VERIFICATION MECHANISM FOR PEACEFUL USES OF OUTER SPACE

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INTRODUCTION

The principle of peaceful uses of outer space has left the question how to define the term "peaceful uses" in the present context of international law and how to ensure "security" in the present legal regime. The legal regime for peaceful uses of outer space lacks its effectiveness in verifying the compliance. Although the Outer Space Treaty of 1967 (hereinafter: the 1967 OST)[1] has the provision of arms control as Article IV, no specific provision of verification is included. Some provisions are applicable to verification under international cooperation; however, they are not on mandatory basis.

With advances in space technologies, the concept of peaceful uses of outer space has shifted from "non-military" to "non-aggressive." Due to the invalidation of the ABM Treaty of 1972 in 2002, the legal implication on lawful military uses of outer space is being affirmed under international law in case of self-defense or collective security, which accelerates ABM or ASAT tests in outer space. In the present situation, it is urgent to take legal action to avoid space weaponization.

By learning lessons from other international areas, where embrace the same principle of peaceful uses and attempt to ensure security with or without verification measures, this article explores possibilities to figure out what elements are necessary for verification mechanism to ensure peaceful uses of outer space.

1. THE PRINCIPLE OF PEACEFUL USES IN INTERNATIONAL AREAS

The legal status of outer space has shift from *res communis* to an "international area" where States Parties have gradually extended their extra-territorial jurisdiction and substantial control. Such a shift is not exceptional to other international areas as Antarctica, high seas and the seabed and the ocean floors.

Although it is difficult to generalize the concept of peaceful uses due to its vague legal implication in the UN Charter, it is possible to understand how the principle of peaceful uses is applied to and function in legal regime governing international area. In this section, the concept of peaceful uses in each area is defined and the present legal regime governing there are studied.

1.1. Antarctica

Antarctica is the last continent discovered on the Earth by the UK, the then USSR and the US. Before International Geophysical Year (IGY) in 1957-58, there was no legal framework on Antarctica activities. In 1948, Chile, Argentina and the UK agreed not to send warships at 60 degrees of South latitude to avoid armed conflicts.[2] This is the first step for ensuring peaceful uses of Antarctica.

In the Antarctic Treaty of 1959[3], the principles related to peaceful uses of Antarctica are: the principle of peaceful uses of Antarctica,[4] the freedom of scientific invetigation and cooperation [5] and the principle of preservation of the environment.[6] The Treaty, first ratified by the twelve States who were active during the IGY,[7] consists of 14 provisions with effectiveness in demilitarizing Antarctica. It has gradually evolved in to a system governing potential activities there, which is known as the Antarctic Treaty System.[8] This development illustrates the consolidation of the Antarctic

régime and its transformation from loose cooperation of States into a régime with a significant organizational structure.[9]

The concept of peaceful uses of Antarctica is outlined by provisions as: Antarctica should not be the battlfield (Preamble 1); the use of Antarctica should be in harmony with the UN Charter (Preamble 4); any measure of a military nature should be prohibited (Article I (1)); except for the use of military personnel or equipment for scientific purposes or for any other peaceful purpose (Article I (2)); Treaty meeting should be held for enhancing the transparecy among the Contracting Parties through exchange of information or communication (Article IX); and the dispute settelement should be considered by dialogue, directly or indirectly via the International Court of Justice (Article XI). Thus, those provisions function to ensure peaceful uses of Antractica aiming for the complete demilitarization of Antarctica with dispute settlement procedures.

Considering that enhancing transparency in Antarctica is prioritized, Article VII establishes a system of inspection. Article VII(1) provides that each Party whose representatives are entitled to participate in the meetings under Article IX has the right to designate observers to carry out any inspection provided for and that observers should be nationals of the Parties which designate them. The names of observers should be communicated to every other Party having the right to designate observers, and notice should be given of the termination of their appointment. Article VII(2) allows each observer designated under Article VII(1) to have complete freedom of access at any time to any or all areas of Antarctica. This provision dedicates to enhancing transparency in terms of ensuring the complete demilitarization of Antarctica. Article VII(3) opens all areas, including all stations, installations and equipment within those areas, and all ships and aircraft at points of discharging or embarking cargoes or personnel in Antarctica, for inspection by any observers designated under Article VII (1). Article VII(4) allows aerial observation at any time over any or all areas of Antarctica by any of the Parties having the right to designate observers. Article VII(5) requires information-sharing among the Parties as well as providing notice in advance of (a) all expeditions to and within Antarctica, on the part of its ships or nationals, and all expeditions to Antarctica organized in or proceeding from its territory; (b) all stations in Antarctica occupied by its nationals; and (c) any military personnel or equipment intended to be introduced by it into Antarctica subject to the conditions prescribed in paragraph 2 of Article I of the present Treaty. Thus, Article VII dedicates to ensuring peaceful uses of the Antarctica by opening all areas for inspection and by enhancing transparency though information-sharing.

