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OUTER SPACE LAW: RUSSIA – UNITED STATES COMMON CHALLENGES AND PERSPECTIVES

INTRODUCTION. *More than fifty years ago, on October 10th, 1967, the entry into force of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies ("the Outer Space Treaty") demonstrated the emergence of a new branch of international law: international outer space law ("ISL"). This article considers the contribution of the Russian Federation / U.S.S.R. and the United States and their leading lawyers and diplomats who were able to reach treaty cooperation even during the Cold War, and highlights the main historical legal steps on the way to signing of the Outer Space Treaty. The paper further focuses on the content of the Outer Space Treaty and other sources of ISL, and depicts approaches to interpretation of the treaty provisions with respect to actual legal challenges of space activities' development, in the context of diverse economic, political and technological factors; as well as on the role of the*

Outer Space Treaty in the progressive development of ISL.

MATERIALS AND METHODS. *The theoretical background of this research consists of works of distinguished scholars and specialists in ISL as well as materials of diverse colloquiums, workshops and conferences on ISL. The analytical framework includes the Outer Space Treaty, other relevant international treaties; relevant UN GA resolutions; the 2001 Cape Town Convention and the 2012 Space Protocol; UN, COPUOS (including its subcommittees), ITU and UNIDROIT documents; national space legislation; documents and proceedings of the UNISPACE-III. The research is based on methods such as historical research, formal logic, including analysis, synthesis, analogy and modeling, as well as systematic, comparative and interpretation.*

RESEARCH RESULTS. *Within the context of applicable principles and norms of the Outer Space Treaty, this article specifically provides an analysis of the related provisions of other sources of ISL, as well as unsettled legal issues such as 1) the international legal regime of natural resources of the Moon and other celestial bodies; 2) the use of the outer space solely for peaceful purposes; 3) the legal status of space tourists; 4) the legal regulation of commercial space activities involving a "foreign element" within the framework of the private international law and specifically private international space law ("PISL"); 5) the role of the 2001 Cape Town Convention and the 2012 Space Protocol in the context of international legal regulation of space activities, as well as, provided the entry into force of the Space Protocol, its role as the first specific international legal source of PISL; 6) International system of registration of interests in space assets as the third international system of registration related to space activities; 7) interpretation of Art. VIII of the Outer Space Treaty for the purposes of definition of law applicable to property rights over space objects located in the outer space; 8) "space object" and "space asset" as legal terms; 9) issues of international responsibility and liability, as well as extension of the scope of the concept of the "launching State", including a proposal on addition of a potential fifth category; 10) registration and control; 11) International Space Station in the relevant legal framework; 12) ways of reaching of due relevance of international legal consequences for states resulted from the change of private law relations to the factual "participation" of the involved states in the corresponding space activities.*

DISCUSSION AND CONCLUSIONS. *After discussing the issues noted above, this paper concludes that: 1) it is in the interest of the Russian Federation, the United States of America and other space powers to consider the role of the Outer Space Treaty as the basis for further progressive development of ISL and inter alia for orderly development of commercial space activities; 2) some burning issues of ISL, as well as other related legal challenges, can be resolved by an authentic interpretation of Outer Space Treaty provisions (e.g. by adding other specific protocols to it, or by means of a universal comprehensive convention on international space law); 3) it is important to take into account both the distinction of subject matter, as well as the relationship and interaction between diverse applicable sources and branches of international law and also relevant national legislation regarding the search for solutions of space related legal issues noted above. In sum, one needs to follow a comprehensive inclusive and coherent approach, involving science diplomacy.*

KEYWORDS: *the 1967 Outer Space Treaty, international space law, UN treaties on Outer Space, Outer Space; space object, international responsibility and liability, concept of the "launching state", international legal regime of natural resources of the Moon and other celestial bodies, space resources, International Space Station, commercial space activities, the 2001 Cape Town Convention, the 2012 Space Protocol, international registration system for space assets, international interest, space asset, private international space law, uniform comprehensive convention on international space law.*

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МЕЖДУНАРОДНОЕ КОСМИЧЕСКОЕ ПРАВО

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МЕЖДУНАРОДНОЕ КОСМИЧЕСКОЕ ПРАВО: ОБЩИЕ ДЛЯ РОССИИ И США ВЫЗОВЫ И ПЕРСПЕКТИВЫ

ВВЕДЕНИЕ. *Вступление в силу более 50 лет назад, 10 октября 1967 г., Договора о принципах деятельности государств по исследованию и использованию космического пространства, включая Луну и другие небесные тела (далее – Договор по космосу) обозначило становление новой отрасли международного права – международного космического права (далее – МКП). В настоящей статье рассмотрен вклад в создание и развитие МКП Советского Союза, а впоследствии – Российской Федерации, и Соединенных Штатов Америки, их ведущих юристов-международников и дипломатов, находивших способы договорного взаимодействия даже в период холодной войны, отмечены основные правовые шаги на пути к заключению Договора по космосу. Главное внимание в статье уделено содержанию этого Договора во взаимосвязи с другими источниками МКП, с учетом подходов к толкованию положений Договора и современных правовых вызовов в связи с развитием космической деятельности, в контексте ряда экономических, политических, технологических факторов, а также значению Договора для прогрессивного развития МКП.*

МАТЕРИАЛЫ И МЕТОДЫ. *Теоретическую основу исследования составили работы ведущих юристов-международников, специализирующихся в области МКП, а также материалы различных коллоквиумов, конференций и симпозиумов по МКП; аналитическую базу – Договор по космосу 1967 г., другие применимые международные договоры, соответствующие резолюции ГА ООН, Кейптаунская конвенция 2001 г. и Космический протокол 2012 г., документы ООН, Комитета ООН по космосу (в том числе его подкомитетов), МСЭ, ЮНИДРУА; национальное законодательство, регулирующее космическую деятельность; документы и материалы ЮНИСПЕЙС-III. Основными методами исследования являются: исторический метод, методы формальной логики, включая анализ, синтез, аналогию и моделирование, а также системный, сравнительно-правовой методы и метод толкования.*

РЕЗУЛЬТАТЫ ИССЛЕДОВАНИЯ. *В контексте применимых принципов и норм Договора по космосу 1967 г. в настоящей статье представлены результаты анализа других источников МКП, а также ряда нерешенных правовых вопросов, таких как 1) международно-правовой режим природных ресурсов Луны и других небесных тел; 2) использование космического пространства исключительно в мирных целях; 3) правовой статус космических туристов; 4) правовое регулирование коммерческой космической деятельности, осложненной «иностранным элементом», в рамках международного частного права и, конкретно, международного космического частного права («МКЧП»); 5) значение Кейптаунской конвенции 2001 г. и Космического протокола 2012 г. в контексте международно-правового регулирования космической деятельности, а так же, при условии вступления в силу Космического протокола, его роль как первого специального международно-правового источника МКЧП; 6) международная система регистрации гарантий в отношений космических средств как третья международная система регистрации в области космической деятельности; 7) толкование ст. VIII Договора по космосу для целей определения применимого права в отношении вещных прав на космические объекты в космосе; 8) «космический объект» и «космическое средство» как правовые понятия; 9) вопросы международной ответственности и расширение действия концепции «запускающее государство», включая предложение о дополнении пятой категорией; 10) вопросы регистрации, юрисдикции и контроля; 11) международная космическая станция и применимая правовая среда; 12) пути достижения «соответствия» международно-правовых последствий для государств в результате изменения частно-правовых отношений реальному участию «задействованных» государств в определённых видах космической деятельности.*

ОБСУЖДЕНИЕ И ВЫВОДЫ. *В результате проведенного анализа вопросов, отмеченных выше, сформулированы следующие выводы: 1) в интересах Российской Федерации, Соединенных Штатов Америки, других космических держав считать, что Договор по космосу 1967 г. является основой для дальнейшего прогрессивного развития МКП и inter alia для упорядоченного развития коммерческой космической деятельности; 2) некоторые безотлагательные вопросы МКП могли бы быть исследованы и решены посредством аутентичного толкования положений Договора по космосу (например, путем принятия к нему соответствующих протоколов или посредством разработки единой всеобъемлющей конвенции по международному космическому праву); 3) в поиске решений обозначенных правовых вопросов космической деятельности необходимо принимать во внимание как разделение по предмету регулирования, так и соотношение и взаимодействие между применимыми источниками международного права и его отраслями, а также применимым национальным правом, т.е. необходимо опираться на комплексный, инклюзивный, целостный подход, вовлекающий в себя научную дипломатию.*

