

# Jurisdiction and Control over Installations and Facilities Serving Space Tourism Activities

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## Abstract

Space tourism is nowadays an extremely promising activity, as a real “industry” has already been organized around this concept, growing everyday through private investment. This space tourism “boom” will inevitably affect some long-standing *acquis* of Space Law. This paper focuses on the possible legal consequences regarding the status of installations and facilities that serve space tourism activities. Said installations and facilities (as, for instance, “space ports” or “space hotels”) may be placed on Earth or in outer space (the case of the ISS); in the future, they can also be established on the Moon and other celestial bodies. Space Law, in its present state, does not seem to be sufficiently elucidative for the legal regime of space installations and facilities constructed on the Moon and the other celestial bodies: Although the right to build such structures is explicitly founded in current regulations, it must be reconciled with the “non-appropriation” principle, according to which no territorial jurisdiction can be established on the surface (or subsurface) of the celestial bodies. It seems that the existing legal framework does not adequately cover the creation of “space hotels” on the Moon and other celestial bodies: The traditional concept of jurisdiction in Space does not provide responses to the issue of the legal status *on the surface* of the Moon, something which is critical for the efficient operation of tourism activities related to the creation of facilities on the surface of the celestial bodies. Therefore, there is an urgent need either for a dynamic interpretation of the existing rules and regulations or for a radical update of the current legal framework.

## Introduction

Although it is still far from being a daily routine practice, space tourism<sup>1</sup> has caused an intense legal debate, so that the tourism activity never triggered in other branches of international law.

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<sup>1</sup> Another alternative term for space tourism is, according to the Commercial Spaceflight Federation, «personal spaceflight».

Space tourism can be defined as space travel for pleasure, relaxation or for business reasons. According to another approach, the term describes «any commercial activity offering customers direct or indirect experience with space travel»<sup>2</sup>. A Space tourist, respectively, is “someone who tours or travels into, to, or through space or to a celestial body for pleasure and/or recreation”<sup>3</sup>. In recent years, there have appeared several private companies wishing to operate in the wider area of space tourism. Although orbital space tourism activities are, up to now, limited and very expensive, said companies are hoping to create, in the near future, a real «space tourism industry»<sup>4</sup>. Although these prospects of space tourism may sound exotic today, the already existing - albeit small - experience and practice, as well as an international overwhelming preparation for suborbital tourism activities – obviously accompanied by significant financial investment<sup>5</sup> - which occurs worldwide raises interesting legal questions<sup>6</sup> – such as regulating flights that take place both to airspace and outer space<sup>7</sup>, the legal status of «space tourists»<sup>8</sup>, the protection of intellectual property rights in outer space<sup>9</sup>, security and responsibility/liability issues<sup>10</sup> and, last but not least, the legal regime of installations that will serve space tourism activities. This paper mainly deals with this last issue. In the first part, the current legal regime governing installations and facilities in Outer Space is approached, whereas the second part considers the applicability of said regime over space tourism facilities.

<sup>2</sup> See S. Freeland, “The Impact of Space Tourism on the International Law of Outer Space”, *56th International Astronautical Congress 2005*.

<sup>3</sup> Freeland, “The Impact...”, *op. cit.*

<sup>4</sup> Another alternative term for space tourism is, according to the Commercial Spaceflight Federation (CSF), «personal spaceflight» - For the CSF, see <http://www.commercialspaceflight.org> (last visit: 9/9/2014). Its members include commercial spaceflight developers, operators, and spaceports.

<sup>5</sup> See, in this respect, Freeland, *op. cit.*

<sup>6</sup> For an overview of the applicability of the Outer Space Treaties on space tourism, see F.G. von der Dunk, “Space for Tourism? Legal Aspects of Private Spaceflight for Tourist Purposes”, in *Proceedings of the Forty-Ninth Colloquium on the Law of Outer Space* (2007), p. 18-28.

<sup>7</sup> See Y.A. Failat, “Space Tourism: A Synopsis on its Legal Challenges”, *Irish L.J.*, Vol.1, 2012, p. 147; Hobe, “Legal Aspects...”, *op. cit.*, p. 441; Freeland, “Up, Up...”, *op. cit.*, p. 6.

<sup>8</sup> Failat, *op. cit.*, p. 122; Hobe, “Legal Aspects...”, *op. cit.*, p. 454; Freeland, “Up, Up...”, *op. cit.*, p. 10.

<sup>9</sup> Freeland, “Up, Up...”, *op. cit.*, p. 12.

<sup>10</sup> Failat, *op. cit.*, p. 129; Hobe, “Legal Aspects...”, *op. cit.*, p. 448.

## I. THE LEGAL REGIME OF INSTALLATIONS AND FACILITIES IN OUTER SPACE

### A. Some definitional issues

*Installations, facilities and stations* are terms that are frequently used in a military or industrial context. It seems that all these terms have similar meaning in everyday use.

According to the Merriam-Webster Online Dictionary<sup>11</sup>, a “*facility*” is “something (such as a building or large piece of equipment) that is built for a specific purpose”. The DoD Military Dictionary<sup>12</sup> focuses on the description of the facility rather than its function, as a “*facility*” is “a real property entity consisting of one or more of the following: a building, a structure, a utility system, pavement, and underlying land”. Finally, the Free Dictionary<sup>13</sup> mentions that a facility is “a building or place that provides a particular service or is used for a particular industry”. It follows from the above definitions that a “*facility*” is a construction on land that serves a specific purpose or service.

“*Installation*” is defined by the Merriam-Webster as “a military camp, fort, or base” – whereas, in the DoD Military Dictionary, the term is used as an alternative to station: For instance, the term “airways station” is defined as “a ground communication *installation* established, manned, and equipped to communicate with aircraft in flight, as well as with other designated airways installations...” (Italics added). Furthermore, the MacMillan online dictionary<sup>14</sup> defines “*installation*” as “a building or structure, especially one that is important for an army, industry, or government”.

Finally, a “*Station*” is, as stated by the Merriam-Webster, “a place where someone does a job or waits for a task”. The DoD dictionary gives the definition of the (more specific) term “global fleet station”, which is “a persistent sea base of operations from which to interact with partner nation military and civilian populations and the global maritime community”. According to McMillan, it is “a building or place where a particular service or activity is based” – which is very near to the definition of “*facility*”, as defined above.

