

THE SPACE LAW
REVIEW

THIRD EDITION

Editor
Joanne Wheeler MBE

THE LAWREVIEWS

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REVIEW

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This article was first published in December 2021
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Published in the United Kingdom

by Law Business Research Ltd, London

Meridian House, 34–35 Farringdon Street, London, EC4A 4HL, UK

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Enquiries concerning editorial content should be directed
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ISBN 978-1-83862-829-1

Printed in Great Britain by

Encompass Print Solutions, Derbyshire

Tel: 0844 2480 112

ACKNOWLEDGEMENTS

The publisher acknowledges and thanks the following for their assistance throughout the preparation of this book:

ALDEN LEGAL LIMITED

ARENDT & MEDERNACH

BIRD & BIRD

FASKEN MARTINEAU DUMOULIN LLP

FORMICHELLA & SRITAWAT ATTORNEYS AT LAW CO, LTD

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HUDSON GAVIN MARTIN

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PREFACE

Over the past year, we have increasingly looked upwards – to consider the ‘mega-constellations’ being launched to bring us internet broadband in the remotest places; to reflect on the increasing issue of space debris; and to opine on news reports describing new space technology observing Earth, climate change and human activities, down to a couple of centimetres. Perhaps we are also seeking to track the International Space Station and other objects in space as more humans explore this final frontier. Whatever the reason, outer space is increasingly on our minds and in our conversations and news stories, and is used by us on Earth in more sophisticated ways – usually without us even realising.

During the continuing covid-19 pandemic, and stimulated by the growing concerns related to climate change on Earth, we have relied on satellite technology for communications, healthcare (including assistance for first responders), education, information and simple social interaction. The relevance of the space and satellite industry to our lives has rarely been greater.

The importance of *The Space Law Review* and its content written by experts across the world is growing each year as the value of the space domain and applications from space activities are understood to an enhanced level. New applications of satellite technology are brought into use and the commercial revenues from the industry are more widely recognised.

New and innovative technologies increasingly derive from private commercial activities rather than more traditional government-funded missions. States are liable and responsible for national activities in outer space and, therefore, seek to supervise and authorise such activities through national legislation and licensing mechanisms, which we see more of across the globe. New and more diverse space players are entering the market, including more state players.

New technology – such as constellations of several thousands of satellites (even hundreds of thousands), very high-resolution Earth observation data and new small-launcher technology – is testing regulatory and insurance frameworks. This, combined with greater risks from debris, in-orbit servicing, active debris removal and robotic missions, presents challenges to regulators that must work closely with industry to govern such activities, ideally by using anticipatory and outcome-focused regulation.

The dynamics of space are also changing with aspiring space nations joining the international space community, along with new categories of non-state actors, such as large industrial players, start-ups and universities. Space is mainstream now and part of everyone’s lives.

Lawyers, such as the excellent contributors to this book, are not only required to understand the international treaties and how they are enforced and applied in national law,

but are also being asked to look at the application of such laws, regulations and policies in innovative and challenging ways and at new applications, technologies (civil and military) and new business models.

Space law is not simply one practice area – it consists of layers of interrelated disciplines and dimensions that lawyers must apply and be alert to, such as: telecommunications; Earth observation; navigation; security and defence; data management; international relations; radio frequency spectrum; technology; national, regional and international laws and regulations; export controls; environmental laws; and corporate, finance and taxation. It requires bright, flexible, problem-solving and solutions-driven minds.

This year I am very pleased to say that *The Space Law Review* has expanded to include contributions from Lichtenberger Partner Attorneys-at-Law in Austria, Fasken Martineau DuMoulin LLP in Canada, Bird & Bird in France, the International Institute of Air and Space Law in the Netherlands and Formichella & Sritawat Attorneys at Law in Thailand. It has been a pleasure to engage with these new contributors, who have all shared their expertise and knowledge in this book.

My thanks go to all the authors, who have contributed their time, expertise and enthusiasm to this edition. Their practical knowledge of the legal and regulatory frameworks, and the related challenges and solutions, makes this book unique.

The contributors' expertise will grow in importance as the economic benefits from the space sector are increasingly recognised by states. The global space economy is expected to be worth £40 billion by 2030.

