf)

[9] Section 12 - Obligation to indemnify against claims
(1) A person who carries on an activity to which this Ordinance applies shall indemnify the Government and the Central People's Government against any claims brought against either government in respect of damage or loss arising out of such activity carried on by him.
(2) This section does not apply
(a) to a person acting as employee or agent of another; or (b) to damage or loss resulting from anything done on the instructions of the Chief Executive.
(*Adaptation amendments retroactively made - see 55 of 1999 s. 3)*

[10] Ukraine : Article 25.
Responsibility For Damage, Caused During Space Activity, And Compensation For Damage :
The responsibility for damage caused during space activity and order of definition of the size of such damage which is subject to compensation are established in accordance with the legislation in force of Ukraine.

[11] South African law : 14. Duties and liabilities of licensee.
(1) A licence issued under section 11, may, in addition to conditions determined under that section, contain conditions relating to -
a) (i) liability of the licensee for damages;
(ii) security to be given to the licensee for such damages and the manner in which it shall be given, as the Council, with the concurrence of the Minister, may determine;
(b) liability of the licensee resulting from international conventions, treaties and agreements entered into or ratified by the Government of the Republic.

entered into or ratified by the Government of the Republic". This point is disputable as the treaty and convention do not impute liability to the licensee but to the State itself.

The law of the Russian Federation[12] is a little bit different as, after having set down the principle of liability of the Russian Federation as a "guarantee"[13], the law makes organisations and citizens responsible for any damage using the very rules of the liability convention but transferred in the Russian domestic legal order and adapted to private entities. The indemnification of the Russian State seems to be considered as understood.

The Australian law deals with liability of the "responsible party" which is very closely adapted from the liability convention. (section 66 to 73) A special section *"Responsible party's liability to the Commonwealth"* considers the liability of Australia according to the liability convention and the consequences thereof[14]. Contrary to the Russian law, the Australian law applies a ceiling if there is one. (74-2b). So does the Belgian law[15], and the German draft at its section 21[16].

---

[12] Russia: Article 30 (2)
2. Compensation for damage inflicted as a result of accidents occurring while carrying out space activities shall be paid by the organizations and citizens responsible for operation of the space technics involved.
If such damage is the result of errors committed in the creation and use of space technics, liability for damages shall be partly or fully be rested upon the appropriate organisations and citizens.[12]

[13] It is interesting to note this very good way to see the role of the Launching State according to the liability convention. :
Article 30 : Liability for Damage
1. The Russian Federation shall guarantee full compensation for direct damage inflicted as a result of accidents occurring while carrying out space activities in accordance with legislation of the Russian Federation.

[14] Section 74
Division 4—Compensation claims by foreign countries
74 Responsible party's liability to the Commonwealth
(1) This section applies if, in accordance with the Liability Convention or otherwise under international law:
(a) a foreign country has presented a claim against Australia for compensation for damage covered by this Part; and
(b) Australia becomes liable to any extent to pay compensation for the damage.
(2) The responsible party for the relevant launch or return is liable to pay the Commonwealth an amount equal to the lesser of the following amounts:
(a) the amount of that compensation;
(b) if the launch or return of the space object concerned was authorised by a launch permit or overseas launch certificate, and section 69 applies—the insured amount for the permit or certificate.

[15] Belgian law article 15

[16] Section 21 - Liability towards the Federal Republic of Germany. (1) (…) if the Federal Republic of Germany pays a compensation for such damage in accordance with the Liability Convention and Art. VII of the Space Treaty, the operator of the launch facility and/or the operator of the object is obliged to indemnify the Federal Republic of Germany for such damage up to an amount of € XXX or the maximum amount of insurance obtainable on the world market. This obligation is not applicable if the operator has paid a compensation to the party suffering the damage by other means.

The US Commercial Space Launch Act (1984 rev 1988)[17] organises the system under a purely domestic logic, without referring to the liability convention mechanism and rules. Under its section 70112, the US code considers *"Liability insurance and financial responsibility requirements"*. It sets down an obligation for any licensee to get insurance and to pay for compensation until the amount of the Maximum Probable Loss (MPL) determined by the Secretary of Transportation. Reciprocal Waiver of Claims makes sure that no one will have to pay more than this MPL. The US government is one of the beneficiaries of the insurance contract.

The mechanism is three tiers : above the MPL the insurer or the licensee will pay. Over the MPL and under 1,5 billion $, the US government "indemnification" takes place. Over 1,5 billion the licensee will pay.
In fact if a US private company is involved in an accident causing a damage, and if the amount of damage is less than 1,5 billion $, the victim will have better asking for compensation to the domestic judge without using the heavy liability convention State to State settlement of dispute mechanism.[18]

States must limit their possibility to get indemnification from private entities.
Even if it is not always clearly stated, the indemnification by private entities to the State which was responsible or/and liable for their activity cannot be unlimited. According to the liability convention, the Launching State's Liability is unlimited either in amount or in duration. So is the responsibility of States for national activities conducted in outer space (OST article VI). This is not compatible with insurance requirements. Even if an insurance company accepted to insure such a risk, the premium should be considerable and an unacceptable burden for space activities which is currently rarely very profitable.

---

[17] § 70112. Liability insurance and financial responsibility requirements. § 70113. Paying claims exceeding liability insurance and financial responsibility requirements.