Given their obvious similarity, it can be argued that installations, facilities and stations constitute constructions on land that serve a specific purpose or provide a specific service. For this reason, the use of all three terms herein will not be distinguished from one another. The specific feature of the association of these structures with the ground also defines the scope of this article, the purpose of which is to seek the legal status of structures adjoined firmly to the surface of the Moon or other celestial bodies.

<sup>11</sup> <http://www.merriam-webster.com>

<sup>12</sup> (U.S.) Department of Defense Dictionary of Military and Associated Terms, Joint Publication 1-02, 8 November 2010 (As Amended Through 16 July 2014), in [http://www.dtic.mil/doctrine/new\\_pubs/jp1\\_02.pdf](http://www.dtic.mil/doctrine/new_pubs/jp1_02.pdf) (last visit: 10.9.2014).

<sup>13</sup> <http://www.thefreedictionary.com> (last visit: 10.9.2014).

<sup>14</sup> <http://www.macmillandictionary.com> (last visit: 10.9.2014).

## B. Installations, Facilities and Stations in Outer Space: Do they constitute “Space Objects”?

On the basis of the ‘non-appropriation’ principle, the Outer Space Treaties<sup>15</sup> provide for the exercise of “jurisdiction and control over “space objects”. In this part, after approaching said legal regime (1), its applicability against installations, facilities and stations will be tested (2).

### 1. The Legal Regime of Space Objects under the Outer Space Treaties: “Jurisdiction” and “Control”

#### a) *Jurisdiction in International Law*

Under International Law, jurisdiction is a corollary of State sovereignty: it reflects the power of a State to adopt regulations on persons, objects and activities in its own territory. In other words, jurisdiction is “an exercise of authority which may alter or create or terminate legal relationships and obligations”<sup>16</sup>.

In International Law, jurisdiction can be legislative, executive or judicial<sup>17</sup>; Civil or criminal. However, the fundamental distinction is between *territorial* and *extra-territorial* jurisdiction. In this respect, it has to be noted that State jurisdiction is, in principle, territorial, as State sovereignty is limited by the obligation of any State not to interfere in the domestic affairs of another State (principle of non-intervention)<sup>18</sup>. However, it is possible that States expand

<sup>15</sup> *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies*, adopted on 19 December 1966, opened for signature on 27 January 1967, entered into force on 10 October 1967, 610/U.N.T.S./205 (hereinafter “Outer Space Treaty” or “OST”); *Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space*, adopted on 19 December 1967, opened for signature on 22 April 1968, entered into force on 3 December 1968, 672/U.N.T.S./119; *Convention on International Liability for Damage Caused by Space Objects*, adopted on 29 November 1971, opened for signature on 29 March 1972, entered into force on 1 September 1972, 961/U.N.T.S./187 (hereinafter “Liability Convention”); *Convention on Registration of Objects Launched into Outer Space*, adopted on 12 November 1974, opened for signature on 14 January 1975, entered into force on 15 September 1976, 1023/U.N.T.S./15 (hereinafter “Registration Convention”); *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*, adopted on 5 December 1979, opened for signature on 18 December 1979, entered into force on 11 July 1984, 1363/U.N.T.S./3 (hereinafter “Moon Agreement”).

<sup>16</sup> M.N. Shaw, *International Law*, 6<sup>th</sup> edition, 2008, p. 645.

<sup>17</sup> Shaw, *op. cit.*, p. 649.

<sup>18</sup> Cf. the *dictum* of Max Huber in the *Island of Palmas* 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 the national organisation of States during

their criminal jurisdiction beyond the boundaries of their territory, mainly against offences that are somehow “linked” with the State in question<sup>19 20</sup>. In this case, “the overlapping claims to jurisdiction have to be coordinated”<sup>21</sup>.

*b) “Jurisdiction” and “Control” in Outer Space*

Although State jurisdiction in International Law has a territorial base, this is not the case in Space Law: In its context, States exercise “jurisdiction and control” over space objects “launched into outer space”, whereas the existence of the “non-appropriation” principle excludes territorial claims.

*- The “non-appropriation” principle*

According to art. I(2) of the Outer Space Treaty, “Outer space, including the Moon and other celestial bodies, shall 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 shall be free access to all areas of celestial bodies”. This “freedom of exploration and use” inevitably leads to the principle of non-appropriation, provided by art. II:

“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”.

Same principle is contained in art. 11(2) of the Moon Agreement<sup>22</sup>: “The

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the last few centuries and, as a corollary, the development of international law, have established this principle of the exclusive competence of the State in regard to its own territory in such a way as to make it the point of departure in settling most questions that concern international relations”. – *R.I.A.A.*, vol. II, p. 838.

<sup>19</sup> As the Permanent Court of International Justice had pointed out in the *Lotus* case, “Though it is true that in all systems of law the principle of the territorial character of criminal law is fundamental, it is equally true that all or nearly all these systems of law extend their action to offences committed outside the territory of the State which adopts them, and they do so in ways which vary from State to State. The territoriality of criminal law, therefore, is not an absolute principle of international law and by no means coincides with territorial sovereignty” - *PCIJ Rec.*, Série A No 10, p. 20.

<sup>20</sup> Such offences can be of national or international character. In the first case, the State adopts provisions in its domestic criminal law regarding offences committed outside its territory (mainly based on the nationality of offenders and/or victims). In the second, extra-territorial jurisdiction is established against crimes in international law (such as piracy on the high seas or illegal diversion of aircraft).

<sup>21</sup> S. Marchisio, “National Jurisdiction for Regulating Space Activities of Governmental and Non-Governmental Entities”, in United Nations/Thailand Workshop on Space Law, *Activities of States in Outer Space in Light of New Developments: Meeting International Responsibilities and Establishing National Legal and Policy Frameworks*, 16-19 November 2010, Bangkok, Thailand, p. 2, in (<http://www.oosa.unvienna.org/pdf/pres/2010/SLW2010/02-02.pdf>, last visit: 10.9.2014).

Moon is not subject to national appropriation by any claim of sovereignty, by means of use or occupation, or by any other means”.

The core element in art. II of the OST is “national appropriation”. Said expression existed in UNGA Resolution 1721(XVI) of 20 December 1961 as well as in UNGA Resolution 1962(XVIII) of 13 December 1963 (principle no 3). According to the opinions expressed during the *travaux préparatoires* of the Outer Space treaty - and those of distinguished scholars<sup>23</sup> -, the expression “national appropriation” prohibits both the exercise of sovereign rights (by States) and private appropriation (by non-governmental entities). This conclusion is further strengthened by the clear wording of art. 11(3) of the Moon Agreement, according to which “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*” (italics added).