Effective national regulation, enabling innovation and investment, is an increasingly important source of competitive advantage globally. We are witnessing increasing regulatory forum shopping in the space industry. The importance of effective national regulation as an enabler for new and innovative satellite technology and the ability to raise finance is increasingly recognised. This is especially the case when such national regulation embraces sustainability goals in relation to the mitigation of space debris and the protection of the outer space environment.

Thank you again to the contributors of *The Space Law Review*. I wish them success in the year ahead. I hope that readers find this edition valuable and recognise the benefit that the international space industry can bring us, especially during challenging times.

Joanne Wheeler MBE

Alden Legal Limited

London

November 2021

INDIA

*Nitin Sarin and Vinamra Longani**

I INTRODUCTION TO THE NATIONAL LEGAL, REGULATORY AND POLICY FRAMEWORK

i Brief history

Not long after gaining independence from the British in 1947, India's space programme was born in 1962. The programme got its first stimulus in 1969 with the founding of the Indian Space Research Organisation (ISRO). The Indian government established the Space Commission of India (the Space Commission) and the Department of Space (DOS) in mid-1972, bringing the ISRO under the management of the DOS in September 1972. India launched its first satellite in 1975. Since then, India's space sector has come a long way.²

India signed the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies 1967 (the Outer Space Treaty) in 1967, although it was not ratified until 1982. India also acceded to the Convention on International Liability for Damage Caused by Space Objects 1972 in 1979 and ratified the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space 1968 in 1979. Further, in 1982, India acceded to the Convention on Registration of Objects Launched into Outer Space 1975 and signed the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies 1979.

ii Legal, regulatory and policy framework

India's space programme has a hierarchical structure and is headed by the Office of the Prime Minister, governing all operations and exercising control over India's space programme through the Space Commission and the DOS.³

The Space Commission is in charge of framing India's space policy, while the responsibility for the implementation of this policy lies with the DOS. Research and development in the space sector are primarily realised through the ISRO.

1 Nitin Sarin is a managing partner and Vinamra Longani is the head of operations.

2 <https://www.isro.gov.in/about-isro/department-of-space-and-isro-hq>.

3 The DOS has developed the following programmes: the Launch Vehicle Programme having indigenous capability for launching spacecrafts; the INSAT Programme for telecommunications, broadcasting, meteorology, development of education, etc.; the Remote Sensing Programme for application of satellite imagery for various developmental purposes; and the Research and Development in Space Sciences and Technology Programme for serving the end of applying them for national development. <https://www.isro.gov.in/about-isro/department-of-space-and-isro-hq>.

The primary aim of India's space programme is to 'harness space technology for national development, while pursuing space science research and planetary exploration'.⁴ This is evident from the various programmes of the ISRO, which ensure that developments from activities in space can be used and made accessible to the Indian population. For example, the Indian National Centre for Ocean Information Services is used by fishermen in coastal parts of the country to determine areas rich for fishing. Similarly, in 2001, the ISRO started the Telemedicine Programme to ensure that medical access can be provided in remote regions of the country.

iii National law

Making provisions for international responsibility with respect to private activities is paramount for any state (party to the international space law treaties) that intends to facilitate private activities in the space domain.⁵ This incentive serves as a premise for enacting national space legislation, as legal certainty is a precondition for the development of commercial activities.

In the past few years, various companies have been incorporated in India that focus on space activities. Since there is no law or regulation governing end-to-end commercial space activities, there is regulatory uncertainty for commercial companies in the Indian space industry.⁶ Although the Indian government formulated different policies to provide regulatory guidance on various commercial space activities, as discussed in Section II, these policies do not provide a robust legal framework. To overcome this, and with the intent of increasing the participation of the private sector in the space economy, the DOS has formulated and circulated various draft policies on remote sensing,⁷ satellite navigation,⁸ space-based communication,⁹ space transportation,¹⁰ technology transfer guidelines¹¹ and humans in space¹² for comments by various stakeholders and the general public since 2020. The draft Space Activities Bill has been pending consultation since 2017 (see Section III).¹³

4 <https://www.isro.gov.in/about-isro/vision-and-mission-statements>.

