

IPR Regulation in space Cross Country Analysis

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I. NEED FOR ESTABLISHING LEGAL REGIME FOR PROTECTING INTELLECTUAL PROPERTY IN SPACE

The importance of establishing a legal regime that effectively protects intellectual property in space cannot be overemphasized. Lack of legal certainty will influence the advancement of space research and international cooperation. Because of the large investments involved in space activities, a legal framework that assures a fair and competitive environment is necessary to encourage the private sector's participation in this field. Limited exclusive rights conferred by intellectual property protection would bring competitive benefits to right holders either by concluding a licensing agreement or by excluding competitors from using a given technology. The overall image of the company may be improved by intellectual property rights created in the company. For example, the acquisition of patents may be viewed as a proof of the technical competence of the company. The possibility of licensing intellectual property also has the advantage of allowing to negotiate a cross-license with other parties, particularly where a specific space technology concerned is a consolidation of various high-technologies.

II. ROLE OF INTELLECTUAL PROPERTY IN THE AREA OF SPACE ACTIVITIES

Despite the fact that space technology is always one of the most advanced technical area, and outer space activities are, in fact, the fruit of intellectual creations, it is only in recent years that intellectual property protection in connection with outer space activities has raised wider attention. One of the reasons is that the space activities are increasingly shifting from state-owned activities to private and commercial activities. These activities include remote sensing from space, direct broadcasting and research and manufacturing in micro-gravity environments. Not only is the new participation of commercial sector increasing, but the privatization of entities is equally increasing as in the cases of Inmarsat or Intelsat. In general, those non-governmental entities are more conscious of their "property", both in tangible and intangible forms. Further, due to financial and technical resources which are required to realize space projects, collaboration with the private sector is not alien to many of the state-owned space agencies today. Licensing contracts are concluded between governmental space agencies, between governmental agencies and private companies and between private companies. Such private financing has to be motivated by the expectation that the R&D investment could be recovered in the future. Thus, the acquisition and protection of intellectual property rights would have a positive effect on the participation of the private sector in the development of outer space activities and on further development of space technology in general.

Another reason why intellectual property has become an issue in recent years relates to the globalization of space activities. As it is the case with the International Space Station (ISS), more and more space activities are operated under international cooperation schemes, which include various players under different constituencies from different countries. Consequently, there is a need for a simple, uniform and reliable international legal framework. Once a dispute arises, each national law regulates questions as to international jurisdiction. Thus, a lack of reliable international legal regime requires parties to negotiate intellectual property clauses in each international cooperation agreement, which may include, for example, issues concerning ownership, rights of use, rights of distribution and licensing of data, information capable of legal protection and confidentiality. Yet another reason may be that, due to the advancement of space technology, new business possibilities are emerging. For example, although it is still a dream for the general public, the development of space transportation technology have been clearing the way to space tourism. Up to now, when discussing intellectual property matters in connection with space activities, the primary concerns have related to patent protection of inventions created or used in outer space, or copyright protection of databases using data acquired through space activities. If the space tourism becomes reality, the protection of trademarks and industrial designs in outer space may also become an important issue.

III. IPR IN SPACE: INVENTIONS, JURISDICTION AND TERRITORY

The United States of America is the only country that has enacted an explicit provision establishing a link between the three key elements: inventions, jurisdiction and territory. Section 105 of 35 U.S.C. (Inventions in outer space) 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.” Therefore, the patent law of the United States of America provides quasi-territorial effect on a space object that is carried on the registry of the United States of America, unless otherwise agreed by an international agreement. In other countries, there is no explicit statutory provision of this kind, except that, by virtue of the ratification of the 1988 Intergovernmental Agreement, German intellectual property law is applicable to the ESA-registered elements. Some argue that, in the absence of an explicit legal provision, the applicability of national intellectual property law on space objects registered by that State is doubtful. Some others are of the opinion that in consideration of the broad concept of territoriality according to which national patent law may be applicable on ships which fly that State’s flag on the high seas and on aircrafts which are registered by that State, the national patent law might be applicable by way of analogy to space objects registered in that State, even if the national patent law does not expressly provide such applicability to space objects. It should be noted that, in order to clarify this uncertainty in Europe, the Proposal for the Council Regulation on the Community Patent, issued by the European Commission (document COM(2000) 412), provides that the Regulation should apply to inventions created in outer space, which are under the jurisdiction and control of one or more member States in accordance with international law.

