Bringing Space Law in the 21st Century: The Permanent Court of Arbitration Adopts Optional Rules for Arbitration of Disputes Relating to Outer Space Activities

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Abstract

As the commercialization of outer space expands and the number of space activities increases, it is nearly inevitable that international disputes related to the use of outer space will occur on a progressive scale. Until recently, international space law did not contain, with the notable exception of the mechanism created under the 1972 Liability Convention, any dedicate machinery to settle international outer space-related disputes, particularly those involving private actors. This absence significantly weakened the applicability and enforceability of space law and contributed to create a climate of uncertainty discouraging to economic undertakings.

In order to address these issues the Permanent Court of Arbitration (PCA) adopted the Optional Rules for Arbitration of Disputes Relating to Outer Space Activities on 6 December 2011. The PCA Space Rules represent a significant development in the field of space law because they provide a voluntary and binding dispute settlement method accessible to all space actors and modeled on the specific legal and economic characteristics of space activities.

While it remains to be seen how States, inter-governmental organizations, and private entities will react to the PCA Space Rules, the present paper argues that such Rules should be expected to be used on a gradually increasing scale. By means of fictional cases, this paper will aim at demonstrating the advantages of making recourse to the PCA Rules as well as their innovative character. Particular attention will be dedicated to the positive impact of the Rules in relation to the settlement of disputes arising out of collisions caused by space debris and breach of launch service arrangements.

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Introduction

For several decades the topic of dispute settlement was relegated to the margin of academic discussions. This approach was mostly due to the conviction that, as long as space activities were limited in size and of nearly exclusive governmental nature, the number of disputes would be marginal and, in any case, States could settled them through diplomatic channels.
Nowadays, a similar approach no longer stands. Space activities have significantly changed in terms of scale, nature of space actors, now including private operators and inter-governmental organizations, and economic interests involved.[1] These factors make the emergence of disputes not only likely but also inevitable.
In such an amended scenario one should wonder whether space law is provided with dispute settlement mechanisms accessible to all space actors and capable of dealing with any kind of space-related disputes.[2] The negative answer to these questions was one of the reasons that moved the Permanent Court of Arbitration (PCA) to address the issue of dispute settlement in outer space and to eventually come up with a set of Optional Rules for Arbitration of Disputes Relating to Outer Space Activities (hereinafter the PCA Outer Space Rules).[3]
The PCA Outer Space Rules bring space law in the 21st century because they enable it to adequately face the challenges that this century presents. The space sector is becoming a far-fetched[4] and profitable industry[5] and, as such, it requires an adequate system to handle disputes. Before the adoption of the PCA Outer Space Rules space law did not have a system for the resolution of disputes that reflected the reality of modern space activities, as it was based on the

1 On this point see E. Walter E., The privatization and commercialization of outer space, in C. Brünner, A. Soucek, *Outer space in society, politics and law*, Wien, New York, Springer, 2011, pp. 494-506; F. Tronchetti, *Fundamentals of Space Law and Policy*, Springer 2013, pp. 61-65.

2 C.J. Cheng, International Arbitration System as Mechanism for the Settlement of Disputes Arising in Relation to Space Commercialization, 5 Singapore J. Int'L. & Comp. L. 167 (2001); F.G. von der Dunk, Space for Dispute Settlement Mechanisms – Dispute Resolution Mechanisms for Space? A few legal considerations (2001) in Space and Telecommunications Law Program Faculty Publications (2001) <http://digitalcommons. unl.edu/spacelaw/38> (last accessed December 10, 2013).

3 For the text of the PCA see at: pca-cpa.org/upload/files/Outer%20Space%20Rules. pdf (last accessed December 10, 2013).

4 On this point see A. Soucek, Space and sustainability: improving life on Earth, in *Outer Space in Society, Politics and Law*, C. Brunner/A. Soucek (eds.), Springer (2011), pp. 570 ss; A. Soucek et al., The utilization of space: space applications, in *Outer Space in Society, Politics and Law*, C. Brunner/A. Soucek (eds.), Springer (2011), pp. 110 ss.

5 The Space Report 2012, available at <www.spacefoundation.org/media/press-releases/space-foundations-2012-report-reveals-122-percent-global-space-industry-growth> (last accessed December 10, 2013).

premise that states were the only space actors. The Rules ended this anomaly by making available a new voluntary and binding means for the resolution of space-related disputes which is open to all space actors and specifically structured to meet the peculiar features of economic space activities.
The purpose of the present paper is not to give a detailed analysis of the Rules provision by provision. Rather, it aims at outlining their positive features compared to the methods available in the pre-PCA Rules era and to demonstrate the advantages that space operators may have in using them. This will be done by making recourse to fictional cases, specifically addressing disagreements arising in the context of debris-generated collisions and pre-launch situations. Ultimately, the paper argues that recourse to the Rules is advantageous not only to private operators, but also to States, despite the traditional reluctance of the latter to submit their disagreements to third-party dispute settlement machineries.

