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National space legislation – crafting legal engines for the growth of space activities

The need for national space legislation

The need to implement the Outer Space Treaty through national law in the light of the current and foreseeable space activity

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Since one or two decades, private activities in Outer Space are increasing they are challenging space law. As we know, space law is quite special compared to general international law when private entities are concerned. According to the Outer Space treaty and the following conventions on liability and registration, States are responsible for national activities in Outer Space, they are liable as launching States even when private entities conduct these activities, and they must register the space objects for which they are a launching State.

These obligations may create the necessity or great utility for States to enact domestic legislations. When only States' activities were conducted, they could control and regulate them through their usual control over governmental agencies, with private entities, it is not simple as, in most countries, private persons may do whatever they want as far as they are not prohibited to do so by a law.

I will present in a first part the consequences of article VI, VII and VIII of the 1967 treaty as interpreted in the light of the following conventions on liability and registration. In a second part, I will analyze the practical questions that may impede a good implementation of these rules in the light of the current and foreseeable space activity.

I Article VI, VII and VIII of the Outer Space treaty and private entities in Outer Space.

A Article VI

Article VI sets an obligation of States to bear the responsibility of "national activities" in outer space. Given the possible misinterpretation of this obligation, the text very clearly and usefully precises that this obligation is applicable "whether such activities are carried on by governmental agencies or by non-governmental entities". Given the possibility of different interpretations of the words "nation" and "national" it was very useful. This provision clarifies the use of "Nation" in the treaty as referring to States and nationals which is normally the case if we have a look in the main English language dictionaries but which is sometimes used differently.

I will not come back to the history of this important provision; may I just remind you that it was a compromise between the USSR and USA positions during the discussions on the 1963 declaration. The USSR wanted only States' activities to take place in Outer Space and the USA preferred to leave open the possibility of private activities.

The compromise sets a unique situation for private activities in Outer Space. As it is the case also in the high sea, the freedom of use of Outer Space is only recognized to States[1]. However, contrary to what exist for the High Sea, a special responsibility is given to States for "national activities in outer space". We see that the text does not make any distinction as far as responsibility is concerned between governmental and non-governmental entities. For both, States are responsible the same way i.e. totally. It is the only case in international law where a State is responsible for a private activity. Usually as in the law of the sea, States have an obligation of control and are possibility responsible if they do not satisfy their obligations. They are responsible for their own wrongdoing not for the wrongdoing of the private entity. In Outer Space according to article VI, they are.

After having set this obligation, article VI goes further and precise States' obligations for the activities of private entities, they have to be authorized and continuously supervised by the State in order to verify that they are "carried out in conformity with the provisions set forth in the present Treaty" and in conformity to general international law as well[2].

These provisions clearly make an obligation to control private persons and thus to enact a domestic space legislation when States cannot control these activities another way. This is usually the case in liberal/free market States where private persons may do everything which is not prohibited by law[3].

When we consider implementing such a rule in domestic legislation, we can point out some relevant issues.

The responsibility is linked with the notion of "national activities" and thus we have to define what a national activity is, taking into consideration the precision about non-governmental entities. Usually current domestic legislations refer to the nationality of the operator. The US Commercial Launch Act enlarges a little this circle including a foreign entity if the controlling interest is held by US citizen[4]. When we discussed the point in France during the drafting

[1] The OST uses very accurately the words States, countries, and national. At article 1for instance, benefit and interests are for all "countries" and activities are "national" but freedom of exploration and use is for "States".
[2] See article III of the Outer Space Treaty "in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international co-operation and understanding."
[3] Déclaration des droits de l'homme et du citoyen de 1789 Article V : *Tout ce qui n'est pas défendu par la Loi ne peut être empêché, et nul ne peut être contraint à faire ce qu'elle n'ordonne pas.*
[4] US code TITLE 49 > SUBTITLE IX > CHAPTER 701 > § 70102 Definitions: "citizen of the United States" means—
(A) an individual who is a citizen of the United States;
(B) an entity organized or existing under the laws of the United States or a State; or
(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.

process of our law, we considered the US precedent but we decided to refer to a more limited definition of national activity and to control only French citizen and French companies[5].

States are responsible for "national activities" wherever the place on earth from where the national is conducting it. It has been argued that in some cases, such a control may be difficult but it is the consequence of the very well known international law concept of personal jurisdiction. International cooperation could be useful in order to control the activities conducted from the territory of a foreign State.

Activities in outer space.

The responsibility of States is only for activities "in outer space". Contrary to what happens for liability of the launching State, the activities of launch during the passage into the air is not concerned by article VI. Activities on the Moon in the contrary are clearly included as outer space includes the Moon and other celestial bodies[6].

