Specialised Dispute Resolution for Commercial Space Disputes: A Practitioner's Perspective

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Abstract

Outer space activities are no longer in the exclusive domain of States. There has been a marked increase in commercial space activities in recent years, with private players taking the lead in new space developments. As the commercial space sector grows, so too do the number of commercial space-related disputes. Contractual arrangements are likely to underpin most of these matters. This given, how different are commercial space-related disputes going to be from disputes in other industry sectors? Are existing mechanisms for dispute resolution adequate to address the needs of commercial space players? Or do specialised methods of dispute resolution need to be developed? The authors offer a practitioner's perspective.

1. *Space*: The latest frontier for dispute resolution

Since the advent of the Space Age with the launch of Sputnik I in 1957 until recently, outer space has largely been the domain of governmental action. This is reflected in the traditional framework of international "*space law*". The treaties which form the basis of this law focus principally on the regulation of State-sponsored space exploration activities. Correspondingly, the dispute resolution mechanisms under the treaties concern State-to-State disputes only.

However, space exploration is no longer the exclusive domain of State actors. Rapid developments in technology and the commercial potential of outer space have led to an increasing number of private players entering the space market. The growth of that market is set to be exponential. Projections suggest that the commercial space value chain is likely to produce revenues of

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485 billion dollars by 2028.[1] This figure is predicted to rise to one trillion dollars by 2040.[2]

A key driving factor behind this growth is new space applications and industries.[3] The satellite services industry is thriving and likely to reach a market size of 144.5 billion dollars by 2026.[4] Moreover, the uniqueness of the physical environment of space, with reduced gravity and extreme temperatures, creates opportunities for the manufacturing industry.[5] Potential for future commercialisation is additionally found in the possibility of carrying out mining on celestial bodies, such as asteroids.[6] Private spaceflight or space tourism also presents a significant avenue for the growth of market for commercial space activities. Indeed, with costs related to launching space objects reducing, a new space tourism race has begun among certain high net-worth individuals.

The increase of private sector investment in these diverse commercial space activities, coupled with ground-breaking innovations in the industry, is predicted to give rise to a significant increase in commercial space disputes in the future.[7] In this context, the question arises as to whether existing dispute resolution mechanisms are sufficient to meet the needs of industry players or whether space-specific adaptations are necessary. In this article, the authors attempt to answer this question from a practitioner's perspective. Part II provides an overview of the nature of commercial space disputes. Thereafter, Part III explains why arbitration is the dispute resolution fora often preferred for their resolution. Part IV considers the adequacy of existing arbitral rules

1 Euroconsult, *The Space Economy Report 2019*, available at https://www.euroconsult-ec.com/press-release/commercial-space-revenues-to-reach-485-billion-by-2028/#:~:text=Paris%2C%20Washington%20D.C.%2C%20Montreal%2C,reaching%20%24485%20billion%20by%202028 (last visited 7 August 2022).

2 Citigroup, *Space: The Dawn of a New Age*, May 2022, p 3, available at https://ir.citi.com/gps/829sRzYY4sQ%2BOhctTEs%2B1WWLgPbyZktiZpoz3QRCC6ToaLgXov4Kxy852czeh38jOi72XKhJGp0%3D (last visited 7 August 2022).

3 Id, at p 23.

4 Allied Market Research, *Satellite Services Market by Type: Global Opportunity Analysis and Industry Forecast 2019-2026*, available at https://www.alliedmarketresearch.com/satellite-services-market (last visited 11 January 2023).

5 Ty S Twibell, *Space Law: Legal Restraints on Commercialisation and Development of Outer Space*, 65 UKMC L Rev 589 (1997), pp 626-627.

6 Clive Cooksonm *Space mining takes giant leap from sci-fi to reality*, The Financial Times, 19 October 2017, available at https://www.ft.com/content/78e8cc84-7076-11e7-93ff-99f383b09ff9 (last visited 7 August 2022).

7 Laura Yvonne Zielinski, *The Rise of Satellite Arbitrations*, Global Arbitration Review, 29 July 2022, available at https://globalarbitrationreview.com/guide/the-guide-telecoms-arbitrations/first-edition/article/the-rise-of-satellite-arbitrations (last visited 1 February 2023).

for the space industry. Part V concludes with a proposal for improving the efficient resolution of commercial space disputes going forward.

2. *Star Wars*: The nature of commercial space disputes

The uniqueness of space as a physical environment is common knowledge. As others have explained: "*space is difficult and expensive to get to, not survivable by human beings without special equipment and even risky for satellites and other machines to operate in.*"[8] Less universally appreciated, however, is the distinctive legal regime that is applicable to outer space.

