

# Satellites and Space: using arbitration to resolve disputes in the new frontier

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This article discusses the increasing potential for disputes arising from the exponential growth in, and commercialisation of, space-related endeavours. It follows that there is a need for an effective dispute resolution mechanism. Therefore, the article considers the different industry sectors in which space-related disputes may arise and the current framework for the settlement of these disputes, including the role that arbitration has played, and will increasingly play.

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Against a backdrop of significantly increased commercial activities in space, this article sets out the relevant industry sectors in which space-related disputes may arise, before discussing the current framework in place for dispute settlement of such disputes and considering the role that international arbitration has played, and will increasingly play going forward.

## The commercialisation of space

Recent years have seen exponential growth in space-related commercial and government endeavours. While space exploration was formerly the exclusive domain of states and their space agencies, technological advancements and the increasing commercialisation of space have allowed private, non-state actors to enter the space industry. Currently a USD400 billion industry annually, the Singapore Ministry for Trade and Industry has predicted that the global space economy will increase to more than USD1 trillion by 2030 (see *Speech by Minister S Iswaran at the Global Space and Technology Convention 2023*).

Given the complexity and highly technical nature of space-related transactions and the multi-jurisdictional situations that they usually entail, effective dispute resolution mechanisms will be needed to address the space-related disputes that will inevitably increase in number alongside this rise of non-state actors in the space industry (including for-profit and not-for-profit entities, entrepreneurs, and small and medium-sized enterprises (SMEs)).

While state actors involved in the space industry have traditionally adopted a culture of cooperation and dispute avoidance through diplomacy and negotiation, commercial parties engaged in space activities require binding forms of dispute settlement.

## Relevant industry sectors for space-related disputes

To date, most publicised space-related disputes have occurred within the telecommunications industry and, in particular, satellite operations. However, the space industry now spans a far broader spectrum of industry sectors, which raises the prospect of space disputes in a wide variety of novel areas.

## Telecommunications and satellites

Disputes in the satellite and telecommunications sector are already being resolved by international arbitration, with typical issues including delays or failures in relation to satellite launches, as well as satellite defects. However, commercial operators are now venturing beyond traditional communications satellites into 5G satellite internet services. It is estimated that satellite

broadband will represent 50% of the projected growth of the global space economy by 2040, and as much as 70% in the most bullish scenario (see [Morgan Stanley, 'Space: Investing in the Final Frontier', 24 July 2020](#)).

In the near future, we will see an exponential increase in satellite launches, with the number of satellites in orbit forecast potentially to grow from around 2,500 to 50,000 within the next decade, including Low-Earth-orbit (LEO) satellites. Operators such as SpaceX, Telesat and Amazon have some of the most ambitious plans for the launch of new satellite constellations.

Two of the most notable space-related disputes in recent times arise from contracts relating to satellites and orbital slots.

- ***Devas Multimedia Private Ltd v Antrix Corporation Ltd (ICC Case No 18051/CYK)***. This dispute arose from the annulment by Antrix (the commercial arm of the Indian International Space Research Organisation) of an agreement for the lease of space segment capacity on two satellites to establish a hybrid satellite-terrestrial communications system combining a satellite and a series of ground-stations. Devas Multimedia, a company with German and Mauritian interests, entered into an agreement with Antrix, by which Antrix was to build, launch and operate two satellites and lease S-band capacity on the satellites to Devas for broadband wireless access and audio-video services through India. Following criticism of the agreement on the basis that the Indian Government was giving valuable S-band spectrum to Devas rather than India's military, India's Cabinet Committee on Security terminated the agreement. In 2015, an ICC tribunal found that Antrix had wrongfully repudiated the agreement and awarded Devas damages in the amount of USD562 million, plus interest. The dispute also gave rise to related investment treaty claims against India, and a series of enforcement actions which are ongoing. In 2022, the Indian Supreme Court ruled that the Devas-Antrix satellite contract was contaminated with fraud and following from this, including in a recent March 2023 decision, the Delhi High Court set aside the ICC award (see [Legal update, Delhi High Court upholds setting aside of ICC award on grounds of fraud and conflict with Indian public policy](#)). The impact of these rulings on various ongoing enforcement actions in respect of the ICC award remains to be seen.
- ***Eutelsat Communications v SES***. This dispute arose out of an Intersystem Coordination Agreement (ICA) which governed the use of certain orbital positions and frequency bands over Europe. Eutelsat claimed that SES had breached the ICA when it entered a subsequent agreement with Media Broadcast in 2005 assigning SES the rights to use a specific orbital slot under the ICA. Eutelsat claimed that SES was prevented from using certain transmission frequencies because the ICA had reserved these frequencies to Eutelsat. The ICC tribunal held that the ICA did not bar SES from using the disputed bands as Eutelsat did not hold the regulatory right to operate in these bands.

