

ISSUE FOCUS

Prevention of Outer Space Weaponization under International Law: A Chinese Lawyer's Perspective

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Since the existing international legal regime governing space weapons is inadequate, the international community is worried about the weaponization of outer space. This paper introduces the efforts and contributions in this regard made by the UN General Assembly, the Conference on Disarmament, the UN Committee for Peaceful Uses of Outer Space and the UN Institute for Disarmament Research. It then analyzes several different approaches to solving the problem of weaponization of outer space, i.e. amendment of Article IV of the Outer Space Treaty, conclusion of a multilateral treaty on comprehensive prohibition of space weapons, and transparency and confidence-building measures in outer space activities. It concludes that a multilateral treaty on the prevention of weaponization of outer space with appropriate verification mechanism will be a final solution. At the present stage, a combination of various CBMs can also serve the purpose to prevent space weapons.

Keywords

Outer Space Treaty, Space Weaponization, Prevention of Space Weapons, Multilateral Treaty, Transparency and Confidence-Building Measures, Code of Conduct

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I. Introduction

The international community has long been concerned about the weaponization of outer space. Fears that outer space would become another arena for warfare have been voiced in the United Nations General Assembly (“UNGA”),¹ the UN Committee for Peaceful Uses of Outer Space,² and the Conference on Disarmament.³ Debates on weaponization of outer space were frequently heated in recent years: when the United States’ space policy was announced in 2006 denying the use of space to adversaries if necessary;⁴ when the China’s land-based missiles destroyed a home-made obsolete meteorological satellite at 800 km above the earth on January 11, 2007;⁵ when a US spy satellite was shot down by a US MS-3 missile on February 20, 2008;⁶ and when the flight test of the US air force X-37 reusable space plane took place in April 2010.⁷

What makes the international community so worried is that the existing international legal regime governing space weapons is inadequate.⁸ Since the withdrawal of the United States from the Anti-Ballistic Missile Systems Treaty in 2002, and the termination of US-Soviet Treaty on Limitation of Strategic Offensive Arms of 1979, there are only three international treaties governing space weapons, namely, the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (“Partial Test Ban Treaty”) of 1963, the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies (“Outer Space Treaty”) of 1967, and the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (“Moon Agreement”) of 1979. However, the Partial Test Ban Treaty only prohibits the testing of nuclear weapons

¹ See *Secretary-General says benefits of space exploration should not be limited to privileged few*, PRESS RELEASE, U.N. Doc. SG/SM/7767 (Apr. 12, 2001), available at <http://www.un.org/News/Press/docs/2001/sgsm7767.doc.htm> (last visited on Sept. 20, 2011).

² Report of the Committee on the Peaceful Uses of Outer Space, U.N. GAOR, 58th Sess., Supp. No. 20, U.N. Doc. A/58/20 8 (June 11-20, 2003), available at <http://www.un.org/documents/ga/docs/56/a5620.pdf> (last visited on Sept. 20, 2011).

³ Paul Meyer, *The Conference on Disarmament and the Prevention of an Arms Race in Outer Space*, available at http://www.unidir.org/bdd/fiche-ouvrage.php?ref_ouvrage=92-9045-011-B-en (last visited on Sept. 20, 2011).

⁴ See National Space Policy of the United States of America (Aug. 31, 2006), available at <http://www.nss.org/resources/library/spacepolicy> (last visited on Sept. 20, 2011).

⁵ Aura Ang, *China confirms Anti-satellite Missile Test*, CBS NEWS (Jan. 23, 2007), available at <http://www.cbsnews.com/stories/2007/01/23/world/main2387524.shtml> (last visited on Sept. 20, 2011).

⁶ David Morgan, *US: Missile Smashed Spy Satellite*, CBS NEWS (Feb. 11, 2009), available at <http://www.cbsnews.com/stories/2008/02/20/tech/main3851209.shtml> (last visited on Sept. 20, 2011).

⁷ Paul Rincon, *X-37B US Military Spaceplane Returns to Earth*, BBC NEWS (Dec. 3, 2010), available at <http://www.bbc.co.uk/news/science-environment-11911335> (last visited on Sept. 20, 2011).