As noted above, space law is treaty-based. The 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (the "Outer Space Treaty") is considered space's "constitution". It establishes certain key principles that differentiate space from other environments in which humans carry out activities. In particular, it sets out that: (i) space is for the benefit of all;[9] (ii) it shall not be subject to national appropriation;[10] (iii) States are responsible for all national activities in space whether carried out by governmental or non-governmental entities;[11] and (iv) States are internationally liable for damage caused by the space objects they launch or the launch of which they procure.[12]

Other treaties develop upon issues such as (i) responsibility for the rescue and return of astronauts and return of objects launched into outer space;[13] (ii) inter-State liability for damage caused by space objects;[14] and (iii) permitted activities by States on the moon and other celestial bodies.[15] There are no treaties, however, which regulate relationships between non-governmental entities involved in space-related activities, such as commercial parties. These relationships are therefore principally governed in the same manner as the relationships between players in other business sectors, namely by contract.

8 Henry R Hertzfeld and Timothy G Nelson, *Binding Arbitration as an Effective Means of Dispute Settlement for Accidents in Outer Space* 2 IISL 129 (2013), p 130.

9 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies 1967 (hereinafter, the OST), Art. 1.

10 OST, Art II.

11 OST, Art VI.

12 OST, Art VII.

13 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space 1968.

14 Convention on International Liability for Damage Caused by Space Objects 1972.

15 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies 1979. Although this has only been ratified by 18 countries. See https://www.unoosa.org/res/oosadoc/data/documents/2022/aac_105c_22022crp/aac_105c_22022crp_10_0_html/AAC105_C2_2022_CRP10E.pdf (last visited 31 January 2023).

Contractual relationships in the space sector include insurance contracts, leases, launch agreements, and contracts relating to the design, development and manufacturing of space objects. Although they may be focused on extra-terrestrial projects, the parties will generally choose a terrestrial law to govern them and forum in which disputes arising from them shall be heard. In terms of general framework, therefore, most commercial space disputes will be much like commercial disputes in other sectors,[16] although – in substance – many will involve technical questions (e.g. relating to satellite defects[17]) or turn on clauses (such as cross-waivers of liability[18]) that are particular to the commercial space market.

3. *Arbitration*: Out-of-court solutions for outer space disputes

Arbitration clauses and litigation clauses both appear in commercial space-related contracts, although arbitration clauses appear to be preferred by many significant space players. For instance, the European Space Agency and the Indian Space Research Organisation provide for the use of arbitration in their model contracts.[19] Similarly, entities such as SpaceX, Avanti, Airbus and Boeing routinely incorporate arbitration agreements in their commercial space agreements.[20]

Given the often technical nature of commercial space disputes and specialist clauses sometimes involved, this is unsurprising. In arbitration, parties typically have some control over who is appointed to determine their cases. If a dispute requires particular expertise to appreciate, the parties can ensure that the arbitrators chosen have the relevant qualifications or experience. In contrast, in litigation in most jurisdictions, parties have no say over the judges appointed by a court to their cases, and very few national judges are

16 Like other business sectors, it is possible for disputes to arise from non-contractual relationships as well (for instance, in the event of a collision between space objects).

17 As was the case in the arbitrations described in GAR, *Boeing wins over defective satellites*, 25 February 2009, available at https://globalarbitrationreview.com/article/boeing-wins-over-defective-satellites (last visited 31 January 2023).

18 For an example of such a clause see Contract between Iridium Satellite LLC and Space Exploration Technologies Corp, for clause 14.2, available at https://www.sec.gov/Archives/edgar/data/1418819/000119312511081407/dex105.htm (last visited 31 January 2023).

19 European Space Agency, General Clauses and Conditions for ESA Contracts; cl 35.2 (2019), available at https://esamultimedia.esa.int/docs/LEX-L/Contracts/ESA-REG-002_rev3_EN.pdf (last visited February 2023); ISRO, Proposal Document for Leasing of Geostationary Satellite, cl 9 (2016).

20 Rachel O'Grady, *Dispute Resolution in the Commercial Space Age: Are All Space-Farers Adequately Catered For?*, 3 ICC Dispute Resolution Bulletin 54 (2021).

likely to have a background in the types of issues that affect the commercial space industry.[21]

Arbitration also offers parties to commercial space disputes other potential benefits over litigation. For example, first, provided the right seat of arbitration is chosen and/or the relevant arbitration clause is drafted correctly, arbitration can ensure confidentiality. Commercial space contracts often involve industry-sensitive data, the release of which to competitors could have significant financial consequences. For many actors in commercial space operations, securing confidentiality over disputes is therefore likely to be a priority. This would also mean that litigation is not a suitable dispute resolution method since court procedures are public in most jurisdictions.