Outer Space being thus a *res communis omnium*, it follows that the traditional scheme of acquisition of territory is inapplicable in its context. Furthermore, as already noted, the principle of non-appropriation leaves no room for territorial jurisdiction in Outer Space<sup>24</sup>.

#### - “Jurisdiction” and “control”

As far as jurisdiction and control in Outer Space is concerned, the key article is art. VIII of the Outer Space Treaty:

“A State Party 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

<sup>22</sup> It is important that, in accordance with art. 1 of the Moon Agreement, references to the moon in the treaty shall be understood as applicable to all celestial bodies within the solar system, other than the Earth.

<sup>23</sup> S. Freeland & R. Jakhu, “Article II”, in S. Hobe, B. Schmidt-Tedd, K.-U. Schrogl & G. Meishan Goh (eds.), *Cologne Commentary on Space Law*, Vol. 1 Outer Space Treaty, Carl Heymanns Verlag, 2009, p. 50; S. Hobe, “Adequacy of the Current Legal and Regulatory Framework Relating to the Extraction and Appropriation of Natural Resources”, in Institute of Air and Space Law, McGill University, *Policy and Law Relating to Outer Space Resources: Examples of the Moon, Mars, and other Celestial Bodies*, Workshop Proceedings, 28-30 June 2006, p. 206; S. Hobe, “The Legal Framework for a Lunar Base Lex Data and Lex Ferenda”, in Gabriel Lafferrandier & Daphné Crowther (Eds.), *Outlook on Space Law over the Next 30 Years: Essays Published for the 30th Anniversary of the Space Treaty*, Springer, 1997, p. 138-139.

<sup>24</sup> Freeland & Jakhu, *op. cit.*, p. 48.

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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”.

According to the first paragraph, a State exercises “jurisdiction and control” over a space object registered by it. Said jurisdiction and control “is retained” while said space object is “in outer space or on a celestial body”.

Although both terms (jurisdiction, control) refer to the powers of the State of registry over a specific space object<sup>25</sup>, they have different meanings: “*Jurisdiction*” refers to “the legislation and enforcement of laws and rules in relation to persons and objects”<sup>26</sup> – whereas “*control*” describes “the exclusive right and the actual possibility to supervise the activities of a space object and, if applicable, the personnel thereof”<sup>27</sup>. As Sergio Marchisio points out, “The ‘control’ competence is more than a technical capability. Control refers, firstly, to a factual situation and such control should be ensured by technical means. It is the right of the State of registry to adopt technical rules to achieve the space object mission and, if necessary, to direct, stop, modify and correct the elements of the space object and its mission”<sup>28</sup>.

Although jurisdiction and control have different meanings, they form an inseparable concept, which defines the powers that the State of registry can exercise over the (registered) space object. In other words, “jurisdiction and control constitutes one block... Jurisdiction should induce control and control should be based on the jurisdiction, it being understood that the State of jurisdiction could entrust to specific entities the implementation of certain measures of control, subject to rules to be agreed”<sup>29</sup>.

The main legal implication of the exercise of jurisdiction and control by the State of registry is the applicability of its national laws and regulations. Obviously, said applicability is both *ratione materiae* (regarding the space object) and *ratione personae* (regarding the personnel).

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The wording of art. VIII leads to the conclusion that the “connecting factor” that gives to a State the right to “retain its jurisdiction and control” over a space object, is registration<sup>30</sup>.

<sup>25</sup> S. Marchisio, *op. cit.*, p. 4.

<sup>26</sup> B. Schmidt-Tedd & S. Mick, “Article VIII”, Article IV”, in S. Hobe, B. Schmidt-Tedd, K.-U. Schrogl & G. Meishan Goh (eds.), *Cologne Commentary on Space Law*, Vol. 1 Outer Space Treaty, Carl Heymanns Verlag, 2009, p. 157.

<sup>27</sup> *Idem.*

<sup>28</sup> S. Marchisio, *op. cit.*, p. 5.

<sup>29</sup> G. Lafferranderie, “Jurisdiction and Control of Space Objects and the Case of an International Intergovernmental Organisation (ESA)”, *Z.L.W.*, vol. 54, 2005, p. 231-232.

<sup>30</sup> Bin Cheng, “Space Objects and their Various Connecting Factors”, in Gabriel Lafferranderie & Daphné Crowther (Eds.), *Outlook on Space Law over the Next 30*

Thus, jurisdiction and control on a space object presupposes its registration. Furthermore, pursuant to the Registration Convention [art. II(1)], the obligation to register a space object exists from the moment that said object “is launched into Earth orbit or beyond”-. It follows that the State of registry must be the (or a) launching State. Although a transfer of ownership of the space object while into orbit cannot be excluded, it will not affect jurisdiction and control over said object, which, according to art. VIII, remains with the launching State. In this case, the dissociation between ownership and jurisdiction can possibly affect private activities in Outer Space, of commercial nature.

It has to be mentioned that, in the light of art. VI of the Outer Space Treaty and arts. I and II of the Registration Convention, States are also responsible for the registration of space objects used by non-governmental entities, in other words for private space flights. This fact will have a major impact on the conduct of private activities in Outer Space such as space tourism activities.

## 2. The Applicability of the “Jurisdiction and Control” Scheme on Installations, Facilities and Stations

### a) *What is a “space object”?*

Although the term “space object” is one of the fundamental notions in space law, there is no definition of it in the Space Treaties<sup>31</sup>. According to Stephen Gorove, only a partial definition exists, as the Liability and the Registration conventions state that said term “includes component parts of a space object as well as its launch vehicle and parts thereof”<sup>32</sup>. Nevertheless, this partial definition “refers back to itself”<sup>33</sup>.

In the context of the Outer Space Treaty, the notion of space object is linked *with launching*: Art. VII provides for international liability (for damage) of any State “that launches or procures the launching of an object into outer space”, while art. VIII refers to “jurisdiction and control” over objects

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*Years: Essays Published for the 30th Anniversary of the Space Treaty*, Springer, 1997, p. 204-205.

