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IPR and the Outer Space - Issues and Challenges

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From a legal standpoint, it appears that neither the space treaties nor the present international intellectual property treaties particularly address the topic of IP protection in space.[1] *Article V of the Outer Space Treaty of 1967 emphasizes the cooperation and assistance of the astronauts of other states while carrying out activities in outer space, which is in contrast to the basic principle of 'Intellectual Property Rights' to protect the sharing of work and creation.*[2] *An intellectual property right granted by another country can be given national treatment under several international treaties, such as WIPO, and the nation can use its domestic legal system to defend or enforce the right there.* [3] *So, it can be concluded that sovereign jurisdiction is an important component in enforcing intellectual rights.*[4] *But, Article II of The Outer Space Treaty of 1967 clearly mentioned that 'no state can claim sovereignty in any manner, in outer space including the moon and other celestial bodies'.*[5] *In terms of Intellectual Property Rights (IP), the government grants inventors ownership rights over their creations to preserve their rights, and the Space Law aims to uphold the principles of international collaboration and mutual benefit for all parties involved.*[6]

[1] Zhijie Chen and Yun Zhao, 'Intellectual Property Protection in Outer Space: conflict in Theory and Application in Practise' (2022) 61 Space Policy <https://doi.org/10.1016/j.spacepol.2022.101484> accessed 04 November 2023
[2] Outer Space Treaty 1967
[3] Ritesh Mehra, 'Intellectual Property protection in Outer Space- An Overview' (2019) 2 ILI Law Review <https://www.ili.ac.in/pdf/rm.pdf> accessed 04 November 2023
[4] *Ibid*
[5] Outer Space Treaty 1967
[6] Vartika Vaishnavi, 'To Study the Issues and Challenges Faced by Intellectual Property Rights in Outer Space' (*The Amikus Qriae*) <https://theamikusqriae.com/to-study-the-issues-and-challenges-faced-by-intellectual-property-rights-in-outer-space/> accessed 05 November 2023

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INTRODUCTION

Space exploration began in 1957 with the Soviet Union's Sputnik launch.[7] With the launch of 'Explorer I' in January 1958, the United States joined the space race.[8] Astronauts have visited the moon, spacecraft have surveyed the solar system, and space instruments have found thousands of planets orbiting other stars in the years since the first artificial satellite was launched in 1957. The next stage of space exploration was indicated by space stations. The 'Soviet Salyut 1' station, launched in 1971, was the first space station to reach Earth orbit.[9] With more space exploration, invention, and development in space activities, comes a set of rights and obligations.[10]

Initially, the majority of space operations were done by the government rather than for commerce. International law in outer space is based on the implementation of United Nations space agreements.[11] The primary focus of these agreements is government space activities; however, intellectual property protection which is essential for the independent sector to engage in space operations profitably, is not specifically addressed. Nowadays, Governmental organizations are no longer the only entities involved in space exploration; independent and commercial enterprises are also involved.

States have supported the involvement of private companies in public projects because privatization lessens the fiscal load on the Government.[12] Space exploration is significantly dependent on advanced technology, which makes the preservation of Intellectual Property

[7] 'Sputnik And Dawn of The Space Age' (*NASA History*) <https://history.nasa.gov/sputnik.html> accessed 05 November 2023
[8] 'Explorer I – Exploded View' (*NASA*, 25 October 2011) <https://www.nasa.gov/image-article/explorer-i-exploded-view/> accessed 05 November 2023
[9] Freddie Wilkinson, 'The History of Space Exploration' (*National Geographic*, 19 October 2023) <https://education.nationalgeographic.org/resource/history-space-exploration/> accessed 05 November 2023
[10] Vaishnavi (n 6)
[11] Outer Space Treaty of 1967
[12] Vaishnavi (n 6)

Rights (IPRs) imperative and as space commercialization grows, this necessity is further amplified. From a legal standpoint, however, it seems that the subject of IP protection in space is not specifically addressed in the provisions of either the space treaties or the current international intellectual property treaties.[13] Even though there are some Articles and principles of treaties or agreements which directly or indirectly deal with Intellectual Property Rights.

IMPORTANCE OF INTELLECTUAL PROPERTY RIGHTS IN SPACE

The recognition of non-governmental organizations' rights and responsibilities in space will rise as a result of their greater involvement in the space environment. More licensing agreements are signed by government space agencies and private Businesses.[14] Private enterprises who are investing in space activities must expect that the money spent on research and development will eventually be reimbursed. This suggests that effective protection of Intellectual Property Rights has a positive impact on the involvement of the private sector in space operations.[15]

Second, the protection of Intellectual Property Rights in space is becoming more crucial than ever as space operations become more globally integrated. In space operations, for instance, there is more international cooperation, as seen by the International Space Station (ISS). Thus, there is a need for an international legal framework that is clear, consistent, and reliable. Various country laws apply different conceptions to different aspects of intellectual property, even though national laws about intellectual property are well-harmonised. To protect Intellectual Property Rights during space operations, a unified legal framework is necessary.

