

# Binding Arbitration as an Effective Means of Dispute Settlement for Accidents in Outer Space

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## I. Abstract

This paper will explore the advantages, issues, and particular circumstances where adopting binding arbitration to proceedings that require the finding of fault and the awarding of damages for in-space accidents may be beneficial to all parties. The space treaties are particularly devoid of effective procedures for resolving disputes between private firms, international organizations, and other non-governmental entities with assets in outer space. As space becomes more crowded with active satellites that are both expensive and valuable orbiting and operating in regions now littered with abandoned satellites and human-created debris, the probability of serious interference with those spacecraft is increasing exponentially. In the existing space legal regime the first level of settling disputes is through diplomatic negotiations, which have been sufficient but could easily become cumbersome and ineffective for private satellites involved in an accident. The process and techniques offered through binding arbitration offer an effective means of dispute resolution that is commonplace in international commercial dealings and also widely used in investor-state arbitration under ICSID or UNCITRAL Rules. Binding inter-state arbitration is also formally part of the UNCLOS and WTO dispute mechanisms. In space, arbitration has been agreed upon for enforcing contractual issues but it has not been applied to cases involving tortious actions such as a space accident. To implement this, national space laws and regulations across nations may have to be amended. But, new space treaties will not be necessary, nor will there be the need for any major innovations in international law.

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## II. Issues of Dispute Resolution Systems for Space Incidents

Space is a unique environment, both physically and legally. It is difficult and expensive to get to, not survivable for human beings without special equipment and even risky for satellites and robots to operate in. Yet, with all of the risks, space provides valuable opportunities to learn more about our existence on Earth as well as advantages for certain types of profitable businesses that cannot be duplicated terrestrially. The space environment also is used for security and defense.

Under the traditional framework of space law, space was viewed as being primarily reserved for government activities. The set of international space treaties were negotiated and ratified during this early period of human space activity in the 1960s and early 1970s and reflect the drafters' focus on government rather than commercial uses of space. Although the private use of space was envisioned, these treaties largely assumed that diplomatic negotiations would solve future space-related disputes between nations. And, in fact the treaties themselves represent a successful set of international government negotiations based on the foundation of international cooperation, peaceful uses of space, and the potential benefits for all humankind.

Some of the elements of space law and the space environment that distinguish it from other sectors of human activity are: the agreement that no nation can declare sovereignty over space and celestial bodies, the difficulty of physically enforcing treaty provisions in space, the lack of a clear definition of where space begins and the lack of clear borders within space, the presumption of unlimited state liability for its national activities in space as well as those of its non-governmental entities, and that a state's liability is also unlimited in time since human created space objects can remain in space for hundreds of years.

Furthermore, we have been lucky. To date there have been no significant international disputes arising from in-space incidents that have created enough economic or other damage to warrant a rewriting of the treaties or laws. Yet, the potential for such an incident grows yearly, especially from the crowding of orbits with satellites and human-created debris. In recent years, there have been a series of in-orbit accidents as well as purposeful actions creating debris. These incidents have served to remind us that there remains the potential for a very devastating accident in space—a contingency that has captured the attention of legal, technical, and political experts.

Space law should provide for an effective and enforceable dispute resolution mechanism, similar to ones that are embedded in many other industries and sectors that also have unique international standing and issues.

The objectives of an effective dispute resolution system are:

- Easy access
- Provide for a fair and equitable process and resolution
- Be speedy and economical
- Provide incentives for space sustainability
- Allow for reasonable compensation for damage
- Provide for enforceable judgments in all nations.

### III. Current Means of Resolving Disputes Concerning Space Accidents

#### A. Government to Government Disputes

In the event of a collision between spacecraft or an accident in outer space involving space debris originating from a spacecraft, it may, depending on the circumstances, become a government-to-government matter. Different governments may own, and directly control, both space vehicles in question: direct government ownership and control of satellites, rockets and other spacecraft remains quite common.