<sup>31</sup> A. Kerrest & L.J. Smith, “Article VII”, in S. Hobe, B. Schmidt-Tedd, K.-U. Schrogl & G. Meishan Goh (eds.), *Cologne Commentary on Space Law*, Vol. 1 Outer Space Treaty, Carl Heymanns Verlag, 2009, p.139; S. Freeland, “Up, Up and ... Back: The Emergence of Space Tourism and Its Impact on the International Law of Outer Space”, *Chicago J.I.L.*, vol. 6 no 1, 2005-2006, p. 13; St. Gorove, “Toward a Clarification of the Term ‘Space Object’ - An International Legal and Policy Imperative?”, *J.S.L.*, vol. 21, no 1, 1993, p. 11-26.

<sup>32</sup> Liability Convention, art. I(d); Registration Convention, art. I(b). As Gorove notes, this “partial definition” must be considered as applicable to all of the Space Treaties - *op. cit.*, p. 13.

<sup>33</sup> Gorove, “Toward a Clarification...”, *op.cit.*, p. 12.



“launched into outer space”. In their commentary on art. VII of the Outer Space Treaty, Armel Kerrest and Lesley Jane Smith define “space object” in this direction: “The term ‘space object’ has been designated as a generic term referring to any object *which humans launch, attempt to launch or have launched* into outer space, including the Moon and other celestial bodies” (italics added)<sup>34</sup>. A similar definition is provided by Bernhard Schmidt-Tedd and Stephan Mick: “A space object is every object *that was launched into outer space* in order to explore or use outer space, as well as every object *that is intended to be launched*” (italics added)<sup>35</sup>.

*b) Do installations and facilities constitute “space objects”?*

The right to construct facilities, installations and stations on the Moon and the other celestial bodies is founded on articles I and IV of the Outer Space Treaty: According to Art. I, “The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries...” and “Outer space, including the Moon and other celestial bodies, shall be free for exploration and use by all States”. Moreover, art. IV(2) states that “The Moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes”. This right of any State in the “exploration and use” of Outer Space incorporates the specific right of placing constructions on the surface of the celestial bodies.

Furthermore, art. 8(2) of the Moon Agreement permit to States to “place their ...facilities, stations and installations anywhere on or below the surface of the Moon”. Article 9 clearly stipulates that States may establish manned and unmanned stations on the Moon, although such stations must not “impede the free access to all areas of the Moon...”. The placement of such facilities does not create a right of ownership over the surface or the subsurface of the Moon [art. 11(3)]. However, the ownership of vehicles, equipment, facilities, stations and installations shall not be affected by their presence on the Moon [art. 12(1)(b)].

Finally, States “shall retain jurisdiction and control over ...facilities, stations and installations on the Moon” [art. 12(1)(a)].

*- Distinguishing “space objects” from “space stations”*

The search for a legal qualification for installations, facilities and stations on the celestial bodies reveals, *de lege lata*, some *acquis*, as well as some doubts: A first *acquis* is derived from the principle of non-appropriation enshrined in

<sup>34</sup> Kerrest & Smith, *op. cit.*, 140.

<sup>35</sup> B. Schmidt-Tedd & S. Mick, “Article VIII”, Article IV”, in S. Hobe, B. Schmidt-Tedd, K.-U. Schroll & G. Meishan Goh (eds.), *Cologne Commentary on Space Law*, Vol. 1 Outer Space Treaty, Carl Heymanns Verlag, 2009, p. 150.

art. II of the Outer Space Treaty: The establishment of any construction on the Moon or on other celestial bodies cannot raise any specific claims of territorial jurisdiction on the surface – or the subsoil – of these bodies. As noted by Adrian Bueckling, “the... legal status of... stations is applicable only to the installation itself, i.e., neither to the lunar surface actually occupied by such installation nor to the operation and supply area around the installation or between the individual component parts of a multi-member station”<sup>36</sup>.

A Second *acquis* resides in the fact that there is a limit on the jurisdictional rights of the State of registry over the facility, installation or station, which is the right of other States to free access, according to art. XII<sup>37</sup>.

As far as doubts are concerned, it is questionable whether the “launch” criterion, which constitutes an indispensable component of the notion of “space object”, applies in respect with installations and facilities – although the prevailing opinion in space law literature opts for an extensive interpretation of the term:

Bin Cheng considers that stations and installations are “indubitably” space objects<sup>38</sup>, whereas Stephen Gorove also adopts an extensive approach of the term “space object”, on the basis of the relative silence, in the Space Treaties, about the nature of objects indirectly “launched into Outer Space” through human intervention<sup>39</sup>. A similar position is expressed by Stephan Hobe, who believes that “the already existing legal framework in principle provides enough flexibility for the establishment of further and more detailed legal rules ... in case of a permanent settlement on the Moon”<sup>40</sup>.

However, regarding objects “landed on a celestial body”, it seems that Gorove expresses some doubt, admitting “there is a temptation” not to consider these objects as space objects after their landing. He finally considers said objects as space objects, “for purposes of both the uniform application of the law as well as reason and logic”<sup>41</sup>, based on the fact that the landing of said objects could be temporary.

What is really interesting is that Gorove feels that objects not originating from the Earth (extraterrestrial objects or materials) do not fall under the notion of space object in relation to the Space treaties. Moreover, in case of

<sup>36</sup> See A. Bueckling, “The Formal Legal Status of Lunar Stations”, *J.S.L.*, 1973, p. 114.

<sup>37</sup> Bueckling, *op. cit.*, p. 118.

<sup>38</sup> B. Cheng, “Space Objects and their Various Connecting Factors”, *op. cit.*, p. 209; “‘Space Objects’, ‘Astronauts’ and Related Expressions”, in *Proceedings of the 34th Colloquium on Law of Outer Space*, 1991, p. 24.

<sup>39</sup> Gorove, “Toward a Clarification...”, *op. cit.*, p. 21.

<sup>40</sup> S. Hobe, “The Legal Framework for a Lunar Base Lex Data and Lex Ferenda”, in Gabriel Lafferranderie & Daphné Crowther (Eds.), *Outlook on Space Law over the Next 30 Years: Essays Published for the 30th Anniversary of the Space Treaty*, Springer, 1997, p. 138, 143.

<sup>41</sup> Gorove, “Toward a Clarification...”, *op. cit.*, p. 22.

constructions on the Moon or other celestial bodies, and considering that a “mix” of earthy and extraterrestrial materials can be used for such a construction, the “space object” identity cannot apply. For the same reasons, according to Gorove, the legal identity of moveable space objects that have become parts of a broader - immovable - installation on a celestial body is questionable<sup>42</sup>. As Gorove mentions, “...if such stations *are built of materials which come from the moon or other celestial bodies, they may not be regarded as space objects under the current space treaties* which seem to imply that the objects must originate from the Earth since the treaties speak about their return to Earth” (italics added)<sup>43</sup>.

