Re-invigorating International Arbitration of Space Related Disputes by National Legislation

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Abstract

Since the 1960s, treaties have been instrumental in setting the law of outer space. Increasingly, technical and economic realities live up to the ambitions envisaged by the drafters. In due time, this will lead to an ever growing number of private-to-private, private-to-state and state-to-state disputes. Already, existing space related dispute resolution mechanisms between states remain largely untested. The same is true for space related disputes involving private parties, which will require other means of effective resolution. We proposes to de-politicize disputes involving private parties where possible. To this end, we suggest coordinated national legislation by states parties to the UN space treaties to make agreement to compulsory jurisdiction of an arbitral body for resolving certain international disputes regarding space activities part of their national licensing requirement for space activities. This paper outlines the most salient advantages, disadvantages and obstacles to the creation of such a coordinate transnational system.

Keywords: dispute resolution, national space law, arbitration, non-governmental entities

1. Introduction

In the 21st century, states and international intergovernmental organizations are no longer the only operators of space objects. It is crucial to recognize that these activities, while promising great economic benefits also pose regulatory challenges. Under the system of international space law, the regulation of private space enterprises is mostly in the hands of national regulators. While there are international rules in outer space that states, and by extension non-governmental entities, have to abide by, a common obstacle

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is the enforcement of said rules. This article will focus on disputes involving private parties, which are less likely to be resolved by intergovernmental negotiations.

Fortunately, there have only been very few actual collisions in outer space or instances of damage caused by space objects so far and none of these involved space objects operated by non-governmental entities. However, as orbital activity and the amount of space debris is increasing, this may change soon.[1] In particular, envisaged mega-constellations of communications satellites, to be operated by various private companies, are likely to substantially increase the risk of collision in orbit. Beyond liability, space operators are also increasingly likely of being implicated in alleged violations of norms of space law not connected with any immediate damage claim.

Relevant literature has long recognized that non-governmental entities have successfully resorted to commercial arbitration for disputes arising out of contractual relationships.[2] However, as Hertzfeld and Nelson note, there remains a gap in situations when there is no commercial relationship, such as with liability for non-contractual torts.[3] We suggest here that this gap also extends to other possible violations of the five UN treaties on outer space[4] by or against private operators and their activities in outer space.

In recognition of the above, there have been calls for creating a treaty, providing for binding arbitration of space-related disputes.[5] However, no international consensus on such a convention appears to be imminent. To leverage arbitration within the space domain nonetheless, we suggest in this article that another solution lies on the level of national space legislation. The

1 Already, space assets have been forced to conduct evasive maneuvers due to such circumstances, see e.g. A. Madrigal, *Space Junk Forcing More Evasive Maneuvers*, Wired, 2009, E. Mack, *A spacecraft needed to make an evasive maneuver to avoid NASA's lunar orbiter*, CNET, 2021.

2 K. Böckstiegel, *Settlement of Disputes Regarding Space Activities,* Journal of Space Law, Vol. 21, No. 1, 1993, p. 10; and H. Hertzfeld & T. Nelson, *Binding Arbitration as an Effective Means of Dispute Settlement for Accidents in Outer Space*, 56 Proc. Int'l Inst. Space L. 129, 134 (2013).

3 Hertzfeld & Nelson, *supra* n. 1, at 134-135.

4 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, 10 October, 1967, 610 U.N.T.S. 205 [hereinafter OST]; Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Space, 3 December, 1968, 672 UNTS 119 [hereinafter ARRA]; Convention on International Liability for Damage Caused by Space Objects, 9 October 1973, 961 U.N.T.S. 187 [hereinafter LIAB]; Convention on Registration of Objects Launched into Outer Space, 15 September 1976, 1023 U.N.T.S. 15 [hereinafter REG]; Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, 11 July 1984, 1363 U.N.T.S. 3 [hereinafter MA].

5 Hertzfeld & Nelson, *supra* n. 1, at 133-134; a comprehensive approach is proposed in G. Goh, Dispute Settlement in Outer Space: A Multi-door Courthouse for Outer Space, First ed., Brill-Nijhoff Publishers, Leiden, 2007, pp. 243 ff.

following text will explore whether compulsory arbitration imposed through national space legislation could serve as an appropriate solution due to its enforcement advantages, and investigates the peculiarities of such provisions.