Secondly, arbitration offers the possibility of disputes being determined before a neutral tribunal seated in a neutral venue, which international parties tend to favour. Parties to a commercial space contract may choose a neutral court before which to litigate disputes as well. However, reaching an agreement on such a neutral jurisdiction is not always easy, in particular where one contractual party is a governmental entity (and there remains a very high level of governmental involvement in space-related activities as compared with operations in other commercial sectors[22]).

Thirdly, arbitration is likely to produce more globally enforceable results than those achieved by decisions of national courts. The New York Convention on Recognition and Enforcement of Foreign Arbitral Awards provides an international framework for the efficient enforcement of arbitral awards and is applicable in 172 States.[23] There are no treaties relating to the enforcement of national court judgments which are comparable in scope. Arbitration is therefore likely to be more appealing to the international parties typically involved in the space industry.

There are, of course, potential benefits to litigation too. These include: (i) the relative ease for parties to seek joinder and consolidation in disputes, regardless of any specific provision for such procedures by the parties to a

21 Although the Dubai International Financial Centre has launched a "Courts of Space" initiative, which will involve (among other things) training judges on issues relating to the commercial space industry. DIFC, Space Disputes Guide, p 8, available at https://www.difccourts.ae/media-centre/publications/space-disputes-guide/space-disputes-guide (last visited 31 January 2023).

22 See, for example, *OECD Handbook on Measuring the Space Economy*, available at https://www.oecd-ilibrary.org/sites/1b214362-en/index.html?itemId=/content/component/1b214362-en (last visited 12 January 2023); Frans G von der Dunk, *Commercial Space Activities: An Inventory of Liability – An Inventory of Problems*, Space, Cyber, and Telecommunications Law Program Faculty Publications, 46, at 168, available at https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1045&context=spacelaw (last visited 12 January 2023).

23 UNIS, *Press Release*, available at https://unis.unvienna.org/unis/en/pressrels/2023/unisl339.html (last visited 18 January 2023).

contract; (ii) the more extensive powers of a court to enforce interim measures; (iii) the possibility of appellate review; and (iv) the potential to obtain broader document disclosure.[24] In most cases, however, the advantages of arbitration for commercial space players are likely to be more significant.

4. *Adequacy of general arbitral rules*: sufficient space in *status quo*?

The previous sections of this paper have established that commercial space disputes are typically contract disputes and are often suited to resolution by arbitration. However, is there anything particular about these most common cases which means they would benefit from specialised arbitral rules for their resolution? In the authors' view, there does not appear to be. Indeed, to date, despite the development of space-specific arbitral rules by the Permanent Court of Arbitration in 2011 (the Optional Rules for the Arbitration of Disputes Relating to Outer Space (the *PCA Rules*)), in respect of contractual disputes space industry parties appear to prefer the general arbitration rules of leading arbitral institutions.

Thus, according to a study carried out in 2020, 31.5% of all space-related disputes for which data is available were resolved under the auspices of the International Chamber of Commerce International Court of Arbitration (the *ICC*),[25] which is also the institution in international arbitration most preferred by parties generally.[26] 15.7% of space-related disputes were resolved under the rules of the International Centre for Dispute Resolution and 10.5% at the London Court of International Arbitration.[27] In contrast, no disputes have been referred to arbitration under the PCA Rules in their twelve years of existence.

The PCA apparently predicts, on the basis of the number of enquiries received relating to the incorporation of the PCA Rules within arbitration clauses in commercial space contracts, that it will only be a matter of time before claims are brought pursuant to this instrument.[28] Time will indeed tell whether this proves correct. The authors of this article are, however, sceptical that they will ever achieve widespread adoption in commercial space transactions.

24 These advantages may of course be disadvantages depending on which side of a dispute a party sits.

25 Viva Dadwal and Madeleine Macdonald, *Arbitration of Space-Related Disputes: Case Trends and Analysis*, 71st IAC – The Cyber Space Edition (2020), p 6.

26 QMUL, *2021 International Arbitration Survey*, p 10, available at https://arbitration.qmul.ac.uk/media/arbitration/docs/LON0320037-QMUL-International-Arbitration-Survey-2021_19_WEB.pdf (last visited 22 January 2023).

