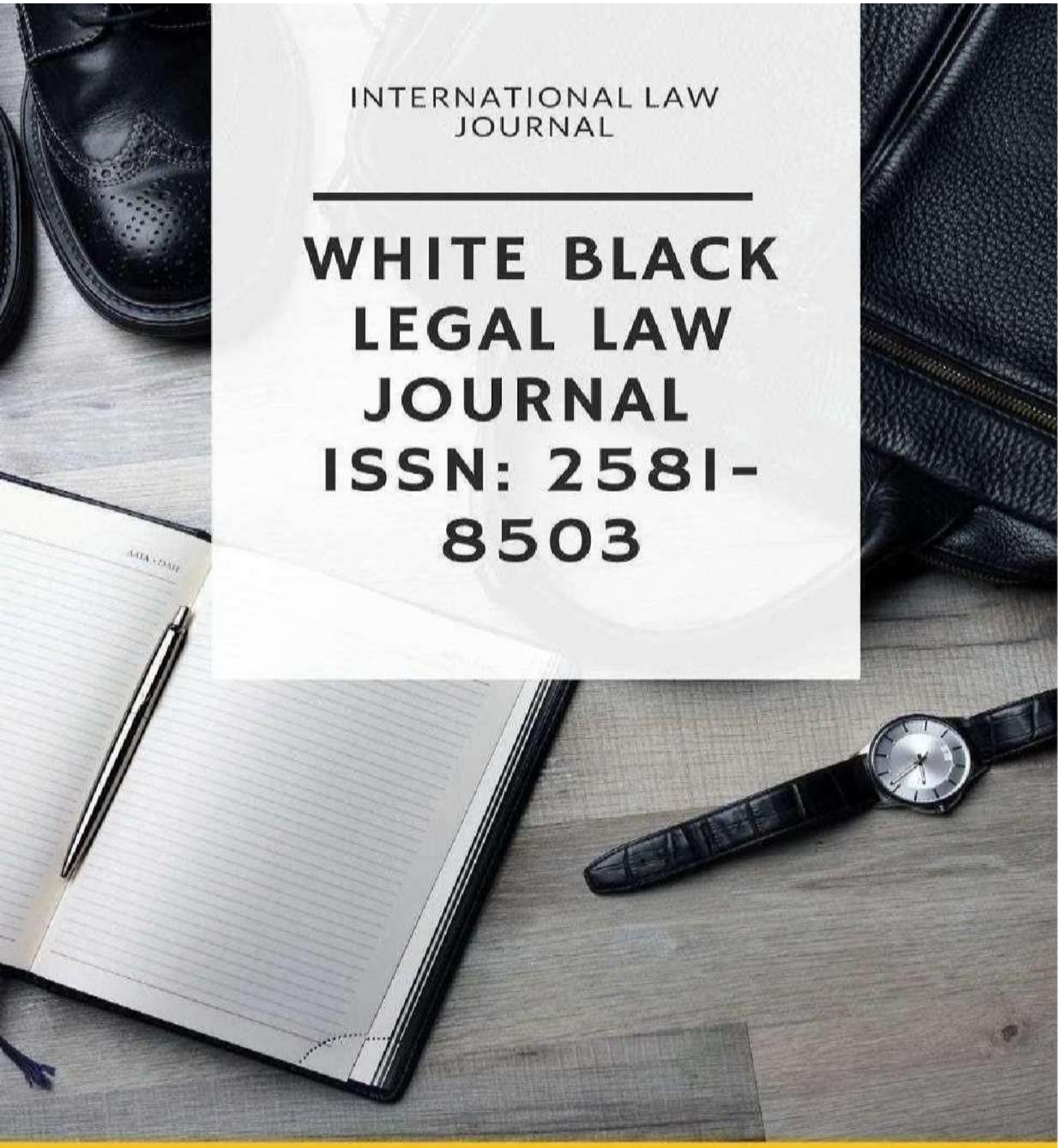

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WHITE BLACK LEGAL is an open access, peer-reviewed and refereed journal providededicated to express views on topical legal issues, thereby generating a cross current of ideas on emerging matters. This platform shall also ignite the initiative and desire of young law students to contribute in the field of law. The erudite response of legal luminaries shall be solicited to enable readers to explore challenges that lie before law makers, lawyers and the society at large, in the event of the ever changing social, economic and technological scenario.