What Is a Space Dispute?

The term 'dispute' refers to "a disagreement on a point of law or fact, a conflict of legal views or of interests".[6] Essentially, a dispute exists in the presence of conflicting claims or rights between two or more subjects.
In the context of outer space disputes may arise in relation to: a) accidents occurring in space; b) events happening on Earth but related to a certain space business. As to the first situation, a dispute may emerge upon a collision between satellites, either active or no-longer functional, or between a satellite and a small piece of a 'defunct' space object.[7] In this respect, the 2009 collision between the spent Russian satellite Cosmos 2251 and the active, privately owned, Iridium 33 satellite,[8] and the impact between the Russian nanosatellite, known as the Ball Lens In The Space [BLITS,] and a piece of space junk generated by the 2007 Chinese anti-satellite test on January 22, 2013,[9] confirm the risks faced by active space objects. The likelihood of collision in space is furthermore enhanced by the progressive congestion of the Earth's orbits and the technical impossibility to track all space objects, including space debris.[10]

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6 ICJ *Mavrommatis Palestine Concessions* (1924) PCIJ Series A, No. 2, at 11.
7 On the topic of 'space debris' see L. Viikari, *The environmental element in space law*, Martinus Nijhoff Publishers 2008, pp. 31-45.
8 See at <www.space.com/9870-iridium-cosmos-satellite-collision.html> (last accessed December 10, 2013).
9 See at <www.space.com/20138-russian-satellite-chinese-space-junk.html> (last accessed December 10, 2013).
10 See the statements by Nick Johnson, an orbital debris expert with NASA's Johnson Space Center in Houston and John Higginbotham, chief executive of satellite control software provider Integral Systems of Lanham, available at <www.space.com/4312-satellite-crash-blame.html> (last accessed December 10, 2013).

As to the second situation, disputes may occur in relation to a space activity contractually arranged but not yet undertaken, for example in the event of non-performance or breach of contract. This might happen in the event of pending pre-launch payments and termination of the launch contract for reasons different from those included in the contract[11]. In similar instances, it might be problematic to categorize these disputes as 'relating to outer space',[12] because the causes generating the disagreement do not actually happen in space but are merely related to contractually agreed space activities to be carried out at a later stage.

As a concluding remark one should emphasize that in the coming years the number of disputes involving private entities should be expected to raise. As the privatization and commercialization of space activities keep expanding, the accidents or disagreements involving private operators will inevitably increase. Therefore, when addressing the issue of dispute settlement in space, questions related to the efficient management of disputes involving private should be given special relevance.

Legal Framework Regulating Outer Space Disputes in the Pre-PCA Rules Era

Preliminary Considerations

Before the formulation of the PCA Outer Space Rules, the international legal framework governing outer space activities lacked an adequate and modern machinery to settle outer space-related disputes. Indeed, the available mechanisms were limited in their personal and material scope, by thus, significantly reducing their applicability and relevance.[13] A specific problem affected the position of private operators, who were basically left with no available legal means to settle their disputes.

Limits of the Dispute Settlement Mechanisms in the Pre-PCA Rules Era

Broadly speaking, disputes relating to outer space can be settled through the traditional dispute settlement mechanisms existing under general public international law, such as negotiation, enquiry, mediation, conciliation, arbitration,

11 See for example the 2011 dispute between Avanti Communication and SpaceX due to the decision of Avanti to scrap the launch its Hylas 2 communication satellite aboard a SpaceX rocket in favor of a launch on board the Ariane 5 launcher.

12 On the problem of classifying a dispute as 'relating to outer space' see F. Pocar, An introduction to the PCA's optional rules for arbitration of disputes relating to outer space activities, 38 J. Sp. L. 174, 181 (2012).

13 On this point see M. Williams, Rapporteur, *Space Committee of the International Law Association*, *in Report of the Sixty-Eight Conference of the ILA* (1998 TAIPEI), p. 241; T. Brisibe, The role of arbitration in settling disputes relating to outer space activities, in Worldwide Financier.com, available at <www.financier-worldwide.com/article_printable.php?id=10036>, at 2 (last accessed December 10, 2013).

and judicial settlement.[14] However, while these mechanisms are in principle available, their effective utilization for the settlement of space-related disputes faces several obstacles. First of all, they are only accessible to States; private entities are normally excluded from the possibility to make recourse to them. Secondly, States are generally reluctant to accept adversarial forms of disputes resolution, particularly those involving a third-party.[15] Moreover, States might always invoke sovereign immunity to impede a priori the formation of an arbitral tribunal or the commencement of proceedings before an international court.[16]

Switching now to the specific space law instruments, the five United Nations (UN) space treaties,[17] with the exclusion of the 1972 Liability Convention, contains no provisions addressing the issue of dispute settlement.

