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THE CONCEPTS OF ASSETS and PROPERTY: Similarities and Differences, and their Applicability to Undertakings in Outer Space

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ABSTRACT

UNIDROIT 's Preliminary Draft Protocol on Matters Specific to Space Assets was revised and modified in 2001. Whereas the first drafts addressed "SPACE PROPERTY", the revised version speaks of "SPACE ASSETS".

This paper will examine these changes and the implications thereof, particularly in view of the trend toward privatization of outer space activities, and the context provided by Article II of the Outer Space Treaty.

Introduction

The concept of "property" is probably older than man-made law itself./[1]/ Land (real property) is an immovable and finite resource, ownership and use of which gained in importance with the expansion of sedentary societies. Humankind's desire to possess things eventually led to the extension of the concept of "property" to include movable and personal goods, as well as intangibles./[2]/

While humans have sought to possess tangible items or objects, we have also sought to imbue intangible ones with certain qualities, valuable characteristics, or "assets"./[3]/ Assets can include property of all kinds, real and personal, tangible and intangible, as well as the perceived value of a characteristic./[4]/ Hence, the term "asset" has broader connotations, comprising far more than merely tangible property. Assets also could include access to and use of nature's elements, "global commons" like the oceans, air, and outer space.

Perhaps a desire to be owner and master of nature's elements has always been in the human spirit. Certainly in our days, wanting to be owners and masters of air and outer space, including orbits and parts of the radio frequency spectrum, would seem to confirm this latent desire.

A question arises, namely whether these intangible assets, the commons of all mankind, can be made the subject of private security interests, as proposed in the UNIDROIT Convention on International Interests Mobile Equipment, and the Preliminary Draft Protocol on Matters Specific to Space Assets./[5]/ Is this kind of convention essential to encourage participation of private parties in space activities, or merely to protect their massive investments in them? A brief look at private sector involvement in this area may be helpful, before examining UNIDROIT's proposals.

The Private Sector and Space Activities

Even before the adoption of the Outer Space Treaty, proponents of space activities foresaw that the private sector would be involved in these. Private entities, such as COMSAT/[6]/,

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were specifically created to develop and deploy the early communications satellite systems, which have been, and still are the most lucrative use of outer space. These activities, however, were "subject to appropriate governmental regulation,"/7/ a caveat that was included in the Outer Space Treaty: the State Party to the Treaty would bear international responsibility for national activities in outer space, whether carried out by governmental or non-governmental entities (including private parties). Further, "[the] activities of non-governmental entities shall require authorization and continuing supervision by the appropriate State Party to the Treaty."/8/

State Parties to the Treaty, and by extension, their nationals, "shall retain jurisdiction and control over [a space object]...while in outer space or on a celestial body. Moreover, "[o]wnership of objects launched into space is not affected by their presence in outer space...or by their return to earth."/9/ I.e., owners remain responsible for their space object, even at the end of its useful life, whether in orbit or not. In addition, under the terms of the Liability Convention, they are liable for damage caused by their space object./10/ Thus, from early on, private parties have been involved in space activities, subject to State authorization, and the States Parties to the treaties assuming responsibility for them.

In the last few years, the State's financial involvement has diminished, while the private sector has taken the lead, but the space treaties remain unchanged. Do the basic concepts of ownership, responsibility, and liability, as found in space law need to be changed, to accommodate private sector initiatives, or are they broad enough to allow for its greater participation in space activities, albeit subject to State authorization?

While States assumed the risks for their decisions (and investments) in earlier times, at present private parties seem eager to engage in space activities, but less willing to assume the concomitant risks and responsibilities. Thus, UNIDROIT's Protocol proposes to make investments in space activities less risky, by providing certain mechanisms for securing at least financial interests in these activities, and in procedures related to them.

UNIDROIT's Definition of "Space Property", now "Space Assets"

UNIDROIT has been engaged for more than a decade with drafting a Convention to secure financial interests in movable property (mobile equipment). It has achieved some measure of success in relation to its Convention on Mobile Equipment, as well as to its Protocol on Aircraft equipment. Since 1997, it has been involved in drafting a Protocol specific to objects that are launched, or used to launch objects to outer space.

Interestingly, the Draft Protocol provides a definition of "associated rights" before, or prior to defining "space asset". The definitions need to be read together, and perhaps in reverse order, as presented in this paper. Thus the far-reaching scope of the current definition of "associated rights" becomes more apparent, as will be elaborated upon, infra.