⁸ Conference on Disarmament, CD/1818 (Mar. 14, 2007), 18-19.

in outer space. It does not prohibit the testing of other space weapons. Article IV, paragraph 1 of the Outer Space Treaty prohibits States Parties to the Treaty “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 was understood that the list of the prohibited activities is “limited to those specific activities.”⁹ The provision “does not prohibit the development and use of conventional space weapons that have a nuclear source,”¹⁰ “the use of particle-beam or laser weaponry in space”¹¹ and anti-satellite weapons.¹² Although Article 3(4) of the Moon Agreement prohibits the testing of any type of weapons on or in the Moon and Article 3(3) extends the prohibition of nuclear weapons and weapons of mass destruction to the Moon and the orbit around the Moon, few countries are party to the Moon Agreement and no important space-faring countries have ratified the Moon Agreement. No wonder those provisions have limited effect on the prevention of weaponization of outer space. Accordingly, the existing multilateral treaties on prevention of space weapons neither fully address the issue of non-weaponization of outer space, nor take into account technical advances that have taken place.

Space technologies offer significant solutions to many targets of development in the 21st century. Nowadays, satellites in particular are indispensable for every country’s national security, global communications, international navigation, development of commercial space, internet industries, etc. However, a report of the U.S. Space Commission identified “at least 11 categories of anti-satellite attack: from ground segment attack or sabotage to kinetic kill to nuclear Anti-Satellite Weapon (“ASAT”), particle beam weapons, and electronic attack.”¹³ These weapons will threaten the existence of satellites, and the security and economic development of all States. Only a weapon-free outer space can avoid risks to space assets and ensure that all mankind would benefit from the peaceful exploration and use of outer space.

Further, it was pointed out that “if one State should start pursuing the weaponization of outer space, others will inevitably follow.”¹⁴ Development of space weapons would result in an escalating arms race in outer space as each country would feel the need to develop more advanced space weapons “in order not to be outmatched

⁹ Michel Bourbonnière & Ricky J. Lee, *Legality of the Deployment of Conventional Weapons in Earth Orbit: Balancing Space Law and the Law of Armed Conflict*, 18 EUR. J. INT’L L. 873, 881 (2007).

¹⁰ *Id.* at 881.

¹¹ *Id.* at 881-882.

¹² FRANCIS LYALL & PAUL B. LARSEN, *SPACE LAW: A TREATISE* 516-517 (2009).

¹³ Jon Kyl, *China’s Anti-Satellite Weapons and American National Security*, HERITAGE FOUNDATION LECTURE (Jan. 29, 2007), available at <http://www.heritage.org/Research/NationalSecurity/hl990.cfm> (last visited on Sept. 20, 2011).

¹⁴ *Supra* note 8, at 7.

by its potential adversaries.”¹⁵ For example, as soon as the new US space policy was announced in 2006, the Russian government responded that it would not lose sight of the risk of the weaponization of outer space. Russia would amend national space development plan to increase the stability of its satellite system and to strengthen its functions. In addition, it would conduct relevant scientific and technical research in response to the US.¹⁶ The commander-in-chief of the Indian Air Force stated on January 28, 2007 that India would establish a Space Command for the purposes of developing outer space technology and protecting India against attacks from outer space.¹⁷ The US Air Force planned to develop “a count-ASAT space weapon system before 2011.”¹⁸ The system would “enable the Pentagon to intercept a direct-ascent anti-satellite weapon, [which is] launched from the Earth, before it strikes the target in low Earth orbit.”¹⁹ The above facts prove that if one State is allowed to test anti-satellite weapons or other space weapons, every State will claim the same right to do so. As a result, outer space will become an area of conflicts. Therefore, there is a need to fill the gaps of the existing international space law and to prevent weaponization of outer space before the space weapons have been successfully tested, produced and deployed.

This research is devoted to realizing the non-weaponization of outer space under international law. For this purpose, this paper compares different approaches towards space weaponization and to find the solution of the problem. The paper is divided into four parts including introduction and conclusion. Part one introduces the existing international regime regarding the prevention and prohibition of space weapons. Part two recalls the efforts and contributions made by the international community to tackle the issue of weaponization of outer space. Part three analyzes and compares several different approaches to solving the problem. Part four makes a conclusion and suggests continuous endeavors of the international community to prevent an arms race in outer space.

¹⁵ Alex B. Englehart, *Common Ground in the Sky: Extending the 1967 Outer Space Treaty to Reconcile U.S. and Chinese Security Interests*, 17 PAC. RIM L. & POL'Y J. 133, 136 (2008).