1.2. High Seas

The principle of peaceful uses of the high seas is found in Article 88 of the UN Convention on the Law of the Sea of 1982[10], but not found in the Geneva Convention on the High Seas of 1958.[11] Article 88 provides that the high seas should be reserved for peaceful purposes. The principle is supported by Article 87 of the freedom of the high seas and by Article 89 of the principle of no sovereignty in high seas. Contrary to the aim of those provisions, there are other provisions allowing military uses of high seas in wartime. Article 95 provides that warships on the high seas have complete immunity from the jurisdiction of any State other than the flag State. In addition, Article 96 ensures that ships owned or operated by a State and used only on government non-commercial services should have complete immunity from the jurisdiction of any State other than the flag State. With the prevailing notion of the exclusive economic zone, the boarder line striding the plural EEZ or the high seas where the freedom of the high seas is applied might become provocative.

Despite the existing provision, Article 88, of peaceful uses of the high seas, there is no general or common understanding agreed on the definition among the Parties. While some States proposed to demilitarize the high

seas completely, the US insisted on that the principle of peaceful uses does not prohibit military operations in general and any military operations for peaceful purposes are in accordance with general international law including the UN Charter.[12] Afterwards, ten developing States submitted a proposal that the general principle according to Article 2(4) of the UN Charter should be established, which prohibit the threat or use of force. Their initiatives were resulted into the inclusion of Article 301 in Part XVI. Article 301 provides that States Parties should refrain from any threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the principles of international law in the UN Charter in exercising their rights and performing their duties under the Convention of 1982. This provision still allows some kinds of military uses of the high seas for self-defense and collective security that are legal under some conditions.

Although the right of self-defense was denied by the Commission in the drafting Article 22 of the Convention on the High Seas "mainly because of the vagueness of terms like 'imminent danger' and 'hostile acts', which leaves them open to abuse."[13] Even in the case of disputes settlement, military uses of the high sea is not denied as Article 298(1)(b) provides that States Parties have the right not to accept any one or more of the procedures for disputes concerning military operations, including military activities by government vessels and aircraft engaged in non-commercial service, and disputes concerning law enforcement activities in regard to the exercise of sovereign rights or jurisdiction excluded from the jurisdiction of a court or tribunal under in case of dispute settlement under Article 297 (2) or (3).

Thus, without sharing any kind of common understanding of the concept of peaceful uses of the high seas, the legal regime of the high seas allows military uses of the high sea. The security in the high seas faces the same challenges as the security in outer space in questioning whether the existing principle of peaceful uses contributes to maintaining peace and security by preventing an arms race.

1.3. The Seabed and the Ocean Floors

The freedom of the high seas applies to the seabed and the ocean floor. The concept of peaceful uses of the seabed and the ocean floor is first stipulated in the Seabed Treaty of 1971[14] aiming for the denuclearization of the area, and second, the UN Convention on the Law of the Sea of 1982 aiming to reserve the area and its resources as the Common Heritage of Mankind (hereinafter: CHM). In applying the concept to their regimes, two different approaches are taken as: including the provisions of verification in the former, and establishing the International Seabed Authority (hereinafter: ISA) in the latter.

