

LEGISLATING SPACE - INDIA'S 2021 SPACE ODYSSEY

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1. An Overview

In recent years the Indian Space Industry, led by the efforts of the Indian Space Research Organization (“ISRO”), has risen to prominence owing to its efficient space program. The one shortcoming, however, that has been apparent for some time now, is the fringe role private players have had to play till today. The inability of the law to develop in time for the involvement of the private sector and start-ups has severely hindered India’s space potential both in terms of research, and financial opportunities.

Fortunately, the draft ‘Space Activities Bill’ was tabled by the Department of Space (“DoS”) in late 2017. Since the laws currently applicable exist in the form of ‘state-centric’ treaty obligations, the Bill intends for the domestic legislation to create specific obligations for the private sector, and to regulate its entry and dealings in the Indian Space Industry. While the draft reveals that the basic tenets of space law have been adapted for the Indian context, it is the regulatory framework proposed in the Bill that comes across as counter-intuitive. Two features of this Draft Bill stand out in particular. The first is the Central Government’s control over licenses and its unfettered power to check the books of accounts of all those affiliated to a license holder. Secondly, it stipulates that any intellectual property rights that may be created while undertaking ‘space activities’ shall be deemed to be the property of the Central Government. Admittedly, a sector as sensitive as space warrants several precautions. However, if India is serious about her space program’s promise as a legitimate contributor to her economy and development, then those precautions must be consistent with the objective of the proposed legislation. Surely the objective to incentivize the entry of private market players would be challenging to achieve with the Bill in its current form.

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2. The Need to Legislate Space

While the origins of space law can probably be traced back to the early 20th century, specifically the 1954 Chicago Convention (which recognized the sovereignty of country's over the air space directly above them), ¹ it was the launch of Sputnik 1's into the Earth's lower Orbit that really spurred the development of space law. ² 10 years later, the *Treaty on Principles Governing the Activities of States in the Exploration and Use^[SEP] of Outer Space, including the Moon^[SEP] and Other Celestial Bodies* ("Outer Space Treaty") came into force on the 10th of October, 1967. ³ This treaty forms the basis of international space law and chalks out the most important principles with an aim to regulate Countries activities in outer space. The principles contained herein give rise to to four other, more specific treaties that deal with subjects such as **rescue of astronauts, liability, registration of space objects, and the Moon and other Celestial Bodies.** ⁴ ("Space Treaties") These treaties and the articles contained therein are no doubt drafted with extreme care and with consideration for the future, but the fact of the matter is they have been unchanged for past 4 decades. Of course, old laws by themselves are not inappropriate laws, but in the Space Industry, they're definitely not ideal. Further, when these treaties were drafted, owing to the monstrous security and financial concerns surrounding space activity, the entry of private-players in this industry was thought to be unfeasible. The increased role of private entrepreneurship in space in today' day and age is one of the main reasons supporting the domestic legislation of space law. The treaty obligations that a State must fulfill is also an important factor in determining the need to enact domestic space legislations.

1 Finch, Michael J. *Limited Space: Allocating the Geostationary Orbit*, HeinOnline.

2 Gabrynowicz, Joanne Irene. *Space law: Its Cold War origins and challenges in the era of globalization*, Suff. Uni. Law Rev.

3 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, Dec. 19, 1966, 13, 610 U.N.T.S 205, 6 ILM 386. [The Outer Space Treaty].

4 There are 4 treaties that arise from the Principle "Outer Space Treaty" they are as follows.

- a) Convention on International Liability for Damage Caused by Space Objects, Oct. 9, 1973, 24 U.S.T. 2389, 961 U.N.T.S. 187. [Liability Convention].
- b) Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, Dec. 3, 1968, 19 U.S.T. 7570, 672 U.N.T.S. 119 [Return and Rescue Agreement].
- c) Convention on Registration of Objects Launched into Outer Space, Jan. 14 1975, 28 U.S.T. 695, 1023 U.N.T.S. 15.^[SEP] [Registration Convention].
- d) Agreement Governing the Activities of States on the Moon and^[SEP] Other Celestial Bodies [Moon Agreement].