The 1972 Liability Convention addresses international liability for damage[18] caused by space objects. The Convention adopts a two-tier approach for the attribution of liability which changes depending on where the damage occurs, either: a) on the surface of the Earth or to an aircraft in flight; b) in outer space.[19] The Liability Convention establishes a procedure to be activated upon the occurrence of a dispute among the parties in relation to the application of the

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14 Art. 33 of the UN Charter contains a non-exhaustive list of peaceful means for the settlement of international disputes.

15 See R.Y. Jennings, The International Court of Justice After Fifty Years, 89 American Journal of International Law 493 (1995).

16 On the issue of State immunity see I. Bronwlie, *Principles of public international law*, Oxford University Press (2008), pp. 323 ss.

17 The five UN Space Treaties are: the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (Outer Space Treaty or OST) 1967, 610 UNTS 205, 18 UST 2410, TIAS 6347; Agreement on the Rescue of Astronauts and the Rescue of Objects Launched into Outer Space 1968 (Rescue Agreement), 672 UNTS 119, 19 UST 7570, TIAS 6599; Convention on Liability for Damage Caused by Objects Launched into Outer Space 1972 (Liability Convention), 961 UNTS 187, 24 UST 2389, TIAS 7762Convention on Registration of Objects Launched into Outer Space 1975 (Registration Convention), 1023 UNTS 15, 28 UST 895, TIAS 8480; Agreement Governing the Activities of States on the Moon and Other Celestial Bodies 1979 (Moon Agreement), 1363 UNTS 3.

18 Art. I (c) of the Liability Convention defines a 'launching State as: i) "A State which launches or procures the launching of a space object"; ii) "A State from whose territory or facility a space object is launched.

19 For an analysis of the Liability Convention and its dispute settlement mechanism see A. Kerrest, in Benkö M./Schrogl K.U./Digrell D., *Space law: current legal problems and perspectives for future regulations*, Utrecht, Eleven International Publishing, 2005, pp. 121-140; K.H. Böckstiegel., Settlement of Disputes Regarding Space Activities, 21 Journal of Space Law 1 (1993); A. Kerrest, L.J. Smith, F. Tronchetti, The Liability Convention, in S. Hobe, B. Schmidt-Tedd, K.U. Schrogl, *Cologne Commentary on Space Law*, Vol. II, Carl Heymanns Verlag 2013.

Convention's provisions. Accordingly, parties shall first try to solve their disagreement through diplomatic negotiations.[20] If negotiations fail, at the request of either party the parties concerned shall establish a Claim Commission and submit the dispute to it.[21]

The dispute settlement mechanism provided for in the Liability Convention presents numerous shortcomings. Firstly, it is only accessible by States. Non-governmental entities do not have an independent right to pursue claims under the Convention. They can only do so if a State accepts to act on their behalf. Also international inter-governmental organizations cannot bring claims to the Claim Commission.[22] Secondly, the decision or award of a Claims Commission will be binding only if parties so agree.[23] Thirdly, but only dispute that meet the definition of 'damage' provided for in Article I(a) of the Liability Convention can be submitted to the Claim Commission. This excludes other kind of disputes, such as pre-launch disagreements. Fourthly, it might be highly problematic to prove fault in the event of a collision in space.[24] This is particularly true in connection with accidents caused by space debris, where the launching State no longer exercises effective control over the debris causing the accident. All in all, even if the Convention might be deemed an excellent instrument to protect third-parties not involved in the launch or operation of a space object, i.e. civilians on Earth, it appears to be rather outdated to adequately deal with modern space related disputes, particularly those emerging in relation to a debris-generated collision and involving private operators. It is also remarkable that the dispute settlement machinery established in the Liability Convention has never been used in practice, not even in situations where recourse to it seemed logic, such as in the aftermath of the Cosmos 954 accidents.[25]

The Special Position of Private Operators

The position of private entities in relation to the settlement of space-related disputes is particularly relevant. Indeed, as the number of private operators participating in space activities augments, so it does the probability for these operators to be involved in space disputes.

Before the adoption of the PCA Outer Space Rules private entities experienced a rather problematic situation, namely the absence of adequate and specific *fora* for the submission of their disputes.[26] The core of the problem was that private entities operated in a framework which was originally created having in mind only public entities. Consequently, access to the traditional international law

20 Art. IX, Liability Convention.
21 Arts. XIV-XXI, Liability Convention.
22 See Art. XXII, Liability Convention.
23 Art. XIX, para. 2, Liability Convention.
24 Pursuant to Art. 3 of the Convention, which requires to prove fault in case of an accident occurring in space.
25 For a description of the Cosmos 954 events see l. Viikari, *supra* footnote 7, at 48.
26 See C.J. Cheng, *supra* footnote 2, at 168; International Law Association (ILA), Report Sofia Conference 2012 – Space Law, p. 14.

dispute settlement mechanisms as well as the one provided for in the Liability Convention, was precluded or fairly limited to private entities.