With this thought, we hereby present to you

INTELLECTUAL PROPERTY RIGHTS IN OUTER SPACE ACTIVITIES[1]

AUTHORED BY - GAYATHRI. A & BHUVANESHWARI. M

1.1 INTRODUCTION

"MAN'S MIND AND SPIRIT GROW WITH THE SPACE IN WHICH THEY ARE ALLOWED TO OPERATE."

- KRAFFT ARNOLD EHRICKE

Space technology is always an advance moving technology and the outer space activity is a fruit of intellectual creation. There are interlinking bonding between them, i.e., the intellectual property rights in outer space activities. In International law the most problematic area is intellectual property rights in outer space activities. As of now the patent protection of invention created or used in outer space and the copyright protection of database data acquired through space activities. And the space tourism becomes a reality then there is need for the protection of industrial design and trademark may become an important issue. The major issue is there are no proper international legal frame work for space activity. There are so many national frame work and different nations follow different principles and it will create an issue among the nation. So, there is a huge need for the important legal frame for the intellectual property rights in space activities.

Intellectual Property is the creation of humankind and intellectual. It is intangible and it derives its values rather than from the idea and concept of the creator itself. In this paper we shall be looking into the principles of space law and how does intellectual property rights provide appropriate protection in the outer world, i.e. space. Intellectual Property will not be used as a tool for an unfair bargain, there will be protection rights given on the basis of the space law. The commercialization of outer space is progressing into a new stage in its development. It is the strong territorial framework to intellectual property rights that is inconsistent with the legislation governing space operations. The purpose of this article is to examine the topic of patent protection in outer space while also providing a feasible framework for the protection of

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what is known as "outer space patenting". It is anticipated that such an international framework will stimulate the advancement of space operations and will, in particular, address the demand for patent protection by governments and private enterprises.

Space activities, like all human practices, are subject to international and national laws and regulations. Intellectual property rights (IPRs) are constantly raising a variety of major legal concerns in relation to space activities, including questions of ownership of intellectual property and violation of IPRs, among other things. The significance of intellectual property rights (particularly industrial property rights) pertaining to space activities is growing rapidly as the private enterprise becomes increasingly acknowledged as a component in further space growth and as space applications become more and more embedded into everyday life on Earth. Generally speaking, industrial property (the patent system) is needed for the issue of a patent since it serves to foster the development of novel ideas for the welfare of the majority at large. Since patent systems were created as a means of striking a balance between the interests of inventors and the interests of the public at large.

PATENT RIGHT IN SPACE ACTIVITIES

A Patent is an exclusive right granted for an invention, which can be a product or a process that provides a new and inventive way of doing something or offers a new and inventive solution to a problem. In Article 2(viii) of the Convention Establishing the World Intellectual Property Organization[2] of July 14, 1967 provides that "intellectual property" should include the rights relating to

- literary, artistic and scientific works;
- performances of performing artists, phonograms, and broadcasts;
- inventions in all fields of human endeavour;
- scientific discoveries;
- industrial designs;
- trademarks, service marks, and commercial names and designations;
- protection against unfair competition; and
- all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields. Thus, intellectual property covers a wide range of various creations of human mind.