## Defence, surveillance and cybersecurity

Space is being used for enhanced military uses, including anti-satellite weapons and surveillance capabilities. Notably, on 1 November 2021, the United Nations First Committee (Disarmament and International Security) approved five draft resolutions aimed at preventing an arms race in outer space, including a resolution introduced by the UK to establish a working group that would "make recommendations on possible norms, rules and principles of responsible behaviours relating to threats by States to space systems" (see [Press release, Delegates Approve 5 Draft Resolutions, as First Committee Takes Action on Peaceful Use, Non-Weaponization of Outer Space, Chemical Weapons, GA/DIS/3676, 1 November 2021](#)).

Having long been active in the satellite sector, commercial operators are now also venturing into surveillance activities.

The increased dependence on space applications and private investment is driving growth in satellite launches. At the same time, the increased profile and influence of space systems (providing the foundation for services across telecoms, navigation, and surveillance) will also expose them to potential vulnerabilities and make them particularly attractive for cyberattacks (see [World Economic Forum 'Will the battle for space happen on the ground?', 25 May 2022](#)).

## **SMEs and start-ups**

Downsizing of technology and lower barriers to entry mean that SMEs now play an increasingly important role in the development of the space industry, with the capabilities to provide advanced products and services alongside better-known, major enterprises. In particular, new space companies are building smaller satellite systems that are far cheaper to make than previous systems. This has made satellite technology, such as earth observation, more accessible for organisations ranging from energy companies to agriculture businesses.

## **Space mining**

Space mining, although requiring vast investments and developments in technology, has become a near-future reality (see [Leonard David, 'Space mining startups see a rich future on asteroids and the moon', 7 January 2023](#)). In 2020, NASA announced its intention to start mining the moon in conjunction with private enterprises, under the aegis of the Artemis programme. China and India each have lunar programmes with potentially similar capabilities.

There are also programmes to prospect for minerals on asteroids. SpaceX is working alongside NASA to launch a research probe to the asteroid "16 Psyche", which contains vast quantities of iron and other minerals. Missions such as 2022's Double Asteroid Redirection Test (DART), which was a NASA mission launched atop a SpaceX rocket, are valuable knowledge-gathering exercises towards the potential eventual extraction of materials. Other companies such as Planetary Resources and Deep Space Industries are looking to pursue similar prospecting activities.

## **Sustainability in space**

The increasing commercialisation of space (in particular, the proliferation of LEO satellites) is expected to clutter Earth's orbit with objects ranging from entire defunct satellites to very small pieces of former satellites or rockets. The accumulation of space debris brings an increased risk of collisions, the risk of certain orbits being rendered unusable and could well result in disputes among satellite operators and other industry actors, as well as between state actors and private industry. In December 2021, China lodged a complaint at the UN after its space station had to take emergency action to avoid a collision with Space X satellites forming part of the Starlink constellation. The complaint cited the 1967 Outer Space Treaty, which requires states to take steps to protect the lives of astronauts.

In addition to high profile incidents such as that, the increasing clutter in Earth's orbit brings ESG considerations and risks directly into play for companies looking to operate or invest in space.

## **Dispute resolution in the space industry**

There are a range of dispute resolution options presently available to commercial actors in the space industry.

### **International arbitration under institutional rules**

Established arbitral institutions, such as the International Chamber of Commerce (ICC), Singapore International Arbitration Centre (SIAC), Hong Kong International Arbitration Centre (HKIAC), London Court of International Arbitration (LCIA) and Australian Centre for International Commercial Arbitration (ACICA), are well placed to administer space-related disputes. These institutions are familiar with the expertise required to adjudicate disputes in specialised subject areas and provide the mechanisms for parties and tribunals to deliver a tailored approach to technical disputes. They also have the infrastructure and administrative capabilities to support large scale disputes, and periodically update their arbitration rules, aligning them with

the most recent developments and best practices. The Permanent Court of Arbitration (PCA) has even developed specialised arbitration rules to address the particularities of space disputes.