It is worth noting that the concept of peaceful uses of the area is linked with the CHM concept. The notion was advanced by developing States who concerned about the exceeding exploitation of marine mineral resources outside areas of national jurisdiction by developed States. The notion was first reflected to the 1967 OST and included in Article 11 of the Moon Agreement of 1979[15] however; it had already been a vague guiding principle. A similar approach was taken in UN resolution on the Committee on the Peaceful Uses of the Sea-Bed and the Ocean Floor beyond the Limits of National Jurisdiction of 21 December 1968.[16] In the end, the area and its resources were formally regarded as a common heritage by the Sea-Bed Declaration of 1970.[17] In the denuclearization of the area, the first paragraph in the Preamble of the Treaty of 1971 recognizes the common interest of mankind in the progress of the exploration and use of the seabed and the ocean floor for peaceful purposes. Furthermore, the Preamble indicates the measures to ensure the peaceful uses by excluding the area from an arms race, by taking a step on general and complete disarmament under strict and effective international control or continuous negotiations, and by furthering the purposes

and principles of the UN Charter without the freedom of the seas.[18]

Apart from the Seabed Treaty of 1971, the concept of peaceful uses of the seabed and the ocean floor is included in the UN Convention on the Law of the Sea of 1982. Article 141 provides that the area should be open to all States exclusively for peaceful purposes, whether coastal or land-locked, without discrimination and without prejudice to the other provisions of the Part of the Seabed. Considering negotiations on the question of military uses of the seabed in the Committee on Disarmament in Geneva, Article 141 of the Convention of 1982 emphasizes the exclusive peaceful uses of the seabed by all States.[19] The concept of peaceful uses is also supported by other principles as: the CHM principle in Article 136; the principle of non-appropriation denying sovereignty and sovereign rights in Article 137; the principle of common interest and international cooperation in Article 138; and the principle of peaceful uses in Article 143 which repeating peaceful purpose in scientific research with an emphasis on the interest of humankind. Among those principles, the CHM concept has been an obstacle in administrating the ISA.

The core provision of verification in the Sea-bed Treaty of 1967 is Article III. The provision consists of six paragraphs as: Article III (1) on the affirmation of the right to observe activities in the area; Article III (2) on concrete verification measures as consultation, reporting, on-site inspection under certain conditions; Article III (3) on further measures to get rid of doubt of breaches; Article III (4) on the implication of possibility to appeal to the UN Security Council to take appropriate action in case of severe doubt of breaches; Article III (5) on the use of National Technical Means (hereinafter: NTM) for verification in accordance with the UN Charter; and Article III (6) on the requirement of such verification procedures to be conducted "with due regard for rights recognized under international law, including the freedom of the high seas and the rights of coastal states with respect to the exploration and exploitation of their continental shelves."

As a difference approach from the denuclearization of the area, the ISA is established on 16 November 1994 under the Convention of 1982 and the Agreement of 1994 Relating to the Implementation of Part XI of the Convention of 1982[20]. It aims to organize and control activities in the area, particularly to administrate the resources of the area. Due to applying the CHM concept to the control of the resources in the area, the ISA faces difficulties in involving key actors as the US. The CHM concept was elaborated in the Sea-Bed Decleration of 1970 [21] recognizing the lack of substantive rules for regulating the exploration of the area and the exploitation of its resources and defining those two as the CHM. Most principles in the Declaration are reflected to Article 133 to 149 of the Convention of 1982. In particular, Article 136 is the provision of the comon heritage of mankind

Although the legal regime under the ISA is accepted by States who prefer to reserving the area as the CHM, the industralized States were dissatisfied with the provision of Part XI.[22] The seabed regime of Part XI and the resolution of UNCLOS III on the Preparatory Commission for the ISA and for the International Tribunal for the Law of the Sea[23] failed in filling the gap between the developed and industrialized States. In order to avoid the development of conflicts, the UN Secretary-General initiated informal consultations among interested states from 1990 to 1994. The outcome of the consultation resuled into the Agreement of 1994 aiming to prevent the emerge of a dual regime as: the one regime fun by the ISA under the Convention of 1982 and the other independently by some industrialized States.[24] Section 4 of the Annex to the Agreement of 1994 ensures the CHM principle and equitable exploitation of the resources of the area for the benefit of all countries, especially the developing States in Article 155 (2) of the Convention of 1982.

Thus, the peaceful uses of the area and its resources requires the involvement of the industrialized States in the regime of the Convention of 1982 and the Agreement of

1994 under the CHM principle.

2. PRINCIPLE OF PEACEFUL USES OF OUTER SPACE

2.1. "Non-Aggressive" Definition

In the 1950s, the most prioritized issue in the international community was to control nuclear threat by establishing international regime on arms control and disarmament. For this purpose, the concept of peaceful uses of outer space was elaborated by the US with its proposal to establish the inspection system for launching activities.

