

# INTERNATIONAL JOURNAL OF LEGAL SCIENCE AND INNOVATION

[ISSN 2581-9453]

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Volume 3 | Issue 5

2021

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# Decoding the Intellectual Property Rights regime in Outer Space

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## ABSTRACT

*The method in which mankind has interacted with Outer Space has undergone massive transformation, a transformation which the law governing the Outer Space has failed to keep up with. One such area is that of the Intellectual Property Regime, which is worrisome considering the rise of private companies interacting with Outer Space and Multinational Space Projects. Such projects and private companies come with the risk of a massive investment that deserves the protection of law. The purpose of this paper is to attempt to bridge this gap between the legal regime governing Intellectual Property Rights and the legal regime governing the interaction between humanity and Outer Space. The scope of this paper lies in understanding the changes in the manner in which mankind interacts with Outer Space, analysing the current interaction between laws governing Outer Space and Intellectual Property Rights, highlighting the major issues that plague the harmonization of both these legal regimes and providing a basic direction for some solutions to these problems.*

*The purpose of this paper is not to solve these issues considering it would be an injustice to discuss said problems in one paper. These problems represent massive challenges to the law which need to be delved into on an individual scale. The purpose of this paper is to provide a basic direction in which research can be done to arrive at solutions to harmonize both the legal regimes.*

## I. INTRODUCTION

The Outer Space Treaty brought into force in 1967 marked the dawn of a new era for humanity. Humanity reached a consensus as to how it will interact with Outer Space, the final frontier.<sup>2</sup> The path to achieving this consensus took many years

and efforts to solve. Questions like who owned the space? Did the sovereign territory of a country extend to the Outer Space itself? Which laws were to apply in this area where only a handful of nations left their mark? These were questions whose answers would have great ramifications for the world, considering the

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<sup>2</sup> The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty].

potential for military and political exploitation of space by spacefaring countries to put non-space faring countries at a disadvantage.<sup>3</sup>

Consensus was reached with space being declared as a zone that no country could claim ownership of. Article 1 of the Outer Space treaty made it clear that Outer Space is a place that belongs to humanity where countries ought to cooperate with each other to reach the true potential of humanity as a species.

However, the world is not what it was in 1967. The manner in which humanity interacts with space has undergone a massive transformation. The dawn of private space flight and the rise of various multinational projects in space change the method humanity interacts with space.<sup>4</sup> While these changes mark a new era for human presence in space, they come at a huge investment, an investment that needs the protection of the law to encourage constant exploration of space for the purposes of science by both public and private industries.

This aspect of protection of these investments, some of which belong to the domain of Intellectual Property Rights,<sup>5</sup> is where there is a dangerous lacuna of law. The lack of a global Intellectual Property regime and territorial limitation of the domestic IPR regimes raises questions of how to resolve disputes with respect to Intellectual Property in space.

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<sup>3</sup>Banner, S. Sovereignty in Space. In *Who Owns the Sky? : The Struggle to Control Airspace from the Wright Brothers on* (pp. 261-287). Cambridge, Massachusetts; London, England: Harvard University Press (2008).

<sup>4</sup>Joana Ribeiro Gomes, Tessaleno Campos Devezas, Mischel Carmen Belderrain, Maria Cristina Vilela

The purpose of this paper lies in decoding the present IPR regime in the context of Outer Space, finding the lacuna in the existing regime, and finding a general direction in which the reforms can take place.

The first part of the paper analyses the various factors that have changed the nature and scope of space exploration and why these changes call for changes in the law governing the IPR regime in space. The second part of the paper analyzes the various laws using which the regimes governing Outer Space and IPR interact with each other. The third part looks into the issues that plague the existence and enforcement of an IPR regime in the context of Outer Space. The last part of the paper looks at a working model of an IPR regime in Outer Space.

## **II. THE CHANGING FRONT OF OUTER SPACE CALLS FOR A REVIEW OF THE LAWS GOVERNING IT**

The method humanity has interacted with space has undergone rapid transformation since the various laws governing the usage of Outer Space were made. There has been a sharp increase in the number of countries that engage with Outer Space and difference in the kind of technology used for said interactions.