КЛЮЧЕВЫЕ СЛОВА: *Договор по космосу 1967 г., международное космическое право, договоры ООН по космосу, космическое пространство, космический объект, международная ответственность, концепция «запускающее государство», международно-правовой режим природных ресурсов Луны и других небесных тел, космические ресурсы, международная космическая станция, коммерческая космическая деятельность, Кейптаунская конвенция 2001 г., Космический протокол 2012 г., международная система регистрации гарантий в отношении космических средств, международная гарантия, космическое средство, международное космическое частное право, единая всеобъемлющая конвенция по международному космическому праву*

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In 2017 the international community celebrated the 50th anniversary of the *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies of 1967* (hereafter "The Outer Space Treaty", "OST" or "1967 Treaty"). The importance of the Outer Space Treaty as the fundamental source of the international space law ("ISL") cannot be underestimated, and its role *"as the cornerstone of the international legal regime governing outer space activities"*[1] was enshrined in the Draft declaration on the fiftieth anniversary of the Outer Space Treaty[2] prepared in 2017 by the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space ("COPUOS"). Moreover, it has been suggested that this Treaty *"belongs to the important law—making treaties of the whole system of contemporary international law"* [Kopal 2006:9].

An extensive legal analysis of the Outer Space Treaty, including in its historical context, can be found in the literature published by leading scholars[3] who were directly involved in the drafting of the international agreements regulating activities of States in Outer Space[4].

This paper will focus on the content of the 1967 Treaty, and approaches to contemporary interpretation of its provisions (in view of the present-day legal challenges posed by the development of space activities in the context of current economic, political, technological factors) as well as on the progressive development of ISL.

First and foremost, it is necessary to mention the *Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space of 1963* ("The 1963 Declaration")[5], the draft of which was submitted by the USSR to the first session of the UN COPUOS Legal Subcommittee in 1962 [Kopal 2008:2]. The 1963 Declaration provided the outlines for the Outer Space Treaty.

The USSR proposed on 30 May 1966 to include in the agenda of the XXI session of the UN General Assembly a special item – on the "Conclusion of an international agreement on legal principles governing the activities of States in the exploration and conquest of the Moon and other celestial bodies"[6] [Kolosov 2014:25]. After diplomatic meetings between the US and the USSR these two leading space powers submitted on 16 June 1966 the Draft Treaty Governing the Exploration of the Moon and Other Celestial Bodies (prepared by the United States)[7] as well as the Draft Treaty on Principles Governing the Activities of States in Exploration and Use of Outer Space, the Moon and Other Celestial Bodies (prepared by the USSR)[8] [Kopal 2008:3]. It is notable to underline the significance of legal science in this respect: while the same might be said of the US draft, scholars indicate that the delegation of the Soviet Union used material from the doctoral theses of Professors Zhukov and Kolosov in developing the draft Treaty [Kolosov, Yuzbashyan 2015:14]. To fulfill the expectations of the negotiations' participants at the XXI session of the UN General Assembly ("UN GA"), on 5 October

[1] *Hereinafter emphasis added*.

[2] See: Committee on the Peaceful Uses of Outer Space Sixtieth session Vienna, 7–16 June 2017. Draft declaration on the fiftieth anniversary of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. Annex. – *UN Doc. A/AC.105/L.311*. P. 14. URL: http://www.unoosa.org/res/oosadoc/data/documents/2017/aac_105l/aac_105l_311_0_html/AC105_C1_L311E.pdf (accessed date: 04.03.2018).

[3] See, e. g.: [Cheng 1968:533–645; Jankowitsch 2015:1–6; Kolosov 2014: 25–34; Kopal 2008:1–10].

[4] On the personal contribution of the lawyers to the formation and development of ISL see, e. g.: [Doyle 2011:1–24; Kolosov, Yuzbashyan 2015:13–17; Zhukov 2008:195–201].

[5] Adopted by the UN General Assembly resolution 1962 (XVIII) of 13 December 1963.

[6] USSR: Request for the Inclusion of an item in the provisional agenda of the twenty-first session. – *UN Doc. A/6341*. URL: http://www.unoosa.org/pdf/gadocs/A_6341E.pdf (accessed date: 04.03.2018).

[7] Draft Treaty Governing the Exploration of the Moon and other Celestial Bodies. – *UN Doc. A/AC.105/32*. URL: http://www.unoosa.org/pdf/reports/ac105/AC105_032_and_AC105_032corr1E.pdf (accessed date: 04.03.2018).

[8] Draft Treaty Governing the Activities of States in the Exploration and Use of Outer Space, the Moon and other Celestial Bodies. – *UN Doc. A/6352*. URL: http://www.unoosa.org/pdf/gadocs/A_6352E.pdf (accessed date: 04.03.2018).

1966 the Soviet delegation submitted for consideration a revised draft of the Treaty[9] which reflected the provisions of the American draft [Kolosov 2014:27]. P.D. Platonov, Deputy Representative of the USSR to the UN, O.N. Khlestov, Head of Treaties and Legal Affairs of the Ministry of Foreign Affairs Department of the USSR and Yu.M. Rybakov, his Deputy, as well as A. Goldberg, Ambassador Extraordinary and Plenipotentiary of the USA, took part in bilateral negotiations between the two countries. Prof. Kolosov's creative contribution to the development of all of the further treaties and declarations on outer space, as well as his participation in the activity of the UN COPUOS Legal Subcommittee's work was not only acknowledged by Prof. Zhukov [Zhukov 2008:7, 10], but also by Dr. Nandasiri Jasentuliyana, former Director of the UN Office for Outer Space Affairs ("UNOOSA") and Dr. Peter Jankowitsch, the current President of the International Academy of Astronautics[10].

A number of complicated issues were reconciled only during the final stages of the negotiations by informal consultations between the representatives of the USA and USSR as the major space powers with the participation of United Nations Secretary-General U. Thant, COPUOS Chairman, Kurt Waldheim of Austria, and the Chairman of the COPUOS Legal Subcommittee, Manfred Lachs of Poland [Kopal 2008:3].

The text of the treaty, as agreed by the USA and USSR, was unanimously accepted by the Member States of the United Nations on 19 December 1966[11]. On 27 January 1967 the Outer Space Treaty was opened for signature in London (United Kingdom), Moscow (USSR) and Washington D.C. (USA), and entered into force on 10 October of the same year. The Outer Space Treaty signified the creation of an entirely new branch of international law – ISL [Kolosov 2014:32; Jankowitsch 2015:5]. The recognition of the importance of the Outer Space Treaty by the international community as a whole was later confirmed by UN GA Resolution 54/68 of 6 December 1999, proclaiming the period of 4th of October (the day the USSR launched the first artificial Earth satellite, Sputnik 1, in 1957) to 10th of October (entry into force of the 1967 Outer Space Treaty) every year as the *World Space Week*. Both the Declaration on the Fiftieth Anniversary of Human Space Flight and the Fiftieth Anniversary of the Committee on the Peaceful Uses of Outer Space Resolution adopted by the UN GA Resolution 66/71 on 9 December 2011 emphasize that the Outer Space Treaty establishes the fundamental principles of ISL[12]. Today the Outer Space Treaty is one that received widespread support by the UN Member States, and as at March 2018 it brings together 106 States Parties, including Russian Federation and United States[13]. It is therefore high time now to remind ourselves of the reasons of such a wide international recognition and to consider the paths of further progressive development of ISL, as well as to analyze those legal issues that remain to be addressed.

