WHO IS THE LAUNCHING STATE? LOOKING FOR THE LAUNCHING STATE IN CURRENT BUSINESS MODELS

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The discussion on the concept of the launching State seems to have lost momentum and has been relegated to academic considerations. However, current developments in the business models of commercial space operators are posing again questions on how to identify the responsible country for supervision and authorisation. Delocalisation of companies and the spread of different operational functions across the globe oblige for the identification of the state responsible for authorisation of the space activity in question. The consequences are of crucial importance to the conduct of commercial activities as operators might be denied authorisation based on the impossibility to identify the country responsible for granting it. The current situation urges to the reconsideration of the concept of the "launching State" on pragmatic grounds. An approach based on the real jurisdiction and control over space assets and activities is essential. This paper attempts to look into issues linked to the identification of the launching state posed by current business cases and draws recommendations on the further interpretation of the concept of "launching State" as a tool to facilitate space business.

I. THE ORIGINS

The concept of the "launching State" attracted much attention at the beginning of the last decade when it incarnated discussions on the suitability of the space treaties to address commercial developments in space. Indeed the "launching State" is one of the many names to the same issue, i.e. attribution of responsibility under the space legal regime for commercial space activities. Issues of responsibility attribution have been tackled in scholarly works and international fora under different labels, mainly registration, liability and National Space Legislation. In this sense, the launching State has seldom received attention by itself. Yet, it represents the causal link of the responsibility regime set up by the Outer Space Treaty, the Liability Convention and the Registration Convention.

The launching State is the criterium whereby the State liable for damages under Art. VI OST is identified. However, the launching State is characterised by its limited definition which has lead to questioning the suitability of the responsibility regime established by the Outer Space Treaty and the Conventions to commercial space activities. This question received much attention during UNISPACE III when the emergence of SeaLaunch as a whole new concept of space business triggered essential questions on the applicability of space law to the new space business. Those questions were translated to the discussions at the UNCOPUOS where two main positions were confronted, the European proposal for the improvement of the Registration Convention and a holistic approach voiced by the Russian Federation which held that single treaties should not be discussed individually. Compromise was reached on the acceptance to single out the concept of "launching State" as a topic where compromise could be reached. The topic was further discussed in a working group on the "launching State" and as agenda item at the UNCOPUOS Legal Subcommittee and led to the adoption of General Assembly Resolution on the concept of the "launching State"[1].

Discussions on the "launching State" as such has not received much attention since. However, the "launching State" remains a relevant criterium in the identification of responsible actors for damages caused by space activities. Furthermore, despite its shortfalls, it remains a valid and useful tool to provide legal certainty and adequate protection in the context of new space activity models.

II. THE CONCEPT OF THE « LAUNCHING STATE » AND THE RESPONSIBILITY CHAIN

Defining the "launching State"

The "launching State" is defined by Art. I of the Liability Convention (LIAB) which adopts the wording of Art. VII of the Outer Space Treaty (OST). According to this definition, "the term launching State means:

- A State that launches a space object or procures the launch of a space object
- A State from whose territory or facility a space object

is launched"

The launching State is the criterion that identifies the State or States bearing liability for damages caused by space activities. Since liability under Art. VII OST derives from the general responsibility for space activities of Art. VI OST, the launching State is the State that holds responsibility under Art. VI OST. Although in principle, this construction seems natural, the responsibility chain is nuanced and qualified at various stages. The first stage is the definition criteria for the launching State, the second is the further elaboration of liability by the Liability Convention and finally the relation between the Launching State and registration.

As its own name indicates, the launching State is primarily connected to launch activities. The focus on launch activities suggests that the drafters gave priority to damages on Earth. This is confirmed by the Liability Convention which imposes absolute liability to damages on Earth while liability by damages in orbit is established by fault. In both cases launching States are to be held liable for damages. This leads to the questions whether the definition of launching State relates also to in-orbit operations and to what extent a satellite (or other space object) operator must be involved in the launch to be considered a launching State. This question is directly connected to the definition of space procurement.

The definition in Art. I LIAB applies both the territorial and the personal criteria. Not only States from whose territory or facility a satellite is launched but also States who have sufficiently participated in the launch (those who have procured the launch) are considered launching States. Can a State whose national has just purchased launch capacity be considered a launching State? Such extension of the definition of the launching State would allow to channel liability towards the State of fault for damages in orbit. This interpretation would also allow a more coherent application of the registration obligations whereby the State who registers an object retains jurisdiction and control over the object while it needs to be a launching State. A broad interpretation of the launching State would allow a real correspondence between the factual control exercised by a State over a space object and its jurisdiction and consequent responsibility over the object when the State (or its national) has not been substantially involved in the launch.