Earlier versions of the draft Protocol referred to space objects as "space property", but in September 2001, the term "assets" replaced "property". According to one author, certain jurisdictions require that the term "property" refer to rights in land or tangible, quasi-corporeal objects as opposed to personal rights, and thus, intangible assets could be excluded. Thus, the term "assets" is "...useful in order to harmonize the conceptual differences between different legal systems under a uniform international Protocol."/11/

Article I (2) (f) of the Protocol provides the following definition of "space asset":

(i) any separately identifiable asset that is in space or that is intended to be launched and placed in space or has been returned from space;

(ii) any separately identifiable component forming part of an asset referred to in the preceding clause or attached to or contained within such asset;

(iii) any separately identifiable asset or component assembled or manufactured in space; and

(iv) any launch vehicle that is expendable or can be reused to transport persons or goods to and from space.

As used in this definition, the term "space" means outer space, including the Moon and other celestial bodies."/[12]/ [Emphasis added.]

The Protocol's definition of "space asset" is broader, yet clearer in some respects, than the Liability Convention's definition of "space object" as provided in Art. I (d): "The term "space object" includes component parts of a space object as well as its launch vehicle and parts thereof."/[13]/

The Protocol's definition of "space", as including the Moon and other celestial bodies, would seem to be a first attempt at defining "outer space", which is not defined in any of the outer space treaties drafted by the United Nations. (The Protocol, however, does not offer a delimitation of outer space from air space.) Could this last clause be interpreted to mean that the Moon and other celestial bodies are also "space assets", since they could be adjudged to be "separately identifiable assets", albeit assets that have not been placed in outer space by humans? While they may be "space assets", or space-based resources, they are not "space property"; i.e., celestial bodies, including the Moon and asteroids, are not subject to appropriation, nor subject to property rights./[14]/

Some authors contend that even though national appropriation of the Moon and other celestial bodies is forbidden, private parties may still have property rights on those bodies./[15]/ Other authors maintain that what is forbidden to a State (the non-appropriation principle found in the Outer Space and Moon Treaties) is not allowed to private parties, either. This would seem to be a more logical tenet. It is acknowledged, however, that the issue of appropriation vs. non-appropriation needs to be resolved, in view of the potential liabilities and responsibilities of States (the Parties to the treaties) whose private entities are engaged in commercial space activities./[16]/

While the space treaties and customary international space law do not allow for the national or individual appropriation of outer space or its resources, this does not mean that endeavours by private parties are not allowed, nor that the *use* of outer space by private entities is prohibited. Quite the contrary, without the involvement of the private sector, many space activities, particularly satellite communications, would not have flourished as they have. Most of the satellites in orbit are currently owned and operated by private entities, and provide services to most of the world's population.

Man-made and launched satellites, clearly fall within UNIDROIT's definition of "space assets", and are the space property or assets of various corporations and consortia. While the Moon and other celestial bodies, orbits and the radio frequency spectrum may be "space

assets", none of them may be appropriated, or transformed into private property. The "Associated Rights" proffered by the Protocol, however, could result in converting some of these intangible space assets, particularly orbits, orbital positions, and radio frequencies, into "property". This will be discussed at greater length, infra.

A last observation in regard to space assets: since the Protocol's definition includes objects manufactured or assembled in space, presumably it would include those assets manufactured or assembled on the International Space Station (ISS) as well. Could there be some conflicting claims to ownership of intellectual property rights, or in relation to the manufacture of objects or assets on the ISS, and interests secured under the Protocol? To avoid controversies in future, it is submitted that the International Governmental Agreement (IGA) amongst the partners involved in the construction and assembly of (and future manufacturing on) the ISS should be examined, to ensure that no provisions or clauses in either the IGA or the proposed UNIDROIT Protocol are in conflict with each other. An analysis of international conventions on intellectual property and copyrights would also be helpful, to avoid future disputes. A thorough discussion of these issues is beyond the scope of this paper, however, and will not be addressed here.