The Outer Space Treaty establishes fundamental principles of ISL. Outer space, the Moon and other celestial bodies[14], as well as the activities (only for peaceful purposes) of States within this common space, constitute the object of the Treaty [Kolosov 2014:28]. However, in drafting the OST it turned out to be impossible to reach consensus (by which all decisions of the UN COPUOS and its subcommittees have been made since 1962), as how to define the terms "outer space", "celestial bodies", "space object" and many others. Hence the *definition and delimitation of outer space* is still an open issue[15]. As it was noted: "on one hand, there is the principle of indivisibility of the outer space, on the other – the principle of State sovereignty over air space", and accordingly "it is difficult" to consider the status of these spaces

[10] Prof. Dr. Yuri M. Kolosov (1934–2015). Memoriam. P. 2. URL: http://iislweb.org/memoriam/obit_kolosov.pdf (accessed date: 04.03.2018). See also: URL: http://www.iafastro.org/biographie/peter-jankowitsch/ (accessed date: 04.03.2018).

[11] See: UN GA Resolution 2222(XXI) from 19 December 1966 r. URL: https://documents-dds-ny.un.org/doc/RESOLUTION/GEN/NR0/005/25/IMG/NR000525.pdf?OpenElement (accessed date: 04.03.2018).

[12] See p. 6 of the Declaration in the Annex to the UN GA Resolution 66/71 from 9 Dec. 2011. International cooperation in the peaceful uses of outer space. – *UN Doc. A/RES/66/71*. URL: https://documents-dds-ny.un.org/doc/UNDOC/GEN/N11/463/08/PDF/N1146308.pdf?OpenElement (accessed date: 04.03.2018).

[13] For actual status of the Outer Space Treaty see: URL: https://treaties.un.org/pages/showDetails.aspx?objid=0800000280128cbd (accessed date: 04.03.2018).

[14] Further, unless otherwise specified, 'outer space' is used to mean 'outer space, including the Moon and other celestial bodies', as is defined in the 1967 Treaty

[15] See: Committee on the Peaceful Uses of Outer Space, Sixtieth session, Vienna, 7–16 June 2017. Report of the Legal Subcommittee on its fifty-sixth session, held in Vienna from 27 March to 7 April 2017. Annex II. Report of the Chair of the Working Group on the Definition and Delimitation of Outer Space. – *UN Doc. A/AC.105/1122*. P. 52–53. URL: http://www.unoosa.org/oosa/oosadoc/data/documents/2017/aac.105/aac.1051122_0.html (accessed date: 04.03.2018).

without defining its boundaries between them [Kolosov 2014:61, 71]. The drastic difference in the legal regimes of outer space and air space is that the first is beyond sovereignty while the second is divided into national air space under sovereignty of a relevant State and international air space[16]. There is no precise natural boundary between air space and outer space, so it has been suggested that a legal boundary be established at an altitude not exceeding 100–110 kilometers above sea level (as proposed by the USSR in 1979, including the proposal on retaining of the right of a space object of any State to pass over the territory of other States at lower altitudes for the purpose of reaching orbit or returning to Earth[17]). This suggested legal boundary was supported by the Russian Federation[18].

It is noted that "the architects of the OST avoided making an explicit and perfect definition of the legal status of the new area" [Kopal 2003:13]; instead they agreed on the purpose and guidelines of space activities by establishing, in particular, that *"the exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development and shall be the province of all mankind"*, and that *"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 there shall be free access to all areas of celestial bodies"*, and *"there shall be freedom of scientific investigation in outer space…"* and "*States shall facilitate and encourage international cooperation*[19] *in such investigation*" (Article I of the Outer Space Treaty).

In furtherance of these principles on 13 December 1996 the UN GA (by Resolution 51/122) adopted the *"Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries"*. As noted, the references to the necessity to take "into particular account the needs of developing countries" have exerted "a strong influence on the content of international space law and have given an impetus to the further development of the notion of solidarity in international law generally" [Vereshchetin 2010:44]. Some scholars note that the OST does not establish the freedom of all kinds of use of outer space, but that it only envisages that the outer space shall be free for exploration and use, and that there shall be freedom of scientific investigation in outer space. For example, according to Prof. Kolosov "there is no freedom of use of outer space but rather the freedoms of outer space that include *the freedom of launch of space* objects, the freedom to choose an orbit" etc., however "these freedoms are limited by purposes – for peaceful purposes, for scientific investigation, etc." [Kolosov 1979:13].

Article II of the OST provides: *"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"*. This principle establishes an important limitation on activities of States in outer space. It is also suggested that this provision of the OST has become part of customary law given that there have not been any protests against it since its entry into force. Article II shall be interpreted with due regard to other provisions of the OST, in particular, the one established by Article I: the "exploration and use of outer space… shall be *the province of all mankind*"; the outer space "*shall be free for exploration and use by all States*". However, in contrast to the *UN Convention on the Law of the Sea*, 1982 ("UNCLOS"; Part XI of UNCLOS provides for the rigid legal regime of the deep seabed "Area" – beyond the continental shelf – as "the common heritage of mankind") the OST does not establish a clear legal regime of such "province of all mankind".

The *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies ("the Moon Agreement"),* 1979[20], also provides – like the OST – that the *"exploration and use of the Moon shall be the province of all mankind"* (Art. 4(1)) but also does not define what it exactly means. Even more doubts are

[16] For more on the need of definition and delimitation of outer space and the differences between international space law and international air law see, e. g.: [Kolosov 2000:30–32].

[17] *Mezhdunarodnoe kosmicheskoe pravo.* Pod red. G.P. Zhukova i Yu.M. Kolosova. [International Space Law. Ed by G.P. Zhukov and Y.M. Kolosov]. Moscow: Mezhdunar. otnosheniya Publ. 1999. P. 60. (In Russ.).

[18] For more on this issue see: Committee on the Peaceful Uses of Outer Space Legal Subcommittee, Fifty-third session Vienna, 24 March – 4 April 2014. Item 7 of the provisional agenda. Matters relating to the definition and delimitation of outer space: replies of the Russian Federation. – *UN Doc. A/AC.105/C.2/2014/CRP.6.* P. 52–53. URL: http://www.unoosa.org/pdf/limited/c2/AC105_C2_2014_CRP06E.pdf (accessed date: 04.03.2018).

[19] For more on legal aspects of international cooperation in this field see: [Vereshchetin 1977].

[20] Opened for signature on 18 December 1979 in New York, entered into force on 11 July 1984. For more on the history of drafting the Moon Agreement see: [Kolosov, Yuzbashyan 2015:16].

added by Art. 11(1) of the Moon Agreement, which uses the different term – "the heritage" regime, not "the province": "*The Moon and its natural resources are the common heritage of mankind*", again without providing rules for application of this legal regime. Though both the US and the Russian Federation are not Parties to the Moon Agreement[21], analysis of this treaty might be important at least for the reason of understanding of the less detailed corresponding provisions of the Outer Space Treaty.

Taking into account the actual trends in space activities' development, as well as the growing interest of the international community at both governmental and non-governmental levels to use natural resources in outer space, it is important to note that *the Outer Space Treaty* defines the main elements of the legal regime of the outer space, including the Moon and other celestial bodies, but does not establish specific rules in relation to the legal regime of the natural resources of celestial bodies, nor does it prohibit potential use of such resources. The 1979 *Moon Agreement*, adopted in furtherance of specific provisions of the Outer Space Treaty, provided for the establishment of an "international regime, including appropriate procedures, to govern the exploitation of the natural resources of the Moon as such exploitation is about to become feasible" under Article 11(5). However, the Moon Agreement has not received great support, in particular because of the proclamation of the Moon and its natural resources as *the common heritage of mankind* (Article 11(1)) and because of potential difficulties in balancing the interests of all of the involved parties. For example, different interpretations may be suggested for the words in Article 11(7): "an equitable sharing by all States Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either directly or indirectly to the exploration of the Moon, shall be given special consideration". Indeed, none of the major space powers are Parties to the 1979 Agreement. In this context *it would be appropriate to consider a contemporary concept of the international regime of natural resources of the Moon and other celestial bodies which might be acceptable both to USA and the Russian Federation, as well as to other outer space powers in order to* avoid related potential future international disputes. This becomes even more important in view of the recent adoption of *the US Space Resource Exploration and Utilization Act of 2015 (US Act of 2015)*[22] and the *2017 Luxembourg Law on Exploration and Use of Space Resources*[23]. Both of these National Laws provide for property rights of their nationals relating to minerals and other natural resources extracted on celestial bodies. Granting of such rights within National Laws shall be exercised "in accordance with international obligations" of the United States and Luxembourg correspondingly[24]. As was noted above, the OST does not prohibit *expressis verbis* the use by States of natural resources of the Moon and other celestial bodies. The 1979 Moon Agreement provides that States "may pursue their activities in the exploration and use of the Moon anywhere on or below its surface" (Art. 8 (1)). Neither the Moon "nor any part thereof or natural resources in place, shall become property of any State", organization or "of any natural person" (Art. 11(3)[25]). The US Act does not provide for property relating to natural resources *in situ and, moreover, it contains a disclaimer of extraterrestrial sovereignty:* "It is the sense of Congress that by the enactment of this Act, the United States does not thereby assert sovereignty or sovereign or exclusive rights or jurisdiction over, or the ownership of, any celestial body"[26]; it provides for property rights relating to minerals *already extracted*.