¹⁶ See *Russia Will Amend the Development Plan in Response to the US New Space Policy* (available only in Chinese) 俄罗斯将修改针对美国太空新政策的发展计划, SCIENCE & TECHNOLOGY 科技 (Dec. 29, 2006), available at <http://tech.wx216.com/hkht/44408.html> (last visited on Sept. 20, 2011).

¹⁷ See *US New Space Policy Allows Pre-emptive Attack against Satellites of Other States* (available only in Chinese) 美国新版太空政策允许先发制人攻击他国卫星, BEIJING EVENING NEWS (Jan. 30, 2007), available at <http://mil.news.sina.com.cn/2007-01-30/1532429223.html> (last visited on Sept. 20, 2011).

¹⁸ Marko Beija, *Arms Race in Space* (Mar. 31, 2008), available at http://www.fpipf.org/articles/arms_race_in_space (last visited on Sept. 20, 2011).

¹⁹ *Id.*

II. The Efforts Made by the International Community

A. UNGA

States are unwilling to unilaterally restrain from the development of space weapons and anti-satellite weapons. Therefore, prevention of the weaponization of outer space relies on international cooperation. The UNGA has made great efforts in this regard. As early as 1963, the UNGA adopted Resolution 1884 (XVIII) solemnly calling upon all States “not to place in outer space and on celestial bodies any space objects carrying nuclear weapons or any other weapons of mass destruction.”²⁰ In 1981, the UNGA adopted the first resolution on the prevention of an arms race in outer space. The member States of the United Nations were “aware of the need to prevent an arms race in outer space and in particular of the threat posed by anti-satellite systems and their destabilizing effects for international peace and security.”²¹ The General Assembly requested the Conference of Development (“CD”) “to consider, as from the beginning of its session in 1982, the question of negotiating effective and verifiable agreements aimed at preventing an arms race in outer space,”²² and requested the CD “to consider as a matter of priority the question of preventing an arms race in outer space” in 1983.²³ Since 1982, the General Assembly has adopted an annual resolution asking States to refrain from actions contrary to the peaceful uses of outer space and calling for negotiations in the CD on a multilateral agreement to support the prevention of an arms race in outer space (“PAROS”). In recent years, these resolutions have been supported by more countries. The UNGA resolution of 2004 obtained 178 votes in favor, only the United States, Israel, Haiti, and Palau abstained.²⁴ In December 2006, the United States was the only one against the UNGA resolution on outer space activities through transparency and confidence-building measures.²⁵ In 2009 and 2010, the UNGA resolutions entitled “Prevention of an Arms Race in Outer Space”²⁶ were adopted with only two absent.²⁷

²⁰ G.A. Res. 1884 (XVIII), U.N. Doc. A/RES/18/1884 (Oct. 17, 1963).

²¹ G.A. Res. 36/97, U.N. Doc. A/RES/36/97 (Dec. 9, 1981).

²² *Id.*

²³ G.A. Res. 38/70, U.N. Doc. A/RES/38/70 (Dec. 15, 1983).

²⁴ See Inventory of International Nonproliferation Organizations and Regimes Center for Nonproliferation Studies, *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (Outer Space Treaty) OS-2* (July 30, 2010), available at http://www.nti.org/e_research/official_docs/inventory/pdfs/ospace.pdf (last visited on Sept. 20, 2011).

²⁵ *Id.*

²⁶ G.A. Res. 64/28, U.N. Doc. A/RES/64/28 (Jan. 12, 2010); G.A. Res. 65/44, U.N. Doc. A/RES/65/44 (Jan. 13, 2011).

²⁷ A/64/P.55 (Dec. 2, 2009), at 7. See U.N. Doc. A/65/PV.60 (Dec. 8, 2010), at 6.

These resolutions demonstrate the desire of the UN member States to prevent an arms race in outer space. The broad consensus on restraining States from the development of weapons in outer space may play a role in the formation of international customary obligations, though these resolutions are not binding at present.

