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Clearness regarding Property Rights on the Moon and Other Celestial Bodies

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Abstract

Human activities in Outer Space have prompted the need to identify and evaluate the rights and risks of those engaged in space activities. Commercialization of space activities has added another impulse to this evaluation, urging the assessment of property rights in the field of space activities against the background of current law systems.
Enlarging the scope of space applications - the main theme of the 1996 IAF Congress - will include space activities in relation to the future exploration and exploitation of the Moon and Other Celestial Bodies. The legal system governing such activities will influence the decision-making process on further research and development. Moreover, it will be of specific importance for the actual involvement of organizations and entrepreneurs in the exploitation of these regions in outer space.
In the light of this evaluation the Outer Space Treaty and the Moon Agreement - as lex specialis - will be examined; with special attention to the provisions concerning the establishment of an international regime to govern the exploitation of the natural resources of the moon and other celestial bodies.
An analysis of these provisions and their status as a part of international space law will set the stage for future international efforts to accommodate the exploitation of these natural resources against the background of present realities.
The execution of property rights and in particular intellectual property rights outside the earth environment will probably challenge existing national systems in order to come to an internationally agreed and acceptable system.

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Introduction

Man's presence in outer space yielded the need to establish a legal system for his activities in the outer space environment resulting into the body of international space law, consisting of the five international Space Conventions. The evolution and diversification of space activities, necessitated the international community to create more specific rules for varying space applications and for international cooperation in the different fields.
The next stage, the commercialization of space activities and private enterprise involvement urged to identify the rights and risks of those engaged in space activities, effecting national space legislation. Enlarging the scope of space applications to activities on the Moon and Other Celestial bodies, urges us to examine the existing framework of space law against the background of present realities.
An assessment of the rights and risks connected with space activities performed on the Moon or Other Celestial Bodies will be necessary to judge whether the present regulation will accommodate not only states, but also private entrepreneurs to involve in such activities.
In particular private entrepreneurs and investors will only be motivated to engage in costly space endeavour, when the legal environment accommodates specific rights, such as property rights in general and intellectual property rights in particular.
Current prospects to exploit the Moon and Other Celestial Bodies strengthens this need to assess the rights and obligations connected with a commercial use of the natural resources in these areas.
The legal status of property rights in these areas of outer space will determine the commercial viability of the exploitation of the natural resources present.
Therefore we should examine in the first place the existing legal regime in place, that is to say the Outer Space Treaty and in particular the

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Moon Agreement 1), being the *lex specialis,* governing the area of the Moon and Other Celestial bodies.

Reassessment of existing regulation

Assessment of the Moon Agreement has already taken place during a number of IISL Colloquia, the first already 15 years ago in Tokyo 2) under the issue "Implications of the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies". And I like to quote one of the first sentences of my paper presented at that occasion, dealing with the legal Conse quences and Practical aspects, reading "The achievement of the Moon Treaty, no matter how controversial the follow-up will be, seems to be a new step in the development of the Law of Outer Space, reflecting man's progress in astronautics and relating technologies as brought together within and governed by a set of international rules".

And indeed controversy has appeared among space lawyers and politicians as to the contents of the Moon Agreement, in particular regarding rights and obligations connected with the use and exploitation of the natural resources of the Moon and Other Celestial Bodies.

It is evident that the commercialization of space activities in general has shifted the accent from the activities of states towards a progressive involvement of private enterprise.

Therefore, a re-evaluation of the rights and risks connected with the exploitation of natural re sources of the Moon etc. will not only influence the decision-making process on further research and development by governments, but even more so by private enterprise.

Moreover, it will be of specific importance for the actual involvement of organizations and entrepreneurs in the exploitation of the natural resources of these regions in outer space, specifically the Moon, Mars and the asteroids, where natural resources are known or thought to in clude oxygen, silicon, carbon, aluminum, iron, titanium, manganese, magnesium, chrome, water, nitrogen and hydrogen. 3)

To assess the existence and/or possibility of property rights on the Moon and Other Celestial Bodies, we have in the first place the Outer Space Treaty, governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies 4)

Article I tells us that "The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out *for the benefit and in the interest of all countries .....*" whilst that region shall be *free for exploration and use by all States* without discrimination of any kind, on the basis of equality and in accordance with international law, and there shall be *free access* to all areas of celestial bodies.

Moreover :There shall be freedom of scientific investigation, and States shall facilitate and encourage international cooperation therein.