[2] Article 2(viii) of World Intellectual Property Organization

In general, the patent means, a patent owner has exclusive rights to prevent third parties not having the owner's consent from the acts of making, using, offering for sale, selling or importing for these purposes the patented invention. In other words, the patent has the right to decide who may or may not or use the invention for the period during which the invention is protected, generally 20 years from the filling date. The patent owner may give permission to (licence) other parties to use the invention on mutually agreed terms. The owner may also sell the right to the invention to a third party, who will then become the new owner of the patent. Once a patent expires, the protection ends, and the invention enters the public domain. The patent right provides the protection for the owner but also provides the valuable information and inspiration for future generation of researchers and inventors. Every country has its own patent law to protect new invention and process. But protection of patent in outer space is difficult in the current legal regime of IPR. Despite this all nations have adopted different measures to prevent IPR violation in outer space.

In India has opened its space industry to everyone and the private investors also. These investors look at their profit instead of public benefit and demand clear law to protect their interest in space activities. India needs to clarify its stand as to how it is going to protect IP created by outer space activities. The Indian Patent Law, 1970 governs the law relating to Patent. It was recently amended in 2005. The protection of IP in outer space is debatable issue and it needs clarification as to how Indian patent law will protect IPR in outer space. Under section 134 of Indian Patent law, provides that India grants patent protection only to the citizens of these countries which have granted similar rights to Indian citizen in their country in respect of protection of Patent right[3]. India has to give similar rights to foreign nationals and foreign state have to grant similar right to Indian inventors for receiving protection in Indian territory. Indian Patent Act grants certain right to patentee under Patent act. These include making, using, offering for sale, selling or importing for those purposes that product in India[4]. This right can be used by patentee only in India. An exception to this section is provided but strangely despite there being a difference between temporary residence and accidental residence[5], as in case of temporary residence foreigner has intended to come and reside for a short time but in case of accidental residence foreigner has no control over circumstances or his intention is not to come and reside, the section clubs these two different sets of circumstances together. Even in

[3] Section 134 of Patent Law
[4] Section 48 of Patent Law
[5] Section 49 of Patent Law

privilege has been granted on reciprocal basis. If Indian Patent law applies to space activities, infringer can take plea of necessity which can be used to prevent patent protection. This can be all the more severe in case of space projects which often are risky affairs running into million dollars.

United States, have extended its patent law to outer space by Patent Law Amendment in 1990[6]. Section 105 of U.S Patent law provides that if the space object which is under control of US, is considered to be made, used and sale in US territory[7]. It means in case of joint launch US would have Jurisdiction if that joint launch agreement is silent on the IP clause. Part b of section 105 empowers US to make agreement with other nations for protection of IP where the space object is registered in a place other than US[8]. It means US can make Special Agreement with other nations for the protection of IP where U.S. is not a state of registry. However, section 105 can be applicable only if space object is registered in US and the other participant countries agreed.

International Space Station Agreement (ISS) gives right to participating member's state to extend their respective IP Law in to the space station. This right is limited to those portions which are registered in their national registry[9]. In case of European Space Agency (ESA) member countries can extend their IP law to the particular object registered by the name of ESA. Article 21(3) provides that a person who is not a citizen/ resident of the state party can file patent application as per his choice and state party will not prevent that person for doing so by enactment of any law. Further, if application for protection of such invention has been filed in one particular country, then it does not prevent other state from filing application in other contracting state to control secrecy or restrict further filing. It is interesting to note that if any infringement has been done by person or entity, the IP right holder cannot recover in more than one country, if such IP right is granted in more than one country[10]. It would be compulsory for all ESA partner states, not to deny IP rights, if such invention has been patented in other ESA states. ISS agreement makes it clear that temporary presence of parts, object or in transit flight between earth and space station does not confer right made certain arrangement to protect IP Rights infringement in all cases. This is because patent is only protected in the partner state

[6] Untied States Code 35 – patent (added Nov 15, 1990)
[7] United State Code – 35, Section 105 A
[8] United State Code – 35, Section 105 B
[9] Article 21(2) of ISS
[10] Article 21(4) of ISS

and ESA member state. It also does not provide protection outside the territory of partner states though it has provided that member state should not deny licence if such invention is patented in other member state of ESA. However, this protection does not remedy cases where member states may not grant patent by stating that it is in their national interest.