Adrian Bueckling’s opinion is equally interesting as, although, initially, he accepts that the word “including” in art. VIII(2) of the Outer Space Treaty indicates the existence of “a *general concept* covering all objects made by man *in and for* outer space”<sup>44</sup>, he nevertheless admits that “while the status claims (registration, administration, control and jurisdiction) as set forth in sentence (1) [of art. VIII] apply to ‘objects launched into outer space’, they do not necessarily apply to *equipment stationarily* erected on the moon surface which, in the further course of technological development, might possibly be constructed not only from ‘objects launched into outer space’ but also at least partly from *lunar* materials”<sup>45</sup>.

Furthermore, another interesting aspect of Bueckling’s view is his opinion that the environment around a station (“the vital supply and operation area of a station”) “shares the legal destiny of the station”, on the basis of “actual effectivity”. This extension of jurisdiction “does not imply any territorial competences of sovereignty”<sup>46</sup>.

On the basis of the above considerations, it is reasonable to assume that a sort of distinction emerges, between “space objects” “launched into outer space” and “objects landed or constructed on the Moon or other celestial bodies”. Although scholarship does not deny, in general terms, the applicability of the Outer Space provisions on “jurisdiction and control” over such objects and constructions, we can discern a tendency to consider that they constitute a distinct group of objects – merely because a) a landed object (i.e. a spacecraft) on the Moon or any other celestial body is not anymore “launched into Outer Space” (at least temporarily) and b) in case of a construction on a celestial body, the origin (earthy or extra-terrestrial) of the construction materials can affect the legal identity of the installation in question and, consequently, the relevant legal regime. Perhaps, in this case, it

<sup>42</sup> Gorove, “Toward a Clarification...”, *op. cit.*, p. 23.

<sup>43</sup> S. Gorove, “Sovereignty and the Law of Outer Space Re-examined”, *A.A.S.L.*, Vol. II, 1977, p. 318.

<sup>44</sup> A. Bueckling, *op. cit.*, p. 114.

<sup>45</sup> *Idem.*

<sup>46</sup> Bueckling, *op. cit.*, p. 118.

was safer to talk about “objects *in space*”.

It is worth noting, in this respect, what Fabio Tronchetti thinks about registration issues in case of constructions in Space:

“What about registration of a space station built on the lunar surface and of its component parts? According to Article II of the Registration Convention when a space object is launched into Earth orbit or beyond, the launching State shall register the space object in an appropriate registry. This means that all the component parts of a space station have to be registered when they are launched in outer space. Whereas the Registration Convention makes clear that a space object may be registered only once, one could for the present purpose consider inserting in the text of the Convention a clause indicating that when the assembling process of a space station has been completed such a station could be registered as a new space object”<sup>47</sup>.

These problems of registration in relation to structures on the Moon were noted by Bin Cheng, who observed that in the Registration Convention there was no provision for the registration of stations and installations constructed on celestial bodies from materials or parts that can no longer be identified with the space objects that brought them there. The result, according to Bin Cheng, is that said constructions become “unregistered space objects”<sup>48</sup>.

The above thoughts and ideas lead to the conclusion that the legal regime regarding objects in space *lato sensu* is not so solid as to adequately cover any such object, independently of its origin and placement. It seems that the ‘triple link’ among “space object”, the “launch” criterion and the rights of the State of registry (jurisdiction and control) does not work in any given situation.

It must be noted that, with respect to the problem concerning the definition of “space object”, Vladimir Kopal suggested to split the notion in “*space object*”, “*space station*” and “*space debris*”, in order to better define legal regimes in Outer Space. According to Kopal, this distinction will become sooner or later inevitable<sup>49</sup>.

In agreement with those recommended by Kopal, it is submitted that *permanent* settlements on celestial bodies – as facilities, installations or

<sup>47</sup> F. Tronchetti, *The Exploitation of Natural Resources of the Moon and Other Celestial Bodies: A Proposal for a Legal Regime*, Nijhoff, 2009, p. 265. Cf. the similar proposal of A. Górbiel, who suggested a rule implying that when components parts individually registered by the launching States had to be assembled in outer space, such States would agree on which one of them would register the whole space station as a space object following the provisions of the Registration Convention – “Large space structures: the need for a special treaty regulation”, *in Proceedings of the Twenty-Seventh Colloquium on the Law of Outer Space* (1984), pp. 247–250 (cited by Tronchetti, *op. cit.*, p. 266).

<sup>48</sup> Cheng, “Space Objects and their Various Connecting Factors”, *op. cit.*, p. 205.

<sup>49</sup> V. Kopal, “Issues Involved in Defining Outer Space, Space Object and Space Debris”, *in Proceedings of the 34th Colloquium on Law of Outer Space*, 1991, p. 41.

stations – should be distinguished from «*space objects launched into outer space*». A hint for this may reside in a different interpretation of the word «including» in art. VIII(2) of the Outer Space Treaty: As «including» does not only mean «to have something as part of a group or total» – which is the meaning that serves the extensive interpretation of this provision – but also “*to contain something in a group or as a part of something*” or *to make something a part of something*”, the wording of art. VIII(2) (‘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...’ – italics added) acquires an entirely different meaning, towards the diversification of the two concepts.

- *The diverse nature of installations constructed on a celestial body*

What makes structures on the surface of the Moon or the other celestial bodies different from objects “launched into outer space”?

According to art. VIII sent. 2 of the Outer Space Treaty, ownership of objects “launched into outer space, including objects landed or constructed on a celestial body” “is not affected by their presence in outer space or on a celestial body...”<sup>50</sup>. Consequently, ownership is, in principle, retained in Outer Space and is not affected by the “non-appropriation” principle.

At this point, the factual difference inevitably leads to a different legal treatment: The differentiating fact that constructions on the celestial bodies are associated firmly on the surface implies a different legal status.

This differentiation passes through the regime of *ownership*.

Ownership is defined as a “complete dominion, title, or proprietary right in a thing or claim”. Besides, real property is a term that is “applied to land and immovable property on land such as buildings”<sup>51</sup>.