Lastly, the Art. I LIAB definition provides for four elements to identify the launching State. These elements are not cumulative, as a consequence, any State complying with any of the four elements is a launching State. Therefore several States can be held liable for the same damage when damage is caused on Earth (liability for in-orbit damage is attributed according to fault). Although Art. VII OST and Art. I LIAB establish a direct link between launch and the launching State, it is left States to decide if they are sufficiently linked to the launch as to bear international responsibility under the Outer Space Treaty[2].

The "launching State" as identifier of the responsible actor

The importance of the "launching State" resides in the fact that it denominates the resposible subject for the obligations set out by the Outer Space Treaty with respect both of liability for damage caused by the launch of space objects (Art.VII OST) and of obligation to register space objects launched into outer space (Art.VIII OST). These two obligations constitute a qualification of the international responsibility laid down in Art. VI OST and must be read in conjunction with the latter.

In fact, this triad creates a chain of responsibility that goes beyond the general international responsibility. It is precisely these qualifications of responsibility which generate difficulties in the application of space law to private space activities. In principle, international responsibility "is the necessary corollary of a right. All rights of an international character involve international responsibility. If the obligation in question is not met, responsibility entails the duty to make reparation"[3]

The duty to make reparation exists even if no provision has been made for it, in addition, as a general principle of international law States are not subject to fault as they are not subject to fault.

The Outer Space Treaty in combination with the Liability Convention and the Registration Convention goes further than that and adds up to three qualifications to the general principle. Art. VI OST establishes international responsibility for space activities carried out in outer space and accompanies the corresponding duty for states to carry out national space activities in conformity with the provisions in the Outer Space Treaty[4]. Should the Treaty stop there, States would be held fully liable for any damage caused in breach of those provisions.

The first qualification relates to Art. VII OST which establishes criteria to identify the liable State and establishes which types of damages lead to liability. This is further elaborated by the Liability convention whereby the concept of launching State is adopted based on the criteria laid down by Art VII OST. The Liability

Convention also qualifies the type of liability by establishing that liability should be established by fault for damages caused in outer space.

The second qualification relates to registration. According to Art. VIII OST, countries that register a space object retain jurisdiction and control over the object. This has been interpreted as the exercise of jurisdiction over the object by the registering State. Such extension of jurisdiction could mean also responsibility. However Art. II REG establishes that only registration by one State has effects for the application of the Outer Space Treaties and conventions. That State will necessarily be a launching State[5].

Thus the "launching State" is the common denominator of all provisions involving responsibility in the Outer Space Treaty, the Liability Convention and the Registration Convention. If read in a last-to-first order, there must alway always be one launching State to resort to for damage claims (Art. II REG) among all States that can be held liable (Art. II LIAB). Only launching States can be held liable for damages caused in breach of the responsibility established in the Outer Space Treaty (Art. VII OST), thus the launching State denominates also countries responsible under (Art. VI OST). Furthermore, the status of launching State is the only criteria qualifying for responsibility under the Outer Space Treaty as not even jurisdiction and control created by registration involve responsibility. The mainstreaming of the "launching State" criterion along all these provisions indicates the intention to link all liability to a natural origin, i.e. the factual involvement in the launch activity or, more broadly, in the space activity.

The "launching State" as causal link in current space activities

In search for a natural link with the original space activity, the launching State even puts aside registration as a criterion to acquire responsibility. A registering State cannot be the registration State unless it is also a launching State. But does the "launching State" really achieve coherence in the responsibility chain in the light of the advances in private and commercial activities?

Scholarly publications have traditionally focused on the transfer of ownership in orbit as an area where the liability chain of the treaties has flows. This is just one of the examples that highlight the gaps, inconsistencies and imperfections of the definition of the "launching State" as the criterion to assign liability. Last years have brought in new scenarios where the "launching State"probes to be a somewhat conflicting criterion.

Transfer

One of the most discussed scenarios has been the transfer of ownership in orbit. The space object which is initially owned and controlled by one of the launching States can be transferred while in orbit to another entity which is a national of another state. The transfer may only comprise physical transfer of ownership while keeping operations in the hands of the initial owner or it may also entail transfer of operations. The transfer maybe to an entity which is a national of a Launching State or also to occur to an entity which is not a national of a launching State.

Damages for wrongful operation in orbit or loss of control of the object may occur both on Earth -caused by a falling space object- or in outer space.