[18] U.S. Department of Transportation, FAA : Liability Risk-Sharing Regime For U.S. Commercial Space Transportation (April 2002) :
The United States is responsible and may be liable as a launching State for damage whether there exists a liability risk-sharing regime under 49 U.S.C. Chapter 701 or not. That is, regardless of the CSLA risk allocation scheme, the U.S. Government has obligated itself, by treaty, to accept international liability for ground damage and for damage to aircraft in flight. Similarly, the United States has agreed to be liable for damage occurring on orbit when it is a launching State and the damage is its fault or the fault of persons for whom it is responsible. The CSLA provides a means by which the government is insured and can financially cover certain of its treaty-based liability obligations, at no cost to the government, up to the amount of liability that it is most likely to bear in the event of an errant launch or reentry. The CSLA risk allocation scheme provides a mechanism whereby the government obtains the benefits of insurance, at no cost to the government.
Insurance provided by a launch licensee will cover the launch participants' liability as well as certain of the government's treaty obligations up to the amount prescribed by the FAA in a license, at no cost to the government. However, claims resulting from an errant launch may exceed the required amount of insurance and, ultimately, the government may have to satisfy the full amount of the liability under the terms of the relevant treaties, regardless of the CSLA. (at 6.5 page 122)

The obligation of indemnification must be limited in amount and in duration.
Some domestic laws refer to this issue and limit the liability of private operators to *the maximum amount of insurance obtainable on the world market* (German draft) or *maximum liability insurance available on the world market at reasonable cost* (US CSLA at 70112 3b.)

Lacunae may be highlighted in some domestic legislation. The ceiling of compensation in amount is provided for by some laws but the issue of limit in duration is not. In some, the ceiling does not clearly apply to actions against private operators taking place under general liability national or foreign domestic rules.
In the US CSLA, very interesting by many others means, the Damocles sword of the third tiers above the ~ 1,5 billions $ ceiling and the limited duration of the law and appropriation does not clarify the situation.

It may be consider as unacceptable for State to take a part of the risk and support private space activities with tax payer's money. In fact it is up to them to fix a high or low ceiling and thus to support more or less the activity. The social utility of the activity may be considered.

States must also limit the liability of private entities in case of action before a domestic judge.
If an accident happens, the victim has two ways to obtain compensation.

One, the best known is to use the liability convention. The victim should ask its national State to ask for compensation to one of the launching States under the liability convention. This procedure has many advantages which have already been presented. Nevertheless being State to State it is a rather long and politically sensitive process. According to the liability convention, the State is liable and not the private entity. States may stipulate that the private operator will indemnify it in this case. A limit of indemnification of the launching State is a ceiling of liability for this operator.

The second way for the victim to obtain compensation is to sue the operator before a domestic judge using general liability rules. There is no precedent, but it seems clear that in case of an accident, the victim would have better suing the private operator before a domestic judge than entering in the launching State liability system of the liability convention. It seems that, in most cases, no ceiling is available. A "forum shopping" will inevitably take place. The victim will choose the most interesting law and judge.

On this issue the US CSLA is interesting as *"the Secretary of Transportation shall provide for the payment by the United States Government of a successful claim (including reasonable litigation or settlement expenses) of a third party against a licensee"*. This procedure saves the victim the difficulty of a State to State procedure under liability convention while giving it nearly the same advantages.

Such a solution is proposed in the French draft, I hope it will be accepted by the law makers. .

States must be aware of the sharing of the risk, choose and control the private entities they want to subsidize.

When a State, generally a launching State, does not deal with the apportioning of the obligation of compensation according to article V of the liability convention, as it has very

few possibilities to get its money back if it has to pay, it subsidize the operation. When a State accepts to launch a spacecraft from its territory, it becomes a launching State for the whole payload and for ever. If no special agreement is passed, this State, *volens, nolens*, subsidizes this activity including the use of the satellite launched in such a way.
It may be good, it should not be done without knowing and without having some control on the spacecraft and on its ownership.

Conclusion

Current space law set a general legal framework for private activities. It gives an important role to States either by their responsibility or liability for any activity whether private or governmental. It is a very good basis. It should not be put at risk so that a strong and efficient control may be maintained.

Nevertheless some difficulties and shortcoming may be recognised.

The legal framework may be improved by **domestic legislation** for problems of relationship between the State and its private entities. An efficient control must be organised at the time of the launch and maintained throughout the stay in orbit of the space object. The risk must be shared between the State and private companies and their insurers. The setting of a ceiling to the private company obligations may support the private activity without limiting the rights or compensation of a potential victim and even securing it.

Cooperation between States must be improved.
The agreements referred to in article V of the liability convention should be passed. They should be agreed on a systematic and beforehand basis. The financial obligations of launching States may be shared according to the phase of the activity and the part taken in the activity and benefits. These agreements are useful for any case where there is more than one launching State. They are especially useful when private activities are concerned.

Agreements mutually recognising authorisation and licences. These agreements are necessary to enable a space objects market. It would be very useful for instance to help selling of satellites in orbit or to implement the UNIDROIT protocol.

The current mechanism is far form being perfect, but the basis of responsibility and liability must be maintained. A lot is still to be done through domestic legislation and international cooperation to make it work more efficiently. UN COPUOS legal sub committee may help coordinate domestic space legislations systems and propose international agreements improving and facilitating the implementation of current texts.