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IN SEARCH OF THE CURRENT LEGAL STATUS OF THE REGISTRATION OF SPACE OBJECTS

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ABSTRACT

The legitimate source of the "jurisdiction and control" over a space object and personnel thereof is supposed to be the registration of a space object in accordance with Article VIII of the Outer Space Treaty and the Registration Convention. However, it is not rare that a State which retains "jurisdiction and control" in accordance with such treaties cannot revoke a license or impose civil penalty in case of the unlawful act through the space objects because it lacks control. This article studies the legal status of the registration of space objects to consider the attribution of international responsibility in space activities. The study of state practices will lead to the conclusion that in many cases, ownership of a space object is used as a test by which a state exercises jurisdiction and that link functions stronger than the authentic link of the act of registration. Such situation makes it difficult to identify which country or countries are internationally responsible for a certain space object and space activity, thereby compromising the healthy development of space activities, especially those of the private sector. Under such circumstances, practical measures to address the problem are considered taking into account the recent developments of the international space law including the 2007 UN recommendations on enhancing the practices in registering space objects. The conclusion is that the remedies of the registration system will be enabled by the use of the ownership test, appropriate arrangements and national laws which will determine the State to exercise jurisdiction with control while the present treaty system intact.

FULL TEXT

1. INTRODUCTION

This article* studies the legal status of the registration of space objects to consider the measures to clarify the attribution of international responsibility in space activities.

Article (Art.) VIII of the Outer Space Treaty (OST) [1] and Art. II of the Registration Convention [2] require a

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[1] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, *opened for signature* Jan. 27, 1967, 610 U.N.T.S. 205, 18 U.S.T. 2410.

[2] Convention on Registration of Objects Launched into Outer Space, *opened for signature* Jan. 14, 1975, 1023 U.N.T.S. 15; 28 U.S.T.695.

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launching State or one of the launching States[3] to register the space object launched with a national registry and to inform the Secretary General of the United Nations (UN) of the establishment of such a registry.[4] UN Secretary-General (SG), then, maintains a Register in which the information furnished by a launching State is recorded, thereby completing the UN registration.[5] Alternatively, national registry may be followed by furnishing information promptly to the Committee on the Peaceful Uses of Outer Space (COPUOS) through the UNSG under UN General Assembly Resolution (UNGA Res.) 1721B (XVI) of 20 December 1961[6]. Since Art. VIII of the OST provides that a State of registry shall "retain jurisdiction and control" over a space object and personnel thereof, it seems that the act of registering a space object is the exclusive source to exercise "jurisdiction and control" over such an object and persons as is the case with ships or aircraft although a space object is not endowed nationality through registration different from ships or aircraft.[7] Since territorial jurisdiction cannot be claimed in outer space,[8] the nature of the jurisdiction exercised by a State of registry would be categorized as "quasi-territorial" jurisdiction[9] or personal jurisdiction.

In state practices, however, "jurisdiction and control" is exercised in a manner not conformity with the UN space treaties. This article, therefore, will study the present practices in exercising State jurisdiction in respect of space objects and space activities, and then, will consider the measures to be taken to better identify a responsible State in a space activity, which will contribute to the sustainable use of space especially for the private sector.

2. UN SPACE TREATIES AS *LEX SPECIALIS* AND STATE PRACTICES

2.1 Methodology to Apply State Jurisdiction

If there were no UN space treaties today, States engaging in "space activities"[10] would exercise State jurisdiction recognized by customary international law. In other words, territorial jurisdiction (e.g., concerning the act of launching or return of an object from space) and personal jurisdiction (e.g., concerning a national who operates a satellite in outer space)[11] would be exercised with

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[3] Because the launching sites are operated only in 8 countries as of September 2010, the number of states engaging in one launching activity inevitably tends to be plural.

[4] Art. II (1) & (2) of the Registration Convention.

[5] Art. III (1) of the Registration Convention.

[6] http://www.oosa.unvienna.org/oosa/SpaceLaw/gares/html/gares_16_1721.html (last visited 12 Aug.2010).