Liability for damages on Earth involves full responsibility for the activity. In cases where operation has been transferred to another launching State, the transfer does not create any problem as the launching State who received the claim for damages would always be entitled to claim from all other launching States as they are jointly and severally liable according to Art. IV LIAB.

The scenario completely changes when damage is caused in outer space. Liability in outer space is attributed according to fault. Only the State conducting the wrongful act is liable for damages. Let us assume that the operating entity after transfer is a national of a non-launching State. The original Launching State may receive a claim for damages either directly from the victim (if it is also the State of Registration) or from the State of Registration who received the claim from the victim. The original owner of the space object has no action against the actual operator under the Outer Space Treaty or the Conventions the current operator as the State of the latter is not obliged under this legal regime.

The launching State criterion is not suited to this kind of situations. It could be argued that the definition of launching State should be interpreted to cover these cases. However, this would result in an over-stretching interpretation that would contravene the purpose of avoiding flags of convenience enshrined by Art. II REG. Most likely the transferring State would want to settle an agreement with the transferee on compensation for liability. Such agreement may even be concluded between State and the private operator[6].

Identification of the fault in joint undertakings

Establishing fault liability may not be so straightforward anymore with sophisticated joint ventures and

sophisticated financial structures. A space object can not only be owned by a company and operated by another company of different nationality but, in addition, each company may be run in common participation of various other companies of different nationalities. The treaties are not charged with defining who is to be in fault, if the company owning 80% of the undertaking and which is not a launching State or the actually operating company which only owns a 5% of the undertaking and which is actually a launching State but not the registration State as the object was registered with a third company which has a 15% participation in the undertaking. Although hypothetic, this may well be an example of the many potential variations of space engineering companies

Decentralisation of operations

A launching State bears the responsibility to comply with Art. VI OST and authorise and supervise the space activity in question. Being launching State involves sufficient involvement and control in the space activity or over the space object as to be able to assume liability for it[7]. Most scenarios are based on the case that operations are conducted from one place on Earth or a limited number of stations with determined tasks in a way that the operation can be attributed to one single operator. However, an operator may decide to spread its operations across a net of stations located in several points of the globe while storing all information on a server located in a country different to the seat of the operator and with none of the station being able to control fully the operation of the space objects. It is not clear who should bear the status of launching State in such case where no particular station contributes substantially to the operation.

If the operator were to launch the from the territory or facilities of its nationality or with launching services of its nationality, the State of its nationality would also be a launchings State and could be held liable for damages caused due to the operation of an object it cannot actually control. Moreover, even in the event that the space object was not launched from the territory or facility of the State of the operator's nationality or with a launcher of that nationality, such State could be held liable for damages caused by the operation of the space object if it were accepted that the operator procured the launch. In any event the State of nationality of the operator could be held liable for an activity that it cannot control[8].

Eventually the State of the operator's nationality might refuse authorisation of the operations as it cannot effectively supervise the space activity in question and cannot take responsibility of the activity. This leads us to the next question, does refusal to authorise involve release from the status of launching State?

Refusal to authorise

The question above is connected to the interpretation of the scope of responsibility for space activities laid down by Art. VI OST as well as to the interpretation of procurement. Discussions in the context of the UNCOPUOS have demonstrated that the concept of responsibility entailed in the Outer Space Treaty is subject to interpretation. Those interpretations are reflected in the wording of National Space Legislations and their application. Since authorisation under Art. VI OST is to be carried out according to National Legislation a State may refuse authorise on the grounds that the participation of one of its nationals on a launch does not suffice to engage responsibility or for the simple fact that the criteria qualifying for launching State have been transposed in a qualified manner into national legislation.

Non-governmental activities in the form of small satellites launched by universities and research centres have become relatively common nowadays. Those non-governmental entities look for most economically convenient launches to be launched as piggy-backs, often with foreign launch operators and from territories other that territory of their State of nationality. Does such a launch make the State of a small Satellite owner a Launching State? The State in question may not consider itself to be responsible for a launch that is occurring outside its jurisdiction where it has not actively participated. As a consequence, it may decide not to grant authorisation in the believe that it cannot be held responsible for an activity it has not authorised. On the contrary, it is not authorisation that originates responsibility but responsibility that creates the obligation to authorise.

A State is a launching State if the criteria of Art. VII OST and Art. II LIAB are deemed to be fulfilled according to international law. In such case States can be held liable even for activities they have not authorised. Unfortunately, there is no general understanding on the interpretation of procurement of a launch which jeopardises the purpose of the Outer Space Treaty to be applied to non-governmental activities.

Conclusions on the suitability of the launching State definition to current problems.