Furthermore, the progressive privatization and commercialization of outer space have introduced elements of private law into the space law legal framework; this has created new issues, such as the enforcement of contractual rights and the settlement of disputes between governmental space agencies and commercial space industry on the one hand and between private enterprises from different countries, which cannot easily find solution under the traditional international dispute settlement means.[27]

In the event of a dispute having international character (i.e. the two private entities belong to two different jurisdiction), private entities have always the possibility to sue in private capacity before their own national courts or in a court of the country of the opposing party. However, in these cases problems of judgment enforcement, *jus standi*, and unfamiliarity with national laws, arise.

An alternative option is to seek binding settlement of disputes through international commercial arbitration.[28] International commercial arbitration is the process of resolving business disputes between or among transnational parties, through the use of one or more arbitrators rather than through the courts. International commercial arbitration requires the agreement of the parties, which is usually given via an arbitration clause that is inserted into the contract or business agreement.

Among the major institutions for international commercial arbitration, the United Nations Commission on Trade Law (UNCITRAL)[29] and the International Chamber of Commerce (ICC)[30] occupy a place of special importance. Particularly, UNCITRAL has played a pivotal role in shaping modern international commercial arbitration law, as its 1985 and 2010 UNCITRAL Model Laws on International Commercial Arbitration have served as a basis for the enactment of municipal legislation in a number of countries around the world.[31]

In recent years, non-governmental entities have submitted space-related disputes to the major institutions of international commercial arbitrations such as the ICC and UNCITRAL.[32] Practice, however, reveals shortcomings related to this practice, especially the fact that the UNCITRAL Rules or other procedural rules of private arbitration institutions are not adapted or specific to space-related disputes.[33] Thus, due to the technical nature of space activities,

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27 F. Pocar, *supra* footnote 12, at 175-77.

28 See/Cf. C.J. Cheng, *supra* footnote 2, at 172.

29 For information on UNCITRAL's activities see <www.unicitral.org> (last accessed December 10, 2013).

30 For details about the ICC's activities see at <www.iccwbo.org> (last accessed December 10, 2013).

31 T.H. Webster, *Handbook of UNCITRAL Arbitration*, London, Sweet & Maxwell (2010).

32 For example, the case involving Eutelast and Alcatel Space submitted to the International Chamber of Commerce (ICC).

33 See F. Pocar, *supra* footnote 12, at 177.

the arbitration panel might lack the technical expertise to adequately decide upon the submitted case. Additionally, due to the sensitive character of operations in space, especially in connection to intellectual property rights and national security, issues of confidentiality may arise in the context of the arbitral proceedings.
The adoption of the PCA Outer Space Rules is, thus, particularly significant from the perspective of private operators. For the first time private entities have the opportunity to benefit from a specialized system for the resolution of space-related disputes that does not relegate them in a position subordinated to that of governmental space actors. The increased level of legal certainty that the Rules contribute to create might lead additional private operators to invest in the space market.

Findings on the Pre-PCA Outer Space Rules

After reviewing the current mechanisms and procedures for settlement of disputes arising from outer space activities the following conclusions can be drawn: 1) no mechanism having compulsory character exists; 2) none of the existing dispute settlement procedures can potentially be used to settle all types of space-related disputes; 3) private enterprises are largely precluded access to the available mechanisms for resolution of disputes in the current, and mainly public, international legal framework governing outer space activities; 4) decisions arising from mechanisms for the resolution of disputes are generally non-binding; 5) the confidential and strategic nature of outer space activities may obstacle the procedure taking place before a tribunal constituted, in the context of international commercial arbitration, to decide disputes arising from outer space activities; 6) States may exercise sovereign immunity to influence or prevent influence the initiation and conduct of proceedings by a tribunal constituted to arbitrate over disputes pertaining to outer space activities; 7) the technical nature of space activities justifies recourse to technical and legal experts to support the arbitral tribunal.

The PCA Rules for Arbitration of Space Related Disputes

Introduction

On December 6, 2011, the Administrative Council of the Permanent Court of Arbitration (PCA)[34] adopted the *Optional Rules for Arbitration of Disputes Relating to Outer Space Activities* (The PCA Outer Space Rules). The adoption of the Rules was the result of two years of efforts within the PCA, which were characterized by intense negotiations between the PCA legal and scientific experts, on one side, and space actors on the other. The PCA decided to formulate optional rules for arbitration of disputes relating to outer space after coming

34 The Permanent Court of Arbitration is an international organization specialized in facilitating dispute settlement between States, State entities, intergovernmental organizations, and private parties.

to the conclusion that the available mechanism for the resolution of space disputes presented numerous shortcomings.[35] Remarkably, since 1992, the PCA has adopted eight sets of sector-specific rules of procedure for arbitration or conciliation developed by expert groups, which have been fairly successful. Generally speaking, the adoption of the PCA Outer Space Rules constitutes an important step forward in addressing the *lacunae* of the existing system for the settlement of space-related disputes. In particular, the rules aims at giving parties to a space dispute the choice to use a means for dispute resolution which is: a) connected the reality of modern space activities; b) accessible to governmental and private space actors; c) versatile, in the sense that can be used in relation to all kind of space-related disputes, d) binding. The Outer Space Rules have been largely based on the 2010 UNCITRAL Rules which have been, however, modified, to reflect the special nature of space activities and disputes.