5 Article VII of the Outer Space Treaty and the Convention on International Liability for Damage Caused by Space Objects 1972.

6 To give an example of the bureaucracy that is involved, should an entity wish to use the ISRO's services to launch a satellite into outer space, various steps are required to be undertaken with Antrix Corporation Limited, which is a company that is wholly owned by the Indian government. After preliminary negotiations, a launch agreement is signed between the ISRO and the private company, which governs the terms of the launch.

7 <https://sarinlaw.com/wp-content/uploads/2021/09/Remote-Sensing-Policy-Nov-2020.pdf>

8 <https://sarinlaw.com/wp-content/uploads/2021/09/Sat-Navigation-Policy-July-2021.pdf>

9 <https://sarinlaw.com/wp-content/uploads/2021/09/Space-Communication-Policy-Oct-2020.pdf>

10 <https://sarinlaw.com/wp-content/uploads/2021/09/Space-Transportation-Policy-June-2020.pdf>.

11 <https://sarinlaw.com/wp-content/uploads/2021/09/Tech-Transfer-Guide-Dec-2020.pdf>.

12 <https://sarinlaw.com/wp-content/uploads/2021/09/Humans-in-Space-Feb-2021.pdf>.

13 <https://sarinlaw.com/wp-content/uploads/2020/10/Draft-Space-Activities-Bill-India-2017.pdf>.

II REGULATION IN PRACTICE

i Remote sensing

India has a Remote Sensing Data Policy (RSDP), which was initially introduced in 2001 and revised in 2011. The RSDP governs the acquisition and distribution of satellite remote sensing data by non-government users, which may be acquired through either an Indian satellite or a foreign satellite.

According to the revised RSDP, satellite remote sensing data of up to 1m resolution shall be available on a non-discriminatory basis by request. In the earlier 2001 policy, satellite remote sensing data of up to 5.8m resolution required protection. The DOS is the nodal agency for the implementation of the RSDP and any decision in relation to remote sensing data availability is taken by the DOS.

Under the 2011 RSDP, satellite remote sensing data of up to 1m may be obtained by getting a licence from the DOS, whereas any request for the acquisition or distribution of satellite remote sensing data of higher than 1m resolution requires special clearance from the High-Resolution Image Clearance Committee (HIC) owing to national security concerns. Indian government departments and organisations are exempted from seeking HIC clearance for the acquisition of high-resolution images. The 2011 RSDP also includes an exemption for commercial entities from the obligation to obtain HIC clearance, provided that the entity is recommended by an Indian government department. For any entity wanting to acquire or distribute satellite remote sensing data of higher than 1m resolution, a specific non-disclosure agreement has to be signed between the entity and the National Remote Sensing Centre (NRSC).

In accordance with the 2011 RSDP, the ownership of satellite remote sensing data acquired through the Indian remote sensing satellite programme shall vest with the DOS. The 2011 RSDP allows commercial entities to operate remote sensing satellites from India after obtaining the necessary permission from the DOS. It also authorises the NRSC and Antrix Corporation Limited (ACL) to enter into agreements with foreign satellite operators for the acquisition or distribution (or both) of foreign satellite remote sensing data in India.¹⁴

ii Spectrum allocation

The Indian government published a new National Frequency Allocation Plan (NFAP) in 2018. The NFAP is based on the International Telecommunication Union's (ITU) Radio Regulations (2016 edition). Although the NFAP governs the use of spectrum in India, it does not grant the right to use spectrum. To use spectrum in India, all entities must obtain a licence from the Wireless Planning and Coordination Wing (WPCW) of the Ministry of Communications. In certain cases, the requirement to obtain permission or a licence to use spectrum may be exempted by the Indian government.