2.1 Participation of Private Enterprises

The 21st century has seen a dramatic increase in private sector participation in the international space industry.⁵ The treaties signed and ratified decades ago are 'state-centric' and do not create binding obligations on private players.⁶ In the absence of specific legislations providing for the rights and responsibilities of private entities, the State would be deemed to be responsible in the international arena for all the private entity's space activities. Such imputation of responsibility would not only harm the interests of the concerned State but also deter the private entities from adopting prudent safeguards in relation to their activities.⁷ Essentially, without any skin in the game, the private sector is unlikely to adopt binding regulatory measures for itself.

At the same time, the private sector's potential to contribute to the economy of the State must not be ignored. Just as a law can regulate existing private entities, it can also encourage the entry of new private entities. This is desirable especially since space-mining and space-tourism are realities of the near future which are slated to be extremely profitable.⁸ Laws which are too restrictive, would only increase the operating costs for a private entity. This in turn would decrease their participation in this sector. Thus, the availability of abundant commercial opportunities demands a legal framework which regulates, but at the same time incentivizes private enterprise.

2.2 Treaty Obligations of State Parties

It is true that the Space Treaties create 'state-centric' obligations. It is also true that the entry of private players was not thought likely or feasible when these treaties were drafted.⁹ However, the principles contained within them make it incumbent on member states to fulfil their treaty obligations. This is in line with article 26 of the Vienna Convention on the Law of Treaties.¹⁰ Basic tenets of 'liability for damages' and 'bearing international responsibility' are always applicable to States. However, as mentioned before, it is entirely undesirable for the State to bear the cost of fulfilling its treaty obligations borne out of private entities. So while the State may never shift its responsibility to fulfill its treaty obligations, the enactment of legislations

5 B. Cheng, *The Commercial Development of Space: The Need for New Treaties*, 19 *Jour. of Space Law*, (1991).

6 *Id.*

7 Elena Carpanelli and Brendan Cohen, *Interpreting "Damage Caused by Space Objects" under the 1972 Liability Convention*, IISL, IAC-13, E7,1,5,x,18256 (2013).

8 RAM S. JAKHU, JOSEPH N. PELTON, YAW OM NYAMPONG, *SPACE MINING AND ITS REGULATIONS*, (1st ed., 2017).

9 B. Cheng, *The Commercial Development of Space: The Need for New Treaties*, 19 *Jour. of Space Law*, (1991).

10 Art. 26 Vienna Convention on the Law of Treaties, Jan. 27, 1980, 1155 U.N.T.S 331. [VCLT].

which chalk out the liability of private entities will go a long way in helping the state fulfil its treaty obligations. Essentially, any reparation that a State would owe to the International Community in case of a mishap would be funded by the fine paid by the responsible private entity.

Thus, by extension, “It is incumbent on member states to discharge their treaty obligations on space affairs via national mechanisms. Accordingly, private space activities must be licensed & overseen by a State in order to comply with treaty obligations.

2.3 Existing Domestic Legislations

So far, four space-faring Nations have enacted domestic space laws. They are the United States, Ukraine, Peoples’ Republic of Korea, and the Russian Federation. India, along with China, Japan, and Poland is in the process of formulating her own ‘Space Activities Act’.¹¹ However, the common thread that runs through all these legislations is the focus on private enterprise

3. Global Relevance of India’s Space Activities Law

It is well known that India’s Space Program which is run and coordinated by ISRO began much after the United States and the erstwhile Soviet Union (now Russia) had breached the barrier of the final frontier multiple times.¹² The Indian Space Program is nowhere near as big as that of NASA or the ESA.¹³ However, in recent times the Indian Space Program has received worldwide attention for all the right reasons.¹⁴ This is primarily owed to its, efficient utilization of limited resources as highlighted in the *Mangalyaan* mission.¹⁵ Further, its high success rate, along with the fact that ISRO is now one of the few commercially profitable companies has afforded the Indian space program a legitimate claim of being one of the most successful space programs in the world.¹⁶ Most notably, ISRO launched 104 satellites (96 of them belonged to the United States) in a single launch aboard its PSLV Rocket. (Polar Satellite Launch Vehicle). Needless to say, this was an extremely profitable mission for ISRO and it was able to collect payments from several countries whose satellites it launched.¹⁷

11 Government of India, *Draft Space Activities Bill 2017*, DEP. OF SPACE (2017), 6.

12 *ISRO’s Timeline from 1960s to Today*, DEP. OF SPACE, ISRO, (Dec, 1, 2018, 9:00PM), available at, <https://www.isro.gov.in/about-isro/isros-timeline-1960s-to-today>.