[7] Some national laws grant nationality to ships not by registration, but by ownership of its national.

[8] Art. II of the OST.

[9] See, e.g., Bin Cheng, "Nationality for Spacecraft?", in *idem*, ed., *Studies in International Space Law* (Clarendon Press, 1997), pp.478-479.

[10] "Space activities" is not defined in the UN space treaties. Only some national space laws define "space activities" including those of Sweden (1982), UK (1986), South Africa (1993), Russia (1993), Ukraine (1996), Korea (2005), the Netherlands (2006) and France (2008). Most commonly, the definition of "space activities" include (i) the launching of a space object, (ii) the operation of a space object in outer space, and (iii) the activities to support (i) and (ii) on and from the Earth.

[11] Note has to be taken that the importance of personal jurisdiction will differ depending on the definition of "space activities." For instance, if "space research" is regarded as a kind of "space activities" as provided for in Art.2 (1) of the Law on the Russian Federation about Space Activity of 1993, much more opportunities would be found that the personal jurisdiction be exercised

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respect to events, persons and property relating to outer space activities on the Earth and in the territorial air. Also, quasi-territorial jurisdiction or personal jurisdiction would be applied vis-à-vis a satellite or a space station functioning in outer space.[12]

It seems that State jurisdiction stemming from customary international law governs space activities today as a predominant basis rather than the one supposed to be generated by the UN space treaties, in particular the OST and the Registration Convention. It would be permissible to the extent that the application of the State jurisdiction based on the customary international law concerns only "space activities" which do not interfere with the control over a space object. [13] However, in respect of the application of State jurisdiction over a space object, *lex specialis* of this subject-matter requires the registration of a space object. Thus, a question arises: without registering a space object, is a launching State, a party to the OST and the Registration Convention, not entitled to exercise "jurisdiction and control" over a specific object in outer space? Dr. Bernhard Schmidt-Tedd stated in the commentary of the Art. VIII of the OST that "[w]ithout the first step of national registration, no jurisdiction and control over the space object in question is feasible."[14] This conclusion seems to be supported by the remedies of the procedural ambiguity about the international notification in the OST and GA Res. 1721B by the 1975 Registration Convention. OST and the Registration Convention as *lex specialis*, it should be concluded that the UN registration is the exclusive legitimate source for the executing jurisdiction and control over a space object and persons in, on and outside such a space object.[15] Legal consequence of "jurisdiction and control" under the OST is explained as the "applicability of the national law of the State of registry for the object launched into outer space, including over any personnel thereof"[16] and it is pointed out that "control" should not depend only on the factual and technical capabilities, but must be based on legitimate jurisdiction.[17]

"Jurisdiction" is, however, a term which must be used with utmost caution as often pointed out, because even in the discipline of international law the meaning and the grouping of it can be different, let alone the usage of respective municipal laws.[18] For the purpose of considering the legal meaning of registration of a space object, it is important to be aware of the differentiated meaning of three groups of powers used under the same name of "jurisdiction." The first group refers

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than the jurisdiction over a space object based on registration. Decree No.5563-1 of the Russian House of Soviets. See, e.g., http://www.unoosa.org/oosa/en/SpaceLaw/national/russian_federation/decree_5663-1_E.html (last visited 10 Aug. 2010).

12 Hereinafter, this article uses "quasi-territorial jurisdiction" instead of "quasi-territorial jurisdiction or personal jurisdiction" based on the categorization by Prof. Bin Cheng. See, *supra* note 9.

13 It seems difficult for a country to distinguish the activities conducted by its national from a space object owned and operated by the same national.

14 Bernhard Schmidt-Tedd, "Commentary on Article VIII of the OST", the explanation by Dr. U. M. Bohlmann (note 70), cited in Stephan Hobe, Bernhard Schmidt-Tedd & Kai-Uwe Schrogl, eds., *Cologne Commentary on Space Law*, vol.1 (2010), p.152.

15 About the modification from "personnel thereon" to "personnel thereof" of the draft Article VIII of the OST, see, UN Doc. A/AC.105/C.2/SR.66 (1966), p.52.