In India, the assignment of radio frequencies is primarily done through a public auction. However, public auctions of radio frequency spectrum have been subject to extensive judicial and public scrutiny recently owing to the allegations of corruption during the 2G spectrum auction. Spectrum has been assigned via public auctions since 1994 under the National Telecom Policy of 1994 (NTP 1994). Prior to 1994, only value-added services such as electronic mail, voicemail, data services, radio paging and cellular mobile telephony were opened up to private investment in July 1992. With the NTP 1994, the Indian

14 <https://sarinlaw.com/wp-content/uploads/2020/10/Remote-Sensing-Data-Policy.pdf>.

telecommunications market, specifically the basic telephone service, was gradually opened up to the private sector owing to the Indian government's realisation that the full potential of the telecommunications market cannot be utilised unless private investment is allowed.¹⁵

The entire Indian telecommunications market was divided into 20 administrative areas known as circles (at present, India has 22 telecommunications circles), and they were further classified into four categories, depending on their revenue potential: A, B, C and Metro.¹⁶ However, the NTP 1994 could not achieve its intended objectives, and it became necessary to introduce a new policy.¹⁷

In 1999, the government published a new telecoms policy (the 1999 Telecom Policy). For the first time, it was mandated that spectrum allocation should follow the rules and principles of the ITU. At the same time, the present regulator, WPCW, came into existence. The 1999 Telecom Policy also required telecommunications companies in India to pay spectrum usage charges to the Indian government and allowed spectrum users (telecommunications companies) to use spectrum for any mobile service.

In 2007, the Telecom Regulatory Authority of India suggested that there should be no limit on the number of telecommunications companies that can operate in the Indian telecommunications market. It was also recommended that subscriber base should be a strong criterion for further allocation of spectrum. In 2012, yet another telecoms policy was introduced with the primary objective of providing affordable and effective communications to Indian citizens.¹⁸

iii Satellite communication

Communication is one of the essential services that are provided through satellites in space, and India first formulated its satellite communications (SATCOM) policy in 1997. Since 1993, the SATCOM policy has been the primary space policy in India. Rules were published in 2000 by the government with regard to the regulation of SATCOM in India. The SATCOM policy aims to develop a thriving SATCOM and ground equipment industry in India. Even in 1997 it was envisaged by the government that SATCOM equipment should be manufactured in India and that India should be self-reliant in this sector.¹⁹

One of the striking features of the SATCOM policy is its intention to make available the Indian National Satellite System (INSAT) to the Indian general public. The SATCOM policy first envisaged privatisation and foreign investment in the Indian space industry.

The Indian SATCOM policy allows satellite operations using Indian as well as foreign satellites, although preferential treatment is given to proposals that use Indian satellites. Another critical aspect of the Indian SATCOM policy is that it allows the leasing of INSAT capacity to private sector entities. Originally, INSAT was mainly used by Indian government departments, such as the Department of Telecommunications and All India Radio. India had committed to the World Trade Organization to privatise the Indian space sector, which was one of the important reasons why the leasing of INSAT was allowed in 1997.

15 <https://sarinlaw.com/wp-content/uploads/2020/10/Basic-Telephone-service.pdf>.

16 <https://sarinlaw.com/wp-content/uploads/2020/10/Telecom-Circles-India.pdf>.

17 <https://sarinlaw.com/wp-content/uploads/2020/10/SC-Judgment.pdf>.

18 https://sarinlaw.com/wp-content/uploads/2020/10/TRAI-NTP_2012.pdf; <https://www.trai.gov.in/about-us/acts-policies>.

19 <https://sarinlaw.com/wp-content/uploads/2020/10/India-Satcom-Norms-Guidelines-and-Policy.pdf>.

According to the SATCOM policy, INSAT can only be leased to a commercial entity. Further, the commercial entity is required to comply with the guidelines of the respective sector's regulator or ministry. For example, private broadcasting agencies that use INSAT capacity must comply with the Ministry of Information and Broadcasting guidelines. The INSAT Coordination Council (ICC) makes decisions to allow or prohibit access to INSAT. There are four broad categories for which INSAT services can be obtained or leased by a private commercial entity: telecommunications; broadcasting; education and developmental communications; and security communications for the Ministry of Defence.

Interestingly, when the SATCOM policy was formulated in 1997, online education was still a very distant prospect for India, but the policymakers envisaged that tele-education would become a reality. The SATCOM policy categorically made clear that the ICC has to allocate a certain percentage of INSAT capacity to the private sector. Although the ICC earmarks some of INSAT's capacity, the DOS is authorised to enter into arrangements or agreements with the private sector for services other than telecommunications. The SATCOM policy also allows the DOS to lease INSAT capacities to foreign entities. However, the leasing procedure requires that when INSAT capacity is used from outside India, the DOS needs to ensure that the contract requires the operations to be carried out in compliance with UN and ITU conventions and treaties.