[21] 18 States Parties as of March 2018. For the actual status of the Moon Agreement see: URL: https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXIV-2&chapter=24&clang=_en (accessed date: 04.03.2018).

[22] Title IV 'Space Resource Exploration and Utilization Act of 2015' of the Public Law 114-90. November 25, 2015. – *U.S. Commercial Space Launch Competitiveness Act.* URL: www.congress.gov/bill/114th-congress/house-bill/2262/text> (accessed date: 04.03.2015).

[23] Loi du 20 juillet 2017 sur l'exploration et l'utilisation des ressources de l'espace. URL: http://legilux.public.lu/eli/etat/leg/loi/2017/07/20/a674/jo (accessed date: 23.12.2017).

[24] See: Supra, n. 22. Sec. 51303. Asteroid resource and space resource rights. "A United States citizen engaged in commercial recovery of an asteroid resource or a space resource under this chapter shall be entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell the asteroid resource or space resource obtained in accordance with applicable law, including *the international obligations of the United States*". Also see: Supra, n. 22: Art. 1er "Les ressources de l'espace sont susceptibles d'appropriation"; Art. 2. (3) "L'exploitant agréé ne peut exercer l'activité visée au paragraphe 1er qu'en conformité *avec* les conditions de son agrément et *les obligations internationales du Luxembourg" (emphasis added by authors)*.

[25] For more on the interpretation of the Article 11(3) of the Moon Agreement in the context of the claims to own the Moon and other celestial bodies by private parties see: [Vylegzhanin, Yuzbashyan 2011:19].

[26] See: Supra, n. 22. Sec. 403.

In view of the mentioned disclaimer of extraterrestrial sovereignty that corresponds to the Article II of the Outer Space Treaty, as well as the Article 11(3) of the Moon Agreement, it is of note that in the US, for example, the "Lunar Embassy" founded by Dennis Hope still operates. In 1980 Mr. Hope's claim for the entire lunar surface, as well as the surface of all the other eight planets of the solar system and their moons (except Earth and the Sun) was registered at the local US Governmental Office for claim registries, moreover, Mr. Hope received a Copyright Registration Certificate from the US Government. Since then the "Lunar Embassy" has sold more than 611 million acres of land on the Moon as well as properties on Mars, Venus, Mercury and IO[27].

Operations of the "Lunar Embassy" – at least those which relate to claiming properties on celestial bodies – seem to contradict not only the ISL principle of non-appropriation of the Moon and other celestial bodies but also the relevant provisions of the US Act of 2015 cited above[28]. As under Article VI of the OST the States shall bear international responsibility for national activities in outer space and f*or assuring that national activities are carried out in conformity with the Treaty provisions,* while the activities of non-governmental entities in outer space shall require authorization and continuing supervision by the appropriate State Party to the Treaty. It is of note that in case private entities claim property rights to the Moon and other celestial bodies or parts thereof[29] the States shall take the necessary measures (e.g. withdrawal of a license/authorization etc.) to ensure that the national space activities are exercised in accordance with the related international obligations of States. In the case of the "Lunar Embassy" besides the US governmental concerns, there can be fraud claims from the misled buyers of the "services" of this company.

Regarding the legal regime of natural resources of the Moon and other celestial bodies, in the absence of a direct prohibition, there may be a possible interpretation that *the "extracted minerals"* (*as contrasted to* "natural resources *in situ* – "in place"[30]) are not subject to the principle of non-appropriation of the Moon and other celestial bodies. Keeping in mind that ISL does not provide for a specific international legal regime of natural resources and extracted minerals of the Moon and other celestial bodies, one might suggest that the term "international obligations" (as provided in the above mentioned National Laws) cannot be clearly understood now. Of course, "international obligations" in this context include the obligations under ISL and general international law. Yet the specific international obligations of States which relate to the exploration and use of natural resources of the Moon and other celestial bodies, being the core of the issue, need to be specified under a special regime. Taking into account the fact that the natural resources the Moon and other celestial bodies constitute an undisputable object of ISL, it is therefore important to agree on the relevant international legal framework[31].

One of the fundamental principles of the ISL established by the Article III of the OST provides that the outer space activities shall be carried out *"in accordance with international law,* including the Charter of the United Nations, *in the interest of maintaining international peace and security and promoting international cooperation and understanding*". As noted, "this is but another affirmation of the well-established tenet of international law that human activities anywhere beyond national jurisdiction are governed by international law" [Vereshchetin 2010: 43]. The principle of international cooperation has received great support, *inter alia,* within the framework of the International Space Station, the European Space Agency, and the international COSPAS-SARSAT program, among others. It has even survived after the privatization of the international satellite communication organizations (INTERSPUTNIK, INTELSAT-ITSO, INMARSAT-IMSO, etc.)[32].

The elements of the legal regime of outer space, the Moon and other celestial bodies, established spe-

[27] See: Lunar Embassy Web-Site. URL: https://lunarembassy.com/head-cheese/ (accessed date: 04.03.2018).

[28] See: Supra, n. 26.

[29] See more on this issue: Statement of the Board of Directors of the International Institute of Space Law (IISL) on Claims to Property Rights Regarding the Moon and Other Celestial Bodies (2004). P. 2. URL: https://www.iislweb.org/docs/IISL_Outer_Space_Treaty_Statement.pdf (accessed date: 04.03.2018).

[30] Appropriation of the natural resources *in situ* is prohibited by Article 11 para. 3 of the Moon Agreement,1979. For different legal regime of natural resources *in situ* and extracted minerals and the legal meaning of mineral resources of the Area under UNCLOS as the "common heritage of mankind" see: Vylegzhanin A.N. Mezhdunarodno-pravovye osnovy prirodoresursnoi deyatel'nosti gosudarstv v Mirovom okeane. Diss.... d-ra yuridicheskikh nauk [International Legal Basics of Natural Resources Activity of States in the World Ocean. Doctorship Dissertation]. Moscow. 2002. P. 11. (In Russ.).

[31] For more on this issue see: [Yuzbashyan 2017b:71–86].

[32] For more on the actual legal trends in the development of international cooperation in this field see: [Kolosov, Yuzbashyan 2015:17–30].

cifically by Article IV of the OST (and other relevant treaty provisions) are essential in characterizing it also *"as an arms control treaty"* [Schrogl 2016:2]. *To be more precise, outer space is a partially demilitarized zone:* in accordance with the first indent of Article IV of the OST *"States Parties to the Treaty undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner"*. It should be noted that even before the OST, *the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water,* prohibited any nuclear weapon test explosions. *Interpretation of Article IV excludes from the scope of this prohibition suborbital* (that is, not completing at least one full orbit around the Earth) *passage through the outer space of objects carrying nuclear weapons, such as intercontinental strategic missiles*[33], *as well as deployment in space of objects carrying conventional weapons.* The legal regime of the Moon and other celestial bodies provides for their *total demilitarization and complete neutralization – they shall be used exclusively for peaceful purposes;* in accordance with OST Article IV *"the establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on celestial bodies shall be forbidden"*: this means, as suggested, that celestial bodies shall not be used even for non-aggressive military purposes, e. g. in self-defense[34]. However, it should also be noted that under the same provision, the use of military personnel for scientific research or for any other peaceful purposes as well as the use of any equipment or facility necessary for the peaceful exploration of the Moon and other celestial bodies are not prohibited. In 1962, at the fifth IISL Colloquium on the Law of Outer Space, Professor Korovin emphasized *the critical link of demilitarization of outer space with the establishment of the general and complete disarmament,* and Professor Kolosov further added in 1968 that neutralization of outer space is possible only under these conditions [Kolosov: 2014:55–56, 58]. These issues remain relevant today, and although at the time of conclusion of OST the established legal regime was a significant step forward, the danger of an arms race in outer space has not been stopped [Kopal 2000:14]. Similarly, Professor Galloway emphasizes the necessity to broaden the scope of disarmament [Galloway 2000:25].