2.1.1. The US Initiative in the 1950s

Even before the successful launch of the USSR's artificial satellite on 4 October 1957, the concept of peaceful uses of outer space was emphasized by the US. On 14 January 1957, US Ambassador Lodge to the UN presented a comprehensive proposal for nuclear conventional arms reduction, expressing that future developments in outer space should be devoted exclusively to peaceful and scientific purposes, by placing the testing of satellites and missiles under international inspection and participation.[25] In August 1957, Canada, France, the UK and the US submitted a working paper on proposals for partial measures of disarmament[26] to the Sub-Committee of the UN Disarmament Commission, calling for a study of an inspection system to assure that the launching of objects through outer space would be exclusively for peaceful and scientific purposes. On 12 January 1958, it was reemphasized by US President Eisenhower in his letter to USSR Premier Bulganin as "I propose that we agree that outer space should be used only for peaceful purposes."[27] The report was incorporated in the UN resolution 1148 (XII) of 12 December 1959 repeating the need of the inspection system to ensure that the sending of objects through outer space be used "exclusively" for peaceful and scientific purposes.[28]

The same US initiatives were also dedicated to bilateral negotiations with the then USSR during the period between the conclusion of the Antarctic Treaty of 1959 and the Limited Test Ban Treaty of 1963, revealing that the Parties attempted to include the verification mechanism in Article IV(1) of the 1967 OST. First, the concept of peaceful uses of outer space was derived from the US proposal by President Eisenhower submitted it to the General Assembly in 1960.[29] The US declared its position in ensuring peaceful use of outer space by recalling the Antarctic Treaty of 1959 as: "1. [W]e agree that celestial bodies are not subject to national appropriation by any claims of sovereignty; 2. [W]e agree that the nations of the world shall not engage in warlike activities on these bodies; 3. [W]e agree, subject to appropriate verification, that no nation will put into orbit or station in outer space weapons of mass destruction. All launchings of spacecraft should be verified in advance by the United Nations; and 4. [W]e press forward with a programme of international cooperation for constructive peaceful uses of outer space under the United Nations [...]. [30] " The proposal was incorporated in the 1967 OST; however, due to the opposition of the then USSR, it lacks the monitoring scheme for disarmament of outer space in order to verify all launchings of spacecraft in advance[31]. Thus, the General Assembly resolution 1721 (XVI) on 20 December 1961 only called upon States to inform the UN when launching objects into orbit or beyond and asked the UN Secretary-General to establish a public register, later established as the UN Register, under the Registration Convention of 1975, to keep their records. Thus, the first concept of peaceful uses of outer space appeared in the UN resolution was "exclusively" peaceful, which is close to "non-military".

2.1.2. Creation of "Non-Aggressive" Definition

The US first defined "peaceful" as "non-military" in the National Aeronautics and Space Act of 1958.[32] In its section 101, sub-section (a) stipulated that "[T]he

Congress declares that it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of mankind." However, contrary to President Eisenhower's statement of 1960,[33] the US changed its definition in 1962 when Senator Gore, a UN delegate, stated before the UN First Committee that "[I]t is the view of the United States that outer space should be used only for peaceful - that is, non-aggressive and beneficial - purposes. The question of military activities in space cannot be divorced from the question of military activities on Earth. To banish these activities in both environments we must continue our efforts for general and complete disarmament with adequate safeguards. Until this is achieved, the test of any space activities must not be whether it is military or non-military, but whether or not it is consistent with the United Nations Charter and other obligation of law."[34] Thus, the US emphasized the lawfulness of defining the peaceful as "non-aggressive." In 1984, the US Senator Goldwater stated that "space is just another place where wars will be fought." Outer space has been regarded as "ultimate battlefield" contrary to increasing the dependence of human society on space-based infrastructure in orbit around the Earth, space objects still are fragile orbiting at high speeds and vulnerable to disturbance and destruction by simple impact.