13 *Budget at a Glance*, DEP. OF SPACE, ISRO, (Dec, 1, 2018, 9:00PM), available at, <https://www.isro.gov.in/budget-glance>.

14 *Four Reasons India is Going Big on Space*, BBC, Jun. 6, 2017 (Dec, 1, 2018, 9:00PM), available at, <https://www.bbc.com/news/world-asia-india-40175268>.

15 For the Mangalyaan Mission ISRO used the Hohfman technique to use as little fuel as possible to escape Earth’s orbit.

16 BBC, *supra* at note. 14.

17 *Id.*

Moving forward, it is clear that ISRO is going to be assisting a lot more countries a lot more often owing to its superior launch capabilities (cost and success rate).¹⁸ Further, it is safe to assume that in due course, ISRO could be launching more than just satellites. When that time comes, its important to note that the Indian Law will apply on board that launched space object.

This is because of articles I(a)(ii) and II.1 of *Convention on Registration of Objects Launched into Outer Space* (“Registration Convention”) respectively and also because of article VIII of the Outer Space Treaty. The Registration Convention states that a Launching State must register the space object in its own registry.¹⁹ The Outer Space Treaty stipulates that the State party on whose registry the space object was launched retains control and jurisdiction over that object.²⁰

At this point it is pertinent to note that Article I of the Registration Convention allows the existence of more than one Launching State, and accordingly, they are empowered to determine which one of them will register the space object.²¹ In this context, a foreign country could certainly agree with India not to register the launch in India’s registry. However, such an arrangement would likely increase the cost of the launch substantially and would thus defeat the purpose of approaching India for its launch capabilities in the first place. Hence, for the purposes of proposing a pragmatic view of contract negotiations it is assumed that in most arrangements of such nature, the parties would agree to register the space object in India’s registry. Accordingly, Indian Law would apply onboard these space objects. The fact that cross-country collaborations with India in the space industry are becoming more and more common, makes India’s Space Law very important legislation.

4. The Proposed Legislation & its Problematic Features

The interest shown in the Indian Space Sector by both Indian and International private enterprises motivated the Department of Space of India (“DoS”) to publish the “Space Activities Bill” on the 21st of November, 2017.²² This marked a major checkpoint in the history of Indian Space since this proposed legislation is meant to regulate all private enterprise in space. This Bill has both advantages and drawbacks which are explained below.

18 *Id.*

19 Art. I(a)(ii) & Art II. 1, Registration Convention.

20 Art. VIII, The Outer Space Treaty.

21 Art. I(a)(i) & Art II. 2, Registration Convention

22 Draft Space Activities Bill, 2017.

4.1 The Advantages

The the Bill encourages participation by both domestic and global private enterprises. §§5-10 make provisions for licensing (granting, terms, transfer suspension, etc.)²³ These provisions reflect the rational contained within Art. 3 the Model Law on Space Legislation, UNCOPUOS, 2013.²⁴ Licensing is set to facilitate the entry of private firms.

The Bill also goes a long way in helping India fulfill her treaty obligations. Registration of space objects, in accordance with Registration Convention has been reflected in §11 of the Bill to address ‘Liability for Damage arising out of Commercial Space Activity’.²⁵

4.2 The Drawbacks

The Bill brings with it, two major problems that are sure to affect the participation of private entities in the Indian Space Industry.

4.2.1. Intellectual Property Right Concerns

§25(2) reads, ‘Any form of intellectual property right developed, generated or created onboard a space object in outer space, shall be deemed to be the property of the Central Government.’²⁶

This clause was borne out of Art. VIII of the Outer Space Treaty and Art. I of the Convention on Registration. The former stipulates that Control of the space object belongs to the country on whose registration it was launched. The second that the launching country/territory shall register the object.²⁷ The existence of control over the space object has been extrapolated to the ownership of intellectual property conceived onboard the space object in outer space.