The *Draft Treaty on Prevention of the Placement of Weapons in Outer Space and the Threat of Force Against Outer Space Objects* was presented in 2008 by the Russian Federation and the People's Republic of China (PRC) for consideration at the Conference on Disarmament, but this document and earlier drafts of such a Treaty have not yet been properly considered[35]. Regarding this issue, it is noted that the decisive prerequisite for the achievement of the objective of a treaty prohibition on the placement of weapons in outer space is the existence of a political will of the leading participants of space activities[36]. According to some scholars, the 2006 U.S. National Space Policy[37] was viewed as allowing the USA to place certain types of weapons in outer space. [Vereshchetin 2010:47]. Prof. Jankowitsch writes that the USA rejects any new multilateral treaty which might limit US activities in the outer space because the 2006 National Space Policy provides that 'the United States will oppose the development of new legal regimes or other restrictions that seek to prohibit or limit US access to or use of Outer Space'[38] [Jankowitsch 2015: 14]. One of the latest examples of avoiding the necessity of negotiating a new international legal regime is the adoption of the US Act of 2015, as noted above. However, this law has a positive effect, probably the main one, consisting of the drawing attention of the international community on the urgent need for specifying the international legal regime of natural resources of the Moon and other celestial bodies.

[33] Neither were prohibited suborbital flights of intercontinental ballistic missiles in the UN GA Resolution 1884 (XVIII) "Question of general and complete disarmament" from 17 October 1963. URL: http://www.un-documents.net/a18r1884.htm (accessed date: 04.03.2018).

[34] *Mezhdunarodnoe pravo.* Pod red. Yu.M. Kolosova, E.S. Krivchikovoi [International Law. Ed. by Yuri M. Kolosov, E.S. Krivchikova]. Moscow: Mezhdunar. otnosheniya Publ. 2003. P. 584. (In Russ.).

[35] Conference on Disarmament. Letter Dated 12 February 2008 from the Permanent Representative of the Russian Federation and the Permanent Representative of China. – *UN Doc. CD/1839.* URL: http://undocs.org/CD/1839 (accessed date: 04.03.2018).

[36] Lysenko M. N. Pravovye problemy i perspektivy zapreshcheniya oruzhiya v kosmose. Avtoref. diss. ... kand. yurid. nauk [Legal Problems and Perspectives on the Prohibition of Weapons in Outer Space. Abstract of the Cand. Sci. Thesis]. Moscow: 2006. P. 28. (In Russ.).

[37] National Space Policy of the United States of America of 31 August 2006. URL: https://history.nasa.gov/ostp _space_ policy06.pdf (accessed date: 04.03.2018).

[38] National Space Policy of the United States of America of 31 August 2006. Section 2. Principles. Para. 7.

In the context of having national outer space law being more rapidly developing then relevant ISL it is important to safeguard international legal restrictions on military use of outer space, including the rules of the ISL on using outer space *"for peaceful purposes"*. A former Judge of the International Court of Justice notes with regret that the term "peaceful" is interpreted as "non-aggressive" instead of the necessary referral to "non-military"; in this context the Judge recalls the provision of Article 2 (4) of the UN Charter prohibiting not only use but also the threat of force [Koroma 2011:6, 8]. The necessity of definition of effective "diplomatic approaches in establishing a consensus on peaceful uses and on how to enforce, or at least to encourage application of the rules and ensure compliance" has also been noted [Schrogl 2016:6–7]. Hence there is an incontestable need to secure the use of outer space for peaceful purposes. Nonetheless, the question is whether this is achievable in the contemporary political environment.

Article V of OST envisages the rendering by States of all possible assistance to astronauts considered as *"envoys of mankind in outer space* […] in the event of accident, distress, or emergency landing on the territory of another State Party or on the high seas", as well as securing safety and prompt return to the State of registry of their space vehicle; the return of space objects being regulated under Article VIII of the Outer Space Treaty. Additionally, in accordance with Article V, the States "shall immediately inform the other States Parties or the UN Secretary-General of any phenomena they discover in outer space, […] which could constitute a danger to the life or health of astronauts". *The 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space* ("Rescue Agreement")[39] was adopted in support of the abovementioned provisions of OST. It should be noted that neither the OST, nor the Rescue Agreement provides for a definition of the terms "astronaut" and "space object". In relation to the term "space object", there is a clause in Article I (d) of *the 1972 Convention on International Liability for Damage Caused by Space* Objects ("Liability Convention")[40] and Article I (b) of *the 1975 Convention on Registration of Objects Launched into Outer Space* ("Registration Convention")[41]. In this context *the term "space object" includes component parts of a space object "as well as its launch vehicle and parts thereof"*.

In view of the development of commercial activities in Outer Space, in particular of s*pace tourism,* of particular relevance is the issue of the possible application of the Outer Space Treaty provisions (specifically the ones envisaging all possible assistance to astronauts) to space tourists. As suggested, the term *"personnel"* (as used in the 1968 Rescue Agreement) does not fully apply to passengers of a space object [Cheng 1997:458], and it is obvious that the relevant provisions were drafted keeping in mind the professional character of activities of humans going into outer space. However, as noted, *"it would make sense to equate space tourist vehicle crew,* certainly the flight deck crew but possibly also any service crew on board, to *"personnel of a spacecraft", hence endowing them with the rights enunciated by the Rescue Agreement"* [von der Dunk 2007:20]. Moreover, it is interesting to note that the legal problems regarding manned space flights in general as well as of diverse categories of space flight participants (and not necessarily directly related to space tourism), were considered by lawyers in the early 1990s, when the scholars from the Center of Space Law and Policy of the University of Mississippi (USA), the Institute of State and Law of the USSR Academy of Sciences and the Institute of Air and Space Law of the University of Cologne (Germany) prepared a draft Convention on Manned Space Flights [Vereshchetin et al. 1991:76–81]. According to Article VI (6) of the draft Convention (that is similar to Article 10(1) of the Moon Agreement), States shall regard any person in outer space as an astronaut within the meaning of Article V of OST and as part of the personnel of a spacecraft within the meaning of Article VIII of OST and the Rescue Agreement. Under this provision (which deals with "any person in outer space"), space tourists could also be considered as astronauts. However, this Convention was not adopted. Nevertheless, even if space tourists do not fall under the legal status of astronauts, it is suggested that the "general humanitarian duties to assist human beings in distress derive – apart from moral and ethical considerations – from customary rules of general international law" [von der Dunk 2007:20]. It should also be noted that the development of space tourism also involves other legal issues such as responsibility, liability, insurance,

[39] Opened for signature on 22 April 1968 in London, Moscow and Washington, D.C.; entered into force on 3 December 1968.

[40] Opened for signature on 29 March 1972 in London, Moscow and Washington, D.C.; entered into force on 1 September 1972.

[41] Opened for signature 14 January 1975 in New York; entered into force on 15 September 1976.

certification, civil and penal jurisdiction, export of information, re-export of equipment, etc. Until now, only the United States have adopted at the national level relevant legislation regulating the status of space tourists[42], in which space tourists fall under the category of "spaceflight participants".