The launching State has hardly been subject to discussion by itself as it has mostly been discussed in its relation to registration or as part of discussions on

liability. Even the Launching State Resolution does not mention explicitly the launching State. On the contrary, this resolution is fully dedicated to encouraging States Parties to adopt National Space Legislation in a harmonised way. In fact this resolution actually provides for a method to ensure that the obligations laid down by the Outer Space Treaty and the Conventions are met by the responsible States while ensuring that liability distribution mechanisms are effectively provided for.

It is precisely the incomplete definition of the launching State - which is primarily focused on launching activities - and its key role in identifying the liable state in all cases of damages which makes this concept so important. All States qualifying as launching States are to be held liable for damages caused by their nationals and it is among the launching States that the State of registration is to be nominated. In addition, as a consequence of the responsibility chain, launching States are responsible for authorisation and supervision - therefore for adopting National Space Legislation as pursued by the Launching State Resolution.

Either because there is a natural link between the State and the activity or because an artificial link is created through registration, a launching State remains liable for three main types of damages, those strictly caused by the launch, those caused in orbit and those caused by the reentry. Most recent developments in commercial space activities involve several parties or entail property or operation transfers breaking the link between natural launching States and the eventual State in operational control of the space object. The linkage to launching States creates a perpetual liability on the States that launched, provided for the territory or the facility to launch or procured the launch initially that may seem too heavy a burden in some cases. If the link is weak, States may not consider themselves launching States and liable.

Yet, the need to identify a responsible actor is essential in order to protect victims. The launching State is the criterion which allows for such identification together with the assurance that there will always be one State to claim against, that is the State of registration. However, there are three main objections to the criterion of the launching State:

- Its main focus is on launch activities which makes the link to other operations difficult
- The status of launching State is not always clear and States may deny it
- The link to a launching State is not fully suitable to cases of fault liability

The first of these three scenarios may be illustrated by damages caused by uncontrolled reentries of space objects. While damages caused by launch activities are naturally linked to the launching States reentries may not that easily link to a launching State as property or operations transfers may have dissociated the initial launching State with the actual operator. The Outer Space Treaty and the Conventions make launching States perpetually responsible for future acts that they may not be able to control. In addition, the complex commercial ventures and financial arrangements make difficult to identify States enough linked to the launch as to be held responsible for any damage. Finally, although liability for damages in orbit is to be established by fault, according to the Liability Convention, such liability must fall on a launching state. However, the operator of the space object that caused damage may have never been considered a launching State under the four criteria of the Convention, a new operator from a non-launching State may have taken up operations, operators might not be identifiable or no operator controlled the object anymore. While fault criteria would permit to claim directly from the State in fault, the launching State criteria obliges to settle claim with the launching States- through the State of Registration- which might have no relation to the act.

In this sense the definition of launching State and its combination with the registration provisions seems not to come together with advances in the development of commercial space activities as it creates a formal link that does not correspond to the facts. This inadequacy has been at the heart of proposals to reform the treaties and many scholarly suggestions to extend the interpretation of the launching State. Most importantly, it has lead to the adoption of the Launching State Resolution which far from dwelling on interpretation issues, elaborates on the avenues provided by the Outer Space Treaty and the Liability and Registration Conventions to tackle liability issues. Both Conventions allow for the apportionment of the responsibility among launching States and none of them prohibits posterior claims to other actors In addition, Art. VI OST establishes the basis for the adoption of National Legislation. In this context the Launching State Resolution recommends States to adopt National Space Legislation in an harmonised manner as well as to consider the conclusion of agreements in accordance with the Liability Convention in respect to joint launches and cooperation programmes. The Launching State Resolution opens an avenue that can also be extended to agreements in the context of commercial agreements.

In fact, the role of the launching State criterion is important and needed in the identification of and actor

to claim to. As long as space activities continue in the remit of space law, it provides for an adequate tool to identify the responsible State and provide protection to victims. However, it needs to be complemented by a clear interpretation of "procurement" that clarifies the scope of the Outer Space Treaty and the Conventions as well as by nationals space legislation and practices on liability share in damages for space activities.

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[2] Gerhard M "Commentaryon Art VI OST" in Hobe, Schmidt-Tedd and Schrogl (eds) *Cologne Commentary on Space Law Vol 1* (Carl Heymanns Verlag 2009) 103

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[7] Perek L, 'The 1976 Registration Convention' (1998) Proceedings of the 41st Colloquium on the Law of Outer Space 374

[8] This model of operation adds an extra difficulty level in the identification of the State bearing the fault of dany damage caused in orbit.