The author of this paper has identified two primary causes behind an increased need for evaluating and revamping the IPR regime in the

Salgado, and Francisco Cristovão Lourenço de Melo, *The road to privatization of space exploration: What is missing?*, (11 Apr. 2020, 9:13AM), [https://www.researchgate.net/publication/289635460\\_The\\_road\\_to\\_privatization\\_of\\_space\\_exploration\\_What\\_is\\_missing?](https://www.researchgate.net/publication/289635460_The_road_to_privatization_of_space_exploration_What_is_missing?).

<sup>5</sup>Hereinafter IPR.

context of Outer Space. The causes are the increased privatization of space and increased multinational projects like the ISS on the international plane. The increased presence of private sector industries in space and multinational projects comes at a massive investment, the protection of which will ensure continued interest in space research which makes it imperative to come up with a robust and sustainable international system of IPR protection in Outer Space.

#### **INCREASED PRIVATIZATION OF SPACE**

The private space sector that emerged in the 1960s comprised companies that were often just small divisions of aeronautical giants like Boeing and Lockheed, and their importance went down in the later years of the cold war as a result of lack of interest in the exploration of space on the part of the United States.<sup>6</sup> Even in their glory days of the 1960s, these companies could not innovate to the extent they desired, considering that they were limited to manufacturing parts for the public sector entities involved in the space race. This is referred to as the first phase of the private space sector.<sup>7</sup>

The second phase of this space sector began in the 21<sup>st</sup> century with governments letting the private space sector play a role in projects like the International Space Station, where the private companies more than demonstrated their skills with respect to doing tasks primarily reserved for the public sector entities.<sup>8</sup> The birth of companies

like Space X rekindled the flame in the torch, that is, the private space sector, with activities like space tourism and space mining becoming a reality. Over 76 privately owned space companies are involved in a wide range of missions, getting grants of up to \$10 Million from governments to conduct further research.<sup>9</sup>

The financial risks these companies take are considerable, and it is only fair that these companies have a globally enforceable mechanism of protecting their investments. There is a major dearth with respect to the method of governing the private sector in space on both a national and international level in terms of liability, insurance, and protection of Intellectual Property, to name a few areas.

#### **INCREASED NUMBER OF MULTINATIONAL PROJECTS ON THE INTERNATIONAL PLANE**

Projects like the International Space Station<sup>10</sup> are the best examples of the multitude of Cooperative operations that countries indulge in for research and exploration of space. Such projects and collaborations generally involve a lot of research and the creation of massive databases, which begs how to determine what laws could be used to protect this research. The territorial limits of national laws and lack of any international regime regarding the protection of Intellectual Property puts such research at great financial costs at risk.<sup>11</sup>

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<sup>6</sup>Supra note 4.

<sup>7</sup>Supra note 4.

<sup>8</sup>Supra note 4.

<sup>9</sup>Supra note 4.

<sup>10</sup>Hereinafter ISS.

<sup>11</sup>WIPO, Intellectual Property and Space Activities, (11 Apr. 2020, 12:00 AM), [https://www.wipo.int/portal/sites/www/patent-law/en/developments/pdf/ip\\_space.pdf](https://www.wipo.int/portal/sites/www/patent-law/en/developments/pdf/ip_space.pdf).

### **III. UNDERSTANDING THE PRESENT LEGAL REGIME GOVERNING OUTER SPACE IN THE CONTEXT OF PROTECTION OF INTELLECTUAL PROPERTY.**

The laws governing the interaction between countries and Outer Space were developed by customary practices, which were later codified into several treaties that to date form the bulk of jurisprudence regarding the international legal regime governing space. The relation between some of these treaties and IPR will be discussed below-

**THE OUTER SPACE TREATY-** This treaty made in 1967 poses several problems for an Intellectual Property regime in space. The general theme behind this treaty is to ensure no appropriation of space by any one country, and that space remains a territory that stands to benefit humanity as a whole.<sup>12</sup> This is guaranteed by Article I, which lays down the "space benefits" clause according to which Outer Space ought to be used for the collective benefit of humanity. This clause is important because it lays down an important moral challenge to IPR laws in space that will be discussed in detail in the paper.