As space technology further develops, and along with it private space activities ramp up, it is also important to note that other issues such as property rights, intellectual property rights, liability of non-governmental entities, or insurance will require adequate regulation. These new issues have already resulted, although to a limited degree, in the introduction of certain elements of private international law into new space regimes such as the *Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Space Assets* (2012 "Space Protocol"[43] *and 2001 "Cape Town Convention*[44], correspondingly), drafted under auspices of the International Institute for the Unification of Private Law ("UNIDROIT"), and *the Permanent Court of Arbitration Rules on Outer Space Disputes*[45]. Some authors, in this context, have argued for the creation of a separate branch – *international space private law* [Jankowitsch 2015:26][46]. While noting that "it would be wrong or at least premature to claim the existence of a distinct private international space law" [Vereshchetin 2010:44], it is appropriate also to note that some authors have already suggested a definition of *private international space law as a set of substantive legal rules and rules of conflict of laws governing space-related property and personal non-property relations involving a 'foreign element',* and consider it as a branch of law under formation that is now at its nascent stage of development and that might be further able to take into account most effectively both the private legal nature of commercial space activities and the distinctive features of the prevailing norms and principles of ISL [Yuzbashyan 2011:70–83][47]. The OST neither provides for comprehensive regulation of private outer space activities nor prohibits such activities.

In view of the development of commercial space activities, special attention should be drawn to the Space Protocol to the Cape Town Convention[48], which might be qualified as the first special instrument of private international law in the field of outer space activities. It regulates the *transfer of rights on space assets* in satisfaction of secured obligations. In accordance with Article 6 of the Cape Town Convention, the Convention and the Protocol shall be read and interpreted together as a single instrument and, if there were to be any inconsistency between the Convention and the Protocol, the Protocol shall prevail. With the objective of facilitating asset-based financing at the international level across the national borders of States, the Convention and its Protocol provide the legal basis for the establishment of a sound international legal regime for security, title-retention and leasing interests, and specifically the creation of a new right *in rem* of international character – the "international interest", in relation to space assets.

The asset-based financing that underlies the international legal framework under the Space Protocol to the Cape Town Convention in the event of debtor's default envisages the enforcement of the creditor's rights against the secured assets. In such a case, the application of the traditional *lex rei sitae* could be complicated with the location of a space asset in outer space. However, such relations do not remain beyond any legal regulation: according to Article VIII of the Outer Space Treaty, "ownership of objects launched into outer space, including objects landed or constructed on a celestial body, and of their component

[42] Public Law 108–492–DEC. 23, 2004. Commercial Space Launch Amendments Act of 2004. URL: www.congress.gov/bill/108th-congress/house-bill/5382/text (accessed date: 04.03.2018); DoT. FAA. 14 CFR Parts 401, 415, 431, 435, 440 and 460 FAA Human Space Flight Requirements for Crew and Space Flight Participants. URL: www.gpo.gov/fdsys/pkg/FR-2006-12-15/pdf/E6-21193.pdf (accessed date: 04.03.2018).

[43] The Space Protocol was opened to signature at the Berlin Diplomatic Conference on 9 March 2012 and is not yet in force. For the Status of the Protocol see: URL: http://www.unidroit.org/status-2012-space (accessed date: 04.03.2018).

[44] The Cape Town Convention is in force since 1 March 2006. For the status see: URL: http://www.unidroit.org/status-2001capetown (accessed date: 04.03.2018).

[45] Permanent Court of Arbitration Optional Rules for Arbitration of Disputes Relating to Outer Space Activities (effective December 6, 2011). URL: https://pca-cpa.org/wp-content/uploads/sites/175/2016/01/Permanent-Court-of-Arbitration-Optional-Rules-for-Arbitration-of-Disputes-Relating-to-Outer-Space-Activities.pdf (accessed date: 04.03.2018).

[46] Following a recommendation given by Prof. Dr. Ram S. Jakhu the notion 'international space private law' was reformulated as *'private international space law'* and further used in publications starting from the following one: [Yuzbashyan 2011:70-83] and further, e. g. in [Yuzbashyan 2013:74–92]

[47] For more on the formation of PISL see: Yuzbashyan M.R. Mezhdunarodno-pravovye osnovy resheniya ekonomicheskikh problem ispol'zovaniya kosmosa. Diss. ... kand. yurid. nauk [International Legal Framework for Solution of Economic Problems in the Use of Outer Space. Cand. Sci. Thesis]. Moscow: MGIMO. 2009. (In Russ).

[48] For more on the Space Protocol to the Cape Town convention see, e. g.: [Goode 2012:109–123; Stanford 2012:109–123; Yuzbashyan 2017a:38–41].

parts, is not affected by their presence in outer space or on a celestial body or by their return to the Earth". Hence this provision is the international legal basis for enforcement of relevant rights by different owners of space objects. The OST wording - *"ownership of objects launched into outer space […] is not affected"*– might help resolve matters of conflict of laws by means of determining these rights and their specific content under the law of place of origin[49] (e. g. in case of on-orbit transfer of rights on space objects, when parties do not choose the applicable law and neither the traditional rule of place of settlement of the transaction can be applied nor the seller's law can resolve all of the issues). In this regard the following conclusion might be suggested: *interpretation of rules of ISL could lead to the definition of applicable law to rights in rem on space objects located in outer space, as well as to subsequent formulation of specific rules of conflict of laws applicable within the framework of private international space law.* Moreover, as noted, "the problem is not so much one of determining what law applies […] but rather the widely differing approaches of legal systems to security and title reservation rights, engendering uncertainty among intending financiers as to the efficacy of their rights. The result is to inhibit the extension of finance, particularly to developing countries, and to increase borrowing costs" [Goode 2002:3]. Additionally, as noted by the former Secretary-General of UNIDROIT, "legal systems vary in their approach to recognition of security interests, the process for enforcement, and the remedies available"[50].

The new international legal framework based on the Cape Town Convention and its Space Protocol would be able to contribute to legal stability and increase the financing of projects that offer high-value mobile equipment as security, by means, inter alia, of creation of a new type of security interest – an "international interest" that shall be recognized in all Contracting States; providing the creditor with special default remedies and, where appropriate, with speedy interim relief; establishing of a system of international registration of international interests in space assets; etc. Accordingly, the creation of a stable and effective international legal basis could lead to the reduction of a creditor's risks by lowering the borrowing costs for potential debtors and hence facilitating asset-based financing of space projects.

One of the most important innovations provided by the Cape Town Convention (Chapters IV–VIII) and the Space Protocol (Chapter III) is *the system of international registration of international interests in space assets:* upon the entry into force of the Space Protocol *may be considered as the third system of registration* in the field of space activities' regulation (taking into account the two existing systems: one under the 1975 Registration Convention and the other one within the framework of the International Telecommunication Union).

Within this third system the *Supervisory Authority* shall, inter alia, "establish […] the International Registry"; "appoint and dismiss the Registrar"; "supervise the Registrar and the operation of the International Registry"; "make or approve and ensure the publication of regulations pursuant to the Protocol"; "do all things necessary to ensure that an efficient notice-based electronic registration system exists"; and "report periodically to Contracting States concerning the discharge of its obligations"[51]. The 2012 Berlin diplomatic Conference adopted, *inter alia*, Resolution 1[52], which set up of the Preparatory Commission for the establishment of the International Registry and Resolution 2[53], in which the governing bodies of International Telecommunication Union ("ITU") were invited to consider the matter of the "ITU" becoming the Supervisory Authority. At the latest, fifth session, held on 6 December 2017, the Preparatory Commission discussed the progress in the selection of the Registrar and the appointment of a Supervisory Authority[54]. The ITU representative informed the participants of the decision made at the 2017 meeting of the ITU Council on the absence of objections regarding ITU becoming the Supervisory Authority and the general agreement that the ITU's Plenipotentiary Conference in 2018 ('PP-18') should

[49] For example, when parties from diverse jurisdictions to a contract of sale of a space object located in outer space do not choose applicable law, under private international law the traditional rule of place of settlement of the transaction would be applicable. The place of settlement in this case would be the outer space, that itself has no laws. The expression "ownership of objects launched into outer space… is not affected" of the Article VIII of the OST would help to resolve matters of conflict of laws by determining these rights and their specific content under the law of the place of origin.

[50] See: [Estrella Faria 2017:2].

[51] See Art. 16 (2) of the Convention.