16 Schmidt-Tedd, *supra* note 14, p.159.

17 *Ibid.*, p.157.

18 See, e.g., Peter Malanczuk, *Akehurst's Modern Introduction to International Law*, 7th rev'd ed. (Routledge, 1997), p.109.

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to the powers to legislate in respect of persons, property or events; second is the powers of a domestic court to hear cases concerning the persons, events and property, and third group refers to powers of physical execution and interference by the state executive Authority. Three categories of powers are usually called legislative jurisdiction[19], judicial jurisdiction[20] and enforcement jurisdiction. [21] When referring to "jurisdiction", it is important to identify which kind of jurisdiction a certain State is to hold and exercise over a space object.[22] Such is the standard understanding of "jurisdiction and control" in the field of international law.[23] Jurisdiction arising from the registration shall be comprehensive, and a State of registry is supposed to hold legislative, judicial and, above all, enforcement jurisdiction.

The problem, however, lies in that State practices are not necessarily consistent with that legal interpretation. More straightforwardly, States parties do not always abide by the OST and the Registration Convention by directly invoking a rule of the customary international law which determines that the rights and duties are, "those of the State to which such objects are attributed."[24] Based on the customary international law, the registration is just one of the acts to prove such attribution, and other kinds of labeling such as nationality or ownership is also a link to generate the national jurisdiction.

2.2. Case 1: Iridium Satellites Registered by China

In fact, some Iridium Satellites, the owner of which is a national of the U.S., were launched from the territory of China, and subsequently registered by China nationally and internationally.[25] In the UN registry, the special reference is made in which it is specified that such Iridium satellites are controlled by Motorola Company, not by China. [26]While China is supposed to have the full "jurisdiction and control" under the UN space treaties, ownership seems an effective connection with a space object in reality. It remains to be confirmed if it is permissible that a State of registry could unilaterally abandon the jurisdiction and control. It is certain, however, that this is different from the case of intelligence satellites often not registered in the UN registry and administered by an owner State, which is a clear violation of the UN treaties.

Providing that China can lawfully relinquishes jurisdiction and control, it will yet lead to an undesirable situation in terms of identifying international responsibility and liability partly because it is not clear if the

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[19] Also called as "jurisdiction to prescribe" or "prescriptive jurisdiction".

[20] Also called as "adjudicative jurisdiction."

[21] Malanczuk, *supra* note 18, p.109.

[22] Attention has to be paid that the distinction of powers are not strictly maintained between the judicial jurisdiction and enforcement jurisdiction in case of wrongful acts committed on ships. *Ibid.*

[23] See, e.g., Ian Brownlie, *Principles of Public International Law,* 7th ed., (2008), pp.299-321; The American Law Institute, *Restatement of the Law Third, Foreign Relations Law of the United States* (1987), pp.230-232.

[24] Bin Cheng, "Outer Space: The International Legal Framework-the International Legal Status of Outer Space, Space Objects, and Spacemen", in *supra* note 9, p.415.

[25] Such Iridium satellites are Iridium experimental satellite launched in September 1997, Iridium 42 and 44 in December 1977, Iridium 51 and 61 in March 1998, Iridium 69 and 71 in May 1998, Iridium76 and 3 in August 1998 and Iridium 88 and 89 in December 1998. ST/SG/SER.E/356 (27 May 1999), p.2.

[26] *Ibid.*

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U.S. regards itself as a launching State.[27]

2.3 Case 2: NSS Satellites under the Jurisdiction and Control of the Netherlands

Another interesting deviation from the Registration Convention is found in the Dutch practices. The Netherlands informed the UNSG of the parameter information of NSS-7 (2002-019A, launched on 17 April 2002) and NSS-6 (2002-057A, launched on 17 December 2002) in 2003 without registering those 2 satellites. [28] The Note Verbale submitted by the Netherlands reads: "In respect of the above-mentioned space objects, the Kingdom of the Netherlands is not the "launching State", "State of registry", or "launching authority" for the purposes of" (a) the Liability Convention, (b) Registration Convention, or (c) the Rescue Agreement.[29] The Netherlands requested the SG to add the following statement to the relevant entries below[30]:

> "The above-mentioned space objects were delivered in orbit to New Skies Satellites after they were launched and positioned in orbit by persons that were not subject to the jurisdiction or control of the Kingdom of the Netherlands. New Skies Satellites is a company that is incorporated in the Kingdom of the Netherlands. The Kingdom of the Netherlands is therefore not required to furnish to the Secretary-General of the United Nations information in accordance with article IV of the Registration Convention. Following the transfer in orbit of ownership of the space objects to New Skies Satellites, the Kingdom of the Netherlands is of the opinion that it bears international responsibility for their operation in accordance with article VI and has jurisdiction and control over them in accordance with article VIII of the Treaty on Principles Governing Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (resolution 2222 (XXI), annex).[31]

The Netherlands seems to suggest that jurisdiction and control is generated not only from being one of the launching States, but also from a corollary of duties of bearing international responsibility in respect of its nationals.[32] The interpretation of Art. VIII of the OST may be the one not "in accordance with the normal meaning to be given to the

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[27] U.S. did not register, e.g., Iridium 33 that was launched from Kazakhstan by a Russian launcher. In that case, Russia only sent the information to UNSG and did not become a State of registry. ST/SG/SER.E/332 (19 March 1998), p.2. Practices are inconsistent and in other occasions, U.S. registered commercial satellites launched outside the U.S.

[28] A/AC.105/806 (22 Aug. 2003), p.1.

[29] *Ibid.*, pp.1-2. The formal name of the Rescue Agreement is "Agreement on the Rescue of Astronauts, the Return of Astronauts and Return of Objects Launched into Outer Space" *opened for signature* Apr. 22, 1968, 672 UNTS 119; 19 UST 7570.

[30] A/AC.105/806, *supra* note 28, p.2.

[31] *Ibid.*

[32] The phrase "jurisdiction and control" over them in accordance with article VIII" of the OST is not the normal understanding of the said article since the registration of a space object is to presuppose the jurisdiction and control. "In accordance with article VIII" may have to be interpreted in a special way to support the jurisdiction and control without the act of registration although such technique will not be recommended to say the least as enumerated in Art. 31 of the Vienna Convention of the Law of Treaties.

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items of the treaty in the context and in the light of its object and purpose"[33] in this case. Dr. Oliver Ribbelink stated in his article that the Netherlands having jurisdiction and control in accordance with Art.VIII of the OST "has raised some eyebrows, since article VIII Outer Space Treaty explicitly connects jurisdiction and control to the launching State". [34] But, he continued that "the reasoning goes, when there is responsibility under article VI, then article VIII must also be applicable. No State will, nor can, accept responsibility for activities outside its jurisdiction and control."[35]

In 2009, the Netherlands informed the UNSG of its establishing a national registry of space objects.[36] The registry established by the Dutch government has two subregisteries; the one when the Netherlands is a state of Registry because it is a launching State and the one when the Netherlands has jurisdiction and control, in accordance with the Art. VIII of the OST, but in respect of which the Netherlands is not the "launching State", "State of registry" or " launching authority" for the purposes of the Liability Convention, the Registration Convention or the Rescue Agreement.[37] The subregistries is evaluated as an effort to identify where the Netherlands exists as for the rights and duties concerning a space object. If it is not perfectly in line with the OST and the Registration Convention, the clarification is more strongly required in the days of commercialization of space. Note has to be taken, however, that it does not necessarily mean that its claims are always opposable to a territorial launching State.