Russian law on space activity via Article 4(3)[11] provides that intellectual property and information dissemination, trade secret is governed by the norms of the Russian laws. It means Russian patent law would be applicable in case of space activity. Article 12(4) provides that the foreign investment in organisation's engaging in space activities, shall be guaranteed intellectual property order to protect their rights and other property rights. It means Russian Federation IP law will be extended to outer space in order to protect their inventions in outer space[12]. The use of space technology and transfer of intellectual property right will be governed by Russian law. The Russian law clearly grants power to Russian federation to execute agreement with other organisation and such agreement will then govern the property. It also confers rights, on the organisations and individuals to file application at any place of their desire. But the loophole lies in the absence of provisions to tackle with patent infringement by other states in outer space or any territory which is not part of the agreement.

THE LEGAL REGIME OF INTELLECTUAL PROPERTY RIGHTS IN OUTER SPACE ACTIVITIES

The International principles concerning intellectual property,

1. PARIS CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY

The Paris Convention for the Protection of Industrial Property (hereinafter referred to as the "Paris Convention"), which is the basic international treaty in the field of industrial property, does not expressly consider the question of inventions in outer space. However, it contains provisions establishing the national treatment principle[13], the right of priority[14] and common rules, including certain measures for the enforcement of intellectual property rights, which all the Member States must follow. As regards patents, patents granted in different Member States for the same invention are independent of each other. This means that, on the one hand, the granting of a patent for a given invention in one Member State does not oblige other Member

[11] Russian Patent Law
[12] Space Legislation in India by Prof. Dr. Kavita Singh
[13] Article 2 of Paris Convention,1883
[14] Article 4 of Paris Convention,1883

States to grant a patent for the same invention; on the other hand, a patent for a given invention cannot be refused, revoked or terminated in a Member State on the grounds that a patent applied for in another Member State for the same invention has been refused or has lost its effect in the latter State. Article 6 provides a similar rule with respect to registered marks. Of particular interest with respect to outer space activities is Article 5, which provides that there is no infringement of the rights of a patentee in the case of

(i) the use on board vessels of other countries of the Paris Union of devices forming the subject of the patent in the body of the vessel, in the machinery, tackle, gear and other accessories, when such vessels temporarily or accidentally enter the water of the said country, provided that such devices are used there exclusively for the needs of the vessel,

(ii) the use of devices forming the subject of the patent in the construction or operation of aircraft or land vehicles of other countries of the Paris Union, or of accessories of such aircraft or land vehicles, when those aircraft or land vehicles temporarily or accidentally enter the said country.

2. BERNE CONVENTION FOR THE PROTECTION OF LITERARY AND ARTISTIC WORKS

The Berne Convention for the Protection of Literary and Artistic Works (hereinafter referred to as the "Berne Convention") is the basic treaty in the field of copyright and related rights. As the Paris Convention, the Berne Convention does not expressly consider the question of intellectual property rights in outer space. However, it contains provisions establishing basic principles such as national treatment, the "independence" of protection and the principle of automatic protection, i.e., copyright protection may not be subject to any formality.

3. THE AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS (TRIPS AGREEMENT)

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) does not specifically address the question of outer space as such. In addition to the principle of national treatment in Article 3, Article 4 provides that, in principle, any advantage, favour, privilege or immunity granted by a Member to the nationals of any other country shall be accorded immediately and unconditionally to the nationals of all other Members ("most-favoured-nation treatment").

Further, according to Article 27(1), patents must be available and patents rights enjoyable without discrimination as to the place of invention. Therefore, national law has to ensure that, with respect to inventions created in outer space, patents must be granted and enforceable in the territory in which it applies under the same conditions applicable to inventions created elsewhere.