2. Obligations of states regarding compliance with space law by non-governmental entities and dispute resolution

2.1. General obligations regarding non-governmental space operators

The Outer Space Treaty,[6] in an "unprecedented" development and at a fairly early stage in the development of modern international law, postulated the "wholesale assumption of direct state responsibility and international liability for the acts of non-governmental entities".[7] This heavy burden stems from a time, when almost all space activities where conducted by states or international intergovernmental organizations.[8] This approach creates an unusual degree of involvement of states in any space activities, and thus also involvement in consequent legal disputes, with private parties, which would otherwise not involve a state entity as a party.

Besides bearing the responsibility for its national space activities by non-governmental entities, Art. VI OST also obliges states parties to authorize and continuously supervise these activities.[9] In this paper, we suggest that this authorization stage is where compulsory jurisdiction of an arbitral tribunal may be implemented into the national space law framework. After authorization, the continuing supervision extends over the whole period of operation of a launched space object and, with respect to space debris mitigation, even beyond. The obligation to authorize and supervise is many-facetted in its scope and implementation, and ought to be complied with mainly through regulation on the national level.[10] At the same time, Art. VI OST does not prescribe specific measures leaving the concrete implementation of sufficient authorization and supervision to states.

States may have a moral or political obligation to provide for peaceful dispute resolution among its nationals. However, under current public international space law, there is not a legal one. Beyond perhaps a good faith effort (and respecting the prohibition to use force in international relations), states are not compelled to agree to any specific legally binding form of dispute settlement and are also not required to provide for such by any treaty applicable to outer space. However, in order to promote private space business, states have a vested interest in a stable and reliable legal environment.

6 Arts. VI, VII OST.
7 B. Cheng, Studies in International Space Law, First ed., Clarendon Press Oxford, 1999, p. 612.
8 Cheng, *supra* n. 7, at 612.
9 Art. VI OST.
10 *Compare* Cheng, *supra* n. 7, at 640.

The space treaties offer little to nothing when it comes to dispute resolution. Except for the Claims Commission under the Liability Convention, there is nothing beyond international negotiations and mediation by a third party, such as the UN Secretary General.[11] None of these are compulsory.[12] Even though the Claims Commission proceedings may be instituted over the objection of a party to a dispute if, after one year, a claim under the Convention had not been settled, its award is only binding, if the parties to the dispute "have so agreed".[13]

2.2. What breaches of space law by non-governmental space operators might be actionable in arbitration?

What are the substantive norms of space law, the breaches of which by non-governmental entities States might be responsible for? Which of them would be suitable as actionable claims in arbitration, beyond the issue of liability for damage caused? As Cheng points out, States are responsible for

> *"ensuring that the space object or any person involved with it, does nothing which may constitute a breach by an of the states concerned of their international obligations under general international law, the Charter of the United Nations and the [Outer] Space Treaty, which inter alia contains provisions against harmful contamination of the environment, and more ambiguously, […] any act of commission or omission of the space object or by those involved as if it were committed by an agency of the states themselves."*[14]

This means that besides the obvious subject matter jurisdiction under compulsory arbitration clauses, which is liability for damage caused (with fault) by a space object,[15] other violations of States' international legal obligations should also be considered as suitable grounds of action under compulsory arbitration clauses. In the quote above, *Cheng* mentions the prohibition of harmful contamination of celestial bodies or the Earth's environment. Along these lines, looking in particular at the Outer Space Treaty, violations of some of its concrete rules may be "actionable" in arbitration. Examples could be violations of the rules regarding the treatment of astronauts (Art. V OST, ARRA), respecting another states' jurisdiction and

11 G. Goh, Dispute Settlement in Outer Space: A Multi-door Courthouse for Outer Space, First ed., Brill-Nijhoff Publishers, Leiden, 2007, p. 23.
12 G. Goh, Dispute Settlement in Outer Space: A Multi-door Courthouse for Outer Space, First ed., Brill-Nijhoff Publishers, Leiden, 2007, p. 23.
13 Art. 19 para. 2 LIAB; G. Goh, Dispute Settlement in Outer Space: A Multi-door Courthouse for Outer Space, First ed., Brill-Nijhoff Publishers, Leiden, 2007, p. 35.
14 Cheng, *supra* n. 7, at 639.
15 *Compare* Hertzfeld & Nelson, *supra* n. 1, at 131, 141-142.