Apart from the freedom principle expressed by the just mentioned provisions, Article VIII rules that jurisdiction and control of objects launched into outer space remains with the state of registry.

Property rights

Hence for property rights in relation to these space objects, it refers back to the national law of the relating state. It establishes the conditions for a legal regime based on quasi-territoriality. This is in line with the fact that in general - property rights and intellectual property rights in particular are based on the principle of *territoriality.*

In relation herewith the International Government Agreement on the Space Station (IGA) 5) applies in its Article 21, par 2, the fiction of territoriality over activities taking place in or on a specific space station element.

In order to bring national legislation into conformity with the fiction of territoriality the US, for instance, has added a new section to the existing US Patent Act. 6)

An International Government Agreement after the example of the IGA on the Space Station, may solve the questions on property rights connected with the commercial exploitation of the natural resources of the moon by creating a similar regime based on *quasi-territoriality.*

Regarding Outer Space itself : Article II of the Outer Space Treaty stipulates that Outer Space, including the Moon and Other Celestial Bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means. Thus applying the non-appropriation principle.

Regarding the meaning of the non-appropriation

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principle 7), the history of the Outer Space Treaty indicates that this term reinforces the principal of freedom and access expressed by Article I. However it should be conceded that free access to all areas of celestial bodies may be limited by the provisions of Article XII, depending on the meaning one attaches to the use of the term reciprocity as stipulated in the rule that "All stations, installations, equipment and space vehicles on the Moon and other celestial bodies shall be open to representatives of other States, Parties to the Treaty, on the basis of reciproc ity........"

In any case imposes this formulation, a slight limitation on the execution of property rights vested in those stations, installations etc.

Subsequently we have to research the position of the Moon Agreement 8) as lex specialis and a more recent instrument of law, governing the activities of States on the moon and other celestial bodies, and compare its provisions with those of the Outer Space Treaty discussed - above.

The freedom principle can be found in Article IV stating that :"The exploration and use of the moon shall be *the province of all mankind...*" a term also found in Article I of the Outer Space Treaty 9).

Article XI, par.2 of the Moon Agreement ex presses the non-appropriation principle using the same wording as the OST.

However the first paragraph of the same Article XI adds that:"The moon and its natural re - sources are the *common heritage of mankind* which find its expression in the provisions of this agreement and in particular in paragraph 5 of this article.

Paragraph 3 provides moreover:"Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or non-governmental organization, national organization or non-governmental entity or of any natural person.

This regulation seems to provide more clearness than the OST since it specifically prohibits appropriation of natural resources of the moon and other celestial bodies of any kind by anybody.

However, at the same time reveals the use of the wording natural resources "in place" a weakness in the system of complete prohibition.

Leading to the suggestion that natural resources, when removed, are not covered by the non-appropriation principle and thus offering enter prises interested in the exploitation of natural resources a possibility to establish property rights. However this can only be realised when the existing Moon Agreement does not imply a moratorium 10) on the commercial exploitation of the natural resources of the moon for the states, parties involved, a point to which I will return later.

A further strengthening of the non-appropriation principle in relation to the surface and subsurface of the moon and other celestial bodies, appears to be provided by the stipulation :"the placement of personnel, space vehicles, equipment facilities, stations and installations on or below the surface or subsurface, shall not create a right of ownership over the surface or the subsurface of the moon (and other celestial bodies) or any areas thereof.

But this provision leads, in my opinion not automatically to a prohibition of property rights in relation to the exploitation of natural resources.

International regime for the exploitation of natural resources of the moon and other celestial bodies

However, the same provision does make a connection with paragraph 5 of the same Article XI, which reads :" States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the moon as such exploitation is about to be come feasible",

whilst paragraph 7 describes the main purposes of such an international regime being:

(a)The orderly and safe development of the natural resources of the moon;

(b) The rational management of the natural resources;

(c) The expansion of opportunities in the use of those resources;

(d) An equitable sharing by all States Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either

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directly or indirectly to the exploration of the moon, shall be given due consideration

The Moon Agreement versus Outer Space Treaty

For property rights vested in objects brought from the earth to the Moon etc we have Article XII par.1 of the Moon Agreement stipulating : "States Parties shall retain jurisdiction and control over their personnel, vehicles, equipment and facilities, stations and installations on the moon. The ownership of space vehicles, equipment, facilities, stations and installations shall not be affected by their presence on the Moon.

This provision is in line with Article VIII OST, applying the principle of state sovereignty and accommodating the application of national law for property rights.