27 Dadwal and Macdonald, supra note 26.

28 O'Grady supra note 21, p 56.

The reason for this is that parties (and their lawyers) tend to favour dispute resolution fora that are reliable and familiar – particularly for high value transactions, which includes most space-related business. It would require a real incentive for them to switch to using arbitral rules with which they have no experience. In the authors' view, the PCA Rules will not, in most cases, offer that incentive. While they do contain novel provisions that thoughtfully respond to concerns that players in the commercial space sector are likely to have in dispute resolution, those concerns are or can likely be addressed adequately under better-known and tried-and-tested arbitration offerings.

For example, in acknowledgement of the fact that many space disputes will involve a government or governmental entity, the PCA Rules (which build upon the 2010 UNCITRAL Rules) contain an express waiver of any right of immunity from jurisdiction on which State parties may seek to rely.[29] In most instances, however, such a provision will be superfluous since, under the national law of most jurisdictions, by agreeing to international arbitration, a State or State entity is treated as having waived its immunity from the enforcement of the arbitration agreement and recognition of any resulting award without any express waiver being necessary.[30]

The PCA Rules also contain provisions which reflect the fact that parties to space disputes (particularly in inter-State disputes) may desire five arbitrators to be appointed as opposed to the usual options of three arbitrators or a sole arbitrator.[31] In addition, to address the need for specialist knowledge in space cases, the PCA Rules include a provision permitting the tribunal to request that parties provide a non-technical document summarising and explaining the background to any scientific, technical or other specialised information which may be necessary to understand the dispute.[32] However, both of these procedural variations can be accommodated under more commonly-used arbitral procedures. For example, while the ICC Rules only expressly envisage arbitration by one or three arbitrators,[33] there is nothing to prevent parties of electing to appoint a five-member panel in their arbitration

29 Permanent Court of Arbitration, *Optional Rules for Arbitration of Disputes Relating to Outer Space Activities*, art 1(2), 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 (last visited 12 August 2022) (hereinafter, the PCA Rules).

30 Gary Born, *International Commercial Arbitration* (2021, as updated in August 2022), s 1.02[B][10].

31 PCA Rules, arts 9(1); 10(1); 10(2); and 10(4).

32 PCA Rules, art 27(4).

33 See, ICC Rules of Arbitration, entered into force on 1 January 2021, art 12(1), available at https://iccwbo.org/dispute-resolution-services/arbitration/rules-of-arbitration/ (last visited 31 January 2023) (hereinafter, the ICC Rules).

clauses.[34] Similarly, under the ICC Rules, the arbitral tribunal may adopt any procedural measure as it considers appropriate to ensure effective case management, provided that it is not contrary to any agreement of the parties.[35]

Moreover, there is one feature of the PCA Rules that could potentially give rise to a due process risk.[36] Under Articles 17(6) to 17(8) of the PCA Rules, a party may apply to the tribunal to have certain information it wishes to submit in an arbitration designated as confidential. If the tribunal agrees, it has the express power to determine under what conditions and to whom the confidential information is to be disclosed and to require any party to whom the information is to be disclosed to sign an appropriate confidentiality undertaking.[37] The tribunal may also, at the request of a party or on its own motion, appoint a confidentiality adviser as an expert in order to report to it based on the confidential information on specific issues designated by the arbitral tribunal.[38] If the tribunal does elect to appoint such an adviser, the confidential information need not be disclosed to the tribunal or to the party from whom the confidential information does not originate.

Thus, the PCA Rules envisage that a party may be able to rely on information in support of its position, without the opposite party having the opportunity to fully analyse it. This appears to conflict with the fundamental right of a party to know the case against it and be afforded due opportunity to respond.[39] If put into practice, therefore, the confidentiality advisor mechanism may jeopardise a final award's enforceability, since many national laws provide for the refusal of enforcement of awards where there was a due process violation in the underlying proceedings.[40] This issue can be avoided by using other more prominent arbitral rules, under which

34 Although, unlike the PCA Rules, the ICC Rules do not contain a fallback mechanism for how such a panel would be appointed. Therefore, if parties wish to have a panel of five arbitrators under the ICC Rules, they should ideally specify an appointment mechanism in their arbitration clause. In any case, it is more common for a five-member tribunal to be appointed in an inter-State case addressing public international law issues than in relation to a commercial dispute.

35 ICC Rule Article 22(2).

36 See also, Frans von der Dunk, *About the New PCA Rules and Their Application to Satellite Communication Disputes*, Space, Cyber and Telecommunications Law Program Faculty Publications 100 (2015), p 15.