ownership of its space objects (Art. VIII OST), exercising due regard to others and engaging in consultations when required (Art. IX) and respecting the right to visit and conversely its preconditions (Art. XII OST).
Other norms, such as registration obligations, refraining from the use of military force under the UN Charter and the prohibition on the placement of nuclear weapons in outer space, are (luckily) less likely to be violated by non-governmental space operators.

3. International standards for national regulation of space disputes

The UN Committee on the Peaceful Uses of Outer Space's Legal Subcommittee (UN COPUOS LSC) had established a working group on national legislation relevant to the peaceful exploration of outer space. In its final report, this working group presented seven key parts of effective national space legislation, based on a comparative analysis and the legal obligations informing/requiring them. These are: scope of application, authorization and licensing of activities on non-governmental entities, continuing supervision of activities of non-governmental entities, registration, liability and insurance, safety, and transfer of ownership.[16] Only the liability and insurance part seems to cover major issues relevant to dispute resolution. However, it confines itself to stating that

> *"[s]tates could consider ways of seeking recourse from operators if their international liability has become engaged. In order to ensure appropriate coverage for damage claims, States could introduce insurance requirements and indemnification procedures, as appropriate."*[17]

This still reflects the international standard of liability and dispute resolution clauses in national space legislation. Understandably, as space operators generally have access to an authorizing state's courts, this legal avenue is usually not specifically mentioned in space legislation. Beyond that, however there is nothing. An insurance requirement, capped at a certain amount is all that most states require for purposes of their own indemnification. This would still work seamlessly when including another clause, providing for compulsory international arbitration, into the national space legislation.

16 Report of the Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space on the work conducted under its multi-year workplan of 3 April 2012 (A/AC.105/C.2/101), para. 35.
17 *Ibid.*

4. Current optional fora for space disputes involving private parties

The main means of dispute resolution between states both generally and with respect to damage caused by space objects specifically, were intergovernmental negotiations.[18] As discussed above, intergovernmental negotiations, under some circumstances involving a third party mediator like the UN Secretary General, are the only means for dispute resolution provided by the five UN treaties on outer space for issues of state responsibility, i.e. violations of norms of international space law except for liability for damage caused by space objects.

States may also get involved on behalf of their subjects by exercising diplomatic protection to settle a dispute[19] to which there are several preconditions.[20] However, since this is a discretionary decision by the state and often influenced by extraneous political considerations, it offers little consolation to private space companies at large.

Besides the options offered by the text of the treaties, being under the general obligation to resolve their disputes peacefully,[21] states have the full range of the methods under general international law available. Besides aforementioned negotiation, these are enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, and any other peaceful means of their own choice.[22]

These ways of settling disputes between states are based on the principle of sovereign equality.[23] If they fail to achieve a result due to one state being unwilling to participate, this is a tolerated consequence. Here then lies the characteristic problem of settling and enforcing disputes in the domain of international law. Lack of compulsory procedures, delay in the resolution of disputes and occasional futility of efforts to resolve may not constitute as big an issue to states. However, private businesses with their comparatively smaller resources and narrower operation timeframes rely on the stability and predictability of effective dispute resolution systems.

According to *Hertzfeld and Nelson*, "[t]he objectives of an effective dispute resolution system are: (1) easy access, (2) provide for a fair and equitable process and resolution, (3) be speedy and economical, (4) provide incentives

18 The most famous example being the resolution of the dispute between the soviet Union and Canada in 1979, created by the crash of the *Cosmos 954* satellite; Hertzfeld & Nelson, *supra* n. 1, at 131.

19 J. Crawford, Brownlie's Principles of Public International Law, Eighth ed., Oxford University Press, Oxford, 2012, p. 701 ff.

20 *Ibid*; *see also* ILC Draft Articles on Diplomatic Protection, UNGA Res. A/61/10 (2006).