2.2. No Specific Provision of Verification

"The principle of peaceful use of outer space laid down in the Outer Space Treaty of 1967 correlates with one of the leading principles of general international law – the principle of disarmament."[35] Article IV is the provision of arms control. Article IV (1) prohibits the placement of nuclear weapons or any kinds of weapons of mass destruction in orbit around the Earth[36] and Article IV (2) ensures the use of the Moon and other celestial bodies for "exclusively peaceful purposes."[37] However, no specific provision of verification is included in the legal regime for ensuring peaceful uses of outer space.

3. VERIFICATION MECHANISM FOR SPACE SECURITY

The introduction of verification provisions to modern international law is traceable to the creation of weapons of mass destruction as nuclear weapons, biological and chemical weapons. Those weapons were regarded as threat to international peace and security, therefore, the UN prioritized the issue on its agenda. Considering the existing arms control provision of Article IV, which deals with the non-proliferation of nuclear weapons into outer space, verification mechanism needs to be studied and designed to ensure its compliance.

3.1. The Need for Verification Mechanism in International Space Law

3.1.1. Verification of the Use of Space Weapons

There is no comprehensive definition of space weapons, however; it is important to understand how verification works to detect weapons being launched in outer space. The effective verification requires the consideration of the entire armament cycle from R&D to testing, production, deployment, stockpiling, possible use, transfer, reduction and destruction of weapons.[38] Space weapon is not exceptional in terms of requiring the phase of testing, deploying and use of weapons in outer space. Thus, the phases of verification require further identification of whole process.

It is pointed out that arms control agreements are most likely to focus on limitations just after completion of the research phase and before major funding for production is approved, or when the system is fully deployed.[39] In particular, considering that most of space technologies are dual-use, the target phase of verification must be well defined for ensuring space security. Such phases are roughly categorized as: R&D, production, deployment, storage, transfers, withdrawal or destruction. The importance of various "lifecycle" stages differ by each weapons to be verified. In case of the

explosive testing of nuclear weapons, monitoring is more effective measure in the phase of R&D. Thus, a throughout examination of a weapon's life enable to permit certain critical points to be identified upon which verification efforts should productively focus on[40] considering that the result could be a more cost-effective verification system with a higher degree of reliability.[41]

3.1.2. The Right of Self-Defense in Outer Space

Under the UN Charter, the use of force is prohibited except for self-defense, collective security or peace keeping operation. In terms of accelerating space weaponization, the legal basis for pursuing military uses is the right of self-defense which leaves a question whether the exercise of the right is lawful in outer space.

The prohibition of the use of force is provided in Article 2 (4) of the UN Charter of and in customary international law constituting a rule of *jus cogens*, however; the paramount obligation not to resort to force has an exception stipulated in Article 51 of the Charter as "the right of self-defense".

The right of self-defense has been studied in the Committee for the Prevention of an Arms Race in Outer Space of the Conference on Disarmament. They concluded that the right of self-defense is not allowed to exercise in outer space, considering that the UN resolution [42] establishing the PAROS Committee itself is the consensus to prevent any arm race based on the right of self-defense.

Before defining conditions for exercising the right of self-defense in outer space, it is important to take other elements into consideration which differ from those on the Earth. First, no sovereignty exists in outer space but jurisdiction and control on space assets are claimed by States who registered under the Registration Convention of 1975. The interpretation of jurisdiction has been various as, for example, "territorial jurisdiction", "extra-territorial jurisdiction", "substantial jurisdiction", or "sovereign jurisdiction" in the legal regime of the high seas. To make a legal basis for the use of force in outer space, jurisdiction in outer space requires further consideration on its clarification. Second, environmental character of outer space requires more strict conditions to justify the use of force. Different from the Earth's environment, States need to refrain from causing space debris by using the force, which is against the freedom of outer space and against the Space Debris Mitigation Guideline of 2007[43], even though it is non-binding.

3.2. Verification Mechanism for Space Security

Verification is the process of gathering and analyzing information to make a judgement about Parties' compliance or non-compliance with an agreement, with the aim of building confidence between the Parties by assuring them that their agreement is being implemented effectively and fairly.[44]

Due to neither international nor comprehensive model/formula, the primary problem of verification is to define verification itself; however, the general process of verification are accepted which includes the following elements: (1) the existence of an obligation, the fulfillment and observance of which must be verified; (2) the gathering of information relating to the fulfillment of the obligation; (3) the analysis, interpretation and evaluation of the information from a technical, juridical and political viewpoint; and (4) the assessment concerning observance or non-observance of the obligation, which concludes the actual verification exercise. While the problem of appropriate reactions to the possible violation of an obligation appears to be a logical consequence of this exercise, it is not in itself an integral pat of verification.[45]