Article VII of the treaty also lays down the rule that countries shall be responsible for the Space Objects launched from their country, with this responsibility extending to the country retaining jurisdiction over the object launched in space. The present domestic IPR regime in every country is limited to the territory over which a

country exercises jurisdiction but using Article VII of the Outer Space Treaty, there is a possibility of extending this jurisdiction to Space Objects registered in the registry of a country.

**THE REGISTRATION CONVENTION-** The Registration Convention<sup>13</sup> made in 1975 provides for international liability of Space Objects by making countries responsible for Space Objects registered in their country. The importance of this convention is that it builds on the object of Article VII of the Outer Space Treaty. Article I(b) of the treaty defines the term 'Space Object' as one that includes the component parts of the Space Object along with the launch vehicle and its parts. Article II(2) of the treaty further lays down the procedure to be followed if multiple countries launch a Space Object by stating a need for an agreement between the countries regarding the registration of the Space Object and the flow of rights and duties.

### **IV. UNDERSTANDING THE INTERNATIONAL LEGAL REGIME GOVERNING IPR IN THE CONTEXT OF OUTER SPACE**

On an international level, there is no universal IPR system. The various forms of protection offered to Intellectual Property are limited to the domestic laws, which have a strict territorial application, meaning that an applicant seeking protection on an international level will have to file in individual countries.<sup>14</sup> While treaties like the Patent Co-operation Treaty<sup>15</sup> take care of the

<sup>12</sup>Supra note 10.

<sup>13</sup>Convention on Registration of Objects Launched into Outer Space, Jan. 14, 1975, 28 U.S.T. 695 [hereinafter The Registration Convention].

<sup>14</sup>Supra note 10.

<sup>15</sup>Patent Co-operation Treaty, June 19, 1970, 28 U.S.T. 7645, 1160 U.N.T.S. 231 reprinted in 9 I.L.M. 978 (1970). [Hereinafter the PCT].

procedural aspect by providing a universal filing mechanism, the scope of such treaties is purely procedural in nature, and the approval for the protection still depends on the individual nations and whether their substantive laws with regards to the protection of Intellectual Property allow for such protection to be granted.<sup>16</sup> The role of the international legal community is to harmonize this substantial aspect of the law to ensure that there is consistency which will help global commerce to the greatest extent.

#### **THE AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS**

The Agreement on Trade-Related Aspects of Intellectual Property Rights<sup>17</sup> remains the greatest attempt made on an international level to harmonize both the substantial and procedural aspects of the IPR regime on a global level. It lays down certain minimum standards that have to be complied with by all signatory nations in terms of national treatment, priority filing, and a most favored nation clause.<sup>18</sup> TRIPS also achieves harmonization of laws by mandating countries to sign other treaties with regards to the international IPR, like the Paris Convention for the Protection of Industrial Property, the Berne Convention for the Protection of Literary and Artistic Works, the Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations

(Rome Convention) and the Treaty on Intellectual Property in Respect of Integrated Circuits (IPIC Treaty).<sup>19</sup>

With respect to Copyrights and Outer Space, Article 10 and Article 14 are relevant considering that the former deals with computer programs and compilations of data while the latter deals with broadcasting organizations. Article 8 of the WIPO Copyright Treaty, which is signed under the Berne Convention, which all signatories to the TRIPS agreement must sign, provides for authors to choose mode of communication of their data, with satellite broadcasting being one of those modes. This is of great help for communications of databases to Earth from space being possible at any given point of time rather than waiting for the journey to end.

When it comes to trademarks, the TRIPS agreement provides for the subject matter, which can be considered a trademark under Article 15.

Regarding Patents, Article 27 lays down the conditions as to what is a patentable subject matter, stating that any invention from any field of technology shall be granted a patent as long as it is novel, has inventive use, and is capable of industrial application. This step to involve all technology regardless of the field it hails from is what helps the most as it was a grey area with some countries reserving some fields of technology as fields incapable of being patentable subject matter. The requirements for a

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<sup>16</sup> Supra note 10.