Regarding “objects launched into outer space”, ownership is not contrary to the principle of non-appropriation. This is for the obvious reason that these objects are not securely mounted on the surface of celestial bodies. However, in the case of objects landed on a celestial body, and for as long as such objects stay grounded, there will be a contact with the planetary surface. Furthermore, objects “constructed” on a celestial body are in permanent contact with the surface of it. In both cases, the enjoyment of all rights conferred by ownership is not possible *without the recognition of the existence of some form of jurisdiction* also on this part of the surface occupied by the construction!

In most national legal systems, real property is based on land acquisition, which is then extended to constructions permanently attached to the land. Thus, the landlord can effectively exercise its rights. In Space Law, the non-appropriation principle, combined with the “jurisdiction and control” principle over space objects, leads us to adopt exactly the opposite direction:

<sup>50</sup> Schmidt-Tedd & Mick, *op. cit.*, p. 163.

<sup>51</sup> <http://thelawdictionary.org>

The need for an effective jurisdiction and control over installations firmly constructed on the surface of the celestial bodies should lead to the recognition of some form of jurisdiction on this part of the surface occupied by a given installation. Otherwise, the exercise of jurisdiction and control over such installations can not be effective, for obvious reasons.

This jurisdiction can be delimited through the interpretation of the relevant provision of art. VIII (2) of the Outer Space Treaty. In this respect, recourse may be made to the rules established by the 1969 Convention on the Law of Treaties (VCLT): Pursuant to art. 32 VCLT, supplementary means of interpretation can be used, in order to, among others, determine the meaning when the interpretation according to article 31 VCLT “(a) leaves the meaning ambiguous or obscure; or (b) leads to a result which is manifestly absurd or unreasonable” (italics added). In view of the emergence of private activities in Outer Space – such as the space tourism initiatives –, the old (from the 60s and the 70s) international instruments of space law should rather be interpreted in accordance with art. 32 VCLT rather than article 31, an option that can lead to an evolutive interpretation<sup>52</sup> of the relevant provisions as well as to the taking into consideration of the principle of effectiveness (*effet utile*)<sup>53</sup>. These methods of interpretation appear to be more appropriate in the present state of development of space law and the consequent emergence of private activities in Outer Space.

In the light of such an approach, a “functional” jurisdiction over the surface occupied by installations constructed on the celestial bodies can emerge. Moreover, the creation of «*safety zones*» around said facilities could be discussed, based on the relevant zones at sea; around artificial islands, installations and structures in the exclusive economic zone (AOZ) or on the continental shelf (articles 60 and 80 of the 1982 UN Convention on the Law of the Sea)<sup>54</sup>. The coastal State, having exclusive jurisdiction over such installations [art. 60(2) LOSC], “may, where necessary, establish reasonable safety zones around such artificial islands, installations and structures in

<sup>52</sup> The International Court of Justice applied the method of evolutive interpretation in the *Namibia* Case: In its advisory opinion, the ICJ stated that “viewing the institutions of 1919, the Court must take into consideration the changes which have occurred in the supervening half - century, and its interpretation cannot remain unaffected by the subsequent development of law” (italics added) – *Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276 (1970)*, Advisory Opinion, *I.C.J. Reports*, 1971, p. 31.

<sup>53</sup> For the application of the principle of *effet utile* by the International Court, see, among many other cases, *Territorial Dispute (Libyan Arab Jamahiriya / Chad)*, Judgment, 1994, *I.C.J. Reports*, par. 51: “Any other construction would be contrary to one of the fundamental principles of interpretation of treaties, consistently upheld by international jurisprudence, namely that of effectiveness”.

<sup>54</sup> United Nations Convention on the Law of the Sea, signed at Montego Bay on 10.12.1982, entered into force on 16.11.1994, 1833/U.N.T.S./3 (hereinafter LOSC).

which it may take appropriate measures to ensure the safety both of navigation and of the artificial islands, installations and structures” [art. 60(4) LOSC]. The breadth of these zones shall not exceed a distance of 500 metres around the installations [art. 60(5) LOSC]. Such a legal regime governing facilities and installations on celestial bodies should give jurisdiction and control in a perimeter around the constructions analogous to the regime established by the Law of the Sea for the exploitation of the continental shelf or the AOZ. Maybe such a regime was in the mind of Stephen Gorove, when, commenting on art. XII of the Outer Space Treaty, noted that «the fact that some measure of *at least temporary exclusive jurisdiction* may be exercised over *a particular area* on the moon or other celestial bodies, such as a space station *and its adjacent grounds*, is also apparent from Article XII which makes access by representatives of a foreign state contingent on reciprocity» (Italics added)<sup>55</sup>.

In any case, and due to the absence of an explicit wording in the existing space provisions, the issue remains open. Any future solution, however, should be adequately balanced in order to safeguard that the existing “jurisdiction and control” scheme does not turn into an exercise of State sovereignty.

### III. The Applicability of the Existing, “Outer Space” Legal Regime in the Context of Space Tourism Activities

#### A. Tourism as an Outer Space Activity

Up to now, space tourism activities have taken place through *orbital* or *suborbital* flights:

Orbital space tourism is overwhelmingly expensive: As early as 1990, the Tokyo Broadcasting System paid \$28 million in order for Japanese journalist Toyohiro Akiyama to stay on the space station Mir for a whole week, during which there were daily television broadcasts from space. Given his professional status, Akiyama can best be described as a «space business traveler» than a real «space tourist».

On April 28th, 2001, American scientist and businessman Dennis Tito traveled to the International Space Station (ISS) and remained there for a week<sup>56</sup>. At that date, Tito became the first space tourist to visit the ISS – for a fee of \$20 million<sup>57</sup>.

These activities could be described as «orbital» space tourism, since said space stations (Mir, ISS) are (or were) orbiting the Earth. It follows from the

<sup>55</sup> S. Gorove, “Interpreting Article II of the Outer Space Treaty”, *Fordham L. Rev.*, Vol. 37 Issue 3, 1969, p. 353-354.

<sup>56</sup> See S. Freeland, “Up, Up and ... Back: The Emergence of Space Tourism and Its Impact on the International Law of Outer Space”, *Chicago J.I.L.*, vol. 6 no 1, 2005-2006, p. 2.

<sup>57</sup> For space tourism on the ISS, see S. Hobe, “Legal Aspects of Space Tourism”, *Nebraska L.R.*, vol. 86 Issue 2, 2007, p. 439.

figures already mentioned that the cost of orbital space tourism is, by today's standards, particularly high, almost prohibitive<sup>58</sup>.

However, the idea of a «suborbital» space tourism is already gaining ground, since the cost in this case will be significantly reduced in comparison with «orbital» activities: although, to date, there is no such tourism in space, many private companies are already preparing intensively for it<sup>59</sup>.