"Associated Rights"

Article I of the Protocol provides a definition of several "associated rights", only one of which will be discussed here. For clarity's sake, the term "*license*" will be used hereinafter, in reference to concessions, authorizations, permits, or licenses granted by a governmental authority, and only as they may relate to telecommunication satellite systems. These have required massive investments, but most of the investors in the non-geostationary satellite systems (non-GEOs, or GMPCS) have experienced huge economic losses, and little, if any return on their investment./[17]/ "Associated rights" as they may relate to remote sensing or navigation (GPS) satellite systems, will not be examined.

Currently, Article I (2) (a) states that "associated rights" means:

(i) *any permit, license, authorization or equivalent instrument that is granted or issued by a national or intergovernmental or other international body or authority to control, use or operate a space asset, relating to the use of orbital positions and the transmission, emission or reception of radio signals to and from a space asset, which may be transferred or assigned, to the extent permissible and assignable under the laws concerned;*

(ii) *all rights to payment or other performance due to a debtor by any person with respect to space assets; and*

(iii) *all contractual rights held by the debtor that are secured by or associated with the space assets.*/[18]/ [Emphasis added]

Several issues related to this very broad definition, such as "associated rights" in relation to national law, and their relation to outer space-related law, have been discussed at COPUOS and other venues./[19]/ There seems to have been, or to be little discussion, however, of an issue which this author believes is fundamental: the gradual taking over of key government functions by the private sector. The Protocol seems to view licenses as negotiable property, as commodities in which a financial interest can be secured; thus, licenses begin to acquire characteristics or traits of "property" that can be transferred or assigned, even attached. But

licenses are not negotiable property, nor are they a right.

Licenses: Privileges or Property?

One law dictionary defines "license", in pertinent part, as follows: "The *permission* by competent authority to do an act which, without such permission, would be illegal, a trespass or a tort"; "privilege from state or sovereign"... A *permit, granted by an appropriate government body*, generally for a consideration, to a person, firm or corporation ...to carry on some business subject to regulation under the police power. *A license is not a contract between the state and the licensee, but is a mere personal permit. Neither is it property or a property right."*/20/ [Emphasis added.]

Whether called "permits, licenses, authorizations, or equivalent instruments," these are not rights, but are essentially privileges and/or prerogatives, granted by an official governmental entity, to facilitate some activity, whether on earth or in outer space./21/ It is an official entity that decides, on the basis of certain criteria, whether a license is granted or not.

Obtaining a license is not an entitlement or a basic right, in the sense that the government has no option but to grant it. Were it otherwise, the official granting of licenses could become a superfluous activity. Human society, however, has not evolved to the point that all activities can be allowed without some government sanction, or be taken over by the private sector. Thus, the granting or withholding of licenses still remains an important governmental function, one unlikely to be delegated to the private sector. To reiterate, *"a license is a mere personal permit; it is not property or a property right."*

A few examples may begin to illustrate the fact that licensing, launching and operating an international satellite system is very complex, and though it may require large amounts of money, not all aspects can be monetarily quantified or converted into a financial asset, or "commodified"./22/

Despite the "globalization" trend, every nation involved in outer space affairs, has a different licensing system, and may have different requirements and milestones that must be met prior to engaging in any facet of space activities, including the use of the radio frequency spectrum (RFS). These requisites are part of a nation's sovereign right to regulate the activities of its nationals, and paradoxically, in this age of "globalization," national regulations are limited in scope, applicable only within the State's territory.

Licensing requirements differ not only from country to country, but also vary, depending on the kind of communication system involved, and even on the kind of antenna(s) involved. A couple of examples are provided. In some jurisdictions, operators of "VSAT" (Very Small Aperture Terminals) systems are granted "blanket licenses"; i.e., they are authorized to install a certain number of these terminals without having to go through the whole licensing procedure for each one. The antennas themselves may be owned by different persons; the satellite system itself may be owned by one entity, operated by another, and services provided by yet other entities. These could all be in different jurisdictions, each with unique licensing requirements.

Another example: in the USA, hand-held sets used to access the GMPCS satellite systems, such as INMARSAT, IRIDIUM

or Globalstar, are considered "earth stations" by the FCC, and need to be "commissioned" (licensed) by the FCC. In other countries they are not deemed to be earth stations, but still require an official sanction, at least a certificate of homologation (that the equipment meets certain technical standards or requirements) prior to use./[23]/

Tracking and controlling a satellite and transfer of command codes raise many issues related to national security, and to export control laws and policies. A thorough analysis of these is beyond the expertise of this author and ambit of this paper, but these issues should be closely examined by technical experts as well as by potential signatories of the Protocol./[24]/ It is submitted, however, that licenses issued for these purposes will not be easily transferable to private investors, due to national security / defense implications.