Main Feature of the PCA Outer Space Rules

The PCA Outer Space Rules contain 43 Articles.[36] This section will highlight the most relevant features of the Rules:

Nature: The Outer Space Rules are not a new dispute settlement mechanism for outer space disputes. Instead, they are optional rules for arbitration. The Rules are based on the assumption that arbitration is the most suitable means to handle space-related dispute.[37] Thus, in case a dispute arises and parties decide to solve it through arbitration, they may decide to use the Rules to govern the arbitral proceedings.

Accessibility: Access to the PCA Outer Space Rules is not restricted to a specific category. Instead, all actors involved in (commercial) space activities, including States, inter-governmental organizations, non-governmental organizations, corporations and private entities, are entitled to rely on the Rules in the event of a dispute.[38]

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35 For the analysis of the drafting of the PCA Outer Space Rules see F. Pocar, *supra* footnote 12 at 172-181.

36 For an analysis of the PCA Outer Space Rules see F. Pocar, *supra* footnote 12 at 181-184; S. Hobe, The Permanent Court of Arbitration adopts Optional Rules for Arbitration of Disputes Relating to Outer Space, 61 ZLW 6 (2012).

37 On the advantages of arbitration as a means for the settlement of space-related disputes see Pocar, *supra* footnote 12 at 175; G.M. Goh, *Dispute Settlement in International Law*, Martinus Nijhoff Publishers 2008, p. 116-120; ILA Report 2012, see *supra* footnote 21 at 14. Generally on arbitration see N. Blackaby/ C. Partasides et al., *Redfern and hunter on international arbitration*, Oxford Univ. Press, 5th ed. (2009), at. para. 11.138; J.G. Merrils, *International Dispute Settlement*, Cambridge University Press, 3rd ed. (1998).

38 See Introduction, PCA Outer Space Rules. See also Hobe, *supra* footnote 36, at 6; ILA Report 2012, *supra* footnote 26, at 13.

Applicability: The applicability of the Rules is extremely broad, thanks to the fact that "the characterization of the dispute as relating to outer space is not a necessary pre-condition for the settlement of such dispute under the Rules."[39] This was a precise choice of the Advisory Group that drafted the Rules which, considering the difficulties of categorizing a dispute as 'relating to outer space', concluded that the geographic, technological or other factual particularities of a dispute should not undermine the parties stated intent to proceed to arbitration. Consequently, the Rules become applicable simply if the parties so agree.[40] Articles 3(3)(d) and 4(3)(d) of the Rules enumerate the different instruments to which space disputes may be related: *inter alia* "rule, decision, agreement, contract, convention, treaty, constituent instrument of an organization or agency." In this way, the language of the PCA Outer Space Rules beyond that of the UNCITRAL Rules, as it points out the numerous relevant sources of law and the role played by States in space law.[41]

Scientific and legal expertise: The Rules recognize that the technical nature of space activities requires the support of legal and scientific experts in the course of the arbitral proceedings. Accordingly, parties may select arbitrators with an expertise in space matters[42] as well as legal and technical experts to support the arbitral panel from two lists specifically compiled by the PCA Secretary-General.[43]

Immunity: As discussed, the judicial settlement of a space-related dispute can be precluded by a State claiming immunity from jurisdiction of an arbitration panel. The PCA tackled this problem by stipulating that consent to arbitration by means of an arbitration clause constitutes a waiver of immunity to jurisdiction.[44] This waiver applies equally to States and international inter-governmental organizations. A model waiver statement model is annexed to the Rules.

Confidentiality: Due to the sensitive and strategic nature of outer space activities, parties to a dispute may refrain from submitting it to an arbitral tribunal for fear of disclosure of confidential and economically valuable information.[45] The PCA Outer Space Rules address this concern by enabling the arbitral tribunal to appoint a "confidentiality adviser".[46] Such an adviser is expected to report to the tribunal on specific issues on a confidential basis, thus preserving confidential information either to the other party or to the tribunal itself.

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39 Art. 1, para. 1, PCA Outer Space Rules.
40 See Pocar, *supra* footnote 12, at 181
41 See/Cf. Pocar, *supra* footnote 12, at 182.
42 Art. 10 (4), PCA Outer Space Rules.
43 Art. 28, para. 7, PCA Outer Space Rules.
44 Art. 1, para. 2, PCA Outer Space Rules.
45 K. Blessing, Arbitrability of Intellectual Property Disputes, in 12:2 Arbitration International, Kluwer Law International, 1996, 191, 215.
46 Art. 17, para. 8, PCA Outer Space Rules.