The space treaties provide that the first and primary method of resolving government-to-government disputes is to engage in direct diplomacy and reach a negotiated outcome. The amicable resolution in 1979 of Canada's damage claims arising from the crash of *Cosmos 954* is a case in point. It should be clearly noted that this was a case of terrestrial damage from a space object. Following the Liability Convention, absolute liability is attributed to the launching state of the space object.<sup>1</sup>

The primary focus of this article is on damage occurring in-space, which triggers the finding of fault; a far more difficult burden of proof.<sup>2</sup> However, the resolution of the *Cosmos 954* accident as well as negotiations involving subsequent international space accidents have set a precedent of using diplomacy for government-to-government space incidents.<sup>3</sup>

Outer space law provides a further, less direct route by which governments can be brought into disputes involving spacecraft. The Outer Space Treaty of 1967 ("OST")<sup>4</sup> provides that states are generally responsible for the activity of their nationals in outer space;<sup>5</sup> that states "shall retain jurisdiction and control" over "objects launched into outer space"<sup>6</sup> and shall generally be "liable for damage" from such objects;<sup>7</sup> and that states shall avoid "harmful contamination"

1 Convention on International Liability for Damage Caused by Space Objects (*opened for signature* Mar. 29, 1972) (hereinafter "Liability Convention"), Article II. The Liability Convention has been adopted by 88 countries, with 23 further signatories.

2 *Id.*, art. III.

3 For example, in 2008 when the U.S. proposed deorbiting U.S. 193, the U.S. Department of State advised all other nations that it would take responsibility and indemnify other nations should that satellite cause damage to their property. Fortunately, it was deorbited into the ocean.

4 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 18 U.S.T. 2410 (*opened for signature* Jan. 26, 1967) (hereinafter "OST"). As at the present date, 101 states have ratified, and a further 26 states have signed, the OST. See *Status of International Agreements Relating to Activities in Outer Space*, U.N. Office for Outer Space Affairs, <<http://www.oosa.unvienna.org/oosa/en/SpaceLaw/treatystatus/index.html>> (last visited Jan. 26, 2013).

5 *Id.*, art. V.

6 *Id.*, art. VIII.

7 *Id.*, art. VII.

of space and activities that interfere with other states' rights and exploration.<sup>8</sup> As mentioned above, the 1972 Liability Convention further imposes "fault"-based liability on states for damages "caused elsewhere than on the surface of the earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching State."<sup>9</sup> Beyond these treaties, it could be argued that customary international law also provides a basis for fixing liability upon launching states.

In the case of claims between parties to the 1972 Liability Convention, the possibility exists of claims being adjudicated by a "Claims Commission" procedures established in Articles XIV through XX of that treaty. Crucially, however, this is a non-binding procedure: although state parties are obligated to *establish* a Claims Commission in the event of a dispute lasting more than a year,<sup>10</sup> the *outcome* of the Claims Commission process is not: a Claims Commission award (including its findings concerning liability and compensation) is merely "final and recommendatory," to be considered "in good faith."<sup>11</sup> In the 40-odd years of the Liability Convention's existence, the "Claims Commission" procedure has never once been used.

Other claims could be resolved through third-party mediation (e.g. through the offices of the United Nations Secretary General, as was done in the case of New Zealand's claims against France arising from the deliberate sinking in 1985 of the Rainbow Warrior). In extreme cases it is conceivable that the UN Security Council might become involved, as it was recently when North Korea's launch of a satellite violated prior Security Council resolutions related to their use of ballistic missile technologies.<sup>12</sup> Although space-related, this was not a case of a tort or one that involved an accident or economic damage in space.

The Permanent Court of Arbitration (historically a venue for numerous interstate arbitrations) has published special rules for space-related disputes, entitled "Optional Rules for Arbitration of Disputes Relating to Outer Space Activities."<sup>13</sup> These are discussed further below, but their key limitation, as regards the *existing* body of space law, is that the rules remain optional, i.e., they only apply if states (or other actors) expressly agree to adopt them, either in a treaty or agreement of general application, or in an *ad hoc* agreement reached

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8 *Id.*, arts. IX, XI.

9 *Liability Convention, supra*, art. III.

10 *Id.*, art. IV. Note that the obligation to establish the Claims Commission is not automatic. It is activated only when one of the parties requests its formation.

11 *Id.*, art. XIX(2).

12 The Security Council of the UN adopted Resolution 2087 on 22 January 2013. This Resolution condemned North Korea's launch of 12 December 2012 and stated that the launch used ballistic missile technology and was in violation of resolutions 1718 (2006) and 1874 (2009). Resolution 2087 also imposes sanctions on individuals of North Korea who were responsible for the launch.