2.4 Case 3: Inmarsat Satellites the Launching of Which Were not Procured by the UK

The logic of the Dutch practices [38] is shared by some of the UK practices. In 2002, UK furnished the information in accordance with Art. XI of the OST and Art. IV of the Registration Convention on the change of the status of 8 of the Inmarsat satellites (I2-F2, I2-F3, I2-F4, I3-F1, I3-F2, I3-F3, I3-F4 and I3-F5) which previously belonged to an intergovernmental organization INMARSAT but became a company Inmarsat Ltd. incorporated in the UK. In respect of such 8 satellites, UK explained its status as not being a "launching State", "State of registry" or "launching authority" for the purposes of the Liability Convention, the Registration Convention or the Rescue Agreement. [39] While UK does not directly claim it has "jurisdiction and control" in accordance with Art.VIII of the OST or with other provisions of the UN space treaties as the Netherlands does, by furnishing information to the UNSG about the satellites owned and operated by its national, the UK implicitly claims it has jurisdiction and control over such 8 satellites without being a launching State.

Attention has to be paid that the UK is one of the most earnest countries to furnish the information of the status of the space object to the UNSG at a number of different levels. In recent years, UK, e.g., furnished supplementary information on "Europe *Star 1", launched in 2000, as it has been renamed

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[33] Art. 31 of the Vienna Convention of the Law of Treaties.

[34] Oliver Ribbelink,"The Registration Policy of the Netherlands", in Stephan Hobe, Bernhard Schmidt-Tedd & Kai-Uwe Schrogl, eds., *Current Issues in the Registration of Space Activities*, Proceedings of the Workshop of Project 2001 Plus, 20/21 January 2005 (2005), p.55.

[35] *Ibid.*, pp.55-56.

[36] ST/SG/SER.E/INF.24 (20 Aug. 2009), pp.1-2.

[37] *Ibid.*, p.1.

[38] See, also, A/AC.105/824 (16 March 2004), pp.1-2.

[39] ST/SG/SER.E/417/Rev.1 (3 Dev.2002), p.1.

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PAS-12 and operated by PanAmSat Europe since October 2005.[40] UK also informed the UN that Sirius 4 (launched in 2007) and NSS-9 (launched in 2009) had been given a launch authorization from the UK government but it was Sweden and the Netherlands respectively to register in-orbit operation.[41]

2.5 The Reason of the Different Practices

Why such inconsistent practices are overlooked. Two reasons may explain the current situation. First is the usefulness of the link of "ownership" to ensure the compliance with UN space treaties. While there remains an unsolved issue of the definition of the "procuring State" as a "launching State," it can be safely said that usually, a launching State owns a satellite.[42] In other words, the precondition to proceed with registration, the status of "launching State" is quite akin to a State which owns a payload or whose national owns a payload.[43] Thus, the Netherlands and UK whose national owns a satellite are thought to be reasonable to exercise State jurisdiction even if the normal interpretation of the Art. VIII of the OST may be compromised. That logic will be reinforced by the fact that both States furnish the information of space objects due to the link of "ownership", different from some countries which do not take the similar measures or those who just ignore the OST and Registration Convention while they launched or procured the launching of a satellite. In China's case, it is also thought to be a responsible act that registered foreign-owned satellites as a territorial launching State. Since then, China seems to have changed the registration policy considering Chinese registration practices [44] and the "Measures for the Administration of Registration of Objects Launched into Outer Space" (hereinafter "Registration Measures") issued in 2001. [45] Art. 7 and 8 of the Registration Measures provide that the owner of a space object shall register the space object.[46] It should be also noted that at the Legal Subcommittee of the COPUOS, Chinese delegation stated that "the operating country and the owner country of the payload should carry out a registration for this effective payload. We believe when the launching country and the owner country and the operating countries of this payload are different, if there is no specific agreement or registration, it is desirable for the latter countries to make the international registration because the latter countries can carry out continuous monitoring of this payload and, therefore, is in a position to report to the United Nations

[40] ST/SG/SER.E/389 (28 Mar. 2001), p.2 ; ST/SG/SER.E/518 (6 Sept.2007), p.4.

[41] ST/SG.SER.E/554 (3 Nov. 2009), p.2; ST/SG/SER.E/575 (4 Nov. 2009), p.2.