B. The Conference on Disarmament

The Conference on Disarmament was established as the single multilateral disarmament negotiating forum of the international community in 1979.²⁸ The CD started to consider the issue of the prevention of an arms race in outer space in 1983.²⁹ It established an ad hoc committee to consider this issue as a matter of priority in 1985. However, views on whether new legally-binding instruments are needed differ among different regional groups.³⁰ The CD members had not worked on matters of substance until the turn of the new century. The recent contributions of China and Russia is to reignite the interest in the negotiation of an international multilateral treaty by jointly presenting a working paper outlining possible elements of a future international legal instrument on the prevention of space weaponization in 2002.³¹ The original proposal was revised in the form of Draft Treaty on the Prevention of the Placement of Weapons in Outer Space in 2008.³² The CD Presidents have made efforts to provide for discussions of the PAROS item either through regular meetings or informal discussions. According to the coordinator of the 2010 informal discussions on the PAROS, however, “conditions for negotiations of a legally-binding instrument are not yet given.”³³

C. UN Committee on the Peaceful Uses of Outer Space

The UN Committee on the Peaceful Uses of Outer Space (“COPUOS”) was established by the UNGA Resolutions 1472 (XIV) in 1959.³⁴ Although the main mandate of the COPUOS is to promote international cooperation on the peaceful use of outer space, it has become an additional forum to discuss prevention of an arms race in outer space under the title, “Ways and Means of Maintaining Outer Space for Peaceful Purposes”

²⁸ United Nations Office at Geneva, An Introduction to the Conference, available at [http://www.unog.ch/80256EE600585943/\(httpPages\)/BF18ABFEFE5D344DC1256F3100311CE9?OpenDocument](http://www.unog.ch/80256EE600585943/(httpPages)/BF18ABFEFE5D344DC1256F3100311CE9?OpenDocument) (last visited on Sept. 20, 2011).

²⁹ *Supra* note 3.

³⁰ *Id.*

³¹ CD/1679 (June 28, 2002).

³² CD/1839 (Feb. 29, 2008).

³³ *Id.* at 6.

³⁴ G.A. Res. 1472 (XIV), U.N. Doc. A/4351 (Dec. 12, 1959).

since the 1980s. In recent years, issues such as transparency and confidence-building measures, a code of conduct for outer space activities and the draft treaty on the prevention of placement of weapons in outer space have been discussed in the sessions of the COPUOS meetings.³⁵ Although there has been a long debate on whether the COPUOS is an appropriate forum to deal with disarmament, it can not be ignored that issues on the PAROS discussed at the forum of the COPUOS are getting more intense. The COPUOS' work will be valuably complementary to the CD's.

D. UN Institute for Disarmament Research

The United Nations Institute for Disarmament Research ("UNIDIR") is an autonomous institution within the framework of the United Nations. At the First Special Session of the United Nations General Assembly Devoted to Disarmament in 1978, the Government of France proposed the creation of a United Nations institute for sustained, forward-looking research and study activity in the field of disarmament to promote informed participation by all States in arms control and reduction. The UNIDIR was then established by the General Assembly for the purpose of undertaking independent research on disarmament and related problems, particularly international security issues, working in close relationship with the Department for Disarmament Affairs of the Secretariat.³⁶ For over three decades since 1980, the UNIDIR has produced relevant and policy-oriented research on diverse topics. With regard to non-weaponization of outer space, the UNIDIR has hosted a series of conferences on space security, involving governmental, NGO and academic experts since 2002, urging the CD to start substantive work on the PAROS issues. The conference reports illustrate the wide interest in an agreement on the non-weaponization of outer space.³⁷

III. Approaches to Solving the Problem of Space Weaponization

There are different approaches to solving the problem of space weaponization, such as amendment of the Outer Space Treaty, conclusion of a multilateral treaty on comprehensive prohibition of space weapons, and transparency and confidence-

³⁵ U.N. GAOR, 65th Sess., Supp. No. 20, U.N. Doc. A/65/20 (June 9-18, 2010).

³⁶ UNIDIR Statute art. I.

³⁷ *Supra* note 8, at 4.

building measures including the creation of a code of conduct for outer space activities.

A. Amendment of Article IV of the Outer Space Treaty

Article IV of the Outer Space Treaty does not fully prohibit all kinds of space weapons.³⁸ This is because the treaty was drafted at the time when nuclear weapons were the only way to successfully attack satellites. But not all countries considered it as “the best that could have been accomplished for space security during that era of the Cold War.”³⁹ Just one year after the Outer Space Treaty entered into force, Italy requested the UN General Assembly to include an item in the agenda on the amendment of Article IV of the Outer Space Treaty. The amendment sought to prohibit placing nuclear weapons or any other kinds of weapons of mass destruction “in complete or partial orbit, around the Earth or around any other celestial body.”⁴⁰ Voices have been raised advocating the amendment of Article IV of the Outer Space Treaty since then.