21 As per Art. III OST in conjunction with Art. 2(3) U.N. Charter.

22 Art. 33(1) U.N. Charter.

23 *Compare* J. Crawford, Brownlie's Principles of Public International Law, Eighth ed., Oxford University Press, Oxford, 2012, p. 723-724.

for space sustainability, (5) allow for reasonable compensation for damage [and] (6) provide for enforceable judgments in all nations."[24] We add here as both an objective and advantage that removing the necessity for state-to-state dispute resolution, when the activities of non-governmental (space) operators are involved, may very well serve to depoliticize these disputes and thus make the parties to the dispute more open to its resolution by an impartial body.

If their state of nationality decides not to exercise diplomatic protection on their behalf, non-governmental space operators cannot avail themselves of these methods to resolve disputes. Depending on who they are in dispute with, private companies typically have the option to sue in the courts of their home or the other party's home state. However, besides potential issues of jurisdiction, if the defendant is a state, it will often enjoy immunity in the courts of other states.[25] Suing a state or its nationals in their home court is also often perceived as affording them an advantage.[26] Finally, if a non-governmental space operator decides to sue in their home jurisdiction, it is questionable, whether the judgment will be internationally recognized and enforceable.[27]

Consequentially, the disadvantages of the avenues granted under domestic legal systems and the discretionary option for governments to intervene in certain disputes with foreign governments leave non-governmental space operators with few acceptable options at present. Going forward, additional international avenues of dispute resolution may be afforded to them by law or by treaty. This must, however, be done explicitly. In different contexts, states have already created and utilized several options in the past to afford their nationals with additional protections. The most suitable basic sets of options for claims by and against non-governmental space operators are introduced below.

4.1. Ad hoc tribunals

A general, usually available option is ad hoc tribunals without prior agreement. The downside of these is naturally that their establishment without prior basis in treaty, law or contract requires consent of the parties after the dispute has arisen.[28] When all parties involved in the dispute can agree on the establishment, jurisdiction, composition and procedures of an ad hoc tribunal at this point, this is a valid option to resolve disputes. A more

24 Hertzfeld & Nelson, *supra* n. 1, at 130.

25 *See e.g.* Jurisdictional Immunities (Germany v. Italy: Greece intervening) (Merits, Judgement) [2012] ICJ Rep 99, para 55, 56; Ferrini v Federal Republic of Germany, Supreme Court of Cassation of Italy (2004) 128 ILR 658, 663–4.

26 Hertzfeld & Nelson, *supra* n. 1, at 133.

27 Hertzfeld & Nelson, *supra* n. 1, at 133.

28 Hertzfeld & Nelson, *supra* n. 1, at 133.

robust option is to foresee the installation of such tribunals prior to potential conflicts. Compulsory arbitration clauses, as suggested in this article, can serve as a valid legal basis for ad-hoc tribunals.[29]

4.2. The Permanent Court of Arbitration (PCA)

An option similar to ad hoc tribunals, but leveraging an administrative secretariat and pre-defined rules on the composition of the panel and procedures are permanent tribunals, most importantly the Permanent Court of Arbitration (PCA).[30] The PCA in particular has two major advantages over similar bodies under international treaties, such as ICSID tribunals. First, the benefit of the PCA for space-related disputes is that it has adopted domain-relevant rules of procedure, specifically adapted to the demands space-related disputes may pose.[31] Second, PCA rules explicitly allow for the participation of parties, who are not states or international organizations.[32] At the same time, the PCA generally shares the same characteristic as *ad hoc* tribunals: its jurisdiction is not mandatory by itself.[33] Compulsory jurisdiction then must come from other legal sources, be this through treaty, such as in the case of the United Nations Convention on the Law of the Sea,[34] or, as we suggest in this paper, for certain space-related disputes through coordinated national legislation on the basis of reciprocity.

4.3. Permanent Space Arbitral Body

Perhaps the most idealistic version is an international arbitral body or court serving only as forum for settling space-related disputes. No such body exists at present. Such tribunal, possibly in the form of an independent international organization or an UN body, could then installed to accommodate not only state-to-state, but also state-to-private and certain private-to-private disputes.[35] While this solution would likely be the most comprehensive, realization is highly unlikely given that it would require a controversial, intricate and broadly ratified international treaty.