In most jurisdictions, licenses cannot be transferred from the original applicant to a different party without the prior authorization of the entity that granted the license in the first place. If it can be transferred, the original licensee often has to keep the license for a specified time period prior to requesting authorization to cede it, a request that may be approved or rejected by the authorities. If the government were not involved, a new "business" could flourish -trafficking in licenses, without official approval of the transfer- thereby supplanting a major role of the government.

As to licenses to use certain orbits and occupy particular orbital positions, neither the International Telecommunication Union (ITU) nor any other international entity regulates the choice or use of orbits. The proponents of (and investors in) the satellite system usually are the ones who decide in which orbit(s) they want to locate their satellite(s), and the frequency bands they propose to use. One Administration/[25]/ submits this information to the (ITU), so that all existing and planned telecommunication systems that could be subject to harmful interference may co-ordinate with the proposed one. The ITU merely endeavors to ensure that no harmful interference is caused between the many systems that use the radio frequency spectrum. Thus, it would be difficult to secure a financial interest in, or transfer a license for the use of a particular orbit or orbital position, as proposed in UNIDROIT's Protocol, since these choices are not subject to regulation.

Other factors may further complicate the issue of securing financial interests in licenses. While UNIDROIT seeks to secure and protect financial investments, national security issues are predominant, and will supersede financial ones, especially after 9/11/01. Many components of spacecraft and launch vehicles are classified as weapons, subject to stringent export controls. Further, many commercial satellite systems are used for official (and military) communications, which could complicate the attachment of any financial interest or revenues generated by the system or service providers. A question arises: is it likely that governmental agencies involved in national security will approve the transfer of "any" license, or all "associated rights", including revenues that could inure from their operation, to private parties, as proposed by UNIDROIT?

As may be deduced from the above, licensing a satellite system, or any of its component parts, as well as the use that is

made of the spacecraft, are complex matters, involving any number of governmental agencies even in just one jurisdiction. Thus, it may take longer than the drafters of the Protocol envisage to transform licenses – a government prerogative – into negotiable private property.

UNIDROIT is not the only entity that advocates greater control and jurisdiction by the private sector, particularly in the use the radio frequency spectrum, which could lead to licenses being converted into property rights. There are other advocates of "propertyizing" the spectrum; i.e., endowing the radio frequencies, an intangible yet physical phenomenon, with the same "status" as granted to physical, tangible, real estate./[26]/

A first step, already taken, is auctioning the use of parts of the radio frequency spectrum. The parties that favor these auctions argue that those who value it most will acquire the spectrum and make more efficient use of these scarce resources. Auctioning the spectrum for *national* telecommunication systems has brought much money to the public coffers, but many of the consortia that have "won" the spectrum are unable to pay the price they bid. If the "winners" are unable to use the spectrum, should they be allowed to "warehouse" it? To whom should this acquired spectrum / "property" revert: to the government that issued the license to use it in the first place, or to the corporation that "acquired" this "property"?

This question highlights an inherent difficulty with spectrum auctions: they create certain expectations. The winning investor is likely to consider that he is entitled to more than just the *use* of the frequencies or orbital position- he may perceive them as his "property", over which he has exclusive control, not subject to government regulation. It seems that those who advocate privatizing the spectrum view this acquisition (which is merely a right to use the RFS,) in the same manner as obtaining any other commodity or property./[27]/

To date, the auctions have involved spectrum for national use by terrestrial wireless systems (microwave or cellular telephony). At the international level, auction of the spectrum is not favored, not even by the US's Federal Communications Commission (FCC). Recent legislation states that the FCC "shall not have the authority to assign by competitive bidding orbital slots or spectrum used for the provision of international or global satellite communication services."/[28]/

Neither the FCC, nor any other Administration can sell the spectrum or orbital locations, since these do not belong to anyone; they are part of the global commons;/[29]/ governments are mere stewards of the radio frequency spectrum./[30]/ And the international steward of these natural resources *par excellence* is the ITU which, though it does not issue any licenses for their use, should remain the international steward or "allocator" of these global commons.