The SATCOM policy further allows the establishment of satellite systems by Indian private entities, and it authorises the government to register these systems with the ITU. The SATCOM policy makes the DOS the nodal department for all such activities.²⁰

Any Indian private entity that wants to establish its satellite system will require three different licences or permissions before it can commence its operations. The three permissions serve three distinct purposes. The first permission is needed from the DOS to ensure that the satellite system will be operated in compliance with the Outer Space Treaty and other international treaties to which India is a signatory. The second permission is required from the WPCW to ensure that the operation will comply with ITU regulations. The third permission is required from the relevant regulator of a particular sector to ensure that the satellite operation is in compliance with the specific national legislation – for example, for broadcasting services, an approval from the Ministry of Information and Broadcasting will be required to ensure compliance with the Broadcasting Act. In accordance with the SATCOM policy, the first two permissions will be granted by the Secretariat of the Committee for Authorising the Establishment and Operation of Indian Satellite Systems (CAISS). CAISS consists of representatives from the DOS, the Department of Telecommunications, the Ministry of Information and Broadcasting, the Ministry of Home Affairs, and the Department of Industrial Promotion and Policy.

Pursuant to the SATCOM policy, only Indian registered companies can establish Indian satellite systems, although foreign direct investment (FDI) in Indian registered companies is permitted, with a cap at 74 per cent. Another novel feature of the SATCOM policy is that for the purpose of the FDI cap, only the ownership structure of the applicant company is relevant (i.e., the shareholding structure of the applicant's parent company is irrelevant from an FDI perspective). The SATCOM policy also provides that Indian companies with 100 per cent FDI can also be granted a licence, provided that the company agrees to provide an

20 *ibid.*

undertaking that will bring down its FDI level in line with the cap on foreign investment within five years. The applicant will also be required to demonstrate that it has the requisite technical, financial and legal capabilities to launch and operate a satellite system.

Moreover, the SATCOM policy requires the satellite system to comply with all international treaties and conventions to which India is a signatory. The procedure requires the licensee to establish a satellite control centre (SCC) – a facility that monitors the correct functioning of the key technical parameters and controls the movements of the satellite with the ability to partially or completely close down the network – within the territory of India or at a place outside Indian territory authorised by CAISS owing to technical feasibility. However, the SATCOM policy requires that if an operator's SCC is situated outside India, the licensee should ensure that the SCC is moved to India within two years of the licence being granted.

The SATCOM policy also provides that if there are two parties interested in leasing the INSAT capacity, and if one party cannot be selected by adjusting technical parameters, preference shall be given to the applicant that proposes to use satellites that are manufactured in India or launched from India. This was intended by the government so that, even though both Indian and foreign satellites are permitted to operate from India, preferential treatment can be given to proposals that plan to use an Indian satellite. In addition, it is required that the proposed satellite system should be compatible with the existing and planned satellite systems of India. The DOS is responsible for ensuring the compatibility status of the proposed satellite system. The SATCOM policy makes the applicant liable for any charge incurred by the Indian government for filing the application with the ITU.

In light of the above, the SATCOM policy has not promoted private participation in the way that a robust policy might have done. Government interference (in the manner explained above) and a lack of transparency have been major roadblocks in this regard.

III DISTINCTIVE CHARACTERISTICS OF THE NATIONAL FRAMEWORK

With national space legislation in the pipeline, India is expected to have a more active private space sector in the coming years. Since the early 1960s, the space sector was dominated by the government, with private industry mostly playing the role of a supplier through contractual relations with the DOS through the ISRO. This is gradually beginning to change with the involvement of the commercial private sector (see Section IV).

One of the issues that has been faced by private players in the Indian space industry is that agreements with the DOS and the ISRO are not in a standard format, making it difficult to predict the outcome of negotiations with the relevant government entity. This regulatory uncertainty is one of the primary reasons why the Indian space industry has been insisting on the adoption of national space legislation.