[52] Final Act of the diplomatic conference for the adoption of the draft Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Space Assets (Unidroit 2012 – DCME-SP – Doc. 43). Annex II.

[53] Ibid. Annex III.

[54] For more on the activity of the Commission see: URL: www.unidroit.org/work-in-progress/space-prepcom (accessed date: 04.03.2018).

decide whether or not the ITU would serve as the Supervisory Authority for the Space Protocol.

The Space Protocol does not contain a definition of the term *"space"* and merely clarifies it through other terms in Article I (j) under which it "means outer space, including the Moon and other celestial bodies" that corresponds to the actual understanding of this term under ISL. This approach is logical. However, a new development is the inclusion of a definition of the term *"space asset"*, in Article I (k) of the Space Protocol. The term means "any man-made uniquely identifiable asset in space or designed to be launched into space, and comprising (i) *a spacecraft"*, or (ii) *"a payload"*, or (iii) *"a part of a spacecraft or payload* […] *together with all installed, incorporated or attached accessories, parts and equipment and all data, manuals and records relating thereto*"[55]. The definition of "space asset" under the Space Protocol corresponds to the above-mentioned ISL clarification that the term "space object" includes component parts of a space object as well as its launch vehicle and parts thereof. The provisions of Article II (3) and (4) of the Space Protocol specify that "the Protocol does not apply to objects falling within the definition of 'aircraft objects'" under the Aircraft Protocol "except where such objects are primarily designed for use in space, in which case the Space Protocol applies even while such objects are not in space". At the same time, an aircraft object designed to be temporarily in space is not considered as grounds for application of the Space Protocol to this category of mobile equipment. It may be concluded that *the Space Protocol considers the targeted use of an object in space under corresponding design documentation as the main criteria for its application and thus proposes an effective solution for the case of potential hybrid activities in this field.* However, it is necessary to provide definition of "space object" within the framework of ISL. Definition of a "space asset" is used merely for the purposes of the Space Protocol, while a potential definition of a "space object" under ISL would apply to all kinds of space objects, including the "space assets".

Under Article III of the Space Protocol "ownership of or another right or interest in a space asset shall not be affected by: (a) the docking of the space asset with another space asset in space; (b) the installation of the space asset on or the removal of the space asset from another space asset; or (c) the return of the space asset from space". This provision *corresponds to, and clarifies, the expression "ownership of objects launched into outer space […] is not affected" under Article VIII of the Outer Space Treaty, to the extent that one recognizes the specificity of the Space Protocol's subject matter.* The general prevailing character of ISL is supported by Article XXXV of the Space Protocol, which states that "the Convention as applied to space assets shall not affect State Party rights and obligations under the existing United Nations outer space treaties or instruments of the International Telecommunication Union". Moreover, upon the entry into force, the *Space Protocol together with the Cape Town Convention may be considered as the first treaty source of PISL.*

Under Article VI of the OST States Parties *shall bear international responsibility for all national activities* in outer space (including activities of non-governmental entities) and for assuring that national activities are carried out in conformity with the provisions set forth in the OST, and moreover, as under Article III of the OST in accordance with international law, including the UN Charter. Similarly, when activities are carried out in outer space by an international organization, both the international organization and its member-States bear responsibility for compliance with the OST. Under the same Article VI, the activities of non-governmental entities in outer space shall also require *authorization and continuing supervision* by the appropriate member-State. The system of authorization of space activities is quite effectively established in the States that adopted relevant national legislation in which such issues as registration of launched space objects, insurance, status of astronauts/cosmonauts, certification are properly regulated. In addition, some specific recommendations regarding the content of national space legislation are provided by Resolution 68/74 *"Recommendations on national legislation relevant to the peaceful exploration and use of outer space"*, which was adopted by the UN GA on 11 December 2013. Such recommendations are also included in Part A of the *Guidelines for the long-term sustainability of outer space activities,* on which consensus was reached during the 59th session of the UN COPUOS[56].

Much is written about *liability in ISL*[57]. Article VII of the Outer Space Treaty, which the 1972 Liability

[55] For the full definition see the specified Article of the Space Protocol.

[56] See: Annex to the Report of COPUOS, 59 sess. (8–17 June 2016). – *GA Off. Rec.* 71 Session, Supp. No. 20 (A/71/20). 56, 58–59. URL: www.unoosa.org/oosa/oosadoc/data/documents/2016/a/a7120_0.html>. Work continues on a preambular text and a second set of guidelines, for more see: URL: www.unoosa.org/oosa/en/ourwork/topics/long-term-sustainability-of-outer-space-activities.html (accessed date: 04.03.2018).

[57] *Mezhdunarodnoe kosmicheskoe pravo.* Pod red. G.P. Zhukova i Yu.M. Kolosova [International Space Law. Ed. by G.P. Zhukov and Y. M. Kolosov]. Moscow: Mezhdunar. otnosheniya Publ. 1999. P. 218. (In Russ.).

Convention eventually elaborated on, provides that "*each State Party* to the Treaty that launches or procures the launching of an object into outer space […], and each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party or to its natural or juridical persons by such object or its component parts on the Earth, in air space or in outer space […]".

Correspondingly, the Liability Convention specifies that in case of damage caused "on the surface of the Earth or to aircraft in flight" – States are "absolutely liable" (Article II); and that in the event of damage being caused elsewhere than on the surface of the Earth – the States shall be liable only "if the damage is due to its fault or the fault of persons for whom it is responsible" (Article III); while the upper limit of compensation to be paid not being established. The absolute liability rule is based on the fact that at the current stage of development of rocket technology the launching of objects into outer space shall be considered as activity linked with source of extreme danger: the conclusions of both Profs. Zhukov and Kolosov formulated in 1966 [Zhukov 1966:122] and 1975 respectively [Kolosov, Responsibility… 2014:201] clearly remain relevant now. In this context the related provisions of the OST correspond to the realities of contemporary space activities. With the adoption of the Resolution 59/115 "Application of the concept of the launching State" by the UN GA on 10 December 2004, the attention of the international community was drawn to the main legal problems resulting from the participation of non-governmental entities in space activities, and some solutions were proposed. These recommendations include, inter alia: 'enacting and implementing national laws authorizing and providing for continuing supervision of the activities in outer space of non-governmental entities under their jurisdiction'; 'conclusion of agreements in accordance with the Liability Convention with respect to joint launches or cooperation programmes'; and submitting information to the UN COPUOS 'on a voluntary basis on their current practices regarding on-orbit transfer of ownership of space objects'. To some degree, it may be concluded that the *commercialization of space activities has led to an "extension" of the application of the concept of the "launching State"*.

As it was mentioned above Article VIII of OST establishes a certain legal link, notably the retention by State of jurisdiction and control over space objects, carried on its national registry, and over any personnel thereof, while in outer space or on a celestial body. Under Article XI of the OST, the States agreed "to inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of the nature, conduct, locations and results of space activities". The 1975 Registration Convention developed these general provisions and provided more details regarding the obligations of launching States to register space objects both in national registries and international Register maintained by the UN Secretary-General. However, open issues still remain with respect to provisions on *registration, jurisdiction and control.* Consider the situation where an astronaut, coming from a particular space object under a particular State's jurisdiction, visits a space object registered by another State: does the astronaut remain under the jurisdiction of the former space object or the latter? In contrast to international air law, where quasi-territorial jurisdiction prevails over personal jurisdiction, it is suggested that the astronaut will remain under jurisdiction of the "first" space object [Cheng 1997:625]. It should be noted that ISL has experienced definite decisions on similar issues: Article 5(2) of *the 1998 International Space Station Intergovernmental Agreement*[58] states, inter alia, that each State Partner shall retain jurisdiction over "personnel in or on the Space Station who are its nationals". Article 22 further details the issues of criminal jurisdiction. In general, the legal regime of International Space Station could be considered as a successful example of comprehensive regulation of diverse legal issues: on one hand they contain direct reference to UN Treaties provisions on outer space, on the other they also regulate various private law relations involving a 'foreign element'. Some of these time-tested provisions may be considered for the future elaboration of a comprehensive international legal framework [Kolosov, Yuzbashyan 2015:27–29].