One author notes that transforming the spectrum from public commons to private electronic real estate would fundamentally change the relationship between the people and global commercial enterprises"/[31]/. One result would be that a few media companies could end up controlling the most important facets of human enterprise –communications- that are basic to all human endeavors.

At present no one "owns" the resources in outer space, such as the orbits, orbital positions and radio frequencies, and no one should be able to acquire property rights in them. However, these global commons would be "privatized" if the Protocol's wording were accepted. In turn, this would bring the Protocol in direct conflict with a key provision of the Outer Space Treaty/[32]/, namely Article II, which states:

> "Outer space, including the moon and other celestial bodies, is not subject to appropriation by claim of sovereignty, *by means of use or occupation,* or *by any other means."* [Emphasis added.]

If licenses to use the spectrum or an orbital location are considered "rights" (rather than privileges) the result will be the appropriation by private parties of outer space resources, a clear violation of the spirit and the wording of the Outer Space Treaty.

Conclusion and Recommendations

In the last decade the "privatization pendulum" has swung nearly 180 degrees, and the results –some good, some less favorable- are now being seen and felt the world over. More recently, many telecom corporations have bloomed and withered, despite massive investments in both satellite and fiber optic cable systems. Unfortunately, some of these economic downfalls have been accompanied by revelations of fraud and corporate wrong-doing.

In addition to making investors leery, these failures would indicate the need for on-going government supervision, rather than leaving everything in the hands of private parties. Elected officials can be voted in or out of office, and while private sector executives can be hired or fired, the shareholders have little control over corporate officials. Do we want to give the private sector more control over communications, allowing a few financial institutions or corporations to become the owners of licenses, of the radio frequency spectrum and other global resources?

While "privatization" and "globalization" are blurring borders between countries, the various national legal systems still need to be taken into account. The Nation-State and national regulators still have important roles to play, roles that should not be ceded to the private sector. Lack of government leads to insecurity at all levels –personal, financial, and legal uncertainty-, which in turn, leads to greater insecurity at all levels, putting everything into question. Thus, in seeking greater financial security for investors, the Protocol may have the effect of creating greater uncertainty and insecurity in non-financial areas.

While UNIDROIT's attempts to reach some unification in private international law are commendable, it is submitted that several points of the proposed Space Protocol would benefit from further discussions. In particular, greater dialogue with the ITU, and operators of global and international satellite systems, would be helpful in clarifying the interrelationship among the technical, financial and legal aspects of space objects and natural resources.

Undeniably, licenses and permits are valuable assets; without them, few activities can be undertaken. However, whether these government prerogatives can be converted into property rights in which a financial interest may be secured is debatable. Thus, the definition of "associated rights" in relation to space assets will likely remain the subject of

debate and clarification. Even UNIDROIT has noted that "the issues of how to define and how to deal with 'associated rights' pose a number of problems which will continue to attract attention and to trigger both technical and doctrinal discussions."/33/

In seeking clarification, the following points should be taken into account:

1. Licenses are not rights, nor "associated rights", as presented by UNIDROIT. As discussed, supra, they are privileges granted by an official entity and are not negotiable property.
2. Users of the radio frequency spectrum, orbits and orbital positions need to remain aware that they are mere users, not owners, of these global commons. National governments are the stewards of these resources, which are allocated and allotted to them by the international steward, the ITU.
3. These global commons are part of outer space, and are not subject to national (or private) appropriation, by any means, as stated in Article II of the Outer Space Treaty.
4. "Associated rights" as stated in Art. I (2) (a) (i) of the Protocol should be re-named "Ancillary Privileges". Just as "space property" was changed to "space assets", to take into account the divergent views on "property" that exist in the different legal systems, the term "privilege" better represents the true nature of licenses, authorizations or permits.

Perhaps this slight change in terminology, would add clarity, and help overcome the reticence of some of the potential signatories of the Protocol. The governments would retain control of the licensing process, authorizing their nationals to *use* space resources but not permitting their privatization.

Outer space, the common heritage or province of mankind, should remain a global commons, and not be subject to privatization, "property-zation", by national or private entities, or by any other means.

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[1] One of the Ten Commandments tells us that we shall not covet our neighbor's goods (or property).

[2] Black's Law Dictionary states that property may be classified as either real or immovable, or personal and movable. St. Paul, Minn., West Publishing Co.