<sup>17</sup> Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994) [hereinafter TRIPS Agreement].

<sup>18</sup> Supra note 16.

<sup>19</sup> Japan Patent Office, Introduction to TRIPs Agreement, (11 Apr. 2020, 9:00 AM), [https://www.jpo.go.jp/e/news/kokusai/developing/training/textbook/document/index/TRIPs\\_Agreement.pdf](https://www.jpo.go.jp/e/news/kokusai/developing/training/textbook/document/index/TRIPs_Agreement.pdf).

patent under TRIPS are novelty, inventive use, and capability of industrial application.<sup>20</sup> The novelty concept means that the product should not have been known to the public before filing for the patent. Considering the fact that journeys in space can last months at a stretch, the invention might be known to people other than those involved in the research, which can make it difficult to achieve this requirement, especially in cases of multinational projects like the ISS. This is where rules like priority filing and confidentiality codes aboard the Space Objects come into the picture. According to Article 29 of the TRIPS agreement, Priority filing defines novelty as a buffer period by defining novelty as something that was not known to the public prior to the date of priority. Confidentiality clauses like Article V of the ISS crew code of conduct ensure that the research and data generated on the Space Object remain confidential and are not released without permission. Article 37(2) of the TRIPS agreement brings circuits under the domain of inventions that are applicable to patents, giving the intricate and large amount of circuitry involved in Space Objects protection.

Article 5ter of the Paris Convention, which is given effect by the TRIPS agreement, is also of relevance to Outer Space considering the fact that it deals with the doctrine of Temporary presence, according to which use of patented products of a country by the vessel, aircraft or land vessel of another country without a license shall not constitute the infringement of patent if the transit is temporary in nature. This is important in light

of the freedom of transportation. The question in the context of Outer Space is whether this Article applies to spacecraft or not. If spacecraft cannot be considered within the context of this Article, the ramifications in light of multinational projects will be great with the freedom of transportation being affected negatively.<sup>21</sup>

By mandating the signing of the various treaties governing major aspects of the international regime governing IPR, TRIPS ensures standardization and harmonization of the international IPR regime on an unprecedented scale. However, several glaring issues remain on a procedural and substantive level that continue to hinder applying a robust IPR regime in Outer Space. These issues shall be discussed in the following section of the paper.

## **V. THE PROBLEMS FACING THE IPR REGIME IN SPACE**

### **THE QUESTION OF WHICH LAWS TO APPLY**

The territorial limits of the domestic IPR laws to the country's territorial jurisdiction combined with the lack of a global IPR protection mechanism leads to the question of which laws ought to apply in case of a dispute regarding Intellectual Property in Outer Space.

Before delving into these issues, one ought to understand the difference between activities conducted in Outer Space that creates technology used on Earth-like satellite communications, activities conducted on Earth for research in Outer Space, and Activities conducted in Outer Space. The first two can obtain the protection of

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<sup>20</sup>Dr Yun Zhao, Protection of Intellectual Property Rights in Outer Space, (13 Apr. 2020, 2:13AM),

<https://iislweb.org/docs/Diederiks2006.pdf>.

<sup>21</sup>Supra note 10.

the domestic IPR regime where the technology is used or made. The third type of activity faces the dilemma of which laws to apply because the activities are done in Outer Space and do not have any usage on Earth.<sup>22</sup>

While the Outer Space treaty and the Registration Convention provide for the country of registration to retain jurisdiction over the Space object, the question not answered is whether this jurisdiction can be extended to the IPR laws to ensure that their jurisdiction can be extended to the Space Objects.<sup>23</sup> This question arises because of the existence of two schools of thought, one believing that this extension of the IPR laws has to be explicit in nature while the other believes that this extension is implicit in nature considering the fact that the country retains sovereignty and jurisdiction over the Space Object.<sup>24</sup>

The United States is the only country in the world to make this extension explicit in nature, as stated in Section 105 of 35 USC (Inventions in Outer Space), which reads as follows:

*"(a) Any invention made, used, or sold in Outer Space on a Space Object or component thereof under the jurisdiction or control of the United States shall be considered to be made, used or sold within the United States for the purposes of this title, except with respect to any Space Object or component thereof that is specifically identified and otherwise provided for by an international agreement to which the United States is a party, or with respect to any Space Object or component thereof that is carried on*

*the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space.*

*(b) Any invention made, used, or sold in Outer Space on a Space Object or component thereof that is carried out on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space shall be considered to be made, used or sold within the United States for the purposes of this title if specifically so agreed in an international agreement between the United States and the state of registry."*

It ought to be noted that this problem of territoriality does not apply to cases involving copyrights considering the fact that the laws regarding copyright protection apply on the basis of the nationality of the author according to Article 3 of the Berne Convention.

The scope of this question expands in light of multinational projects like the ISS, where different countries contribute to different aspects of the Space Objects. Article II (2) of the Registration Convention states that in the case of multinational projects, there must be a prior agreement on which country's registry the different Space Objects will be registered. This still leaves the question of whether the IPR laws of the country in whose registry the Space Object is registered extends to the Space Object or not in the context of the two schools of thought as discussed above.

<sup>22</sup>Supra note 10, Id.

<sup>23</sup>Supra note 10.

<sup>24</sup>Supra note 10, Supra note 20.

The Intergovernmental Agreement<sup>25</sup> signed between the Governments of the United States, Canada, Japan, Russia, and the European Space Agency regarding the governance of the International Space Station is a good example of an agreement that lays down the laws which will apply and which country would retain jurisdiction over which aspect of the ISS. Article 21 of the IGA makes the extension of the jurisdiction of the IPR Laws to the Space Object of the respective country, thereby enabling the principle of quasi-territoriality. This extension becomes complicated in light of the Space Objects registered with the ESA, which has multiple parties. Article 21 (2) of the IGA states that with any invention that has been made on a Space Object registered by the European Space Agency, any member of the ESA can deem the invention to have been made on its soil and no other European partner to the ESA can decline the patent application made in its country. This principle extends to Trademarks and Industrial Designs as well.

The IGA is a good example of how clear and explicit mention of which laws to apply in which scenario ensures that there is little room for confusion that can stifle the research that might take place in the ISS.

However, answering the procedural question of which laws should apply is only the start of the journey towards a stable IPR regime in Outer Space. Various substantial issues plague the protection and enforcement of IPR in Outer

Space that need to be looked into to ensure a robust and harmonious IPR regime in Outer Space.

#### **LACK OF HARMONIZATION OF THE SUBSTANTIVE CONTENT OF THE INTERNATIONAL IPR REGIME**

The answering of the procedural aspect of which law is to apply only solves the problem of domestic enforcement of the IPR laws. The problem persists in applying and enforcing these IPR laws on a global level to ensure maximum protection of Intellectual Property. Considering the lack of a global IPR regime, the applicant who desires to protect the IPR laws internationally must apply to individual nations. The procedural problem here is solved with the help of treaties like the PCT, but there remains the question of substantive law. The PCT streamlines the application procedure, but the IPR application still needs to meet the substantive requirements of the domestic IPR laws like that of the subject matter of the laws. This subject matter of law is where there is a lack of harmony on an international level. Despite several attempts to harmonize the international IPR regime in the form of various treaties, with the most serious attempt being that of the TRIPS agreement, there are several issues where there remains a lack of consensus that can be of great detriment to the protection of intellectual property Property in Outer Space. Two major

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<sup>25</sup>Agreement among the United States of America, governments of Member States of the European Space Agency, the government of Japan, and the government of Canada on Cooperation in the Detailed

Design, Development, Operation, and Utilization of the permanently Manned Civil Space Station, Sept. 29, 1988, [hereinafter IGA].