Avoidance of unnecessary delays: Pursuant to the motto "A slow justice is a bad justice", one of the Rules' goals is the avoidance of unnecessary delays of the arbitral proceedings. Accordingly, numerous provisions aimed at preventing or reducing the effects of obstructive practices by the parties are introduced.[47] For example, the Secretary-General of the PCA is entitled to operate as a default appointing authority and, on this basis, may, upon request by a party, appoint, replace, and decide challenges against arbitrators. This provision significantly improves upon those of the UNCITRAL Rules, where the PCA-Secretary-General may only act as a designating authority and not as a default appointing authority.

Final and binding nature of the arbitral award: The award of the arbitral tribunal is in writing, final and binding on the parties. Once the award is released the parties are obliged to comply with it without further delay. This is important to create climate of certainty in the field of commercial space activities.

Neutrality: The PCA Outer Space Rules enable parties to choose an arbitration venue that is outside the 'home' court of any party. This provision reflects the international nature of space disputes and the legal hurdles related to bringing a case in one of the two available 'local' courts.

Treaty interpretation: the PCA Outer Space Rules can also be used to settle disputes concerning the interpretation and application of multilateral convention on the use or access to outer space, such as the UN Outer Space Treaties[48] If used, this provision could contribute to solve some controversial issues contained in the space treaties. controversial issues contained in the space treaties and, as a result, contribute to the substantive development of space law

Advantages of the PCA Outer Space Rules

After having described the main features of the PCA Outer Space Rules one should wonder how the space community will receive them and the possible advantages that space actors may have in making recourse to them. Ultimately, the question is whether the Rules should be expected to be successful. The present paper argues that, considering their innovative and modern character, the Rules should be positively received and gradually encounter the favor of both governmental and non-governmental entities.

Certainly, not everybody would agree with this positive approach. Indeed, it is undeniable that the attitude towards third-party dispute settlement mechanism in space has been, so far, largely negative. Particularly, States have been reluctant to submit their space-related disputes to a third-party machinery and have preferred to settle their disagreements bilaterally. The costs and length of the procedure as well as the lack of specific expertise in space matters of

47 Art. 4, para. 5, Art. 9, paras. 3- 4, PCA Outer Space Rules.

48 See Introduction of the PCA Outer Space Rules.

arbitrators/judges, are additional reasons which have discouraged recourse to adversarial forms of dispute settlement.
An additional factor, particularly relevant for private operators, is the impact of insurance-related considerations. Normally, under national space law, private operators are requested to obtain a third-party liability insurance, covering third party property damage either on the ground, at the launch site, during the mission flight or in orbit. Hence, third party damage caused by space debris fall within the scope of the license. Consequently, it is possible that in the event of a debris-related collision in space, a private entity may be reluctant to submit a case to an international (commercial) arbitration body for fear of a significant increase in the payable premium of future satellites insurance policies.
It is, however, possible to counter these arguments by pointing out that the reasons for the limited recourse to third party dispute settlement machineries are: 1) the small number of space-related disputes arisen so far and; 2) the lack of adequate or accessible dispute settlement means. Furthermore, in connection with the insurance issue, it should be pointed that, due to the increasing likelihood of debris-caused accidents, insurance premium are, anyway, rising. Additionally, in the event of a debris-generated collision involving two private companies, if one of them would refuse to cooperate in the settlement of the dispute, either bilaterally or through recourse to commercial arbitration, such a company would gain the reputation of an untrustworthy and unreliable operators Eventually, this might undermine its future business undertakings.
As mentioned earlier, it is also extremely difficult to use the existing dispute settlement procedures to settle debris-related disputes. For example, the Liability Convention requires to prove fault in the event of damage caused to another space object. However, it might be problematic to demonstrate the fault of a space operator for damage caused by an object (or a piece of a space object) over which that operator is no longer able to exercise effective control. The Liability Convention does not give any indication of what constitutes 'fault' and according to which parameters it should be determined. Additionally, the concept of 'fault' is interpreted differently in common law and civil law systems.[49]
Remarkably, the PCA Outer Space Rules address several of the issue that have prevented recourse to third party dispute settlement in the previous years, particularly with regard to confidentiality of sensitive information, length of the proceedings, lack of technical and legal expertise of the arbitrators, costs and the non-binding conclusion of the dispute. This is why paper considers the Rules a useful and timely instrument, which is potentially extremely advantageous to space operators both of governmental and non-governmental nature. In order to support this statement following section will give some fictional

49 In civil law systems 'fault' is associated with 'culpa'. 'Culpa' is the failure to act as the 'reasonable man' under the circumstances; the key point is whether the 'reasonable man' could have foreseen the likelihood of harm and acted differently. In common law systems 'fault' is linked to 'negligence'. 'Negligence' requires the existence of a duty, based on custom or written law, and the breach of that duty.

examples of dispute to demonstrate the differences between the traditional dispute settlement means and the PCA Outer Space Rules, and the advantages that the latter may bring.

Using the PCA Outer Space Rules to Settle Disputes Relating to Outer Space: A Few Examples

The first example concerns a dispute resulting from a debris-generated collision. On January 1st, 2014, news spreads that two communication satellites, Icarus-4 and Dedalus-2 collided in the geostationary orbit, causing a large number of debris. A preliminary evaluation of the event reveals that the newly launched Dedalus-2 was worth USD 300 million and that revenues for billions of dollars were expected. Instead, Icarus-4 had long past its lifetime and had been drifting for 2 months before the accident.