Certain items such as a ‘solar radiation vest’ can only be tested and successfully invented in space. Further, inventions such as these are likely to be highly expensive and valuable because of the research behind it and because of its usefulness respectively. Hence, it is quite evident that this provision would seriously deter private entities from undertaking research/experimenting in outer space.

4.2.2. Blanket Licensing Concerns

§3 provides for the licensing mechanism under the Bill.²⁸ The licensing is in the nature of ‘Blanket Licensing’ and applies to all private entities. Existing entities and new entrants alike. Further, the Central Govt. has the unfettered

23 Draft Space Activities Bill §§5-10, 2017.

24 Art. 3, Model Law on Space Legislation, [United Nations Committee on Peaceful use of Outer Space].

25 Draft Space Activities Bill §11, 2017.

26 Draft Space Activities Bill §25(2).

27 Art. I(a)(ii) & Art II. 1, Registration Convention.

28 Draft Space Activities Bill §3, 2017

power to check books of account of any licensee when it considers 'expedient'.²⁹ However, the Bill does not set out any criteria describing a situation that warrants expedient or urgent action. Needless to say, blanket licensing acts as an impenetrable barrier for startups and completely ignores the presence of already established companies for whom the licensing fee is not a hindrance at all.³⁰

5. Suggestions: Addressing Intellectual Property Concerns & Breaking the License Barrier

5.1 Doing Away With §25(2)

The law derives its content from 2 International Space Law Treaties. However, those were signed and formulated in a time where only the Govt. was in charge of a countries space activity. The situation has drastically changed in the 50 years since and the law must as well. Further, to confer IPR ownership from control over a space object is an unfair extrapolation.

Neither the UNCOPUOS's Model Law nor the domestic laws of any nation with space-faring capabilities contain such a provision.³¹ The Russian Space Law, enacted during the reign of the then Soviet Union is the only one which hints at undermining Intellectual Property Rights.³² The US Patent Act (35 U.S.C. 105 (2003)) is the only law that provides for inventions in outer space.³³ However, even that stipulates that the invention shall only be deemed to be conceived within the territory of the United States and not that it shall be considered the property of the United States.

No such law exists in any other jurisdiction, further, only the Soviet Union which wasn't to keen on private enterprise. This knowledge should be enough to convince any nation that wants to promote private enterprise that it is important to incentivize private players with conducive IPR Laws.

5.2 Tackling Blanket License

Instead of a Blanket License, breaking down the Bill into specific activities will allow users to frame business rules and address international obligations, national security, environmental, health/safety, etc., concerns better.³⁴

29 Draft Space Activities Bill §4, 2017

30 Narayan Prasad, *Why You Should Care About India's New Private Sector Space Activities Bill*, THE WIRE, Nov. 29, 2017, (Dec. 1, 2018, 09:00PM), available at, <https://thewire.in/law/care-indias-new-private-sector-space-activities-bill>

31 Model Law on Space Legislation, [United Nations Committee on Peaceful use of Outer Space].

32 The Law of Russian Federation on Space Activities, 1979.

33 The US Patent Act, 2003, 35 U.S.C. 105.

34 Prasad, *supra* at note. 30.

6. Conclusion

It is apparent that the Space Activities Bill was drafted with the right idea in mind. However, certain provisions contained therein must be tweaked in a manner which would incentivize private players, especially start-ups to enter the Space Industry. It is also pertinent to note that the provisions of the Bill have the potential to affect all countries that wish to collaborate with India in Space Missions.

While not explored in this paper specifically, the idea of a ‘paternalistic nudge’ could be contemplated. Essentially, a legislation which would allow for financial independence while simultaneously laying down strict punishments in case of non-compliance, something that’s lacking in the current Bill. Conversely, this monopoly over the licenses could operate to India’s advantage both domestically and internationally. An increase in transparency domestically and a stronger negotiating position internationally could prove to be a worthwhile bargain.

In any event, India needs a space law, what remains to be seen, however, is the shape this law takes in the near future. The future is not only time-bound but also technology-bound; A nation that has the ability to use its resources for technological progress leaps decades into the future. Accordingly, legislations must keep pace with technological progress in order to avoid a space-time warp.