[42] The owner State of a space object shall be "(i) [a] State which launches or procures the launching of a space object" as found in Liability Convention Art. I (c) (i)and Registration Convention, Art. I (a)(i). If a space object is owned by its national(s), the owner state can be also a launching State as the "procuring" State. Cheng, *supra* note 24, p.415.

[43] The owner of an upper stage of a launch vehicle is a territorial "launching State." Accordingly, a "genuine link" to exercise jurisdiction and control is preserved if a owner State controls a corresponding space object either a satellite or an upper stage of a rocket, in comparison with the situations in the maritime and air law.

[44] Chinese registration practices are found at http://www.oosa.unvienna.org/oosa/en/Reports/docschina.html (last visited 2 Sept.2010).

[45] Decree 6, issued on 8 February 2001. Unofficial translation is found in 33 *J. Space L*, vol.33 (2007), pp.437-441.

[46] It is interpreted that Art. 8 provides for the registration of non-foreign (Chinese) satellites.

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Secretary-General on any future changes of the space object, including when the object is no longer in orbit."[47]

Three countries explained on their practices in this section seem to take "ownership" test to exercise jurisdiction and control.

Second reason, which is essential, is that the primary function envisioned in the making of the Registration Convention is not for the public announcement to exercise "jurisdiction and control" over a space object and persons thereof, but for the identification of a space object for ensuring the smooth application of the Art VII of the OST and the Liability Convention.[48] Registration as an exclusive source of jurisdiction and control may be the supplementary goal in the making of a fundamental space law regime and deviated practices may have been an expected outcome. However, it has brought about inconveniences to identify the responsible and liable states in space activities, in particular, in commercial satellite operations today.

3. THE MEANING AND SCOPE OF JURISDICTION AND CONTROL UNDER THE UN SPACE TREATIES

3.1 Non-Registration to Avoid the Obligation Possible?

Irrespective of the drafting history, unless subsequent State practices different from the normal interpretation of a certain provision have become unanimous or at least overwhelmingly predominant, a State practice complying with the literal interpretation of Art. VIII of the OST and the Registration Convention may be opposable to those who are also States parties.

Art. VIII of the OST and the Registration Convention recall instantly several questions. One of the questions, although a little bit dogmatic, is that if a "launching State" fails to register a space object, will it be exempted from the international responsibility when an internationally wrongful act is committed through the space object in question as long as another launching State is a State of registry? This question is based on the formula that the duties are corollary of the rights, and lacking the legitimate jurisdiction to apply its national laws will bring about the consequence that such State is not obligated to assume duties to ensure the compliance with international space law. It seems that this question has to be answered in the affirmative.

However, exempting a State in question from fulfilling its legal obligation based on Art. VIII of the OST will not lead to the unreasonable result vis-à-vis the third States in most cases. Because Art. VI of the OST provides that States Parties shall bear international responsibility for national activities in outer space, non-registering State can as well be blamed for the breach of a rule of international law based on the personal jurisdiction or territorial jurisdiction. The owner of a satellite will be appropriately punished by the State from which its nationality is given through the exercise of personal jurisdiction. For instance, the State concerned can order the owner of a satellite to de-orbit or otherwise to deal with the situation if its on-orbit operation has become unstable or has interfered with the radio frequencies of other satellites placed in near orbits. The problem is thus duly addressed, but yet such situation itself demonstrates the underlying defects of the registration system under the UN treaties.

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[47] See, e.g., COPUOS/LEGAL/T.742 (10 Apr. 2006), p.3.

[48] See, e.g., E.R.C. van Gogaert, *Aspects of Space Law* (Kluwer Law and Taxation Publishers, 1986), pp.133-136.

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3.2 Hypothetical Case 1

Considering the enforcement aspect of jurisdiction of a State of registry to physically revoke a license of a certain space activity, impose civil penalty, etc., as commercial use of space flourishes, the awkward situation for the State of registry will be frequently recognized whenever the State of registry lacks control and therefore the enforcement jurisdiction over a space object while another State that lacks legitimate jurisdiction holds, in fact, control over the same space object.