Dedalus-2 belonged to the Dutch company Dedalus Ltd., a subject operating in space under a license issued by the Dutch government. Icarus-4 was owned by Icarus, a company headquartered in Houston, Texas, acting under a license issued by the US Federal Communication Commission. Arguably, the collision was due to fact that Icarus failed to perform end-of-life maneuver, as requested by US space law, and left Icarus-4 drifting for 2 months in the geo-stationary orbit. From a legal standpoint the basic question is: how can Dedalus Ltd. obtain compensation for its losses? According to the legal regime law existing in the pre- PCA Rules, three options were available to Dedalus Ltd.:

1) to demand The Netherlands to initiate a liability case on its behalf under the Liability Convention;
2) to bring a tort claim case in the US Court or in the Dutch Court against Icarus;
3) to recur to international commercial arbitration.

Under the first scenario, Dedalus Ltd. cannot independently bring a claim against the USA or Icaurus because under the Liability Convention only states are entitled to make claims under the Liability Convention. It must be the Dutch government to take on this claim. However, there is no obligation for the Dutch government to do so under the Convention. Even if the Netherlands agrees to bring a claim on behalf of Dedalus Ltd., it must be able to prove the fault of the defendant, Icarus, as the accident occurred in space. As the Convention lacks a definition of fault 'fault', proving it may be a challenging task, especially because a debris was concerned in the collision. Additional questions would be related to whether a 'debris' could be considered as a space object under the Convention. Furthermore, under the Convention it is not clear what 'compensation' would consist of, particularly whether it would include lost profits, revenues, and other damage that might be recovered under US law or other relevant legal systems.

Under the second option, Dedalus Ltd. could initiate a case against Icarus in the Texas Federal Court based on Texas State tort law or in the Dutch court based on Dutch law. This possibilities would raise questions related to the right of the courts to hear the case, applicability of law, and enforcement of the judgment.

In any case, Dedalus Ltd. would have to prove that Taurus had a duty to avoid the collision, thus that Taurus was at fault. As no treaties or binding international standards oblige satellite providers to remove satellites from the GSO, Dedalus Ltd. could only rely on the argument that Icarus violated the disposal plan outlined in the license provided by the FCC. Icarus could reply that the FCC only required to provide information about disposal plans and that in no way was there a legal requirement to boost the satellite to a higher orbit. Ultimately, it would be difficult for Dedalus Ltd. to prove fault on the part of Icarus.
Under the third option, parties could decide to settle their dispute through international commercial arbitration. In this scenario, however, the case, if accepted by the arbitration panel, would be decided by arbitrators not specialized in space-related disputes.
Consequently, none of these three options offers a satisfactory solution to settle the dispute at stake. From this perspective, if the parties agree to submit their case to the PCA for arbitration under the PCA Outer Space Rules, the use of these Rules would provide the following benefits:

a) Dedalus Ltd. would have an independent right of action against Icarus. Indeed, under the Rules, a private entity does not need to request its national/licensing state to act on its behalf.
b) Dedalus Ltd. and Icaurs could select the most appropriate forum for the settlement of their dispute.
c) Dedalus Ltd. and Icarus could choose the law applicable to the case. In doing so, they could decide to combine international law with other relevant national laws and principles. Through this practice, parties could overcome some of the obstacles and restrictions deriving from the application of a single set of laws.
d) Parties would have the opportunity to have their dispute settled by a panel of arbitrators specialized in space-related disputes.
e) The dispute would be settled in a fast and binding manner. The PCA Rules include several mechanisms to prevent and reduce delays. Moreover, once the arbitral award has been released, parties are under the obligation to implement it.

Clearly, the Rules could be used only if both Dedalus Ltd. and Icarus agree to do so. None of them can be forced in this direction because the nature of the Rules is optional. Nevertheless, an un-cooperative behavior of one of the parties to the dispute, in our case Icarus, would be perceived by the space community as an 'irresponsible' act, likely affecting future Icarus's space business. This could provide sufficient justification for that company to accept to settle the dispute through arbitration under the PCA Outer Space Rules.
The advantages of using the PCA Rules can be also outlined in relation to other types of disputes, such as those emerging in connection with a contractually arranged space activity. For example, they might involve pending pre-launch payments or delivery of remote service products or services different from the one contractually agreed.