4. INTERNATIONAL PRINCIPLES CONCERNING OUTER SPACE

The main body of current international space law is contained in five international agreements:

- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (1967 Outer Space Treaty);
- Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects launched into Outer Space (1968 Rescue Agreement);
- Convention on International Liability for the Damage Caused by Space Objects (1972 Liability Conventions);
- Convention on registration of Objects Launched into Outer Space (1975 Registration Convention); and
- Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (1979 Moon Agreement).

None of those agreements contains a provision expressly dealing with intellectual property.

5. OUTER SPACE TREATY,1967

- Article I of the Outer Space Treaty provides for a space benefit clause which states that all the activities concerning exploration and the usage of objects in outer space will be carried out in a manner that shall be beneficial for the interest of all countries irrespective of the degree of enhancement in the field of economic and scientific development and be the province of mankind the state shall be free from exploration and there should be no discrimination of any kind on the basis of equality which is as per the terms of international law which states there should be free access by a state in areas concerning celestial bodies.
- Article II of the Outer Space Treaty: Provides for a clause called the non-appropriation of space which states as per the clause that no member state will be allowed for appropriation by the claim of sovereignty in outer space.

- Article VII of the Treaty establishes that the State to whose treaty the registry is launched into outer space shall retain jurisdiction and control over an object and any personnel in outer space or celestial body to the same. There is also ownership of objects which include land or object which is constructed on the celestial body or object which is not affected by outer space or the said component which is found beyond the limit and jurisdiction of a State who is a party to the treaty or to whom it is registered to has to return by the other state to the original state registered

6. REGISTRATION CONVENTION, 1975

- Article II of the Registration Convention provides that the launching State shall register the space object by the means of an entry into the appropriate registry.
- Article I(a) of the Convention mentions launching state, Article I(B) mentions space objects Article VIII of the Outer Space Treaty and with prejudice to an agreement which would be amongst the launching State of the jurisdiction as well as the control over space object and their personnel[15].
- The Registration Convention provides for the possibility of an international intergovernmental organization that would register its space objects in space and under certain conditions for the same.

7. DECLARATION OF UNITED NATIONS COMMITTEE

For the peaceful use of Outer space on International Cooperation in the Exploration and the Use of the Outer Space for the Benefit and the Interest of all States taking into interest the needs of Developing countries which was adopted in 1996, all states are free to determine all aspects which will be on the basis of equitable and mutually acceptable terms[16].

JURISDICTION OF OUTER SPACE

The Sate Responsibility in International law, is in the exercise of jurisdictional authority, which is an expression of sovereignty. There are many bases for the assertion of jurisdiction, and a brief excursus to highlight the chief ones is necessitated. The Jurisdictional competence in international law having many principles such as,

- The Territorial Principle

[15] Outer Space Treaty, 1967
[16] https://www.kashishipr.com/blog/aligning-outer-space-and-iprs

- The Nationality principle
- The Passive Personality Principle
- The Protective Principle
- The Universality principle.

These are the general principles of jurisdiction in international law.
In the space context. Article VIII of outer space treaty provides that "State party on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object and over any personnel thereof", the concept of registration is must and at this juncture it is enough to assert that the floating territorial principle is the one made expressly applicable to activities in outer space. This is probably does not exclude the other bases of jurisdiction, given the clear statement in article III of the Outer Space Treaty (outer space treaty article 3). Heretofore, the relatively straightforward assertion of jurisdiction based on registration as denoting nationality has proved adequate. However, with the advent of the Space Station 'era, there is a potential for the wholesale application of all of the other concurrent bases for jurisdiction. It is submitted that this exports unnecessary complexity to a milieu which does not require it.