13 Permanent Court of Arbitration, Optional Rules for Arbitration of Disputes Relating to Outer Space Activities, introduction (Dec. 6, 2011), *available at* <[www.pca-cpa.org/showfile.asp?fil\\_id=1774](http://www.pca-cpa.org/showfile.asp?fil_id=1774)>.

by the parties after a dispute has arisen. To date there are no reported instances of the PCA Rules being used in practice.

A further avenue for state-to-state dispute resolution might be international adjudication through the International Court of Justice. But although most states have signed the Statute of the ICJ, relatively few states (and fewer still space-faring nations) have submitted unconditionally to the compulsory jurisdiction of the ICJ – and none of the major space treaties provide for ICJ jurisdiction over claims of alleged violation of their terms. Furthermore, with the exception of the *Corfu Channel* case adjudicated in 1949 (dealing with a British claim for damage after a warship was damaged by submerged mines in Albanian waters), the ICJ has not generally handled “collision” type cases involving claims for monetary compensation.

A final possibility is litigation in the national courts. There are problems with this approach, however, including: (1) claims of sovereign immunity for the defendant state; (2) diplomatic pressures not to allow such litigation to proceed; and (3) the problems of obtaining international recognition of the judgment.

#### **B. Claims by or against Private Parties Involving Incidents in Outer Space**

At present there is no established framework for private claims involving space collisions. If a private owner of a spacecraft suffers damages through the actions of another space user, his/her remedies may depend on who the other party was. If the “defendant” party is a foreign government, the private owner might enlist the support of its own government in order to make a claim on its behalf, at the government-to-government level (such a procedure is sometimes known as “diplomatic protection”). Alternatively, the private owner might seek to sue the foreign government for damages in a national court (either its home court or that of the foreign government) – assuming it can overcome any objections to sovereign immunity. In the opposite scenario (government plaintiff vs. private actor), the plaintiff government might seek to sue the private actor in a national court, but might face difficulties in enforcing a judgment of its own “home” court against a foreign defendant.

If in a purely private party vs. private party situation, conceivably the dispute might be referred to litigation either in the plaintiff’s home court or that of the defendant. In either scenario, however, potential problems exist, especially if one side is perceived as having a “home ground” advantage.

#### **IV. The Need for a New International Dispute Resolution Mechanism for Space Activity**

It has long been recognized that accidents will occur in outer space and that the provisions included in the space treaties do not provide for effective enforcement or resolution of many potential types of disputes that are likely to occur. Beginning in the late-1970s, there were a series of proposals for new dispute resolution mechanisms to be incorporated into the space legal regime. It is now clear that the era between approximately 1985 and 2000 was critical: it her-

alded the rapid growth of private investment in space, particularly in the telecommunications and direct broadcast TV industries in Geosynchronous Earth Orbit (GEO), along with proposals for Low Earth Orbit (LEO) broadband systems incorporating large numbers of satellites. The advent of commercial satellites as well as the expansion in the number of satellites in space led to the push for a dispute resolution system more appropriate to private sector interests than the existing regime of relying on diplomatic negotiations to settle issues. The pivotal academic articles were initiated by Prof. Böckstiegel, who outlined the reasons for the changes.<sup>14,15</sup> He also proposed a set of detailed rules for binding arbitration that would form a new Convention on the Settlement of Space Law Disputes.<sup>16</sup>

He summarizes the arguments regarding a system of dispute resolution for space matters as follows:

- "...most areas of space law, though codified on many other aspects, lack such a machinery or at least lack provisions for mandatory binding dispute settlement.
- "As more and more practical disputes have to be anticipated in the exploration and use of outer space by a growing number of states, international organizations and private enterprises, frameworks for effective dispute settlement will have to be developed at the international level in the near future."
- "This may be less necessary for commercial space activities, especially as far as the participation of private enterprises is concerned, because the international business community has developed and used for many years international commercial arbitration as the preferred method of dispute settlement. The space industry and state institutions active in commercial space activities including international organizations like ESA are already using this option as well."<sup>17</sup>

Today, it is necessary to review these conclusions. Although they are still relevant and accurate, the growing issues regarding space debris and the increased potential for a very serious accident in space involving significant economic loss needs further attention.