About ten years later, inspired by the negotiations held in 1977-1979 between the United States and the Soviet Union on limiting the ASAT systems, Italy submitted a Memorandum to the Conference on Disarmament suggesting the drafting of a Protocol of the Outer Space Treaty.⁴¹ The document further proposed a total prohibition on the stationing and testing in Earth orbit or beyond to all weapons. Peru and Venezuela also made similar proposals to the CD on amending the Outer Space Treaty.⁴²

Scholars also suggested amending Article IV of the Outer Space Treaty. According to one proposal, the updated Article IV would not only prohibit the deployment of weapons of mass destruction, but also ban “kinetic vehicles, space-based laser weapons, and the ASATs.”⁴³ These prohibitions are due to the fact that the space weapons “have the potential to seriously disrupt the effectiveness of ICBMs and thus vitiate the peace.”⁴⁴ Moreover, they will pose threats today as serious as the deployment of nuclear weapons

³⁸ It reads: “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.”

³⁹ CD/1865 (June 5, 2009), at 2.

⁴⁰ A proposal for the review of Article IV of the 1967 Treaty, UN Doc. A/7221 (Sept. 10, 1968).

⁴¹ Additional Protocol to the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies” with a view to Preventing an Arms Race in Outer Space (Mar. 26, 1979), at CD/9.

⁴² Proposal for Amendment 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 (July 28, 1989), at CD/939; Proposed Amendment to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies submitted by Venezuela (Aug. 2, 1988), at CD/851.

⁴³ *Supra* note 15, at 152.

⁴⁴ *Id.* at 145.

in space in 1967.⁴⁵

Article XV of the Outer Space Treaty lays down: “Any State Party to the Treaty may propose amendments to the Treaty. Amendments shall enter into force for each State party to the Treaty accepting the amendments upon their acceptance by a majority of the States Parties to the Treaty and thereafter for each remaining State Party to the Treaty on the date of acceptance by it.” It means that the Treaty could be amended. Currently, there are 100 State Parties to the Outer Space Treaty. An amendment as such will enter into force when more than 50 State Parties have accepted it. This procedure makes amendments to the Treaty rather easier than the conclusion of a new treaty. However, the amendment shall bind only those State Parties that accept the amendment. The amendment will thus have limited effect as it is not binding those State Parties that oppose the amendment.

In addition, only updating the prohibited weapons is not sufficient to solve the problem of weaponization of outer space. First, it does not prohibit the testing of those weapons in outer space. Accordingly, it will not prevent States from continuously developing those weapons. Complete prohibition of space weapons requires prohibiting testing, development, deployment and storage of all kinds of space weapons. Second, while the Outer Space Treaty prohibits the placement of nuclear weapons and weapons of mass destruction in outer space, the treaty does not provide any verification mechanism. The said amendment does not fill the gap of the existing treaty system because any changes made to Article IV of the Outer Space Treaty without a verification mechanism would not ban space weapons effectively.⁴⁶

In this regard, Venezuela used to propose a Protocol setting forth appropriate verification mechanisms to supplement the Outer Space Treaty in order to ensure compliance with the complete prohibition of space weapons.⁴⁷ Verification of space weapons and use of force or threats to use force against space objects are a controversial issue. Some commentators see verification of a space weapon ban as technically possible.⁴⁸ China, while acknowledging the importance of a politically acceptable, technologically feasible and economically affordable verification system, opines that such a verification arrangement will be difficult to design and implement for cost and

⁴⁵ *Id.*

⁴⁶ Paul Meyer, *Space Security and the Prevention of an Arms Race in Outer Space* (Aug. 26, 2004), available at <http://www.international.gc.ca/genev/new-nouveau/2004/20040826.aspx?view=d> (last visited on Sept. 20, 2011).

⁴⁷ U.N. GAOR, 43rd Sess., Supp. No. 27, U.N. Doc. A/43/27 (Oct. 3, 1988).