One of the specific features of contemporary space activities is that *the change of private law relations,* especially those involving a "foreign element", *can lead to international legal consequences for States.* Thus, certain difficulties can be faced in case of an on-orbit sale of space objects or transfer of control over space assets to a creditor in case of debtor's default under the Space Protocol to the Cape Town Convention. In case of a transfer of rights to a person under the jurisdiction of a State that can be considered as "launching State", this latter State, and likely the State

[58] Space Law – Basic Legal Documents, D.II.4.

of the seller's/debtor's jurisdiction as well, will be liable in the sense of Article VII of the OST. Moreover, the re-registration of the space object can have similar issues, bearing in mind that under Article I (c) of the 1975 Registration Convention "the term "State of registry" means a launching State on whose registry a space object is carried". Such an action could lead to termination of any legal link between the State of the seller's/debtor's jurisdiction with the related space object (when such a link essentially ceases). When both of the involved States remain connected to the space object, they could be considered as participants in a joint launch under Article V (2) of the Liability Convention and therefore could conclude an agreement apportioning among themselves the financial obligations, to which they are jointly and severally liable. One of the most complicated scenarios in this case is when the state of jurisdiction of a buyer/creditor does not fall under any of the four categories of "launching State" and therefore will not be liable for damage caused by a space object belonging to a natural or legal person under its jurisdiction. In this particular case, legal certainty for the State of jurisdiction of seller/debtor (the "previous" "launching State") as well as the logical sequence may be provided by *adding a fifth category of "launching State": a State under which jurisdiction a non-governmental entity*[59] *launches, or procures the launching of, or owns a space object.* However, bearing in mind all the additional risks for launching States under the fifth proposed category, potential difficulties might arise in considering and adopting such a provision, either as a treaty or as a UN GA resolution. UN GA Resolution 62/101 *"Recommendations on enhancing the practice of States and international intergovernmental organizations in registering space objects",* adopted on 17 December 2007 and the above-mentioned UN GA Resolution 59/115 both capture what has been achieved so far in finding a solution to this problem.

Article IX of the OST refers to *the principle of cooperation and mutual assistance,* and establishes the obligation of States to take "due regard to the corresponding interests of all other States Parties to the Treaty", and to "avoid harmful contamination of outer space and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter". The *Space Debris Mitigation Guidelines of COPUOS*[60] (endorsed by the UN GA Resolution 62/217 "International cooperation in the peaceful uses of outer space"; adopted on 1 February 2008) reflects proposals that further elaborate on these obligations.

Additionally, Article IX of OST envisages the right of State Party to request related consultations if it has reason to believe that an activity or experiment planned by another State Party in outer space "would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space […]". As noted, except for "appropriate international consultations", no special system of the peaceful settlement of international disputes has been provided under the Treaty regime [Kopal 2000:14]. In this context it should be mentioned that the 1972 Liability Convention the Convention provides for procedures for the settlement of claims for damages. Until now, however, such a claim was only made once in 1978, in connection with the "Cosmos-954" accident[61].

The OST additionally covers such issues as an opportunity to observe the flight of space objects on a basis of equality (Article X), as well the "openness" of stations, installations, equipment and space vehicles on the Moon and other celestial bodies for representatives of other States Parties on a basis of reciprocity (Article XII).

Conclusions. Having considered and analyzed the fundamental principles of ISL established by the OST, it is possible to move to certain conclusions on its role, including in the progressive development of ISL. First and foremost, it must be stressed that OST laid the international legal foundations to ensure that the exploration and use of outer space is in the interest of maintaining international peace and security. The "fundamental role played by the Treaty in maintaining outer space for peaceful purposes and in furthering the purposes and principles of the Charter of the United Nations" is specifically reaffirmed in the 2017 Draft declaration on the fiftieth anniversary of the OST[62]. It is noted that "it is almost incredible that such an instrument could be accomplished in a relatively short interval of détente, but still during the continuing Cold War"; this, inter

[59] Following the language of the UN Treaties on Outer Space, or otherwise 'natural or legal persons'.

[60] Official Records of the General Assembly, Sixty-Second Session, Supplement No. 20 (A/62/20), paras. 117 and 118 and annex.

[61] For more on this accident see: *Mezhdunarodnoe kosmicheskoe pravo.* Pod red. G.P. Zhukova i Yu.M. Kolosova [International Space Law. Ed. by G.P. Zhukov and Y.M. Kolosov]. Moscow: Mezhdunar. otnosheniya Publ. 1999. P. 222. (In Russ).

[62] See: Supra, n. 2. P. 4.

alia, relates *to the moderating effect that the OST had on the arms race in outer space,* "which could have led humankind to the brink of war and complete destruction of civilization"; similarly the absence of significant international problems in relation to the OST provisions "that would have required resolution at international conferences or by international judicial instances" was also noted [Kopal 2008:9–10]. It was also stated that the Outer Space Treaty is primarily aimed at preventing the expansion of military activities to outer space, including the Moon and other celestial bodies [Kolosov 2014:32]. The Outer Space Treaty marked the beginning of formation and progressive development of ISL [Zhukov 2008:215] and laid the basis for development of further sources of ISL[63]. In this view former Chairman of the UN COPUOS Legal Subcommittee, Prof. Brisibe, emphasized that "the Outer Space Treaty and the customary rules set forth therein, will continue to serve as a framework document from which subsequent instruments will emerge" [Brisibe 2013:8]. Nonetheless, it is well-known that the period that followed the adoption of the 1979 Moon Agreement is characterized by the adoption of relevant UN GA resolutions regulating space applications activities and the conclusion of bilateral instruments or the development of relevant national legislation. The difficulties in achieving consensus on legal issues within the framework of UN COPUOS and specifically its Legal Subcommittee are not the only reasons of such transformations in the law-making process[64]. Bearing in mind these trends, Prof. Jankowitsch stresses that the economic globalization and the global nature of space cooperation certainly require "a minimum of universally accepted rules to stay on course and to avoid lawlessness, chaos and conflict in outer space" [Jankowitsch 2015:14]. In particular, open issues of ISL could be regulated by the adoption of relevant protocols building on the authentic interpretation of OST provisions. It also seems important to recall the initiative of Prof. Kolosov to draft a *universal comprehensive convention on international space law* (presented for the first time at the 39th session of the UN COPUOS Legal Subcommittee in 2000). Because of the absence of consensus, relevant discussions have been postponed. In response to objections of some of the States' delegations against the inclusion of the item on the agenda, Prof. Kolosov stressed that "the discussion of such an item on the agenda and even the beginning of work on a new universal comprehensive convention, should by no means upset the stability of international space law": would such substantive discussions on the universal convention take place, all the fundamental provisions of principle of current ISL would have to be properly reflected and preserved, but the work on the convention would allow to find some solutions to problems that have remained outstanding for a number of years within the framework of the UN COPUOS Legal Subcommittee[65]. The Legal Subcommittee has not yet initiated substantive discussions on this item, but it is important to note that this comprehensive approach to the ISL development has recently received more support [Jankowitsch 2015:14; Schrogl 2016:6].

The importance of the OST, as well as other sources of ISL, *for the stable development of commercial activities in outer space* should also be stressed. Actions are needed at the applicable legal levels (general international law, ISL, private international law, national space legislation) to address the issues of correlation and efficient interaction between applicable legal sources. As for the national legislation, for example, drafting of the Russian National Law on Space Resources Exploration and Utilization (similar to US Act of 2015) might be suggested. However, it is important to respect principles and norms of international law, and specifically ISL, without which international peace and security are not possible.

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[63] See: UNOOSA. United Nations Treaties and Principles on Outer Space, related General Assembly resolutions and other document. – *UN Doc. ST/SPACE/61*. URL: http://www.unoosa.org/res/oosadoc/data/documents /2013/stspace/stspace61_0_html/st_space_61E.pdf (accessed date: 04.03.2018).

[64] For an interesting explanation of these changes see: [Jankowitsch 2015:13].

[65] UN COPUOS Legal Subcommittee 760th Meeting, Tuesday, 3 April 2007, 10 a.m. Vienna. Unedited transcript. P. 5–6.

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