[3] This same dictionary provides the following definition of **intangible property:** "such property [that] has no intrinsic and marketable value, but is ...evidence of value..." "Other **intangibles** include property that is a "right" rather than a physical object. Examples would be patents, stocks, bonds, goodwill, trademarks, franchises and copyrights." [Emphasis added.]

[4] Ibid. "An **intangible asset** is defined as a non-physical, noncurrent asset which exists only in connection with something else, such as the goodwill of a business." [Emphasis added.]

[5] UNIDROIT is the acronym for the International Organization for the Unification of Private Law, headquartered in Rome, Italy. UNIDROIT has drafted a Convention on international interests in mobile equipment, and Protocols specific to the rolling stock of railroads, to aircraft, and to "space assets." The full title is "Convention on International Interests in Mobile Equipment, preliminary draft protocol thereto on matters specific to space assets." Opened to signature in Cape Town, South Africa, November 2001. [Cited hereinafter as the Protocol.]

[6] The Communication Satellite Corporation has its genesis in Section 102 (c) and Sec. 301 of the 1962 Communication Satellite Act. P.L. 87-624; 76 STAT 419. Through this Act President Kennedy sought to bring the benefits of satellite communications to the world, especially to developing countries, and "to provide the widest possible participation by private enterprise" in commercial satellite communications.

[7] Ibid., Sec. 102 (c).

[8] Art. VI, Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial

Bodies. Entered into force October 1967. [Cited as the Outer Space Treaty hereinafter].

[9] Ibid., Art. VIII. Could this article be interpreted to mean that entities engaged in space activities are also responsible for mitigating space debris that may result from their activities?

[10] Convention on International Liability for Damage Caused by Space Objects. Entered into force 1972. [Cited as the Liability Convention hereinafter.]

[11] Neil Hazan, The UNDROIT Preliminary Draft Protocol on Matters Specific to Space Assets. Term Essay (unpublished). McGill University 2002. Discussions held at COPUOS also reflect the concern of different delegations as to the inclusion of certain intangibles in "property". See UN documents A/AC.105/763; A/56/20, *inter alia*. See also footnotes of the Draft Protocol discussions held at Evry, France, Sept. 2001. At that meeting it was agreed to adopt the term "space assets" in preference to "space property", 'in response to concerns regarding the implications under civil law of the term "property"'. UNIDROIT, www.unidroit.org.

[12] Protocol, *supra*, note 5, Art. I (f).

[13] Art. I (d), Convention on International Liability for Damage Caused by Space Objects. Entered into force 1972. [Cited hereinafter as the Liability Convention.]

[14] Art. II, Outer Space Treaty, supra note 8. Art. 11 (2) of the Moon Treaty reiterates the non-appropriation doctrine, although Art. 6 allows States Parties to this Treaty to "collect on and remove from the Moon samples of its minerals and other substances". Agreement Governing the Activities of States on the Moon and Other Celestial Bodies. Entered into force 1984.

[15] P. Dasch, M.M. Smith, A. Pierce, "Conference on Space Property Rights: Next Steps; IISL Proceedings 1999, pp.174-178. See also W. White, Implications of a Proposal for Real Property Rights in Outer Space. IISL Proceedings 1999, pp.366-373.

[16] P. Sterns, G.H. Stine, L. Tennen, "Preliminary Jurisprudential Observations Concerning Property Rights on the Moon and Other Celestial Bodies in the Commercial Space Age. IISL Proceedings 1996, pp.50-60. (For other discussions on property rights in space, see '96,'97,'98 IISL Proceedings).

[17] Billions of dollars were devoted to the development of the Global Mobile Personal Communication Services/Systems (GMPCS), such as ICO, Iridium, Orbcomm, Globalstar, Teledesic, Skybridge, Ellipsat, inter alia. While some projects have not materialized yet, those that are in service have had to seek protection of the US Bankruptcy courts. Is it coincidence that UNIDROIT's Space Assets Protocol was drafted in 1997, at which time many of the GMPCS consortia had already launched, or were planning to launch their satellites? Being able to secure an interest internationally in satellite systems such as the GMPCS would be very appealing to the financial sector, especially since the GMPCS consortia were incorporated in a variety of jurisdictions, had investors from many different countries, and legal systems. It would make sense, from a legal and financial perspective, to be able to secure these massive loans through an international convention, like the one proposed by UNIDROIT.