3.1 Legal Uncertainty in trademarks and industrial designs

As regards copyright protection, the determination of jurisdiction of a spacecraft is less important, because it is the author’s nationality which, in the first place, determines the status of the work as regards its protection. According to Article 3(1)(a) and (2) of the Berne Convention, the Convention applies to authors who are nationals of one of the countries of the Berne Union or who have habitual residence in one of those countries. Only in the case of non-protected authors, the place of the first publication is of importance (Article 3(1)(b) of the Berne Convention). However, since publication normally involves a significant number of copies, it is not likely to occur in outer space, at least in a near future. This would mean, for example, that if a database is created on a spacecraft, its status as regards protection under the Berne Convention will depend on the nationality of its creator.

The determination of the jurisdiction as far as intellectual property is concerned should be clearly defined, particularly where more than one country is involved in the launching of the elements of a space station. A good example of how a joint government administration can lead to a specific agreement on jurisdiction and control over the elements of an international space station is the Agreement on Cooperation in the Detailed Design, Development and Operation and Utilization of the Permanently Manned Civil Space Station among the governments of the United States of America, the Member States of the European Space Agency (ESA), Japan and Canada (the Intergovernmental Agreement (IGA)), concluded in 1988. Although the 1988 IGA was upgraded by the Agreement Concerning Cooperation on Civil International Space Station, concluded in 1998, which included the participation of the Russian Federation to the cooperation project, both Agreements contain, in Article 21, a provision establishing an intellectual property regime for the international space station.

In principle, Article 21.2 of the IGA stipulates that, for the purposes of intellectual property law, an activity occurring in or on a Space Station flight element should be deemed to have occurred only in the territory of the Partner State of that element’s registry. As regards the European Partner States, a separate rule is necessary, since the European Partner States delegate to the ESA the responsibility to register the ESA flight elements. Article 21.2 of the IGA provides that, for the purposes of intellectual property law, any European Partner State may deem the activity to have occurred within its territory for ESA registered elements. Thus, with respect to all types of intellectual property law, the principle of quasi-territoriality is implemented on the Space Station, though ESA registered elements could be considered as a “common territory” of the European Partner States.

Although the maritime law also applies the quasi-territorial principle to ships and to ships on the high sea, in the case of the international space station, each segment, to which the intellectual property law of each registered State applies, is located in proximity. Such a physical proximity might highlight the differences among national intellectual property laws. For example, the use of a certain invention, or a certain mark, could be considered as an infringement of a patent, or a trademark, in one segment while no problem would arise in the neighbouring segment. As described above, enforcement of intellectual property rights relating to intellectual creations which were made in outer space but which are used in one or more territories on Earth are, in general, governed by the national (or regional) law of the country or countries concerned. As regards satellite broadcasting, inasmuch as a satellite

transmitting signal is merely a conduit for Earth-based receivers, this would seem to constitute use on Earth, not in outer space.

3.2 International conventions relating to intellectual property and outer space

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 (Article 2), the right of priority (Article 4) and common rules, including certain measures for the enforcement of intellectual property rights, which all the Member States must follow.

Of particular interest with respect to outer space activities is Article 5ter, 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.

3.3 WIPO Copyright Treaty (WCT)

The WCT provides, among other things, for the protection of (i) computer programs, whatever may be the mode or form of their expression, and (ii) the compilation of data or other material (“databases”) in any form, which by reason of the selection or arrangement of their contents constitute intellectual creations. In particular, Article 8 assures the authors’ right to enjoy the exclusive right of authorizing any communication to the public of their works, including the making available to the public of their works in such a way that members of the public may access these works from a place and at a time individually chosen by them. This Article is also applicable to transmissions to and from a spacecraft.

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, favor, 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”).

IV. INTERNATIONAL PRINCIPLES CONCERNING OUTER SPACE

- 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).

V. OUTER SPACE TREATY

Article I of the Outer Space Treaty provides the so-called “space benefits” clause according to which the exploration and use of outer space should be carried out “for the benefit and interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.” Further, it states that outer space should be “free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law” and that there should be “free access to all areas of celestial bodies.”

Article II provides for so-called “non-appropriation of space”, according to which outer space is “not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”

While non-appropriation of outer space has been agreed, Article VIII of the Outer Space Treaty establishes the principle that the State of registration has jurisdiction and control over space objects as well as personnel launched into outer space. It states that: “A State to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body. Ownership of objects launched into outer space, including objects landed or constructed on a

celestial body, and of their component parts, is not affected by their presence in outer space or on a celestial body or by their return to the Earth. Such objects or component parts found beyond the limits of the State party to the Treaty on whose registry they are carried shall be returned to that State Party, which shall, upon request, furnish identifying data prior to their return.”