In any case, the future looks very promising for space tourism: As human imagination has no limits, there is already an interest in «space hotels», either through the adaptation of abandoned or defunct space stations or through *ad hoc* constructions of such units. There are also exotic ideas and thoughts of creating «orbital hotels» as well as «orbital sports centers», of scheduling daily flights to the Moon or to hotels located at the poles of the Moon or in orbit around it<sup>60</sup>. This fact implies that the verification of the effectiveness of the existing legal framework with respect to facilities of tourist interest on the Moon and the other celestial bodies constitutes an undeniable legal necessity.

## **B. Installations, Facilities and Stations serving Space Tourism**

### 1. The emergence of “space ports” and “space hotels”

According to M. Reichert, there is a “roadmap” for the evolution of Space Tourism through time: 1<sup>st</sup> step, short suborbital flights; 2<sup>nd</sup> step, short Earth orbital tourism in advanced, reusable spacecraft; 3<sup>rd</sup> step, extended Earth orbital tourism in Space hotels and 4<sup>th</sup> (and last), the establishment of a “Moon and Mars Tourism”<sup>61</sup>.

- *Space ports*: It is already discussed that “space ports”, which constitute installations from which spacecrafts will operate, will facilitate space tourism activities. According to E. González Ferreiro & A. Azcárraga, these spaceports can be either on Earth either “orbital” or “celestial”; either

<sup>58</sup> Regarding how orbital tourism prices could become lower through the use of reusable space vehicles, see A.P. Kothari & D. Webber, “Potential Demand for Orbital Space Tourism Opportunities Made Available via Reusable Rocket and Hypersonic Architectures”, AIAA Space 2010 Conference & Exposition, 30 August – 2 September 2010, Anaheim, California, in <http://arc.aiaa.org/doi/abs/10.2514/6.2010-8600> (last visit: 10.9.2014).

<sup>59</sup> See a description of suborbital space tourism options in Hobe, “Legal Aspects...”, *op. cit.*, p. 440. For ESA’s position on suborbital space tourism, see “Space Tourism: ESA’s View on Private Suborbital Spaceflights”, *ESA Bulletin* No 135, 2008, in [http://www.esa.int/esapub/bulletin/bulletin135/bul135c\\_galvez.pdf](http://www.esa.int/esapub/bulletin/bulletin135/bul135c_galvez.pdf) (Last visit: 10.9.2014).

<sup>60</sup> For these ideas, see Freeland, *op. cit.*

<sup>61</sup> M. Reichert, “The Future of Space Tourism”, 50<sup>th</sup> International Astronautical Congress, 4-8 October 1999, Amsterdam, The Netherlands, in [http://www.spacefuture.com/archive/the\\_future\\_of\\_space\\_tourism.shtml](http://www.spacefuture.com/archive/the_future_of_space_tourism.shtml) (Last visit: 10.9.2014).



national or international. By “orbital space port” is meant “a permanent inhabited facility, whose object is to solve the needs of the space traffic and, situated in Earth orbit or beyond, including a celestial body, will be for peaceful purposes in accordance with International Law”. Said space port constitutes “an assembly of space objects whose purpose is that the platform orbits in outer space, goes through it (displacement), if it is possible, or remains fixed in a celestial body”. A “celestial” spaceport is one that is “positioned on a celestial body”<sup>62</sup>. According to these definitions, a celestial spaceport can be installed on the Moon or any other celestial body, thus being facility serving space tourism activities.

It has been suggested<sup>63</sup> that space ports into orbit should follow, in terms of registry, the legal regime of the International Space Station, established by the International Space Station Intergovernmental Agreement of 1998 (IGA), according to which each State registers in its national registry the elements it provides (art. 5). It should be also noted that, according to the same article, each State retains jurisdiction and control over the elements in its national registry, as well as over the personnel of its nationality.

Consequently, the emphasis will be on the prospect of space tourism facilities constructed on celestial bodies.

- *Space Hotels*: Although, by today’s standards, establishing space tourism installations on the Moon as well as assuring the transportation of “tourists” there is a highly expensive operation<sup>64</sup>, the creation of “space hotels” is an ongoing discussion. As S. Freeland validly points out, “it is quite foreseeable that as space tourism activities develop, there will emerge the demand for the constant presence of tourists on the moon and other celestial bodies, necessitating the construction of celestial hotels”<sup>65</sup>. Space hotels on celestial bodies, when created, will constitute an extraordinary event that will entail a variety of challenges to legal regulation. The general considerations already exposed with respect to facilities and installations on the celestial bodies can, of course, provide some answers to these challenges. More specific thoughts are exposed below.

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<sup>62</sup> E.González Ferreiro & A. Azcárraga, “Orbital Space Ports: Their Operating Procedures and Legal Frame”, in *Proceedings of the 50<sup>th</sup> Colloquium on the Law of Outer Space*, 2008, p. 160-177.

<sup>63</sup> González Ferreiro & Azcárraga, *op. cit.*

<sup>64</sup> Reichert, *op. cit.*

<sup>65</sup> Freeland, “Up, Up...” *op. cit.*, p. 13.

2. The need for an updated jurisdictional scheme regarding space tourism installations and facilities

a) *“Space hotels” under the Moon Agreement*

Is it possible for the Moon (and other celestial bodies) to be used for space tourism activities? Art. 11(4) of the Moon Agreement seems to permit it, by providing that States Parties have the right to exploration and use of the Moon “without discrimination of any kind, on the basis of equality and in accordance with international law”. In this context, the use of facilities “necessary for peaceful exploration and use of the Moon” is not prohibited” [art. 3(4)] – whereas, according to art. 8(2), States may land space objects on the Moon and launch them from the Moon; they are also permitted to place “their personnel, space vehicles, equipment, facilities, stations and installations anywhere on or below the surface of the Moon”, which may “move or be moved freely over or below the surface” (of the Moon).

Art. 9(1) is also applicable against space tourism installations, as permits States to establish “manned and unmanned stations on the Moon”, under the condition that, in establishing a station, a State party “shall use only that area which is required for the needs of the station and shall immediately inform the Secretary-General of the United Nations of the location and purposes of that station”. Nevertheless, “Stations shall be installed in such a manner that they do not impede the free access to all areas of the Moon of personnel, vehicles and equipment of other States Parties conducting activities on the Moon”. The impact of this provision on facilities such as “space hotels” will be discussed below.