Prof. Böckstiegel's discussion regarding the use of commercial arbitration that it is a proven successful system for contractual disputes among private entities. For example, disputes regarding the manufacturing of space equipment, insur-

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14 Böckstiegel, Karl-Heinz, *Arbitration and Adjudication Regarding Activities in Outer Space*, Journal of Space Law, Vol. 6, No.1, 1978, pp. 3-16.

15 Böckstiegel, Karl-Heinz, *Settlement of Disputes Regarding Space Activities*, Journal of Space Law, Vol. 21, No. 1, 1993, pp. 1-10.

16 Böckstiegel, Karl-Heinz, *Proposed Draft Convention on the Settlement of Space Law Disputes*, Journal of Space Law, Vol. 12, No. 2, 1985, pp. 136-161.

17 Böckstiegel-1993, supra, page 10.

ing space activities, and the operations of satellites are commonly referred to commercial arbitral tribunals.<sup>18</sup>

However, important questions remain that need to be addressed for accidents occurring in outer space. If a party is at fault for a space accident and there is no contractual relationship between the parties, the space treaties provide no guarantee of binding dispute resolution. Furthermore, commercial space assets often are a combination of private interests and state interests. We now need to develop a method of binding settlements which will go beyond contractual relationships and that will also be able to accommodate (either in general and/or for a particular fact situation) the potentially contentious subjects surrounding a definition of what constitutes fault liability, state responsibility, and economic remedies in space law.<sup>19</sup>

Arbitration is an option for dispute resolutions in many areas of law analogous to space. The ITU Convention,<sup>20</sup> the European Space Agency Convention,<sup>21</sup> the U.N. Convention on the Law of the Seas,<sup>22</sup> the World Trade Organization Convention,<sup>23</sup> among others, all have provisions for binding arbitration to be used to settle disputes. Even the Intelsat and Inmarsat Treaties, before they became private companies, had similar provisions.<sup>24</sup> And, as discussed below, arbitration is a preferred dispute resolution mechanism for many other international and domestic issues.

And, even the International Court of Justice has a process that resembles arbitration. Under art. 26, paragraph 1 of the Statute, the ICJ can form a “chamber” for a particular type of case.<sup>25</sup> Specific judges are assigned to that chamber and would hear those cases. This process is also, under paragraph 3, available for specific cases with the consent of the parties (states) involved—a process

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18 Mourre, Alexis, *Arbitration in Space Contracts*, Arbitration International, Volume 21, No. 1, 2004.

19 Hertzfeld, H., *A Roadmap for a Sustainable Space Legal Regime*, Proceedings of the International Institute of Space Law 2012, Eleven International Publishing, (forthcoming).

20 Jakhu, R., *Dispute Resolution under the ITU Agreements*, Secure World Foundation, accessed at: <<http://swfound.org/media/48115/Jakhu-Dispute%20resolution%20under%20the%20ITU%20agreements.pdf>>, accessed 7/31/2013.

21 Convention for the Establishment of the European Space Agency, Art. XVII, Paris, France 1975.

22 United Nations Convention on the Law of the Sea, opened for signature Dec. 10, 1982, 1833 U.N.T.S. 3.

23 Final Act Establishing the World Trade Organization, Understanding on Rules and Procedures Governing the Settlement of Disputes, Article 21.3(c), 15 April, 1994.

24 Agreement Relating to the International Tele-communications Satellite Organization, annexes and Operating Agreement, (1971) Annex C, accessed at: <[www.islandone.org/Treaties/BH585.html](http://www.islandone.org/Treaties/BH585.html)>; The Operating Agreement on the International Maritime Satellite Organization, London, September 33, 1976, and entered into for the United States, July 16, 1979, T.I.A.S. 9605.

25 See: <[www.icj-cij.org/court/index.pho?p1=1&p2=4](http://www.icj-cij.org/court/index.pho?p1=1&p2=4)>.

akin to arbitration and the appointment of agreed upon judges for that case. However, to date, just as the Claims Commission in the Liability Convention has never been used, no case has yet been heard in an ICJ Chamber.