The need for national space legislation stems from the responsibility and liability that India bears pursuant to the international space treaties that it has ratified. In addition, the increasing role of space activities in general and increasing participation by the private sector in such activities has made it mandatory for a spacefaring nation such as India to have national legislation on space activities undertaken by government entities and private commercial players.

The draft Space Activities Bill 2017 (the Bill)²¹ makes it obligatory for the Indian government to introduce a framework that promotes ‘every aspect’ of space-related activities. The Bill identifies two principal reasons why space exploration should be carried out: first, for peaceful purposes; and, second, in the interest of national security. Another feature of the Bill is that it requires the government to make broader policies, but it does not directly render it responsible for investing in space infrastructure. This aspect of the Bill (enumerated in Sections 3 and 4) makes it clear that the government only wants to regulate the sector and let the commercial industry develop by itself.

i Applicability

One of the striking features of the Bill is its broad application. According to Section 1, it applies to all vessels, aircraft and airborne vehicles registered in India. Further, it also applies to space objects of ‘Indian origin’ and in relation to space objects that are registered in the national registry of space objects, which is maintained by the Indian government. As the Bill does not define the term ‘Indian origin’, it is unclear what the government means by this term.

ii Commercial space activities

The Bill creates a licensing system for Indian commercial space activities. According to Section 5, insurance or financial guarantees are a prerequisite for any licence application; however, the amounts of these are not defined in the Bill and are calculated at the government’s discretion. The Bill explicitly authorises the government to refuse to grant a licence to an entity if the entity’s activities jeopardise the health or safety of individuals or property, or both, or if the activities are not in compliance with India’s international obligations. Lastly, if the activities are likely to compromise India’s sovereignty and integrity, security, international relations with other states, or public order or decency and morality, then a licence application may be refused.

Section 2(a) of the Bill defines ‘commercial space activity’ as any activity that generates or is capable of generating profits. Thus, even if a space activity is not generating profit (e.g., a scientific research mission for education purposes) but, in the opinion of the government, it can generate profit, such activity could theoretically be regarded as a commercial space activity.

iii Liability provision

Another critical aspect of the Bill, set out in Section 12, is that it requires the licensee to indemnify the Indian government against any claim that is brought against the government in respect of any loss or damage arising out of the licensee’s commercial space activity. It is unclear whether there is any limit to this liability. If there is no limit to the licensee’s liability, it could severely hamper the growth of the private space sector. If the amount of liability of the licensee is not fixed, it could lead to stalled participation by the private sector as this would create unlimited liability, leading to an uncompetitive regulatory environment. It is also impossible to insure against unlimited liability and this will add to difficulty in raising finance.

21 *Supra* footnote 13.

iv Penalties

Chapter V of the Bill introduces criminal sentencing. If any person indulges in unauthorised commercial space activity, such person may face imprisonment for up to three years along with a fine, which cannot be less than 10 million rupees. Similarly, if false information is furnished by a licensee or a licence applicant, the Bill imposes one year's imprisonment. Similar punishment will also be applicable if the licensee knowingly hides any information from the Indian government.

In addition, the Bill deals with penal provisions for polluting the environment. Any person who causes damage or pollutes the environment of the Earth, airspace, outer space or other celestial bodies shall be punished with imprisonment, which may extend to three years. The polluter may also be required to pay a fine, which cannot be less than 10 million rupees.

The Bill imposes a fine in cases of contravention of any direction issued by the government. In such cases, the Bill proposes a minimum fine of 10 million rupees, which may extend up to 500 million rupees.

v Intellectual property rights

The provisions of Section 25 of the Bill set out that the safeguarding of Indian national interests is one of the principal objectives behind the protection of any intellectual property developed, created or generated during a space activity. The Bill further provides that the Indian government shall own the intellectual property that is developed, created or generated on board a space object in outer space.

Lastly, in accordance with Section 30, in case of any emergency arising out of war, external aggression, natural calamity or any other such event, the Bill empowers the Indian government to take operational control of any space object or any installation (buildings, control centres, launch pads, etc.) if it is deemed necessary by the government.