[18] Protocol, supra, note 5, Article I (2) (a). Revised in Rome, Italy, February 2002.

[19] See, for example, UNGA, A/AC.105/C.2/L.225, Jan.2001, para. 19,in which it is stated that "Such associated rights are regarded as being inextricably linked to a satellite and integral to its commercial value." Also A/AC.105/763, April 2001; A/57/20, June 2002. Also M. Stanford's presentation at UNISPACE III, July 1999, and UNIDROIT's Secretary-General, H. Kronke assessment, included in "Project 2001- Legal Framework for the Commercial Use of Outer Space", Karl-Heinz Bockstiegel, Ed. Carl Heymanns Verlag, Koeln, Germany, 2002.

[20] Black's Law Dictionary, supra, note 2.

[21] Perhaps the licensing system with which most people are familiar is the driver's license, which is issued by a governmental entity. A driver's license is highly personal, and cannot be assigned, transferred, or re-issued to a third party without prior official authorization. Should licenses pertaining to space activities be more easily transferable than drivers' licenses, in view of the numerous national security (and not only financial security) issues involved?

[22] One author notes that the "new culture of hypercapitalism" tends to "commodify" all experiences. As to telecommunications, he cites some studies that advocate that the entire radio frequency spectrum should be converted into private property to be sold, leased or otherwise developed, thus eliminating the need for a FCC, or any other kind of regulatory body. Jeremy Rifkin, "The Age of Access", Jeremy Tarcher/Putnam, New York (2000) p.226 ff.

[23] The GMPCS were subject of a Memorandum of Understanding, the GMPCS MOU, whose overriding purpose, *inter alia*, was to facilitate the bringing into service of the mostly privately owned GMPCS systems world-wide. The GMPCS MOU was drafted primarily by private parties; its proposed regulations are not legally binding until adopted into national legislation. The lack of harmonized regulations, as would be provided by an international treaty, may have been a contributing factor to the GMPCS systems' lack of success.

[24] P. Larsen & J. Heilbock , "UNIDROIT Project on Security Interests: How the Project Affects Space Objects. 64 J. Air L. & Commerce 703 -770 (Summer 1999). The authors recognize that there are a number of problem areas with the Protocol, one of which is the 'bundling of rights, interest, privileges and properties in the satellite business'. (P.736).

[25] The ITU defines Administration as "any government department or service responsible for discharging the obligations undertaken in the {ITU's] Convention and Radio Regulations." Ch.1, Art. I, Sect. I, 3.1.1. ITU Radio Regulations. The ITU "Administration" is similar to the State of Registry of the space object, as required in Art. VIII of the Outer Space Treaty and in Art. I (c) of the 1976 Convention on Registration of Objects Launched into Outer Space.

[26] Several economists are promoting this notion. A recent article by Prof. Lawrence J. White, attempts to provide a parallel between real estate and the spectrum, and proffers reasons as to why they should be treated in a like manner. ""Propertyzing" the Electromagnetic Spectrum: Why It's important and How to Begin". NYLS J. Media Law & Policy, Vol. IX, No.1, Fall 2000 (22-48). See also, Rifkin, supra, note 22, who makes references to various initiatives in the U.S. Congress to "privatize" the spectrum.

[27] Rifkin, supra, note 22, pp 227 ff..

[28] Section 647, P.L. 106-180, March 2000, the "Open-market Reorganization for the Betterment of International Telecommunications Act., the "ORBIT" Act.

[29] V. Kopal "Outer Space as a Global Common", Proceedings of the IISL, 1997, pp.108-118. See also Rifkin, supra, note 22.

[30] See Fishman, W.L., "Property Rights, Reliance and Retroactivity Under the 1934 Communications Act. Fed. Communications Law Journal, Vol. 50 No. 1 (2-51), 1997.

[31] Rifkin, supra, note 22, p. 227.

[32] Art. II, Outer Space Treaty, supra note 8. But see fn 2, of the Protocol Draft (Evry 2001), to the effect that there are no conflicts between the Protocol and the principles incorporated in the UN's Space treaties.

[33] H. Kronke, "The Draft UNIDROIT Convention..." Included in "Project 2001- Legal Framework for the Commercial Use of Outer Space", Karl-Heinz Bockstiegel, Ed. Carl Heymanns Verlag, Koeln, 2002, at p. 655.