Think of a certain hypothetical case. A remote sensing satellite X registered by State A is made by a company of State B, operated by a company Y established by the law of State C. State A becomes a State of registry because that satellite was launched from the territory of A and state C is not a party to the Registration Convention. The license to operate a remote sensing satellite is granted by State C and therefore the control of X is solely exercised by Y through the law of State C. State A does not have any legal connection to impose its national laws to X, or State A does not have a control while it retains "jurisdiction and control" in accordance with Article VIII of the OST. X obtains the images of State D, the resolution of which is best among currently available in the market, and those images are sold to the Ministry of Defense of state E. Unfortunately, State A made an agreement with State D which prohibits taking and selling the images of D if the resolution of the images is higher than other images currently available in the market. C is not under such obligation without any treaty commitment with D. On the contrary, C expressly objects to the data distribution policy of D. Under such circumstances, is A responsible for its failure to suspend the business of Y vis-à-vis D based on the "jurisdiction and control" retained by A as a State of registry?

The answer will be in the affirmative between A and D, and the fact would not be opposable to D that A does not have control over X by way of lacking legislative jurisdiction and/or enforcement jurisdiction supported firmly by the genuine legal connections under the customary international law. A is simply responsible for its breach of the bilateral agreement. It seems then difficult that State D should invoke the international responsibility of C, since the data distribution policy in D is far from being an established rule of international law.[49]

As Prof. Bin Cheng rightly points out, the rule of customary international law is quite stable on the order of the actual and physical exercise of State jurisdiction: namely, territorial jurisdiction precedes quasi-territorial jurisdiction and the latter precedes personal jurisdiction.[50] OST and customary international law allow no one country to exercise territorial jurisdiction while X is imaging the surface of the Earth from outer space, and a rule of customary international law gives C the State power to exercise quasi-territorial jurisdiction over X. While such power is incompatible with the jurisdictional mechanism expected under the UN space treaties, C nevertheless exercises the control not based on jurisdiction, which should not be overlooked. The contents of the jurisdiction A is granted under Art. VIII of the OST can be said substantially void because the element of control is lacking. As a result, *de facto* jurisdiction of C prevails over *de jure* jurisdiction of A, or control without the legitimate jurisdiction wins over the legitimate jurisdiction without control. It shows that there are clear defects in the

[49] On-orbit transfer of the ownership of a satellite may bring about a similar situation if the State of a registry is not changed to a state whose national newly operates a satellite.

[50] Cheng, *supra* note 9, pp.478-479.

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registration system which has to be remedied. However, it is difficult to ameliorate the situation because no sanction against C is provided for in the OST or the Registration Convention.

3.3 Hypothetical Case 2

To think about the meaning of the registration under the UN space treaties, another example will be given below. Liability from the damage caused by a space object either on the surface of the Earth or elsewhere than on the surface of the Earth is addressed by the Liability Convention at least among the States Parties to the Convention, thus making the legal implications of the registration of a space object irrelevant. A launching State or launching States is/are liable for the damage over a space object with or without registering a space object concerned. [51] However, the scope of the "damage" in the Liability Convention is rather narrow, [52] and, financial damage caused by nonphysical incident is not covered by the said Convention. One of the examples of such damage will be the economic damage stemming from the interference of the radio frequencies between the two satellites. [53] Granting that a communications satellite A of company B (the nationality of which is State C), by its negligence, interfered with a broadcasting satellite D of company E (the nationality, State F) and degraded the function of satellite D which resulted in the suspension of the airing of the popular drama series provided by TV company G of State H for several weeks. The profit of G was sharply decreased soon after because a number of frustrated viewers canceled a contact with G. Then, G filed a lawsuit with E in a district court of State H, which was followed by the decision that company E shall pay financial compensation to G. Since E thought B should indemnify to E, it eventually filed a complaint with B at a court in State F and won the case. C is State of registry of Satellite A and F is State of registry of Satellite D. There exists a bilateral agreement on the recognition and enforcement of foreign judgments between C and F. Is State C under the legal obligation to make its national B implement the judgment to pay indemnification to company E based on Art. VI of the OST that obligates C to assure that national activities are carried out in conformity with the international law [54] ? Because C is a State of registry, the answer seems yes.