## V. Arbitration

Arbitration has proven an effective means of solving modern commercial disputes, especially between parties of different nationalities. Numerous modern arbitral institutions (the International Chamber of Commerce, UNCITRAL, the American Arbitration Association, London Court of International Arbitration, Singapore International Arbitration Centre and Hong Kong Arbitration Centre) have enacted rules and, in many cases, play an active role in administering arbitral disputes, appointing arbitrators and promoting the system of commercial arbitration. In addition, there exists a network of “investment treaties” providing for neutral arbitration of disputes before bodies such as the International Centre for Settlement of Investment Disputes (“ICSID”) or the PCA. Arbitration is also widely used in cases involving public international law. In addition to treaty disputes before ICSID, the PCA or UNCITRAL (which represent a sub-species of public international law), international arbitration is frequently used in order to resolve state-to-state maritime boundary disputes arising under the Law of the Sea Convention. A form of arbitration (using “Dispute Panels” and an “Appellate Body”) is utilized in the World Trade Organization trade dispute procedures, and, as noted above, the 1972 Liability Convention contains a kind of quasi-arbitration (albeit in a form that is somewhat flawed due to its non-binding nature).

Arbitration can be particularly popular in certain industries where specialized knowledge is important, and, indeed, in many areas of commercial arbitration, there exists a pool of qualified lawyers with experience in handling industry-specific cases (e.g. oil and gas, satellites, maritime situations and insurance). Arbitration is also widely used in cross-border cases, in order to avoid parties going to their “home court,” and in cases between private parties and foreign government entities.

All of these qualities would potentially make arbitration an efficient means of resolving disputes involving space activity and space collisions in particular. First, arbitrators can be appointed based on their particular technical or industry experience. In addition, the arbitral procedure, which is usually private and often confidential, may also provide a better setting in which to handle confidential or proprietary information of the kind often associated with high-technology spacecraft. Indeed, with appropriate safeguards, arbitrations can even be structured to handle “classified” information or information protected by ITAR or export controls.<sup>26</sup>

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26 It will be important that the legal reasoning, conclusions, and judgments arising out of space-related arbitrations be published and transparent since they will be extreme-



Although arbitration is often a private process, there may be instances where some third-party transparency is appropriate (e.g., in cases involving environmental damage that affects third parties). The experience of investor-state arbitration under the ICSID Convention and UNCITRAL Rules (including UNCITRAL cases administered by the PCA) shows that it is possible to incorporate procedures for third parties or *amici* to participate in the arbitral process. Some may argue that this is only appropriate when both parties to the dispute consent to third-party participation and/or publication of the proceedings; others may take the view that the arbitral tribunal should possess the independent power to authorize this.

Generally speaking, for an arbitral system to be effective, there needs to be:

- A stable, predictable body of rules that will govern the procedure, together with competent administrators who can oversee the arbitrations.
- Adherence to the system of arbitration by all relevant players.
- A pool of available practitioners that can serve as arbitrators.
- A legal framework in which a final arbitral award can be enforced as a final judgment in jurisdictions where the parties operate.

The last of these mechanisms already exists, largely due to the successful implementation of the 1958 New York Convention on Recognition and Enforcement of Foreign Arbitral Awards. Under this Convention, which currently has 149 parties, the courts of each contracting state are required to recognize and enforce arbitral awards rendered in other contracting states, subject to certain relatively narrow criteria for denying enforcement (e.g. that the award violates of important norms of international public policy). The New York Convention, as well as a number of other regional treaties such as the 1975 Panama Convention on International Commercial Arbitration, thus provides a mechanism for the worldwide enforcement of awards arising out of international commerce. The development of the first, second, and third criteria poses the more significant challenge for the space community. It requires creation of an arbitral “infrastructure” both through the establishment of a proper institutional framework, as well as the development of imposition of uniform rules or practices that mandate industry adherence to arbitration.

In theory, these factors could be developed and a new arbitral system enshrined through a new space treaty or an amendment to the 1972 Liability Convention. Given, however, that there are 88 parties to the Liability Convention, the task of amending the treaty itself would be extremely time-consuming and onerous—however meritorious the proposed forms might be.