In USA, the Uniform Code of Military Justice applies to military personnel wherever they may be, including in outer space. Regarding criminal jurisdiction over civilians, both American and foreign, the "special maritime and territorial jurisdiction of the United States" has been legislatively extended to "any vehicle used or designed for flight or navigation in space and on the basis and to institutionalize the means of transfer of the technology within the UN system. This is a powerful current in international affairs and cannot be entirely ignored by the participants in the USA/ International Space Station. Finally, they must be mindful of article XI of the Outer Space Treaty, by which they agree to inform the UN Secretary General "as well as the public and the international scientific community, to the greatest extent feasible and practicable, of the nature, conduct, locations and results" of activities in outer space. Naturally, it is left up to the states concerned to interpret the ambit of this provision and the practice with respect to the Registration Convention does not augur well[17].

Jurisdiction refers to the powers exercised by the dispute settlement mechanism over persons,

[17] Law and Policy in the Space Station' Era by Andrew J. Young.

property or events. One of the unique requirements for any dispute settlement mechanism for space activities is that it requires an ecumenical and universal jurisdiction. This mechanism must be competent to consider any and all the factors that could potentially arise in a dispute concerning space activities. In general terms, this means that it has to have a broad scope of jurisdiction in three areas:

1. Subject matter and adjudicative jurisdiction: This dispute settlement mechanism must have the jurisdiction to consider disputes that will likely range over a wide diaspora of subjects. Disputes arising from space activities will likely involve factors of public international law, private international law, domestic law, and matters of equity. The dispute settlement mechanism must be competent with the jurisdiction to deal with the varied subject matter that may crop up in these cases. Further, it is necessary that this dispute settlement mechanism should have wide adjudicative jurisdiction to hear and settle disputes with little unreasonable restriction on the applicable law and type of dispute that can be brought before it. The mechanism should also have the competence to decide its own jurisdiction. In particular, it must be noted that this mechanism needs to have jurisdiction to hear disputes that might fall within a multilateral or international treaty framework, such as the 1967 Outer Space Treaty or the 1972 Liability Convention, other general treaties (such as environmental treaties) as well as private contracts between a private commercial entity and another. One possible manner to achieve this is by allowing parties to choose which areas of the law to include or exclude from the mechanism's authority in dealing with disputes that are submitted to it. Another possibility is to ensure that the mechanism is not established as a supplement to a particular treaty regime, but rather as a standalone institution that separately supports the existing legal framework.
2. Territorial jurisdiction: This is especially important, given that activities in outer space generally know no artificial State boundaries that have been imposed on Earth. As Huber noted in the Palmas Island case, "Sovereignty in the relations between States signifies independence. Independence in regard to a portion of the globe is the right to exercise therein, to the exclusion of any other State, the functions of a State. The development of international law [has] established this principle of the exclusive competence of the State in regard of its own territory in such a way as to make it the point of departure in settling most questions that concern international relations." Action on the territory of a State without its consent then, generally constitute violations of the international legal principles of territorial integrity and non-intervention.168

Examples of this at international law include the kidnapping in the Alvarez-Machin case by US agents, and the bombing of the Rainbow Warrior by French agents in New Zealand. This principle has always been operative in international law, including international dispute settlement, meaning that no action can be taken without the consent of the State. It is significant that this dispute settlement mechanism be allowed to hear and settle cases with no restriction as to the territory in which the factual matrix constituting the events took place. Due to the transboundary nature of space activities and the immense amount of international and multilateral cooperation involved, it would be counter-productive to confine the jurisdiction of the dispute settlement mechanism behind the artificial walls of territoriality. This can already be seen in the context of the Liability Convention, which, although appearing to limit potential claims only to "launching States", then proceeds to define such "launching States" in a very broad manner. This wide definition, together with the liability then accrued for joint and several liability under the Convention, actually allows in practice for a wide range of possible parties from which claimant States can pursue a remedy. It is submitted that the establishment of any dispute settlement mechanism should follow in the path of the Liability Convention, and be endowed with universal jurisdiction irrespective of territorial boundaries.