However, different answer might be given in case when Satellite A is registered with country I because A was launched from the launching site of I and state C, having no launching sites in its territory, refused to be a State of registry by the reason that C was not a launching State in the definition of the three of the UN space treaties on outer space. [55] In that case, is State I to be responsible for the financial damage to F as a State which legitimately retains "jurisdiction and control" over A, whereas A is subject to the laws of C in conducting its business?

4. CONCLUSION: POSSIBLE MEASURES

[51] See, esp. Articles II, III, IV, and V of the Liability Convention.

[52] Art. I (a) of the Liability Convention. "Damage" for the purpose of the Convention is limited to physical loss, injury or the impairment of the health of the natural person and the loss of or damage to property.

[53] See, e.g., UN Doc., A/AC.105/C.2/ SR.94 (1969), pp.5-8.

[54] Combining Article VI with Article III of the Outer Space Treaty will imply that the C-F bilateral agreement shall be abided by both States parties as a rule of international law.

[55] Article VII of the Outer Space Treaty, Article I (c) of the Liability Convention and Article I (a) of the Registration Convention.

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TO IDENTIFY A RESPONSIBLE STATE

State practices show that State of registry cannot necessarily exercise control over the space object in question. The reason is that jurisdiction based on customary international law functions stronger than the one generated from registration in accordance with UN space treaties because the former has genuine connection between the State and a space object concerned. Since territorial jurisdiction is out of the question in outer space, personal jurisdiction is the most important connection, thus ownership test being essential as commercialization of space flourishes. Besides, as already mentioned, the primary goal of the Registration Convention is the identification of space objects for the smooth application of the Liability Convention and the safe use of outer space, not the public announcement to which State the object belong. In that sense, registration may be regarded as the most primitive space situational awareness (SSA). Sophisticated notification system may play a role of the proxy to the registration. The practices of China, the Netherlands and the UK on their communications satellites can be understood from that perspective. Thus, for the safety of space and for reassuring various space actors engaging in space activities, tentative conclusion will be given as follows.

First, as for the satellite owned and operated by private persons, ownership test, or personal jurisdiction should be used to identify a State that exercises jurisdiction and control. True that it does not apply to the cases such as "flag of convenience", but ownership test will substantially ameliorate the situation. Second, in order to accomplish the first conclusion, it is not necessary to amend the OST and/or the Registration Convention. [56] There is already a sophisticated tool for that purpose, or the Recommendation on Enhancing the Practice of States and International Intergovernmental Organizations in Registering Space Objects endorsed at the UNGA in 2007.[57] The importance of Art. VI which implicitly generates State jurisdiction and control in the form of the State responsibility is highlighted in that Recommendation, which asks appropriate State party to be a linchpin to address, divide and determine State responsibility and to find a State of registry most appropriate in each case. Third, in the connection with the second conclusion, appropriate arrangements and national laws have to be made the most of. In order to overcome the explicit provision of Art. VIII of the OST with legitimacy, "appropriate agreements" [58] among the related States, particularly among the launching States, shall be utilized as specified in Art. II (2) of the Registration Convention. Paragraph 3 (b) of the 2007 Recommendation will be also a reference in that case, which provides that a territorial or facility-based launching State should contact State(s) that may be regarded as "launching States" to jointly determine which State should register the space object. [59] Appropriate agreements as *lex specialis* and national laws can help identify a responsible state which truly exercises all aspects of jurisdiction and control.

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[56] See, e.g., Kay-Uwe Hörl & Julian Hermida, "Change of Ownership, Change of Registry? Which Objects to Register, What Data to be Furnished, When and Until When?", in Francis Lyall & Paul B. Larsen, eds., *Space Law* (Ashgate, 2007), pp.263-272.

[57] GA Res. 62/101 (17 December 2007).

[58] Art. II (2) of the Registration Convention.

[59] *Supra* note 57, para. 3 (b).