issues where the lack of consensus hurts the IPR regime in the Outer Space are-

**The question of which databases are to be awarded copyright protection-** A lot of research is involved in exploring Outer Space that results in the creation of databases that have a massive investment attached to them. Databases would ordinarily come under the ambit of copyright protection, considering the fact that they are of literary nature.<sup>26</sup> Article 2.5 of the Berne Convention provides for copyright protection for various compilations of literary and artistic works. The scope of this Article, however, is limited to providing protection to the compilations of data itself which enjoys copyright protection which is a problem that is remedied by Article 10.2 of the TRIPS agreement, which states that "*Compilations of data or other material, whether in machine-readable or other forms, which by reason of the selection or arrangement of their contents constitute Intellectual Creations shall be protected as such. Such protection, which shall not extend to the data or material itself, shall be without prejudice to any copyright subsisting in the data or material itself.*"

The next question to be analyzed is what kind of a database can be considered an 'Intellectual Creation'? Is it the database where creativity was involved in either selecting or arranging data where protection is provided? The problem is

that there is no consensus among countries with regard to this principle. The Supreme Court of the United States in *Feist Publications Inc. v. Rural Telephone Service Co.*<sup>27</sup> held that a simple compilation of data that lacks creativity regarding either selection or creation could not be granted the status of an Intellectual Creation despite the financial costs and labor involved. This "Creative Spark" doctrine that the American courts follow is not followed in countries like Australia where the doctrine of "sweat of the brow" applies, according to which despite there not being any creative efforts involved, the court, upon finding substantial effort put into the work can grant compilations of data the status of an Intellectual Creation.<sup>28</sup>

This fundamental lack of harmony can have large ramifications on research and data collection in Outer Space, which should be remedied by bringing uniformity to the system.

**Lack of clarity with respect to the definition of the term 'Space Object'**- There is a lack of clarity as to what exactly is meant by a 'Space Object' under the present legal regime governing the use of Outer Space. The term 'Space Object' is itself first used in the Convention on International Liability for the Damage Caused by Space Objects,<sup>29</sup> which does not define the term per se but merely goes on to include components of the Space Object as well as the launch vehicle in the definition of the term Space Object. The

<sup>26</sup>Gary Myers, Intellectual Property Resources in and for Space: The Practitioner's Experience, 32 J. Space L. 385 (2006).

<sup>27</sup>*Feist Publications Inc. v. Rural Telephone Service Co.*, [1991] 111 S Ct 1282.

<sup>28</sup>*Telstra Corporation v. Desktop Marketing*, [2001]

FCA 612.

<sup>29</sup>The Convention on International Liability for Damage Caused by Space Objects, Mar. 29, 1972, 24 U.S.T. 2389, T.I.A.S. No. 7762, 10 I.L.M. 965 [hereinafter Liability Convention].

definition of this term can be inferred from Article VII of the Outer Space Treaty, which uses the terminology of 'an object launched into Outer Space.' The inherent lack of clarity is made worse by the use of the terms 'space vehicle' in Article V of the Outer Space treaty and the term 'Space Craft' in the Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects launched into Outer Space.<sup>30</sup>

This fundamental lack of definition of the term Space Object has led to different interpretations and definitions by different schools of thought. The functionalist school of thought believes that the term 'Space Object' ought to be defined in light of the functions played by the vehicle. The fundamental question they ask is whether the object is able to serve space-related functions or those more aviation-related.<sup>31</sup>

This is in contrast to the spatialist approach, which defines the object in light of the location where the activity takes place, which can be problematic in light of next-generation Aerospace objects capable of suborbital space flight and flying within Earth's atmosphere.<sup>32</sup> The line becomes murky, and the application of laws becomes problematic in such a scenario.

The functionalist approach also runs into problems when they define a 'Space Object' as a human-made object launched into space for the purposes of usage in Outer Space. This is primarily because the focus on the terminology

'launched into Outer Space' would exclude any Space Objects made in space. Article VIII of the Outer Space Treaty did provide for the ownership of objects manufactured on celestial objects and launched into Outer Space, but there is a legal vacuum regarding objects made in Outer Space. Therefore, the objects made in Outer Space would lack jurisdiction, which is a massive lacuna that needs to be looked into.<sup>33</sup>

These are some of the most important discrepancies in light of substantive law issues that plague the law governing Outer Space and protection of Intellectual Property in the context of Outer Space on which there is a severe dearth of Jurisprudence.