Given the fact that outer space is not yet delimitated, it may be a problem for launches of non-orbital objects[7]. For the time being, the US FAA/AST decided to license "Space Ship One" as a launch in outer space under the 1984-1988 Commercial Space Launch Act. The 2004 Commercial Space Launch Amendment Act is applicable for experimental non orbital launches. Given the lack of delimitation of outer space, it would have been possible to consider those launches as air launches. But then it may have been much more difficult to sell them at a considerable fare only acceptable if the launch makes the client an astronaut.

The responsibility referred to in article VI is international responsibility and follows the rules of general international law. It is linked to internationally wrongful acts, violation of international obligations of the State and private entities. There is no special settlement of dispute mechanism. Thus in practice, it may be rather difficult to use this procedure.

At this stage, we can see that States must control "national activities" in outer space; they must authorise and supervise them. The consequence of it is that the control set by the domestic legislation should apply to every national if they conduct an activity in outer space whether this activity is conducted from their territory, from a territory outside any territorial jurisdiction - like the high sea or the air above or from outer space, including celestial bodies- or from the territory of another State[8]. The activities include of course placing and moving a satellite, changing of orbit but perhaps also the activities performed by the satellite as far as it is regulated by space law (like remote sensing, non peaceful use or use of the moon and other celestial bodies for instance)

This control, especially the supervision of activities in outer space, may be a heavy burden for the States and for the operators. It is the reason why in a foreseeable future some kind of "avoidance manoeuvre" may be seen. Some operators may be willing to avoid control by

[5] Article 2 at point 3. « Toute personne physique possédant la nationalité française ou personne morale ayant son siège en France »

[6] Phrase systematically used and specially at article VI : "Outer space, including the moon and other celestial bodies".

[7] I prefer the terms "non orbital" to "sub orbital" generally used because some of these launches may fly over lower orbits. Being launch at a too low speed, they will cross the lower orbits but will return down without being put on orbit.

[8] During the life in orbit such activities as change of orbit, desorbitation at the end of life etc.. must be supervised. Activities in outer space like telecommunication or remote sensing may be also considered as "national activities" for the part done in outer space.

changing the nationality of the operator at least for the part of their activity that takes place in outer space. We are then at risk to see some kind of "flag of convenience" in outer space. We know how detrimental they are in the high sea, I think it is of major importance to emphasise the responsibility they would engage in. The example of the current problem of Iceland being considered responsible for its lack of control of its banking system is a lesson those States should look at carefully. This responsibility under article VI should remains clear and efficient. It may be connected with the liability of the launching States.

2 The liability of the launching States according to article VII of the OST and to the liability convention.

In the sixties, the freedom of use of outer space was not obvious. According to the 1919 Paris convention, States extends their sovereignty to the air above their territory without either definition or limit. In order to have a freedom of use accepted by the non space faring States, the USSR and USA decided to establish a liability for damage. They accepted a heavy and the best liability system as far as the damage is caused on earth. In case of damage in orbit the requirement of a proof of a fault makes it much less efficient.

I will not enter here in the description of the liability as it is set in article VII of the Outer Space Treaty and in the liability convention. I will just insist on the fact that for damage on earth it is very much victim oriented: absolute liability without any exoneration, no act of God, no fault of a third party, not even a fault of the victim if it has not resulted "either wholly or partially from gross negligence or from an act or omission done with intent to cause damage on the part of a claimant State or of natural or juridical persons it represents".

Contrary to what is usually accepted when objective liability is created there are no ceiling neither in amount nor in time. A settlement of dispute mechanism is created: the Claims Commission.

As we are now dealing with national legislation, the most relevant point here is to determine who is going to be liable. As you know it is the launching State. The choice is quite good because nobody is going to launch a space objet without everybody knowing it. It is also good because a liability of a State is much more efficient to protect the victim.

Since 1963 the launching State is defined by four alternative criteria: (i)

- A State which launches
- or procures the launching of a space object;
- A State from whose territory
- or facility a space object is launched;

If a State fulfils one of these criteria, it is a liable launching State for the space objet. If there is more than one, which is currently generally the case, they are jointly and severally liable. It means that the victim may ask compensation to any of them for the whole.

In the case of a private activity, general interpretation was that States were liable because of their nationals' activities of launch, procuring the launch or facilities. The practice of States and application of article 31 to 33 of the Vienna convention supported this interpretation. The issue was nevertheless questioned by some. In 2007 thanks to the work of our working group

in the legal sub-committee, the UN General Assembly resolution clarified the issue at it point 3c.[9]
As we have seen, according to article VI of the Outer space treaty, they are responsible for national activities and have an obligation to control these activities. In fact they are very much concerned, perhaps even more concerned, by their potential liability as a launching State. The financial risk is more direct and may be more important. A control is not compulsory here but it is quite useful if a State does not want to be liable for an activity that it does not control.