3. Enforcement jurisdiction: This refers to the powers of the dispute settlement mechanism of physical interference executively exercised. The includes the enforcement of any awards or settlement given, together with measures that can be undertaken to ensure that such awards or settlements are implemented in good faith. A dispute settlement mechanism without proper enforcement jurisdiction is ineffectual. Space activities involve high risks and stakes, and any effective dispute settlement mechanism must be able to be practically enforceable.

CONCLUSION

Outer space activities have always been characterized by high-tech inventions and advanced science but the recognition of IPR with respect to these activities is of a recent origin and India, like many others countries, has not enacted any space legislation, nor has any provisions dealing with outer space activities in its domestic IPR regime. There is no questioning the fact that intellectual property is essential for exploring space and further contributing to research and development. However, certain conflicts persist. The enforcement of any intellectual

property may be in conflict with principle of free and fair access to knowledge, information and resources derived from space activities and cause hindrance to the same. Though the regime of intellectual property is governed by national laws, international entities like the World Intellectual Property Organisation (WIPO) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) have succeeded in harmonizing the IP laws to some extent, worldwide. However, such a harmonization is not sufficient for extending such protection to space related activities and inventions. The need of the hour is to establish a uniform legislative regime governing IP law in space so that even the developing countries are able to benefit from their creations rather than being overshadowed by the developed ones. There is a wide scope for several new dimensions pertaining to IP rights that can be opened in the Outer space, such as, application of territory based national laws in outer space for enforcement of rights, entitlement and ownership in case of joint activities, compliance with international obligations, etc. In addition to a uniform legal regime, a standard enforcement mechanism, such as that of International Arbitration, also has to be established to hear and decide disputes arising out of IPR in outer space.

Space has potential which may take us years to, merely, discover. It can provide resources that cannot yet be priced. It is only through the technical and financial cooperation of the private sector and the government entities that proper and adequate methods for exploring the space can be devised. An incentive that any enterprise has for innovating and creating better technologies is that it has exclusive right over its inventions to the exclusion of others. The only way such an exclusive right can be granted is via intellectual property rights. Thus, it is for the benefit of space exploration, as a whole, that IPR laws have to be brought in line with Space Laws.

Space sector is heavily dependent upon technological innovations and development of space sector is directly linked to the kind of protection accorded to IPR in space. Of particular relevance in this regard is protection of space inventions via patent. The present regime in India is acutely lacking on both these counts. India is currently focusing on commercialization of its space program and is interested in inviting private participation. However, private investors are singularly focused on making profits and existing state of IPR regime, does little to inspire confidence. We need to draw lesson from countries which have put in place a strong IPR regime governing space inventions to plug the loopholes plaguing our system. This is an immediate requirement and should be done at the earliest.

Understanding the "Province of All Mankind" concept, Article 38 of the Statute of International Court of Justice is generally recognised to enumerate the source of international law. In the halcyon days of 1958 after the news of Sputnik had reverberated around the world, the United Nations resolved to create a Committee on the Peaceful Uses of Outer Space (COPUOS)[18]. Contained in that inchoative resolution was the phrase, destined to become a veritable incantation in relation to outer space, "the common interest of mankind". This principle articulates the apogee beyond which the policy makers in the governments of the space powers may not go. "While in itself so general as to lack any clearly defined content, it is basis and to institutionalize the means of transfer of this technology within the UN system". This is a powerful current in international affairs and cannot be entirely ignored by the participants in the US/ International Space Station. Finally, they must be mindful of article XI of the Outer Space Treaty, by which they agree to inform the UN Secretary General "as well as the public and the international scientific community, to the greatest extent feasible and practicable, of the nature, conduct, locations and results" of activities in outer space. Naturally, it is left up to the states concerned to interpret the ambit of this provision and the practice with respect to the Registration Convention does not augur well.

"The exploration of space will go ahead, whether we join in it or not, and it is one of the great adventures of all time, and no nation which expects to be the leader of other nations can expect to stay behind in the race for space." – John F. Kennedy

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