29 However, to be effective, there should be some frame, coherently in national laws or in a treaty, providing for the selection of the arbitrators and rules of procedure. Otherwise, one party may easily block or at least unduly delay the establishment of the tribunal.

30 *See* https://pca-cpa.org/en/home/.

31 Permanent Court of Arbitration Optional Rules for Arbitration of Disputes Relating to Outer Space Activities, available at: https://docs.pca-cpa.org/2016/01/Permanent-Court-of-Arbitration-Optional-Rules-for-Arbitration-of-Disputes-Relating-to-Outer-Space-Activities.pdf [hereinafter: PCA Space Rules].

32 PCA Space Rules, *Introduction*.

33 Hertzfeld & Nelson, *supra* n. 1, at 132.

34 *Compare* United Nations Convention on the Law of the Sea, Dec. 10, 1982, Art. 287 para. 1 1833 U.N.T.S. 397 [hereinafter UNCLOS].

35 For a thorough analysis of the issues with the creation of such a body and a proposed concept, *see generally* G. Goh, Dispute Settlement in Outer Space: A Multi-door Courthouse for Outer Space, First ed., Brill-Nijhoff Publishers, Leiden, 2007.

5. Compulsory jurisdiction through reciprocal national legislation

5.1. The argument for action on the national level

Leaving aside then the more aspirational installation of dedicated tribunals for the settlement of space disputes, it is clear that security and predictability for non-governmental space actors can only come from using the existing forms of dispute settlement fora, either ad-hoc or permanent tribunals. Jurisdiction then becomes the key question. Again, two options seem most salient: jurisdiction through treaty or jurisdiction through national legislation. We suggest that national space legislation is the appropriate vehicle to impose jurisdiction. Through their sovereign powers over space operation authorization, they can make any authorization contingent on subordination to certain dispute settlement conditions, which we suggest should include compulsory jurisdiction to an ad-hoc or institutional arbitral tribunal on a basis of reciprocity.

5.2. Advantages

In this paper, we identify three main advantages of national legislation as a vehicle for compulsory arbitration. First, changing national laws would usually take much less time than drafting, agreeing to and ratifying a new multinational treaty. For all the reasons already highlighted and well known, treaties require overcoming of substantial inertia. Second, transferring at least disputes involving private parties out of the immediate domain of diplomatic relations between concerned states would depoliticize the disputes.[36] Doing this would still preserve international responsibility under Art. VI OST by a state for their non-governmental national space activities and also preserve the right to exercise diplomatic protection of a state on behalf of their subjects, who have been the victim of damage caused by a space object or another violation of international law. Third, compulsory arbitration would also provide a higher degree of legal certainty and predictability for non-governmental space operators.

5.3. Disadvantages

While this paper suggests that national legislation is both the most realistic and, given the circumstances, most preferable solution to ensure legal certainty and predictability for space actors, the approach comes with its own disadvantages. First, national jurisdiction suffers from its eponymous

36 This is due to not requiring states to intervene by exercising diplomatic protection for the dispute to be resolved. This is seen as a major advantage of investor-state arbitration mechanisms like the ICSID-Convention; *compare* J. Crawford, Brownlie's Principles of Public International Law, Eighth ed., Oxford University Press, Oxford, 2012, p. 741.

weakness: it is limited to its relevant nation, and subordination to a tribunal's jurisdiction is meaningless if the other party to a dispute is not bound to the same. To solve this, what is needed then is a similar inclusion of such provision in the national space law framework governing all actors to a dispute, in omission of which the jurisdiction does not need to be established. National imposition of compulsory jurisdiction then must be governed by some sort of reciprocity: only when both parties are contingently under jurisdiction of the chosen tribunal does the jurisdiction become compulsory. Second, the establishment of an appropriate framework, while faster than a treaty, still takes considerable time. For a proper scope and high degree of reliability of such an arbitration system, it is necessary for a substantial majority of space-faring nations to accept it. Third, if operators wanted to avoid compulsory dispute settlement, they might look to move their operations, seat (i.e. their effective nationality under Art VI OST) to more lenient jurisdictions, akin to the issue of *flags of convenience* in the law of the sea. Finally, under some legal systems, existing constitutional and other protections might prevent or at least impede passing such a clause into law.