Nevertheless, the establishment of “space hotels” on the Moon does not imply the creation of ownership rights on the surface or the subsurface of the Moon [Art. 11(3)]. States “retain jurisdiction and control” on such facilities, although “the ownership of space vehicles, equipment, facilities, stations and installations shall not be affected by their presence on the Moon”.

b) *The inadequacy of the existing legal regime*

In the present state of Space Law, it seems that the creation of facilities for space tourism on the Moon and other celestial bodies are not adequately covered by the existing legal system.

Let us not forget that the Moon Agreement is a legal instrument that primarily seeks to regulate the “exploitation of natural resources of the Moon” – exploitation in the context of which States Parties to the agreement have undertaken to establish “an international regime, including appropriate procedures... as such exploitation is about to become feasible”, in accordance with art. 11(5). Consequently, it does not have the requisite

adequacy and flexibility to effectively regulate tourism activities on the surface of the Moon.

As a general comment, it can be stated that the “traditional” association of jurisdiction and control in Space with the State of registry does not seem adequate under the new conditions: Even if it were considered that the traditional, broad vision for “space objects” also covers facilities on celestial bodies such as a “space hotel”, any relevant acceptance of jurisdiction will not solve the issue of the legal status *on the surface* of the Moon. Consequently, any debate related to the range occupied by the “hotel” premises (only the installations *stricto sensu*? What about the surroundings?) can not have a satisfactory outcome. In this respect, reference is made, *mutatis mutandis*, to the thoughts and ideas, already presented in Part I, about the need of recognition of a “functional jurisdiction” over the part of the surface occupied by a facility on a celestial body as well as the possibility of creation of «*safety zones*» around such facilities. It is worth mentioning that art. 9(1), providing that States «*establishing a station shall use only that area which is required for the needs of the station*» (italics added) presents a ‘valuable vagueness’ that could shed some light on the problem. However, it will be a matter of interpretation.

Furthermore, under the current status of Space Law, securing a right of visit (art. XII of the OST) or free access (art. 9(2) of the Moon Agreement) does not seem consistent with the necessities of isolation and privacy of a tourism facility – for which it appears that current space law provisions do not provide some sort of legal protection that is considered necessary for the owner of the tourism enterprise. It is important, in this respect, what Freeland mentions: “Naturally, it will be important for the “owner” of such a structure to gain some legal protection in relation to the site of the hotel—perhaps akin to some form of a leasehold (or even freehold) title with which we are familiar on earth. Here the problem presents itself: In the absence of ‘sovereignty’, it is not possible under existing international space law to assert that any particular jurisdiction applies to the area on which the hotel is to be constructed. *Without a right of any state to exercise jurisdiction—that is to make (and enforce) laws—it is impossible to determine how such a title can be established*” (Italics added)<sup>66</sup>.

Finally, the prospect that it will be the states that will be entitled to exercise jurisdiction and control over a “space hotel”, in accordance with art. 12(1), appears as highly problematic.

## Conclusions

- 1) The right to construct facilities, installations and stations on the Moon and the other celestial bodies is explicitly founded in current Space Law.

<sup>66</sup> Freeland, “Up, Up...”, *op. cit.*, p. 13.

However, *de lege lata*, this right must be reconciled with the “non-appropriation” principle, according to which no territorial jurisdiction can be established on the surface (or subsurface) of the celestial bodies.

- 2) The Space treaties do not define “space objects”, although this term describes one of the fundamentals notions in Space Law. “Space objects” are linked with the act of “launching” and the State that registers them “retains” “jurisdiction and control” over them.
- 3) According to the prevailing academic viewpoint, installations, facilities and stations constitute “space objects”. This assumption, however, seems to reach its limits against objects landed or constructed on a celestial body. The origin (earthy, extra-terrestrial or a “mix”) of the construction materials can also be a critical factor. Consequently, a distinction between “space objects launched into Outer Space” and “objects landed or constructed on the Moon or the other celestial bodies” should be made.
- 4) Although, in the case of “objects launched into outer space”, ownership is not contrary to the principle of non-appropriation, the enjoyment of all rights conferred by ownership on objects landed or constructed on a celestial body is not possible without the recognition of some form of functional jurisdiction, also on this part of the surface occupied by said objects.
- 5) Outer Space treaties dating from the 60s and the 70s should be interpreted in the light of art. 32 of the 1969 Vienna Convention on the Law of Treaties, an option that can lead to an evolutive interpretation of Space Law provisions and to the taking into consideration of the principle of effectiveness (*effet utile*). These methods of interpretation appear to be more appropriate in the present state of development of space law and the consequent emergence of private activities in Outer Space. According to such an interpretative approach, the issue of the creation of «*safety zones*» around facilities on celestial bodies could be raised.
- 6) Regarding the legal status of space tourism facilities on the Moon and the other celestial bodies, the existing legal framework does not adequately cover the creation of “space hotels”. The traditional concept of jurisdiction in Space does not provide responses to the issue of the legal status *on the surface* of the Moon; besides, the right of visit to installations of other States as well as the right of free access to all areas of the Moon cannot promote isolation and privacy, inherent in any decent tourist services. Finally, the fact that jurisdiction, in the context of space activities, is exercised only by States, obviously does not promote the development of private activities such as the creation and the administration of a “space hotel”.
- 7) It is obvious that the existing Space Law Treaties, drafted in the initial phase of the development of human activities in Outer Space, did not (and could not) take into consideration the emerging space tourism industry. From 1950s to 1970s, the space community focused on space exploration and putting satellites into orbit. Consequently, the evolution of private

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activities in Space such as space tourism inevitably poses the question of the adequacy of the existing Outer Space Legal Regime in present<sup>67</sup>.

- 8) The existing regulations are proving somewhat "blurred" as to be applied to private activities that are developed rapidly in Outer Space. Therefore, there is an urgent need either for a dynamic interpretation of said rules and regulations or for a radical update of the current legal framework, in order to adequately regulate important human activities in Outer Space, such as space tourism.

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<sup>67</sup> As Gorove observes, "the establishment of human settlements on celestial bodies or elsewhere in outer space will certainly raise questions of the continued existence of ties on nationality and citizenship, the applicability of the laws of the home country to space settlers, the enforcement of law, including public administration, in other words the whole gamut of legislative, judicial and executive functions and their exercise in an exclusive manner or otherwise" - "Sovereignty...", *op. cit.*, p. 317-318.