5.1 Declaration by the United Nations Committee on the Peaceful Uses of Outer Space

An explicit reference to intellectual property rights is made in the Declaration by the United Nations Committee on the Peaceful Uses of Outer Space on International Cooperation in the Exploration and Use of the Outer Space for the Benefit and the Interest of All States, Taking into Particular Account the Needs of Developing Countries, which was adopted in 1996. Its second paragraph states:

“States are free to determine all aspects of their participation in international cooperation in the exploration and use of outer space on an equitable and mutually acceptable basis. Contractual terms in such cooperative ventures should be fair and reasonable and they should be in full compliance with the legitimate rights and interests of the parties concerned as, for example, with intellectual property rights.”

VI. ANALYSIS: IPR UNCERTAINTY IN SPACE

6.1 Analysis1

The acquisition of patents may be viewed as a proof of the technical competence of the company. The possibility of licensing intellectual property also has the advantage of allowing to negotiate a cross-license with other parties, particularly where a specific space technology concerned is a consolidation of various high-technologies.

6.2 Analysis2

The acquisition and protection of intellectual property rights would have a positive effect on the participation of the private sector in the development of outer space activities and on further development of space technology in general.

6.3 Analysis3

The development of space transportation technology have been clearing the way to space tourism. Up to now, when discussing intellectual property matters in connection with space activities, the primary concerns have related to patent protection of inventions created or used in outer space, or copyright protection of databases using data acquired through space activities. If the space tourism becomes reality, the protection of trademarks and industrial designs in outer space may also become an important issue.

6.4 Analysis4

The patent law of the United States of America provides quasi-territorial effect on a space object that is carried on the registry of the United States of America, unless otherwise agreed by an international agreement.

6.5 Analysis5

If a database is created on a spacecraft, its status as regards protection under the Berne Convention will depend on the nationality of its creator.

6.6 Analysis6

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.

6.7 Analysis7

The Article 8 WCT is also applicable to transmissions to and from a spacecraft.

6.8 Analysis8

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) does not specifically address the question of outer space as such.

VII. IPR IN SPACE: ISSUES UNANSWERED

General international law issues, for example, the question of territory and jurisdiction, the legal issues relating to the cooperation activities between space faring nations, and the legal questions arising between a regional space

agency and its member States, remain examined. Attention need be paid to the protection of intellectual property rights, in view of the growth in the commercialization and privatization of space-related activities. However, the protection and enforcement of intellectual property rights should be considered together with the international legal principles developed by the United Nations in the form of treaties and declarations, such as those relating to the principle of non-appropriation of outer space, as well as other relevant international conventions. The feasibility of harmonizing international intellectual property standards and legislation relating to intellectual property rights in outer space need to be further explored with a view to enhancing international coordination and cooperation at the level of both the State and the private sector.

The United States of America is the only country that has enacted an explicit provision establishing a link between the three key elements: inventions, jurisdiction and territory. The patent law of the United States of America provides quasi-territorial effect on a space object that is carried on the registry of the United States of America, unless otherwise agreed by an international agreement. In other countries, there is need for explicit statutory provision of this kind.

One of the issues concerns the access to knowledge and information derived from space activities. In view of Article I, paragraph 1 of the Outer Space Treaty which stipulates that exploration and use of outer space “must be effected for the good and in the interest of all countries, regardless of their state of economic and scientific development, being the attribute of all mankind”, it has been argued that the knowledge and information resulting from space activities should be available to all countries, in particular, to developing countries. For example, earth observation data may be useful in the areas which are critically important for all nations, such as agriculture, natural resources, protection of the environment as well as the prevention and intervention in the event of natural disasters. Another issue concerns the freedom of exploration and use of outer space on the one hand and the possibility of excluding others from accessing to outer space by way of obtaining intellectual property rights on the other.

Today, there is general agreement that the notions of propriety rights over space objects and of appropriation of outer space as such should be clearly distinguished. However, it is pointed out that, in certain cases, protection of intellectual property may hamper the development of subsequent research, especially in the case of intelligent orbits for which the necessary technology has been patented. It is argued that such a patent that would cover a system or a method of satellite communication using these orbits would have the effect of limiting the access to those orbits by third parties. It can be expected that technical inputs as well as financial contributions from the private sector will become more and more important in the context of future development of outer space activities. Further advances in a wide range of technologies will create more opportunities for the development of new space applications by the private sector. Although a number of public policy tools can be envisaged to attract the participation of the private sector, intellectual property protection will play an important role in developing successful space business models involving public/private collaborations. It is very likely that intellectual property protection will be one of the key factors for the establishment of the institutional and regulatory environment that supports further development of space business. A simple and reliable international legal framework would facilitate maximizing the collective utilization of public and private resources in the area of space technology for the benefit of all nations

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