In a webinar organised by the ISRO in August 2020 entitled 'Unlocking India's potential in Space Sector', it was revealed that the Bill had been revised and submitted to the Prime Minister's office and inter-ministerial discussions were ongoing in relation to it.²² However, it is not yet certain when the Bill will enter into force.

IV CURRENT DEVELOPMENTS

The participation of Indian industry in space activities has spanned nearly five decades, and the ISRO has been working with approximately 500 private entities, albeit in a limited manner.²³ Private entities have been predominantly engaged in the Indian space sector by means of contractual relations with the DOS through ACL, the commercial arm of the ISRO, which was incorporated as a wholly owned company by the Indian government in 1992 under the administrative control of the DOS.²⁴

Over the past few years, however, the Indian government has been actively encouraging the private sector to participate in Indian space programmes. The ISRO has been doing a significant amount of application-based work in the space sector, which has prevented it from

22 <https://www.isro.gov.in/link-to-watch-live-streaming-of-webinar-unlocking-of-india's-potential-space-sector>.

23 <https://www.nsilindia.co.in/Aboutus>.

24 <https://www.isro.gov.in/about-isro/antrix-corporation-limited>.

focusing on space research. Thus, by allowing the commercial space sector to participate in Indian space programmes, the ISRO aims to focus exclusively on research and development activities, including developing a human spaceflight programme.²⁵

In the past two years, the government announced that two new entities would be established to facilitate the active participation of private sector players in the Indian space industry. In 2019, New Space India Limited (NSIL) was set up, a public-sector enterprise that was incorporated as a commercial arm of the ISRO, under the administrative control of the DOS. The NSIL was established to commercially exploit the benefits of the research and development carried out by the ISRO, with the aim to move space activities from a supply-driven model to a demand-driven model. The NSIL is mandated to own and operate satellites, develop launch vehicles, provide launch services and allow the transfer of technology.

The NSIL aims to equip the Indian private space industry with the latest space technology so that the space industry as a whole can grow as an emerging market within the global space industry. Its main function is to boost the commercialisation of outer space, and it also acts as a point of contact between the private industry and the ISRO in relation to the transfer of technology.²⁶ As a commercial entity, its role is important to facilitate international collaboration as it can form a consortium with other commercial entities in the space industry.

In June 2020, the government announced the creation of the Indian National Space Promotion and Authorisation Centre (IN-SPACe). This entity serves as a regulator and facilitator for the private space industry with an aim to hand-hold, promote and guide the private space industry in India. A licensing, authorisation and supervisory regime was put in place for IN-SPACe to act as a regulator under Article VI of the Outer Space Treaty. It also acts as a facilitator for the private sector as it assesses the demands of this sector in consultation with the ISRO.²⁷

IN-SPACe ensures that private companies are positioned on a level playing field in India's space sector. The government permits the private sector to use the facilities and capabilities of the ISRO to grow private businesses through a hand-holding approach. The government has been proactive in its plans and memoranda of understanding have been signed with Skyroot Aerospace Pvt Ltd and Agnikul Cosmos Pvt Ltd²⁸ to use the resources and facilities available at ISRO.²⁹ Furthermore, to provide a platform that facilitates the aspirations of the private sector to participate in space activities, the government created the Indian Space Association in October 2021, which will undertake policy advocacy and engage with all stakeholders in the Indian space domain.³⁰

India's human spaceflight mission, 'Gaganyaan', was first announced in 2007 but it never received the required attention from Indian policymakers. However, in August 2018, the Prime Minister commented during his Independence Speech that India would send two astronauts into outer space by 2022, the year in which India will commemorate 75 years of independence. The Gaganyaan programme regained traction after this announcement.

25 <https://sarinlaw.com/wp-content/uploads/2020/10/Footnote-for-private-sector-participation-and-can-use-ISRO.pdf>.

26 <https://www.nsilindia.co.in/vision-and-mission>.

27 <https://sarinlaw.com/wp-content/uploads/2020/10/PressRelease-Participation-of-Private-Sector.pdf>.

28 On 11 September 2021 and 17 September 2021, respectively.

29 <https://www.isro.gov.in/updates-archivals>.