Alternatively, a network for arbitration of collision cases could be developed through an agreed system of national laws or regulations, making it a standard condition of any launch license that the launching party agree in advance to: (1) accept international arbitration of any collision claims involving any private or public actor which is also engaged in space-faring activity; and (2) publishes

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ly useful in establishing precedents for this area of space law that now lacks case history and specificity.

its consent to arbitration so as to notify potential claimants of the availability of arbitration.

Skeptics might wonder whether an arbitration regime might be created in this decentralized, non-prescriptive manner. In actuality, there are numerous past instances in commercial practice of an international arbitration “system” in a particular sector being created, or evolving, through a decentralized process. As but a few examples:

- *Domain name disputes.* Under the auspices of the Internet Corporation for Assigned Names and Numbers (“ICANN”), a private body based in California that is responsible for the worldwide coordination of Internet identifiers, there has been established a “Uniform Domain Name Dispute Resolution Policy” that provides a mechanism for adjudicating disputes over domain name use and ownership.<sup>27</sup> Under the policy, which has been adopted by ICANN-approved registrars, domain-name holders are required to agree to in advance to submit a variety of domain-name disputes to a “mandatory administrative procedure” administered by an ICANN-approved dispute resolution service provider (a list that includes the World Intellectual Property Organization Arbitration and Mediation Centre.<sup>28</sup> According to WIPO, this procedure provides a ready means of resolving disputes about abusive name registration (“cybersquatting”).<sup>29</sup>
- *Maritime Salvage.* In maritime practice, salvage operations on the high seas are usually conducted via a “Lloyds Open Form” agreement: the salvor and the stricken vessel customarily agree to adopt the Lloyds form prior to the salvage operation. This standard form, which represents a contract governed by English law, leaves the “reward” (i.e. compensation”) for the salvage operation to be determined by an arbitrator in London.<sup>30</sup>
- *Wall Street securities industry arbitration.* In the United States securities industry, licensed brokers are required to submit to a uniform system of arbitration administered by the private industry body, the Financial Industry Regulatory Authority (“FINRA”). FINRA arbitration thus embraces a large variety of securities industries disputes, including broker/customer disputes as well as disputes between broking firms and their own brokers.

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27 <[www.icann.org/en/dndr/udrp/uniform-rules.htm](http://www.icann.org/en/dndr/udrp/uniform-rules.htm)>.

28 <[www.icann.org/en/help/dndr/udrp/providers](http://www.icann.org/en/help/dndr/udrp/providers)>.

29 <[www.wipo.int/export/sites/www/freepublications/en/arbitration/919/wipo\\_pub\\_919.pdf](http://www.wipo.int/export/sites/www/freepublications/en/arbitration/919/wipo_pub_919.pdf)>.

30 The key arbitration clause in the Lloyds Open Form provides that “[t]he Contractors’ remuneration and/or special compensation shall be determined by arbitration in London in the manner prescribed by Lloyd’s Standard Salvage and Arbitration Clauses (‘the LSSA Clauses’) and Lloyd’s Procedural Rules in force at the date of this agreement.” See <[www.lloyds.com/The-Market/Tools-and-Resources/Lloyds-Agency-Department/Salvage-Arbitration-Branch/~/\\_media/Files/The%20Market/Tools%20and%20resources/Agency/Salvage%20Arbitration%20Branch/Agency\\_LOF\\_2011.pdf](http://www.lloyds.com/The-Market/Tools-and-Resources/Lloyds-Agency-Department/Salvage-Arbitration-Branch/~/_media/Files/The%20Market/Tools%20and%20resources/Agency/Salvage%20Arbitration%20Branch/Agency_LOF_2011.pdf)>.

- *Sports arbitration.* The Court of Arbitration for Sport, based in Switzerland, has been established to hear any disputes involving sport in which the relevant governing bodies had consented to CAS jurisdiction. It now hear disputes involving the Olympics, international soccer contests and other sporting competitions, including anti-doping appeals by athletes.
- *Commodities and futures markets.* Several commodities or futures markets have their own system of arbitration that is potentially applicable to resolve disputes between market participants. The London Metals Exchange and the National Futures Association are but two examples.

These examples show that an identifiable arbitration “system” can be established to adjudicate international or industry disputes, without the need for an implementing multilateral treaty.