Major functions of verification may be distinguished as: fact-finding; political and legal qualification of facts; and enforcement to ensure the compliance of treaties.[46] Since the goals of disarmament and arms control are different, the goals of verification are also different. On the one hand, the primary

objective of disarmament is to reduce the level and amount of armaments and relevant technologies, ultimately aiming for their complete removal or elimination. Its theoretical aspect is coherent with the aim in Article 2 (4) of the UN Charter which prohibits the use of force. On the other hand, the objective of arms control is to limit the level of quality and quantity of weapon systems while keeping military power balance. It imposes restrictions on the development, production, stockpiling, proliferation, and usage of weapons, in particular, weapons of mass destruction.

3.2.1. Possible Provisions in the 1967 OST

The 1967 OST only provides opportunities for the States Parties to verify on voluntary basis. Such provisions are Article IX, X, XI and XII. Although treaties aiming to prevent an arms race in outer space were elaborated by superpowers in the Cold War as the ABM Treaty of 1972[47] or the SALT II Agreement of 1979[48], the former was invalidated by the US withdrawal in 2002 and the latter was not ratified. Thus, the possible verification mechanism in international space law is on reciprocity basis without penalty but under international cooperation. The effectiveness of verification depends on the level of NTMs. Due to the limited number of space-faring States, Multilateral Technical Means (hereinafter: MTMs) are more effective in enhancing transparency in outer space.

3.2.2. NTMs vs. MTMs

Verification Measures are dividable into two categories as NTMs and MTM. The former relies on unilateral means of verification while the latter use multilateral means of verification.

NTMs are nationally owned and operated technologies and techniques used to monitor the treaty obligation of another States. In general, NTM include satellite, high-altitude and other aircraft and land-based remote detection systems, electronic signals intelligence (SIGINT) and electronic intelligence (ELINT) collection systems and systems for collecting open source information.[49] Due to its direct linkage with national security, States Parties were unwilling to define NTM.[50] On the other hand, there is an increasing tendency that States provide NTM-derived information for multilateral verification purposes. In order to involve non-space-faring States, verification mechanism using MTMs through international organizations is suitable for ensuring space security.

3.3. Verification by International Organization

Some verification mechanisms require the establishment of international organizations for monitoring or disarmament verification as the Agency for the Control of Armaments (ACA) of the Western European Union or the Agency for the Prohibition of Nuclear Weapons in Latin America (OPONAL) in Latin America. As to the present, the number of such organizations has increased and its role has varied. Such a tendency provides certain implication that verification mechanism and procedures have become more elaborate and cooperative, in short, multilatelized.

The proliferation of weapons has increased and the universal adherence to multilateral disarmament agreements leads to the need to operationalize the political principle of indiscriminate and equal access to verification capabilities.[51] Thus, internationalized verification measures enable all States to have the equal rights to participate in the process of the international verification of agreements to which they are parties.[52] Even in the process of establishing, elements for confidence-building measures are required which result into better compliance.[53] There is also another aim in establishing international organizations as the US proposal for an International Atomic Control Authority, known as the Baruch Plan, was aimed at denying the USSR access to atomic weapons; or as the Western Europe aim of establishing the Armament Control

Agency was at denying the right of Germany to produce atomic, biological, chemical and certain conventional weapons.[54]

Besides involving international organizations, the confidentiality of data acquired for verification is the issue to be considered or opposed among States Parties. The format of sharing information on advanced and sensitive technologies obtained by NTMs, which is directly related to intelligence gathering, is problematic.

3.3.1. Verification by UN Security Council

The United Nations Security Council has no statutory duty to ensure compliance with arms control treaties unless there is a threat to international peace and security[55] which is different from a test-ban treaty. The Council may initiate an investigation of alleged breach on request; however, there is no obligation to do so, even Member States of the Council may use the power of veto. Moreover, if none of Member States are parties to a treaty, a request for the investigation for the compliance may not to be considered in the Council. In any event, it is the organization of the parties that should perform the function of compliance evaluation, not an external international organization. [56] In order to enhance the effectiveness of treaties, their content should be clarified in case of breach, except the withdrawal, by inducing a defaulting State promptly to redress the situation.[57]

3.3.2. Verification by Specific Organization

There are three treaties which established international organizations for verifying the compliance as: (1) the Modified Brussels Treaty of 1954;[58] (2) the Treaty of Tlatelolco; [59] and (3) the Guadalajara Agreement between Argentina and Brazil. (1) established the Western European Union and the former Arms Control Agency which was already defunct; (2) the Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL) and (3) the Argentine-Brazilian Agency for Accounting and Control of Nuclear Materials (ABACC).