#### **ENFORCEMENT OF IPR IN OUTER SPACE**

Assuming the binary of whether the extension of quasi-territoriality ought to be explicit or implicit is solved, the issue of enforcement of these rights remains unanswered. This is another problem faced by the legal regime governing IPR in an international context and the context of Outer Space. There is a lack of any international instrument that deals with enforcement of foreign judgments with respect to IPR issues, making enforcing said rights an extremely lengthy and difficult process that would discourage private industries. While this remains the perfect situation for engaging in Arbitration, whose awards can be globally enforced by virtue of the New York Convention, for parties preferring the

<sup>30</sup>Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, Apr. 22, 1968, 19 U.S.T. 7570 [hereinafter Rescue Agreement].

<sup>31</sup>Louis de Gouyon Matignon, The definition of a space object, (20 Apr. 2020, 8:12 PM), <https://www.spacelegalissues.com/space-law-the->

[definition-of-a-space-object/](#).

<sup>32</sup>Id.

<sup>33</sup>Thomas Cheney, What is a space object, (22 Apr. 2020, 9:19PM), <https://thomascheneyblog.wordpress.com/2017/10/30/what-is-a-space-object/>.

national court mechanisms, there needs to be an enforcement mechanism to ensure enforcement of the IPR laws in Outer Space.

#### **THE MORAL AMBIGUITY OF IPR IN SPACE IN LIGHT OF THE OUTER SPACE TREATY**

Article I of the Outer Space Treaty clearly states that the exploration of Outer Space "must be effected for good and in the interest of all countries, regardless of their state of economic and scientific development, being the attribute of all mankind." One conclusion from reading this Article is that the scientific research that has been done in space must be available to the general public. However, this principle needs to be juxtaposed with emerging privatized space exploration, which comes at a massive cost.

This calls for a clear distinction between ownership over the Space Objects and Outer Space being free from appropriation by any country but even then, the aspect of research done on these Space Objects being appropriated still lingers. This calls for a balancing act that can be achieved with the help of national laws governing IPR, which capture the said problem and provide solutions in the form of the government interfering and setting limitations on exclusive IPR for the purposes of public order or morality.<sup>34</sup> This still depends on the domestic laws, which can lead to problems on the international level, which calls for a uniform policy on the moral aspects of IPR in space.

#### **VI. A GLIMPSE AT A WORKING MODEL FOR PROTECTION AND ENFORCEMENT OF IPR IN THE CONTEXT OF OUTER SPACE**

The first step needed to get a working model for the protection and enforcement of IPR in Outer Space would be to reach a consensus on whether the quasi-territoriality principle to be applied to Space Objects is explicit or implicit. Answering this question would require one to solve the conundrum of what is meant by the term 'Space Object.' Assuming these problems have been solved, the procedural aspect of which laws to apply has been solved.

The next step will be to streamline the application procedure for patents on the global level. The PCT comes into the picture and allows for a single patent application to file, thus saving time and labor. This takes care of the procedural aspect of international protection and enforcement of IPR, which will be meaningless unless there is uniformity regarding the discrepancies in the substantive law of IPR among different countries. Assuming these discrepancies have been worked out, all that remains is a multinational treaty that will enforce foreign judgments related to IPR laws. There will have to be an international consensus as to how exactly to balance a return-on-investment principle and a fair and equitable approach towards the interaction between humanity and space to ensure that Outer Space belongs to humanity as a whole.

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<sup>34</sup>Supra note 10.

The answers to these problems will result in a harmonious and stable IPR regime that benefits IPR in the context of Outer Space and IPR on the international plane.

## **VII. CONCLUSION**

The purpose of this paper is to understand the present regime of IPR in Outer Space and highlight the issues that plague this regime while giving some direction as to the steps that can be taken to solve these issues. The issues are such that trying to solve them in the span of a paper would be doing them the gravest of injustice. These issues need to be looked at on an individual level and discussed on international platforms by countries both spacefaring and non-spacefaring to ensure that there is genuine consensus that can be achieved. The interaction between humanity and space is only set to increase with the influence of the private sector only set to grow, which calls for a solution now when the problems are still in their infancy.

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