As noted above, in 2011 the PCA issued Optional Rules for Arbitration of Disputes Relating to Space Activities. They are based on the UNCITRAL rules with some modifications. Although mainly related to the procedures for arbitration, they are modified to reflect the realities of space. Many of the provisions of these rules deal with the handling of sensitive or classified information in an arbitral proceeding.<sup>31</sup> The rules require the PCA to assemble a “list” of “persons considered to have expertise” in space disputes (art. 10(4)), as well as “an indicative list of persons considered to have expertise in the scientific or technical matters in respect of which these Rules might be relied upon” (art. 29(7)). Although, as noted above, use of the rules remains optional, it nevertheless is significant that space law and the potential for future arbitral tribunals in space is receiving international recognition and that models for procedural rules are being formulated.

## VI. Pros and Cons of Arbitration

Arbitration is not a panacea or a solution to the problem of dispute resolution for space affairs. It is, however, a system that has proven effective and useful in many other sectors and should be seriously considered for formal inclusion in space law.<sup>32</sup>

The advantages of using arbitration instead of a formal court proceeding (either in national courts or an international tribunal such as the ICJ) have been discussed above. Briefly summarizing them:

- Available to all parties, governments, corporations, and individuals (as noted above, some international tribunals such as the ICJ have jurisdiction only when a state brings a claim.)

31 See: Carminati, Giugi, *The Optional Rules for Arbitration of Disputes Relating to Outer Space Activities: A Comparison to the UNCITRAL Rules*, International Law Journal, Los Angeles County Bar Association, Vol. 1, No. 1, October 2012.

32 The space treaties do not excluded arbitration from being used, as the Liability Convention, art. XI(2) does permit a state to “pursue a claim in the courts or administrative tribunals or agencies of a launching state.”

- A potentially expeditious process, not governed by complex national evidentiary rules.
- Arbitrators can be chosen from a pool of experienced neutral professionals.
- Arbitrators can be selected by agreement among the parties.
- Potentially less costly than some forms of national court litigation (but this is not to imply that a complex case will be “cheap”).
- A multilateral treaty framework already exists whereby nations have agreed to enforce the decisions of arbitral tribunals.

On the other hand, arbitration may not be appropriate in all circumstances and carries with it some drawbacks. Among them are:

- Unwillingness of states to submit classified information to a tribunal, even with appropriate safeguards.
- Unwillingness of companies to reveal proprietary information to potential competitors.
- The continued risk of gamesmanship or delay, based on party conduct. The availability of arbitration might not alter the determination of some parties to engage in improper tactics, especially in a new system. Much will depend on the precise rules and institutional framework that is eventually utilized.
- Possible difficulty of selecting a specific arbitral system for space law—many exist but are often crafted to meet specific situations of other issues (environment, contracts, trade, etc.).
- The difficulty of creating arbitration agreements for third-party or “tort” situations when there is no contractual relationship among the parties.

There will often (if not usually) be concerns focusing on crucial classified information that may be necessary for any tribunal to reach a legally sound and fair resolution of the dispute at hand. Even assuming that adequate safeguards and procedures are in place to protect and keep confidential the information (and that any national statutory restrictions on disclosure can be overcome), a disputant party might still question either the accurateness or the completeness of information furnished to the tribunal by its adversary. Objections of this kind, while indicating a degree of distrust among the parties, are often encountered in international arbitration involving state parties or large commercial enterprises. However, these are issues of politics and technology, not legal issues. Specifically with cases involving outer space accidents, nations today are developing multiple new systems to better track and identify what is in outer space and where it is located. As these technical capabilities improve over time, the need to rely on just one nation for evidentiary facts will decrease and a tribunal should be able to better assess the accuracy and truth of evidence that is submitted to it.

It should be noted that arbitration, which is a framework for the presentation and adjudication of opposing claims, is only one system of dispute resolution and that other, less formal means of dispute resolution could also be explored. Although not examined in depth by this article, they include conciliation and mediation – two forms of structured negotiation process that rely upon the good offices of a neutral facilitator/mediator to aid the parties in reaching

agreement. As with arbitration, creating an effective framework for these procedures will depend upon the precise rules and institutional support that is selected by its framers.