6. Particularities of codifying compulsory arbitration requirements through model provisions

To establish appropriate uniformity, there is hence a need for some standardized legislation. This section investigates a hypothetical "model provision" that would implement compulsory jurisdiction of an arbitral tribunal and the guidance it ought to provide.

6.1. Contents of a model provision

First, the legal form of such a provision needs to be informed by and be in accordance with each states' legal traditions. We suggest that including an obligation to accept arbitration by virtue of using a granted authorization directly in the national space legislation is the most robust and trust-inducing measure given its publicity. Another option would be to include a clause conditioning authorization on general acceptance of jurisdiction for the chosen form of arbitration, into the official action authorizing a space activity/launch. In some cases, such as when procuring services from non-governmental space operators, states might also include arbitration as a contractual clause. Whichever method is chosen will depend on the legal system and applicable constitutional or other limits.

Second, a compulsory arbitration provision would need to define its own scope. A logical first step would be to limit its scope to activities covered by the scope of the national space legislation itself. Furthermore, states would need to decide whether the provision should cover disputes against itself, foreign governments, other domestic or foreign non-governmental entities and international organizations. While this is a discretionary decision, and

there are arguments to be made for excluding purely domestic disputes, with regard to foreign or intergovernmental entities, for the provision to be effective, the group of possible other parties to the dispute should be as broad as possible. The only unnecessary, but reasonable and likely, limitation might be to exclude state-to-state disputes.

Next, such a provision would need to state its substantive scope, i.e. what types of disputes it should cover. Since contractual disputes are already being solved effectively by resorting to commercial arbitration, those can be excluded in most situations. The first obvious category then are tort cases for damages caused by space objects. States may want to differentiate between cases of absolute[37] and fault-based liability[38] here, as the former are likely more susceptible to resolution by international intergovernmental negotiations than the latter. However, this dispute resolution mechanism may also be applied to disputes concerning violations of other obligations under international space law, as suggested above. Extension of jurisdiction beyond issues of liability would contribute substantially to make the operational risks that are attributable to other space actors more predictable and remediable. However, leaving the determination of which space law treaty provisions afford a direct cause of action to the arbitral tribunals themselves runs the risk of arbitrariness. Thus, for the sake of predictability and the rule of law, the national regulator must make an explicit and conscious choice.

Connected to the substantial scope above, a further crucial part of this concept is to acknowledge the strongly mixed form of space activities in the 21st century. This means that, while acknowledging the rapid increase in non-governmental space activities, there is still a significant government share. To be most effective, we strongly recommend jurisdiction should extend beyond private-to-private disputes. Thus, the clause should include an acknowledgement of the authorizing state to acknowledge jurisdiction of arbitral tribunals under the same/reciprocal conditions it imposes on its non-governmental space operators, with the likely exception of state-to-state disputes. Our arguments notwithstanding, we believe this to be unlikely in practice without any other external (or market) pressure, as states may be much more comfortable within the protective cushion of their sovereign jurisdiction.

On a more technical level, there is uncertainty about which form these declarations of acceptance of arbitration must take to be accepted by the arbitral tribunal; a detail that will likely depend on the choice of arbitral system and on probably untested precedent. Is a declaration or *note verbale*

37 Art. II LIAB; Art. VII OST.
38 Art. III LIAB.

to the arbitral institution (or similar) necessary? Would it suffice to include it into published legislation and maybe notify the arbitral body or its secretariat of the existence and content of this provision?

Another issue is state (or international organization) immunity.[39] Agreeing to arbitral proceedings, implies agreement to consider the award as binding and enforceable. For states, it furthermore implies a waiver of immunity from jurisdiction with respect to a dispute, to which a state or organization may otherwise be entitled.[40] It does not however automatically imply a waiver of immunity from execution, which needs to be stated explicitly and separately. While this is not key to effectiveness of the clause, state could include such an explicit statement into the clause or their notification of/under it to the arbitral body. Seeing as states are less likely to agree to this, including it in a state's national space legislation might even be limiting its effectiveness, if a condition of reciprocity is applied to it.