Barbara Luxemburg and Gerald J. Mossinghoff, while highlighting the importance of the protection of Intellectual Property Rights write that before expecting a return on investment, private companies participating in commercial space initiatives will need to confirm that they can safeguard the concepts and innovations. In the absence of robust safeguards for patents,

[13] Chen (n 1)
[14] Vaishnavi (n 6)
[15] *Ibid*

trade secrets, and proprietary data and expertise, corporations will lack the motivation to allocate toward realizing the commercial viability of Space Stations.[16]

Therefore, for developing successful models and inventions in outer space there is a need for the protection of International Property Rights with private or public cooperation. Large sums of money are required for space exploration, and any discoveries made by private businesses must be recognized and given due credit.

CONTRASTING NATURE OF IPR AND SPACE TREATIES

The basic principle and objective of the space treaties is to maintain peace, order, and cooperation between the different member states in outer space. These treaties specified the need for cooperation and assistance during space operations and activities. But the Intellectual Property Rights protects the sharing of work and creation. For example, Article V of the Outer Space Treaty of 1967 emphasizes the cooperation and assistance of the astronauts of other states while carrying out activities in outer space, which is in contrast to the basic motive of Intellectual Property Rights, to protect the sharing of work and creation.[17]

Article 2 of the Declaration on International Cooperation in the Exploration and Use of Outer Space for the benefit and in the interest of all states, taking into particular account the needs of Developing Countries talked about the interests and legitimate rights of the parties including the Intellectual Property Rights.[18] Article III of the Outer Space Treaty promotes the idea of understanding and cooperation among the different states.[19] Article 1 of the Outer Space Treaty specified the need to emphasize progress and scientific development in the interest of all countries and mankind without any discrimination based on scientific development or economics. States would encourage and facilitate international cooperation.[20] Provisions are

[16] Barbara Luxenberg and GeraldJ. Mossinghoff, 'Intellectual Property and Space Activities' (1985) 13(1) Journal of Space Law 8
[17] Outer Space Treaty 1967
[18] 51/122 Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries 1996
[19] Outer Space Treaty 1967, art 3
[20] Outer Space Treaty 1967, art 1

made under Article VI about the international responsibility of non-governmental organisations, which shows that the Treaty has sufficiently taken care of the fact that there is a need for non-governmental and private enterprises in space exploration.[21]

Similarly, Article 1 of the Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of all States, taking into Particular Account the Needs of Developing Countries, 1996 emphasizes the benefit and interest of all mankind and states, without any kind of discrimination based on technological, scientific or social development.[22]

Hence, it is a fundamental principle of several space treaties to keep in mind the interest and benefit of all states and mankind without any discrimination regarding economic, scientific, or social development.[23] Article 66(2) and Article 67 of TRIPS Agreement 1995 provides a provision for the encouragement and promotion of technology transfer, and financial and technical cooperation in favor of least-development member states.[24]

There is accelerated and unstoppable development in space exploration, which creates a need for an effective legal system to ensure the rights and duties of the states. The contemporary legal provision for activities in outer space has a fundamental principle of free access to humanity, which is in stark contrast with the basic principle of Intellectual Property Rights, which could determine who owns specific space research objects. The establishment of the right of ownership for private businesses, corporations, and research facilities is crucial for the space industry's economic growth.

[21] Outer Space Treaty 1967, art 6
[22] 51/122 Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries 1996
[23] Mehra (n 3)
[24] 'Overview: the TRIPS Agreement' (*World Trade Organisation)* <https://www.wto.org/english/tratop_e/trips_e/intel2_e.htm> accessed 06 November 2023

IMPLICIT PROVISION OF OWNERSHIP AND IPR IN OUTER SPACE

Article VIII of the Outer Space Treaty implicitly addresses the issue of ownership of the object launched, which is in line with the principle of Intellectual Property Rights. But Article VIII only takes care of the objects that are launched or made before launching. The article states that while an object is in space or on a celestial body, its personnel are subject to the jurisdiction and supervision of the State Party to the Treaty whose registry the object was launched into space.

It does not matter if an object is sent into space, lands on a celestial body, or returns to Earth; ownership of such objects, as well as its parts, remains unaffected. When such items or parts are discovered outside the borders of the State Party whose registry they are carrying, they must be returned to that State Party, which must first provide identifying information upon request.[25] Hence, the Article applies to the state in whose name the registration of the space object or component is completed.