States wanted to control any activity that may make them a launching State according to one of the four criteria.

It was obviously first of all the case for launches from the **territory**. For many reasons they are right to consider this criterion as important. It is easy to prove, it is certain and usually does not need any interpretation. Moreover, a control was generally already maintained as launching is a rather dangerous activity and is always strictly controlled as such.

The activity of **launching** in every case, whether it takes place from their territory, from the territory of another State or from an international space.

The activity of **procuring the launch** also wherever the launch takes place.

The use of national registered **facilities** wherever they are located.

When States are launching State they have to control the private operators in order to minimise the risk, they have also in mind the possibility to "get their money back" if they have to pay indemnification.

The consequences of the obligation of a Launching State on domestic legislation.

- A control of the activity and of the risk that it may cause. (technical issues)

- The qualities of the operator
  - Technical capabilities to perform the operation with low risk
  - Stability and seriousness of the company
  - Financial capabilities to indemnify the victim or/and reimburse the State if it has paid (including the possible obligation to give a guarantee or to get an insurance)

- The will for the State to support its space operators
  - Limit of the obligation to reimburse the State if it has paid an indemnification to a victim.
  - Limit in time of the obligations of the operators.
  - Guaranty given to the operators and thus to the victim above a certain ceiling or when an insurance coverage is impossible.

[9] Recommendations on enhancing the practice of States and international intergovernmental organizations in registering space objects A/RES/62/101 *(c) In cases of joint launches of space objects, each space object should be registered separately and, without prejudice to the rights and obligations of States, space objects should be included, in accordance with international law, including the relevant United Nations treaties on outer space, in the appropriate registry of the State responsible for the operation of the space object under article VI of the Outer Space Treaty;*

As you see, there are two kinds of control: the control on the activity and the control on the operator. It is the reason why, during the law making process in France, we decided to propose a double mechanism: on the one side an **"authorisation"** that is the control of the operation, it is compulsory and must be done for every activity that may cause the State to be either responsible or liable; on the other side a **"licence"** which is given to a company after consideration of its technical and financial capacities. This license is given for a certain time and is not connected to a given operation. An operator that is not licensed may get an authorisation but the process will be more difficult and longer. A licensee will get it quicker and easier; in some cases, it will not have to ask every time.

3 Article VIII of the OST.

Under article II of the registration convention, when there are more than one launching State they "shall" jointly determine which one of them shall register the object.

Most domestic legislation deals with the obligation of registration and organise it. They create register and precise how the registration of an object is transmitted to the UN Secretary General in application of the registration convention.

The registration of a space object is not only a list it is a legal link between an object and a State. In the case of a space object, registration has two aims: first of all to indicate a launching State in order to facilitate the application of the liability convention and a second one which is to connect an object with the legal order of a State. (Jurisdiction and control under article VIII OST).

This double purpose of registration may cause some difficulties as only a launching State may register and that launching States are determined forever at the time of the launch. In case of change of the ownership of the satellite in orbit we may have a liable State having jurisdiction and control over an object that they cannot control and for which another State is responsible because it is a "national activity in outer space"

II Remarks for suitable implementation and improvement.

First, may I insist on the point that the current rules adopted in the treaties are rather good. My already long experience of our work in the COPUOS shows me that if we had to rewrite them it would not be possible for the time being to get a consensus on such ambitious rules. The end of the cold war, the growth of national egoisms, the growing importance of commercial and financial competition, would make absolutely impossible the establishment of such a regime which, at the end of the day, protects the victims and maintain a certain responsibility of States in these exiting but dangerous and strategically sensible activities.

The solution is not to modify the treaties but to try to help them working. One way to do so is to use UN resolutions adopted by consensus; another way is to use bilateral / multilateral agreements to help a good implementation and application of the treaties.

I will give you two examples of the possibility and even necessity to do so. The first one is related to the implementation of article VII of the treaty and the liability convention when many launching States are concerned; the second one is the issue of change of ownership during the stay of the object in orbit.

Plurality of launching States and control under domestic legislation.

The liability of launching States is global i.e. every launching State is liable for the object during its whole life in orbit. Every of them are liable without distinction from the launch to the return on earth. It may appear unfair in some cases. The States procuring the launch but not involved in the launch itself feel unfair to have to pay for the consequences of an accident of launch, the States of the territory of launch feel unfair to have to pay for an accident in orbit making damage on earth a long time after the launch.

The solution is not to put an end to the system but to use its potentialities to make it work efficiently. One possible way to do so is to pass those agreements referred to in article V of the liability convention.