37 Id.

38 PCA Rules, art 17(8).

39 UNCITRAL, *Explanatory Note by the UNCITRAL secretariat on the 1985 Model Law on International Commercial Arbitration as amended in 2006*, para 32, available at https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/19-09955_e_ebook.pdf (last visited 31 January 2023).

40 See, for example, UNCITRAL Model Law on International Commercial Arbitration, art 36.

arbitrators may still make provision for enhanced confidentiality in whatever way is appropriate without giving rise to a due process issue.[41]

5. *Specialist adjudicators*: a need to fill the vacuum?

Is the conclusion of this paper then that there is no room for improvement of existing arbitral procedures to cater for commercial space users? The answer is no. While the authors do not see a need for specialised space arbitration rules, they believe that the creation and promotion of a body of arbitrators specialised in the space sector would be a step forward for the efficiency of commercial contract space dispute resolution.

As noted above, many contractual disputes in the commercial space sector will involve highly technical questions or industry specific contractual clauses. While experienced arbitrators should be able to grapple with issues even if they are novel to them, arbitration is undoubtedly more efficient when the adjudicator(s) have some relevant background knowledge. The quality of the ultimate award may also be improved in these circumstances. Good expert counsel should be able to help arbitrators get familiarised with specialist topics through submissions, but they will not be available to call on during final deliberations.

Currently, however, there are only a very limited number of arbitrators with space-related expertise widely known to the arbitration community. The PCA's Specialised Panel of Arbitrators for space-related disputes lists only ten individuals of eight nationalities.[42] Likewise, the PCA's Specialised Panel of Scientific Experts for space-related disputes has seven individuals of six nationalities,[43] and no arbitrators listed on the commonly-used arbitrator databases, Global Arbitration Review's Arbitrator Research Tool and Jus Connect, cite "space" as a specialism.[44] By way of contrast, the same research tools list 186 practitioners that specialise in the field of oil and gas[45] and over

41 For example, drawing on the IBA Rules on the Taking of Evidence in International Arbitration.

42 PCA, *Specialised Panel of Arbitrators Established Pursuant to the Optional Rules for Arbitration of Disputes Relating to Outer Space Activities*, available at https://docs.pca-cpa.org/2022/01/2022/01/a42fa03c-pca-184031-v15-current_list_annex_4_sp_outer_space_arb.pdf (last visited 16 August 2022).

43 PCA, *Specialised Panel of Scientific Experts Established Pursuant to the Optional Rules for Arbitration of Disputes Relating to Outer Space Activities*, available at https://docs.pca-cpa.org/2022/01/2022/01/ddde3962-pca-184007-v14-current_list_annex_5_sp_outer_space_exp.pdf (last visited 16 August 2022).

44 This may be because the tools do not list space as a potential specialisation. If so, the effect is the same.

45 GAR, *Arbitration Research Tool*, available at https://globalarbitrationreview.com/tools/arbitrator-research-tool?arbitrators-production%5BrefinementList%5D%5Bspecialist_knowledge%5D%5B0%5D=Oil%20%26%20Gas (last visited 1 February 2023).

726 profiles of arbitrators for commercial arbitration in the energy sector[46] respectively.

As commercial space activities expand, a limited pool of specialised arbitrators could also pose a procedural issue as it could lead to the recurrent appointments of arbitrators by the same party. This could create doubts as to the independence and impartiality of arbitrators, which, in turn, could lead to challenges to their appointment.[47] For instance, the 2014 IBA Guidelines on Conflicts of Interest in International Arbitration (viewed by many as "soft law" in arbitration) require mandatory disclosure by an arbitrator if they are re-appointed more than twice by the same party (or its affiliate),[48] or re-appointed more than three-times by counsel,[49] within in a three-year period. Upon such disclosure, depending on the circumstances, this fact could result in an arbitrator being forced to step down from a tribunal. Accordingly, a greater number of (or knowledge of) arbitrators with experience in the space industry could have the potential to improve the efficiency of commercial space dispute resolution.

46 Which does not include oil-related disputes. Jus Connect, available at https://jusmundi.com/en/directory/arbitrators/all?query=&page=1&role%5B0%5D=arbitrator&economic-sector%5B0%5D=36&type-cases%5B0%5D=6 (last visited 1 February 2023).

47 Kroll et al, Comparative International Arbitration (2003), p 264.

48 Id, at Part II, para 3.1.3.

49 Id, at Part II, para 3.3.8.