### PCA Optional Rules for Arbitrating Disputes Relating to Outer Space

The PCA is among the oldest arbitral institutions in the world. Established by treaty in 1899, it specialises in the administration of disputes involving one or more state-parties. In 2011, the PCA introduced its *Optional Rules for Arbitration of Disputes Relating to Outer Space Activities (2011)* (PCA Space Rules) to address the unique nature of the space industry. The PCA Space Rules are based on the *UNCITRAL Arbitration Rules (2010)*, with several distinguishing features:

- **Waiver of immunity.** The adoption of the PCA Space Rules provides for the waiver of any right to immunity. This is important owing to the prevalence of governmental and quasi-governmental organisations in space-related contracts (*article 1(2)*).
- **Technical complexity.** In selecting an arbitrator, primary regard should be had to expertise on the matter in dispute (*article 10(4)*). The secretary general of the PCA is required to maintain lists of arbitrators and experts, and to support the parties in choosing suitable candidates during the arbitration (*articles 10(4) and 29(7)*). The arbitral panel can request a non-technical summary of scientific evidence from the parties (*article 27(4)*).
- **Confidentiality.** Parties can apply to have information treated as confidential and the tribunal is to decide whether the absence of protection is likely to cause serious harm (*articles 17(6) and (7)*). An expert confidentiality advisor can be appointed to report on the confidential information without disclosing it to the opposing party or to the tribunal (*article 17(8)*).
- **Timeliness.** Activities in space are time sensitive and often operate to precise schedules. The PCA Rules are written to reflect this sensitivity.

There are no publicly reported arbitrations using the PCA Space Rules. Although the PCA has administered space-related disputes (including *CC/Devas (Mauritius) Ltd, Devas Employees Mauritius Private Ltd & Telecom Devas Mauritius Ltd v Republic of India, PCA Case No. 2013-09* and *Deutsche Telekom AG v The Republic of India, PCA Case No. 2014-10*), these have been conducted under the UNCITRAL Arbitration Rules 2021. The low take-up of the PCA Space Rules has been attributed to various factors, including limited awareness of the PCA or the PCA Space Rules among private entities. Further, the PCA Space Rules may not necessarily have offered any benefits in the kind of satellite-related space disputes that have typically arisen to date.

### Dubai International Finance Centre's (DIFC) Courts of Space

Recently, some jurisdictions have also been looking to attract, and provide mechanisms for, disputes related to the space sector.

In 2021, the DIFC launched its Courts of Space as part of the Courts of the Future initiative. The initiative is designed to help build a new judicial support network to serve the commercial demands of international space exploration in the 21st century and to encourage businesses to opt for the jurisdiction of the DIFC Courts to resolve their space-related disputes. Two editions of a "Space Dispute Guide" have already been published in conjunction with this initiative (the second in February 2023; see *Space Disputes Guide – Edition 2*), which explore the court procedures for different types of claim and the legal frameworks of jurisdiction which could be considered with the Courts of Space.

### Arbitration best to resolve space disputes

Despite targeted developments such as those discussed above, as with any type of cross-border dispute, the key question that arises is which is the most appropriate forum for dispute resolution in the space sector. In light of the nuances and specialty of space-related disputes, as well as the fact they often involve large-scale commercial or government operations, international arbitration is typically regarded as a more attractive forum than litigation before national courts to reaching a binding resolution of space-related disputes.

International arbitration can be applied to disputes between both states and states and private parties, as well as purely commercial disputes. As a form of dispute resolution that features almost unfettered procedural flexibility, it is well suited to space-related disputes, given their frequently technical, and often highly-confidential, subject matter.

International arbitration is built on principles of choice and party autonomy. Parties choose the seat and governing law of the arbitration, typically with a view to ensuring a neutral and efficient process. Parties choose how many arbitrators will hear their dispute and typically appoint or nominate an arbitrator to the tribunal, thereby ensuring that the tribunal has the necessary technical expertise to hear the dispute. Parties can also agree to expedited arbitration procedures, which may be appropriate for lower value claims involving SMEs and smaller actors in the space industry, resulting in a quicker and cheaper dispute resolution process. Many sets of institutional rules now incorporate their own procedural framework for expedited arbitration proceedings.

The confidentiality of arbitration is also very attractive to parties with large-scale commercial or government operations in a sector where technological advancement is a key component of success.

As an inherently international industry, parties to international arbitrations in the space sector will also benefit from a final arbitral award that is enforceable against assets in the jurisdictions of the more than 170 contracting parties to the [New York Convention](#) (see [Checklist, New York Convention enforcement table: status](#)).

As space disputes are set to become more commonplace, this is a timely opportunity to consider how arbitration currently fits into the ecosystem of space-related dispute resolution, what role arbitral institutions and arbitration practitioners can play and how existing arbitration mechanisms can adapt or improve to accommodate the needs of a new wave of users in the space industry.

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