The use of these agreements is not only useful to clarify to situation between launching States, it is also necessary to ease the licensing process at the national level. During the discussion for the French Law, we had a problem about the control of activities of launch when they take place in a foreign country. Let us take an example: a French satellite operator would like to use the launch services of a foreign launch operator, for instance Russian or Chinese. Because France would be a launching State liable for every step of the launch and activities in orbit, the French law, as most others, prescribes a control of the operation of launch[10]. It is quite normal as France as every launching State for this launch may be held liable in case of damage occurring during the launch phase. The problem is that the French licensing authority cannot really control the foreign launch installations and cannot assess its efficiency and low risk. For legal reasons we have the necessity of a control, but in practice, the control cannot be conducted. This may be a real problem and a risk of very damaging delay for the operator.

Of course, the situation is the same for the life in orbit of the object. The State having launched or the State of the territory of launch are liable for the damage that may be caused by the objet but they have no way to control the activity in orbit.

As it has been highlighted many times, for instance during our discussions within the working group on the definition of the launching State, the solution is to have an agreement sharing the risk between launching States according to article V of the liability convention. In the example chosen, an agreement between France and Russia or China may clarify the situation and make useless the control of the launch phase by the French licensing authority and the control of the in orbit phase by the Russian or Chinese authority. By this agreement, both States would decide to bear the risk of the part of the activity they conduct and control; they would guarantee the other one(s) if the victim chooses to ask for compensation to the "wrong" State. According to article V there is no consequence for the victim, but then, there is also no need of control by the State of the satellite operator. Of course, this would apply on a reciprocity basis.

It may be interesting to have such agreements passed in a general way for every launches to come in order to avoid delay to the launches. A kind of "standard agreement" may be discussed and proposed by groups of experts or even by the COPUOS itself[11].

[10] This control may be ....

[11] There is already some agreement of this kind but they concentrate on the launch phase and do not consider the whole liability of launching States. (ex US/China agreement)

Transfer of licence and change of ownership in orbit.
One problem we have already and we will have in the next future is the change of ownership of satellites in orbit. This could endanger the system of liability and responsibility.

First let us see that there is a difference between the linkage of activities when we are considering responsibility under article VI and liability under article VII. For article VI the "appropriate State" is defined by its responsibility for "national activities in outer space". This link is a matter of fact, it may change according to the nationality of the operator or in case of change of the operator. It is not the case for the liability of the launching State that is fixed at the time of the launch and does not change. The problem comes from this distinction and from article 1 of the registration convention which specifies that only a launching State may register a space objet and then have according to article VIII jurisdiction and control over the satellite. If there is a change of ownership in orbit, the launching State stays the same; the responsible State may change according to the nationality of the new operator but the registration State cannot change as it must be a launching States. Then we may have a complex situation for the control over the satellite: a launching State having registered, thus having jurisdiction and control over the satellite but not being responsible and having to authorise and supervise the activity according to article VI.

Some domestic laws already ask for an authorisation in case of change of ownership or control over a space object. To my knowledge, it is the case at least in the US CSLA, in the Belgian and in the French law. Launching States cannot accept a transfer without controlling it as they stay liable during the whole life in orbit of the object.

The solution should be to try to authorise a change of registration. This change is not denied by principle. It already happened for the Asiasat satellites being transferred from the UK to the Chinese Hong Kong register but in both cases the satellites had been launch from China, which for that reason was one of the launching States.

My suggestion is to try to accept more generally the change of registration of a space object in case of a change of ownership. In that case, the new State would be allowed to register the object if it accepts the obligation of the launching States that registered it at first. The benefit of this solution would be that the first launching State would no more have to pay in case of damage, that the new State would have clearly jurisdiction and control over the satellite and would be responsible according to article VI. The three links of article VI article VII and article VIII would be concentrated on the same State as they were before the change of ownership. It would be done for more efficiency and for less impossible control.

The problem is: how can we come to this solution without amending the registration convention. It may be a work for our Committee. The point has to be carefully studied. It seems that a solution may be found acting within the framework of the UN, using a UN General Assembly resolution on the proposal of the COPUOS.

The UN General Assembly may ask the UN Secretary General to accept this change of registration as far as the newly registering State accept the obligations of the former as a launching State. This change would be done with an agreement between both originally and newly registering States. According to article V of the liability convention, it would have no effect to third parties rights.

As a conclusion

I would like to insist on the fact that it would not be a good idea to try to modify the treaties. For the time being, they have shown that they maintain a good international legal framework. Nevertheless, it is necessary to ease its implementation on the domestic level by international agreements especially between launching States and by UN-GA resolutions.