For a mandatory arbitration clause to have the intended effect (and exert harmonizing pressure) it would likely make jurisdiction dependent on reciprocity. This means that the clause would only apply with regard to states and private entities as far as attributable to them under Art VI OST, insofar as they too have enacted such a compulsory arbitration provision in their national space legislation. This is not unlike general submissions by states to the compulsory jurisdiction of the International Court of Justice, which also often are conditioned on reciprocity by the other party to the dispute relying on them.[41] This requirement of reciprocity will of course diminish the reach of these clauses in national legislation. However, they are crucial in nudging other states to introduce such national legislation as they themselves and "their" non-governmental space operators would otherwise be deprived of the benefits of this legal avenue. Reciprocity furthermore preserves a certain degree of fairness as to the degree of "legal vulnerability" non-governmental space operators open themselves to. To this end, the scope of a compulsory arbitration provision, as discussed in the beginning of this section is highly relevant. It is only in the common ground of scope between arbitration provisions of different states that private actors benefit from a trust-inducing framework ensuring predictability and security.

39 For a discussion of state immunity, in particular for non-governmental space operators see M. Friedl & M. Gartner, *Article VI Outer Space Treaty as a Gateway to Extending State Immunity before Domestic Courts to Non-Governmental Space Operators*, 62 Proc. Int'l Inst. Space L. 195 (2020).

40 Art. 1 para. 2 PCA Space Rules.

41 Art. 36 paras. 2, 3 ICJ STATUTE.

6.2. Forum for drafting a model provision

How to arrive at such a provision, so that sufficient homogeneity and coherence is ensured for the requirement of reciprocity to function effectively? While the precise formulation depends obviously on the legal requirements and customs, as well as the language of the national legal system concerned, some international guidance will likely prove helpful. An example is the work of the UN COPUOS Legal Subcommittee Working Group report mentioned above. The Legal Subcommittee may, through new or existing working groups, propose a draft mandatory arbitration provision for the consideration of UN COPUOS and the UN General Assembly. Individual UN Member States are then free to incorporate the ideas expressed in this provision into their national space legislation, in accordance with their legal traditions. Another option would be for a civil society initiative to draft a guidance document or model provision. Potential candidates for this task are the International Law Association, the International Institute of Space Law, or, with respect to disputes resolved under its rules and akin to model arbitration clauses provided for treaties and contracts, the Permanent Court of Arbitration.

Of course, we would be remiss not to highlight the "ideal" path forwards as well: states may draft a framework convention. This convention then may include a model provision as well as an institutional or procedural framework. Such treaty, if adopted, comes with increased weight and would impose an international legal obligation on state parties to enact such a provision domestically and to recognize the awards of any tribunal or single arbitrator, according to the rules chosen by the parties to the dispute, applicable domestic law or international treaties and general principles of law. For the reason outlined above on why we perceive compulsory arbitration clauses as useful and timely, we remain skeptical of the chance of any such treaty.

7. Conclusion

Based on the foregoing, we suggest that improved dispute settlement brought about by compulsory jurisdiction of arbitral tribunals will, on balance, greatly improve the legal certainty not only for non-governmental space operators but also for states. We suggest that coordinated national space legislation by space-faring states to make such rules a precondition for authorization is the most realistic path forwards. In order for this to succeed, and to ensure appropriate coverage of such provisions via their reciprocal application, we see a need for international coordination with regard to the content and text of these arbitration clauses. In this context, we identify the UN COPUOS Legal Subcommittee as an appropriate forum. As currently situated, it is the ideal forum to contemplate and negotiate relevant

provisions, and by sharing their domestic implementation, promote similarity and coherence in the national implementation of this concept.
Making the (quasi-)judicial settlement of disputes relating to space activities more likely, and their enforcement more predictable, will further improve the acceptance, practical application and development of the general principles of the space treaties. Ultimately, such operationalization of space law through mandatory arbitration would lend relevance to the existing frameworks and may counteract criticism of irrelevance, generality and outdatedness.