In 1978, France submitted a proposal to the UN to establish the International Satellite Monitoring Agency.[60]. And others followed, however, whole proposal failed in coordinating political will to share space-based information which is directly related to national security.

3.3.3. Challenges

All existing verification-dedicated organizations are treaty specific. The analysis of practices experienced by the three organizations above provides certain lessons. Complete controls of prohibited armaments and on-site challenging inspections are far acceptable to the suspected States. In the case of ACA, France did not agree with verification measures under the proposed Convention which allows on-site challenge inspection.[61]

CONCLUSION

The principle of peaceful uses applied to international area as, Antarctica, the high seas, the seabed and the ocean floor, has different definition and different legal regime for ensuring peace and security of those areas. Outer space is not exceptional in this respect.

Due to the military-oriented definition of peaceful uses of outer space, the legal regime in outer space fails in establishing an effective verification mechanism.

Considering the present tendency that the increasing number of States cooperate to MTMs-based verification through international organization by providing NTMs-based information, it is suitable for space security to establish such an organization responsible for verification with the aim of enhancing transparency in outer space.

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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, 27 January 1967, 610 UNTS 205.

[2] WOLFRUM R., KLEMM, U., Antarctica, in: R. Bernhardt (ed.), *Encyclopedia of Public*

International Law, Volume I, 1992, p. 174.
[3] The Antarctic Treaty, 1 December 1959, 402 UNTS 71.
[4] Article I of the Antarctic Treaty of 1959.
[5] Article II of the Antarctic Treaty of 1959.
[6] Article IX (1) (f) of the Antarctic Treaty of 1959.
[7] The twelve States were: Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the UK, the US and the USSR.
[8] This term was first used by an Argentine scholar and diplomat, Roberto Guyer, in his 1973 lectures at The Hague Academy of International Law: see R. Guyer, "The Antarctic System", in Hague Recueil des Cours, vol. 139-II, 1973, pp. 149-226, at p. 156.
[9] Supre note. 2, p. 181.
[10] United Nations Convention on the Law of the Sea, 10 December 1982, 1833 UNTS 3.
[11] Convention of the High Seas, 29 April 1958, 450 UNTS 11.
[12] Official Records, p. 62.
[13] Year Book of International Law Commission, 1956, p. 284.
[14] Treaty on the Prohibition of the Emplacement of Nuclear Weapons or Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof, Annex to UN General Assembly Resolution 2660 (XXV), 7 December 1970, 10 *International Legal Materials*, 1971, p. 145.
[15] Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, 18 December 1979, 1363 UNTS 3.
[16] UN GA Res. 2467 A-D (XXIII).
[17] UN GA Res. 2749 (XXV), 17 December 1967,Declaration on Principles Governing the Sea-bed and the Ocean Floor, and the Subsoil thereof, Beyond the Limits of National Jurisdiction.
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[23] UN GA Res. A/RES/37/66, 3 December 1982.
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[25] UN GA (XI), 1st Com., A/C.1/SR 821, 14 January 1957, p. 41.
[26] DC/SC.1/66, Cmnd. 333, 1957, 96, p. 98.
[27] "President Eisenhower and Premier Bulganin Echange Correspondence on Proposals for Reducing International Tensions," *38 Dep't State Bull*, 1958, p. 126.
[28] *Documents on Disarmament: 1945-1959 (Vol.2)*, 1960, pp. 901-902. Also see, MATTE, N.M., BERNHARDT, Rudolf L. (ed.), *Encyclopedia of Public International Law*, Volume I, 1992, p. 552.
[29] A/AC.105/C.2/SR.65, 22 July 1966, pp. 9-10 (the US); ibid. /SR.66, 25 July 1966, pp. 6-7 (the then USSR).
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