Unlike other sectors of the economy, there have been so few litigated incidents within space law (except for breach of contract) to warrant any special court or tribunal to be devoted solely to those cases. It would be impractical today to form a standing court or tribunal composed of full-time judges to handle such disputes when the demand is unknown and in the indefinite future.<sup>33</sup> Arbitration, however, does not require the establishment of a permanent tribunal; arbitral tribunals can be formed on a case-by-case basis, as needs dictate.

## VII. Conclusions and Recommendations

Binding arbitration should be viewed as a very viable and workable method for dispute resolution for matters involving in-space accidents and incidents. A workable system for binding arbitration of space-related disputes, including among private actors, can realistically be accomplished within the existing international legal system without the need to modify or renegotiate the current U.N. space treaties and without drafting any new U.N. space treaty.

In order to make the arbitration binding, several initiatives must begin. First, there needs to be a consensus among companies and governments as to the benefits of agreeing to submit disputes to international arbitration and a consensus on the kind of international rules and procedures that would form part of that process. Next, a mechanism for submitting such disputes needs to be agreed, e.g. by making this a condition of any required national license to engage in space-faring activity. This, in turn, requires an amendment to national laws would have to be changed to permit licensing agencies of the states to require companies to submit to binding arbitration when the license to launch and/or operate in space is granted.

Associated with this licensing requirement would be the agreed framework for the international arbitral process that is selected to hear space-related cases, including any specific rules or procedures that are considered acceptable and appropriate to meet the special needs of the space sector (e.g. handling of classified and sensitive technical information, specialist experts in space technology, etc.).

In an ideal system, all states themselves will also submit to binding arbitration – absent a basis for mandating such submission, they will continue to decide whether to submit disputes on a case-by-case basis.<sup>34</sup> (States will continue to

33 For example, under the UNCLOS a Sea Bed Tribunal has been established to adjudicate cases involving international disputes.

34 As noted above, the 1972 Liability Convention already provides a non-binding Claims Commission procedure. It would be reasonable to require, as part of any submission to arbitration in collision cases, that the claimant cause its government to forgo any "Claims Commission" procedures.

be bound by the treaties to first attempt to resolve their differences through diplomatic negotiations.) The types of disputes that appear most suited to arbitration are those that:

- Involve an accident in outer space (i.e. above the limits of the atmosphere)
- Involve two or more different states or companies that reside in different states
- Create enough economic damage to at least one party to warrant an international tribunal to find fault and award damages
- Require a finding of fault (due diligence, negligence)
- Cannot be resolved first through diplomatic negotiations

The recognition of the need for a better and more effective dispute resolution system in space law has long been recognized. The efforts of the 1980s were forgotten for two main reasons: 1) arbitration procedures for commercial disputes were adequate to meet the needs of the companies involved and 2) there were no accidents in space of enough magnitude or economic significance to warrant a change in law.

Today there is renewed attention to the need for a better system. The issue of space sustainability has generated much attention due to the threat created by congestion in space and the potential for satellite collisions and for cascading debris to accelerate the probability of more accidents. Unlike contract disputes, these collisions will bring forth claims of liability due to the negligence, lack of due diligence, or fault of one or more companies or nations involved in space operations.

It is now time to be prepared for the inevitable. Governments are negotiating various “codes of conduct,” “rules of the road,” and other methods to minimize the creation of additional debris in space. They are also creating systems to monitor space and develop better predictions of when conjunctions might occur with the objective of having operators of space equipment maneuver to avoid accidents.

But it is also time to consider changes in the legal system to deal with accidents after they happen. Hopefully, such a system will evolve to accommodate both commercial and government interests and to develop rules, definitions, and procedures that will reward those who take responsible steps to avoid collisions as well as provide penalties for those who are found to be at fault in their operations.

Since the current dispute resolution systems are admittedly weak, the inclusion of a proven system of arbitration to address in-space issues can help to develop new ways to improve the potential for both incentives to avoid accidents as well as the award of damages if an accident occurs.

A workable system of arbitration (or even one in which states formally recognizes the option of arbitration) would be beneficial. It should evolve in the rules and regulations of national regulatory systems. It would be very advantageous if the major space-faring nations, particularly the United States, Russia, and China adopted this option in their licensing process for settling future disputes, particularly when private enterprises are involved, just as these and other nations have for other industries and international economic sectors.