30 <https://www.isro.gov.in/update/11-oct-2021/hon%E2%80%99ble-pm-shri-narendra-modi-launches-indian-space-association-isp>.

The programme is being undertaken in cooperation with Russia. There was a slight delay in the training of astronauts because of covid-19 but this has now resumed and the launch is scheduled to take place as planned.³¹

In October 2020, the government also issued a notification to exempt goods and services tax (GST) from satellite launch services provided by the ISRO, ACL and the NSIL.³² This was a critical issue as Indian registered space companies and foreign registered companies were treated differently as far as the imposition of GST was concerned. If an Indian entity used facilities provided by the ISRO to launch its satellite, it had to pay GST at 18 per cent, whereas foreign registered companies could claim exemption from GST. However, the satellite launch services provided by the ISRO, ACL and the NSIL, irrespective of whether they are used by an Indian or a foreign entity, are now completely exempt from GST.

A critical aspect of the space sector that deserves significant attention is private space financing. Until recently, the space sector in India was predominantly owned and controlled by the government. However, with the entry of the commercial private sector into the space industry, companies can now reach out to the global finance industry for funding, and in future, we might see the growth of the spacecraft or space equipment-leasing industry. Therefore, it is important for the Indian government to have a regulatory regime in anticipation of this.

The Cape Town Convention Bill (which will give effect to the Convention on International Interests in Mobile Equipment) is already in the pipeline, with the Ministry of Civil Aviation acting as the nodal ministry. This may be the right time, therefore, for the government to ratify the Space Assets Protocol and transpose it into the draft national space legislation or include the space aspect in the Cape Town Convention Bill.

Another issue in the development of India as a spacefaring nation is the drawn-out legal battle between ACL and Devas Multimedia Private Limited (Devas) over the unilateral termination on 25 February 2011 by ACL of a contract entered into in 2005, in which ACL was to lease two satellites (GSAT VI and GSAT VIA) and Devas was to use the S-band to provide mobile services. There have been multiple legal proceedings brought before various courts of law in India and overseas by both parties. In judicial proceedings initiated by ACL before the National Company Law Tribunal (NCLT), Bengaluru Bench in May 2021, the NCLT ordered the liquidation of Devas.³³ This order was upheld by the National Company Law Appellate Tribunal.³⁴

V OUTLOOK AND CONCLUSIONS

With the approval of the draft Space Activities Bill, which aims to provide a licensing and regulatory framework for the Indian space industry, we expect to see the entry of various private players that will shape the Indian space sector in the coming decades, although we will have to wait and see what position the Indian government will take on specific provisions of the Bill. For example, as discussed in Section III.iii, the Bill imposes unlimited liability

31 <https://sarinlaw.com/wp-content/uploads/2020/10/PressRelease-Human-Space-Flight.pdf>.

32 <https://sarinlaw.com/wp-content/uploads/2021/09/GST-exempt-on-launch-services.pdf>.

33 <https://sarinlaw.com/wp-content/uploads/2021/09/Devas-Multimedia-Private-Limited-Wind-up-order-25-May-2021-NCLT.pdf>.

34 <https://sarinlaw.com/wp-content/uploads/2021/09/Devas-Multimedia-Private-Limited-NCLT-Winding-up-upheld-8-Sept-21.pdf>.

on the licensee to indemnify the government in the event of damage arising as a result of its space objects or activities. In India, most companies that are interested in the space sector are start-ups, which cannot sustain such extensive financial exposure to liability in their initial years. The government will therefore need to provide a limit on a licensee's liability.

Similarly, as the Bill proposes a mandatory insurance requirement, the government will also need to check whether the Indian insurance market is capable of underwriting unlimited liability against risks arising from space-related activities. It is also not clear whether the government will allow insurance to be obtained by foreign insurers or underwriters.

The various initiatives taken by the Indian government in recent years herald a new beginning for the space sector in the country. Even though some of these initiatives are yet to be put to the test, they largely encourage the participation of the private sector. However, some critical issues, such as the imposition of unlimited liability, remain unresolved. Unless these issues are remedied, they may seriously impede private-sector participation and prevent India from establishing itself as a significant player in the global space industry.

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ISBN 978-1-83862-829-1