Although, paragraph III of the Moon Agreement contains a slight limitation of property rights by stipulating:"In the event of an emergency involving a threat to human life, States Parties may use equipment , vehicles, installations, facilities or supplies of other States on the moon."

But this seems very reasonable, whilst moreover in such a case prompt notification should be made to the Secretary-General.

Furthermore, in line with the provision of the OST, Article XV, par.1 of the Moon Agreement secures accessibility by stating that "all space vehicles, equipment, facilities, stations, and installations on the moon shall be open to other States Parties. But it has left out the wording "on the basis of reciprocity" as defined in the OST, whilst it connects the provision itself with the right to assure compatibility with the provisions of the Agreement. The paragraph provides further for consultation with reasonable advance notice, like the provision in the OST, but elaborates extensively on procedures worked out in the paragraphs 2 and 3.

The Moon Agreement offers moreover in Article VIII States, Parties the freedom to land space objects on the moon and to launch therefrom as well as to place and move personnel, space vehicles, equipment and facilities, stations and installations anywhere on or below the surface of the moon, although such activities must not interfere with the activities of other States Parties, in which case consultations must be undertaken in accordance with Article XV, par.2 and 3.

Returning to the possibility to establish property rights in relation with the natural resources of the moon etc. we still have to scrutinize the legal regime of these natural resources as provided for by Article XI of the Moon Agreement.

As mentioned before, paragraph 3 of this article stipulates non-appropriation of the natural resources *in place*. This restricts in my opinion the application of the non-appropriation principle to natural resources as long as they are not re moved from their original place.

However this does not necessarily lead to the conclusion that appropriation can take place at random when the natural resources are being moved.

In this respect we have to look at the connection with paragraph 5 regarding the establishment of an international regime. And it is exactly the regulation providing for an international regime, that according to some critics, might inhibit commercial activities on the moon and other celestial bodies by placing a moratorium on the exploitation of the natural resources outside a framework of an international regime as stipulated by the provisions of Article XI (of the Moon Agreement).

As the Moon Agreement stands today Article XI, par.5 reads :"States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural re sources of the moon *as such exploitation is about to become feasible.* Furthermore, obliges paragraph 6 States to inform the UN General Secretary, the international scientific community and the public of the discovery of any natural resources in order to facilitate the establishment of such an international regime.

Finally paragraph 7 elaborates on the main purposes of such international regime, as mentioned before.

It is evident that the Moon Agreement and in particular the regulation of an international regime for the exploitation of its natural

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resources refers to States, Parties .
Hence in principal are individuals or private commercial organisations not directly bound by its provisions .
On the other hand it is also true that Article XIV of the Moon Agreement vests States Parties with international responsibility for national activities on the moon whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Agreement". It obliges them moreover to maintain authority and continuing supervision.
Hence States, Parties are bound not to authorize private entities activities not in compliance with the Moon Agreement as much are they are themselves bound by its provision.
Having said all this the main issue focuses on the question whether Article 11 and in particular the provisions regarding the establishment of an international regime for the exploitation of the natural resources of the moon place a moratorium for commercial exploitation activities in general. The history of the Moon Agreement, including the discussion in UNCOPUOS, confirms the understanding that the Moon Agreement does not derogate from or limits the provisions of the Outer Space Treaty of 1967 11).
Where the OST permits private enterprise to conduct activities in outer space within the rights and obligations provided by Article VI, and in accordance with Article II, the Moon Agreement corresponds with these rules as laid down in Article XIV and Article XI, par.2.
Article II of the Moon Agreement, which de clares that all activities on the moon including its exploration and use shall be carried out in accordance with international law, strengthens the opinion that the Moon Agreement does not derogate from the tenet of the OST.
If an important change of mind had taken place in view of the newly established Moon Agreement this should have been brought about by a clear use of language.
The same argumentation goes for the meaning of the word "use" in the term exploration and use .
It is undisputed that the term "use" in the OST includes commercial use 12), hence covering *exploitation* by private enterprise. The same wording maintained in the Moon Agreement does not leave room for a totally new or restricted meaning of use in relation to the area of the moon.
Nevertheless, the fact that so few states have ratified the Moon Agreement, still expresses dissatisfaction or rather uncertainty regarding the permissibility to exploit the natural re sources, apart from the establishment of an international regime as provided for by Article XI.
In relation herewith I like to quote from a publication in 1980 13), which still appears to be relevant when suggesting" that the anticipation of an international regime to govern the exploitation of the natural resources of the moon leads some persons to argue that future interpretations and negotiations will inevitably work against the interests of certain states (read in stead of certain states: the United States) 14).