Disputes falling within the first category are not uncommon, as proved by the 2012 dispute between Globalstar and Arianespace[50] and the ongoing dispute between Russia and Kazakhstan.[51] Similar disagreements might arise in case of: a) a satellite service provider, which has acquired the launching services of a launch company to place one of its satellite in orbit, fails to pay prior to the launch as requested by the contract. Consequently, the launch company refuses to launch the satellite within the agreed time and date; b) a satellite service provider is in default on payment of launches already undertaken by the launch company and has contracted additional launches. Due to this situation, the launching company does not undertake the launch in the scheduled timeframe; c) the launch service provider does not undertake the contractually agreed launch for un-justified and un-announced reasons. Provided that the parties belong to different jurisdiction and that they have been unable to settle their disagreement on a bilateral basis, recourse to arbitration under the PCA Rules would be the optimal, if not the only, option. Indeed, the Liability Convention would not relevant in the above examples, as the event causing the dispute fall outside of the scope of "damage" under the Convention. Furthermore, suing in one of the national courts of the parties would raise issues of jurisdiction, enforcement, and applicable law. Instead, if parties would decide to solve their dispute by arbitration governed by the PCA Outer Space Rules, this choice would not be hampered by jurisdictional issues and would leave them free to choose the law applicable during the arbitral proceedings. Furthermore, the use of the Rules would have given the parties the advantage of a relatively quick award by the arbitral tribunal. Speed is a key element in case of disputes relating to the launch of space objects because of the limited availability of launch windows. The decision to submit their dispute to the PCA under the Outer Space Rules could have been taken by inserting a clause in their contractual arrangement or by means of a special arrangement posterior to the disagreement. Disputes arising in connection with remote sensing activities may occur in case of delayed delivery of the remote sensing product (i.e. image) or when such a product is not of the expected quality or accuracy. Because of these factors, the end-user may suffer financial and other type of losses, especially when these events are connected with land management, marine protection, and rescue

50 In such a dispute, Globalstar was in default on payments due from three launches undertaken in 2010 and 2011 by Arianspace. Arianspace warned Globalstar that if payment was not settled by late August 2012, the fourth and final Globalstar launch planned for the end of the year would be suspended. Settlement was reached on 18 September, 2012, when Globastar agreed to pay the due amount, see at <www.spacenews.com/article/globalstar-arianespace-dispute-over-launch-payments> (last accessed December 10, 2013).

51 Russia and Kazakhstan have failed so far to reach an agreement on a new drop zone for the debris of Russian carrier rockets being launched from the Baikonur space center. The standstill has already prevented Russia to launch European, German, Canadian, Belarus, and Russian satellites from the Kazakhstan launch facility.

activities. In similar situations a dispute would arise and questions related to the appropriate *forum* and *lex* for its settlement would arise, provided, of course, that the remote sensing provider and user belong to two different jurisdiction. Recourse to arbitration regulated by the PCA Rules through an arbitration clause inserted in the contract governing the remote sensing service could address and likely solve these questions.

Apart from private operators, recourse to the Rules would also be advantageous to States. States can be involved in space-related disputes in numerous circumstances, for example, in relation to: a) collisions in space; b) national defence-related issues; c) military uses of outer space; d) provision and use of space services of all type, etc. Despite their traditional negative approach towards adversarial forms of dispute settlement, there are several reason why States might decide to settle their dispute through arbitration under the PCA Rules. Broadly speaking, arbitration has gradually emerged as the most popular means for the settlement of international disputes, also those having commercial nature. As it has been successful in other fields, there is no reason why arbitration could not become the preferential means to settle disputes involving States in the space sector. Secondly, by choosing to utilize the Rules, States could benefit from a panel of arbitrators, as well as advisors, which is specialized in space matters and which is to be chosen by the States parties to the dispute. Remarkably, no other existing dispute settlement mechanism offer such a possibility. Certainly, States would also have the option to submit their disputes to the International Court of Justice (ICJ). However, on one side, practice reveals that States do not often do so and, on the other side, the ICJ would not provide a specialization in the field of space law nor a speedy procedure. Instead, arbitration under the PCA Rules would prevent unnecessary delays and enable a relatively fast release of the arbitral award. This quickness is a factor of particular relevance in the space sector, considering the enormous financial interests involved and the consequent need for legal certainty.

Significantly, there are elements that suggest that the Rules might be progressively seen by States as a valuable tool. For example, Argentina and Brazil are negotiating an agreement that will include the PCA Rules in their arbitration clause and the European Space Agency is considering inserting recourse to the Rules into its future contracts.

Conclusion

Space activities have followed a rather peculiar pattern. While technological and scientific advancements have allowed remarkable achievements in the exploration and use of the space environment, the international legal framework governing operations in outer space has largely remained unchanged in the past decades. This fact has made such a framework substantially inadequate to deal with some of the legal issues arising in connection with current space activities, particular that of dispute settlement.

The Permanent Court of Arbitration has taken the initiative to address this problem by adopting the Optional Rules for Arbitration of Disputes Relating to Outer Space Activities. The PCA Outer Space Rules constitute an important and timely step in the right direction towards providing space law with a dispute settlement machinery which reflects the reality of the 21st century space activities. Certainly, despite their positive features, their success solely depends on the will of space actors. However, based on the analysis carried out in the present paper, it is arguable that arbitration based on the PCA Outer Space Rules could become the preferential means to settle space-related disputes in the years to come.