Initially, Intellectual Property Rights were protected under the domestic law of a particular state within its limited boundary,[26] but after the commencement of the WIPO Convention in 1967, the component apparatus of WIPO[27] and another remarkable multilateral treaty for the protection of IPR globally. Further, the most extensive international agreement on intellectual property to date is the TRIPS Agreement, which went into effect on 01 January 1995.[28] These multilateral treaties provide a way to give national treatment to an intellectual property right granted by another country and use its domestic legal system to protect or enforce said right there.[29]

So, it can be concluded that sovereign jurisdiction is an important component in enforcing intellectual rights. [30] But, Article II of The Outer Space Treaty of 1967 clearly mentioned that 'no

[25] 'The Outer Space Treaty of 1967' (*NASA History*, 26 October 2006) <https://history.nasa.gov/1967treaty.html> accessed 05 November 2023
[26] Mehra (n 3)
[27] 'Summary of the Convention Establishing the World Intellectual Property Organization (WIPO Convention) (1967)' (*WIPO*) <https://www.wipo.int/treaties/en/convention/summary_wipo_convention.html> accessed 07 November 2023
[28] Overview: the TRIPS Agreement (n 24)
[29] Mehra (n 3)
[30] *Ibid*

state can claim sovereignty in any manner, in outer space including the moon and other celestial bodies'.[31] Hence, the challenge of securing Intellectual Property Rights occurred in outer space where no claim regarding sovereignty can be made by any state.

Article 5 of the Convention on the High Seas, 1958 states that, 'control and jurisdiction over the ship, its occupants, and their actions are retained on the high seas by the state in which the vessel is registered'. Given that International law recognizes the state whose flag is flown as having exclusive jurisdiction as regards everything that occurs on board a ship on the high seas, One could argue that the domestic intellectual property law might apply by analogy to space objects registered in that state, just as it does for ships flying that state's flag on the high seas and for aircraft registered by that state.[32]

Article 21 of the Intergovernmental Agreements on the International Space Station provides a straightforward but effective method of governing Intellectual Property Rights in space, and just as crucially, it provides a legal basis for cooperative space activities. The definition of 'intellectual property' is given by Article 21(1) of the IGA[33], which is consistent with Article 2 of the 1967 Convention Establishing the World Intellectual Property Organization.[34]

By deeming fiction, Article 21(1) of the IGA expands the concept of quasi-territoriality to the International Space Station. It states that, for IP regulation, an activity that takes place in or on a Space Station flight element shall only be deemed to have taken place in the territory of the Partner State (the IGA party state) of that element's registry.[35] Additional particular provisions are carved out in Article 21(2) with regard to elements registered with the European Space

[31] Outer Space Treaty 1967
[32] Mehra (n 3)
[33] 'International Space Station Legal framework' (*The European Space Agency*) <https://www.esa.int/Science_Exploration/Human_and_Robotic_Exploration/International_Space_Station/International_Space_Station_legal_framework> accessed 06 November 2023
[34] 'World Intellectual Property Organisation'(*WIPO*) <https://www.wipo.int/about-wipo/en/> accessed 06 November 2023
[35] International Space Station Legal framework (n 33)

Agency. It states that any activity that takes place on such an element may be considered to have taken place on the territory of any European Partner State.[36]

However, it might not be out of place to note that Article 21 of the IGA takes into account the unique needs of the partner states of the European Space Agency with regard to the unique issue of overlapping jurisdiction and multiplicity of legal proceedings presented by the European Union factum.[37] But inspiration can be taken from these agreements and treaties to make robust, effective and simple legal provisions for the protection of intellectual rights in outer space.

PROBLEMS

Due to the disparities in each nation's national laws, handling IP issues in space is considerably more challenging because there is no consensus or single platform to assess them.[38] There exists a stark difference between the two legal domains: national law safeguards the creator against exploitation, whereas international law permits the unrestricted exploration of outer space.[39]

Regarding Intellectual Property Rights (IPR), the government protects the rights of creators by allowing them ownership rights over their works, while the Space Law seeks to uphold the values of global cooperation and mutual benefit for all concerned parties.[40] Nevertheless, neither the provisions of the five outer space treaties nor the international intellectual property treaties specifically address the legal question of intellectual property protection in space. States and non-governmental organizations may be deterred from actively engaging in commercial space activities by this legal ambiguity.[41]

CONCLUSION

With scientific exploration and development, there is more exploration of space operations and activities. These developments have created a place for the interest of private enterprises and

[36] *Ibid*
[37] *Ibid*
[38] Vaishnavi (n 6)
[39] *Ibid*
[40] *Ibid*
[41] Chen (n 1)

companies in outer space. Private Enterprises and companies are investing large sums of money in space exploration, and any discoveries made by private businesses must be recognized and given due credit. There are implicit provisions that are given in various treaties of outer space or Intellectual Property Rights but these treaties are not sufficient to effectively address or enforce the protection of Intellectual Property Rights in outer space.

There is a need for a simple, robust and effective mechanism that specifically addresses IPR issues and is effective globally. Inspiration can be taken from the articles and principles of various international treaties and agreements like the Outer Space Treaty, Convention on the High Seas 1958, Intergovernmental Agreements on the International Space Station, WIPO TRIPS, etc. Therefore, an effective legal mechanism must be created to address the Intellectual Property Rights issue in Outer Space.