A novel kind of property rights

Hence, concluding that there still is a risk for a moratorium on the exploitation of natural re sources on the moon etc, which might hamper commercial exploitation under the existing provisions of the Moon Agreement, this problem might be solved by the attachment of an Understanding to the Moon Agreement. Ensuring, that whatever legal regime ultimately comes into being, the ability and right of states as well as private enterprise to use and exploit the natural resources of the moon will be recognised in so far as this will be done in accordance with the purpose as expressed in paragraph 7, Article XI of the Moon Agreement.
This would pave the way for a novel kind of property rights, which take due care of the interests of investors combined with the interests of mankind at large in the exploitation of the natural resources of the moon and other celestial bodies.
The accommodation of these property rights and intellectual property rights in particular could be based on an International Government Agreement after the example of the Space Station, taking due regard to special characteristics in relation to space resources and being subject to specific requirements including the principle "for the benefit of all mankind".

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Harmonization

Harmonization amongst different national systems should be reached by imposing specific requirements responding to the provisions of Paragraph 7, Article XI of the Moon Treaty.

In this manner the Moon Treaty supplemented with the Memorandum will provide an incentive for investment in exploitation activities by interested parties as soon as national legislations provide a legal regime where special property rights for national resources on the moon or other celestial bodies can be established.

As soon as an international regime will be established in accordance with Art. 11 of the Moon Treaty, States Parties will have to make provisions to honour specific property rights on natural resources of the moon etc. acquired through national legislation, but to be accomodated within the constraints and requirements of such an international regime.

A mechanism to resolve disputes will have to be included in the rules and regulations of such an international regime.

Notes

1. Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, done at New York on 18 December 1979, entered into force on 11 July 1984 (18 ILM 1434; UN Doc.A/RES34/68 of 14 December 1979 Annex)

2. Proceedings of the 23rd Colloquium on the Law of Outer Space, held in Tokyo, 1980, AIAA, 1981

3. See Raclin, Crier C., From Ice to Ether: The Adoption of a Region to Govern Resource Exploitation in Outer Space, Northwestern Journal of International Law & Business, Fall-Winter 1986, Vol.7 Number 4, p.728 etc., The commission report of the US National Commission on Space, Pioneering the Space Frontier 3 (1986). See also Harris, P.R., A case for permanent lunar development and investment, Space Policy 1994, 10 (3) 187-188, note 1, referring to two recent American and two European studies; and Chicako Iguchi, International Cooperation in lunar and space development: Japan's role, in particular note 1, referring to the Intermediate Survey Report on Lunar Base and Lunar Resources, Future Technology Institute, Tokyo, 1989, pp. 25-26

4. January 27, 1967 (entered into force October 10, 1967 18 UST 2410; TIAS 6447; 610 UNTS 205)

5. Done at Washington D.C., 29 September 1988. See for Text of the IGA, Proceedings of the Colloquium on manned Space Stations - Legal Issues -, Paris, 7-8 November 1989, ESA SP-305, ISBN 92-9092-062-9, January 1990

6. H.R. 2946

7. See Jasentuliyana and Lee, Manual on Space Law, Vol.I, p.11, Oceana Publications Inc., Dobbs Ferry, New York/Sijthoff & Noordhoff, Alphen aan de Rijn, 1979.
See also van Traa-Engelman H.L., Commercial Utilization of Outer Space, Law and Practice, Chapter II, Kluwer Academic Publishers, 1993

8. See supra note 1

9. See Christol, C., The Modern International Law of Outer Space, Chapter 7, esp. P.252, Pergamon Press, 1982

10. See supra note 7, van Traa-Engelman at page 27

11. See supra note 7, van Traa-Engelman at Chapter 7

12. See supra note 7, van Traa-Engelman

13. Smith, Delbert D., The Moon Treaty and Private Enterprise, pp. 62-65, Astronautics and Aeronautics, January 1980

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14. See also Reynolds, Glenn Harlan, The Moon Treaty: prospects for the future, Space Policy, May 1995, pp. 115-120, esp. Note 9, The Moon Treaty: Hearings before the Subcommittee on Science, Technology and Space, Committee on Commerce, Science and Transportation, United States Senate, 96th Cong. 2d Sess., 29&31 July 1980, Serial No. 96-115