⁴⁸ Richard A. Bruneau & Scott G. Lofquist-Morgan, *Verification Models for Space Weapons Treaties: A Flexible, Layered Approach as a Negotiating Tool*, BUILDING THE ARCHITECTURE FOR SUSTAINABLE SPACE SECURITY, PROC. 1 (Mar. 30-31, 2006); Regina Hagen & Jürgen Schegeran, *Is a Space Weapons Ban Feasible? Thoughts on Technology and Verification of Arms Control in Space*, DISARMAMENT FORUM, MAKING SPACE FOR SECURITY, PROC. 50 (2003).

capacity reasons.⁴⁹ The US government has been of the view that prohibitions of space weapons and use or threat to use force against space objects are not verifiable.⁵⁰ This is because a clear definition of space weapons and prohibited space activities are absent; it makes impossible “to ascertain whether a given object or activity is compliant with the agreement’s terms.”⁵¹ The United States has consistently posited that it is not possible to develop an effectively verifiable agreement for the banning of space-based weapons or terrestrial-based anti-satellite systems.⁵² The difficulty in establishing a mechanism to verify the compliance with a ban of space weapons, therefore, is another obstacle to having a Protocol supplementary to Article IV of the Outer Space Treaty.

B. A Multilateral Treaty on Comprehensive Prohibition of Space Weapons

1. Draft Space Weapon Treaties Proposed by the Soviet Union in 1980s

An international treaty is binding for contracting parties.⁵³ Therefore, it would be a more desirable and effective way to ban outer space weapons. Tracing back to the 1980s, concerns about new kinds of weapons were being developed with rapid advances in science and technology, and the Soviet Union submitted the first draft space weapon treaty to the United Nations to prevent weaponization of outer space in 1981.⁵⁴ The draft treaty would have prohibited only space-based weapons, but would not have restricted the testing, development, and deployment of ground-based or air-launched ASATS. After the US President Reagan announced that the United States was to launch the Strategic Defense Initiative (“SDI”) to develop the capability to intercept and destroy strategic ballistic missiles before they reached the territory of the United States and their allies on March 23, 1983, the Soviet Union once again submitted to the United Nations a revised draft treaty on the prohibition of space weapons.⁵⁵ The draft treaty would have prohibited the “use or threat of force in outer space and the atmosphere and on the Earth through the utilization of ... space objects,”⁵⁶ testing and deploying space-based weapons, and “destroying, damaging, disturbing the normal function or changing the

⁴⁹ Space Security 2010, From Foundation to negotiations, UNIDIR PROC. 26 (Mar. 29-30, 2010).

⁵⁰ Paula A. DeSutter, *Is An Outer Space Arms Control Treaty Verifiable?* (Mar. 4, 2008) at 7, available at <http://www.marshall.org/article.php?id=592> (last visited on Sept. 20, 2011).

⁵¹ *Id.* at 3.

⁵² CD/1847 (Aug. 26, 2008), at 24.

⁵³ Vienna Convention on the Law of Treaties art. 34.

⁵⁴ Draft Treaty on the Prohibition of the Stationing of Weapons of Any Kind in Outer Space, U.N. Doc. A/36/192 (Aug. 20, 1981).

⁵⁵ Treaty on the Prohibition of the Use of Force in Outer Space and From Space against the Earth, U.N. Doc. A/38/194 (Aug. 26, 1983).

⁵⁶ *Id.* art.1.

flight trajectory of space objects of other States.⁵⁷ It would have also prohibited testing or creating “new anti-satellite systems and destroying any anti-satellite systems that they may already have.”⁵⁸ Unfortunately, the proposals for the draft treaties did not obtain sufficient support and could not make progress.

2. *The Newly Proposed Treaty by China and Russia*

In 2002, the United States unilaterally abandoned the Anti-Ballistic Missile Treaty. It lifted the long-term restraint for the development of space-based conventional weapons between the United States and Russia (former Soviet Union). The international community was worried again about the weaponization of outer space which might have a negative impact on space security. On June 28, 2002, China, Russia and five other countries jointly presented to the CD a working paper entitled, “Possible Elements for a Future International Legal Agreement on the Prevention of the Deployment of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects.”⁵⁹ The preamble of the document reads that the existing agreements on arms control and disarmament relevant to outer space and the existing legal regimes concerning outer space “are unable to effectively prevent the deployment of weapons and an arms race in outer space.”⁶⁰ For the benefit of mankind, outer space “shall never be allowed to be a sphere of military confrontation.”⁶¹ It proposed that “only a treaty-based prohibition of the deployment of weapons in outer space and prevention of the threat or use of force against outer space objects can eliminate the emerging threat of an arms race in outer space.”⁶² The document, which has received considerable support, also lists three basic international obligations.⁶³

On May 22, 2006, China and Russia submitted to the CD a working paper on the “Definition Issues regarding Legal Instruments on the Prevention of the Weaponization of Outer Space.”⁶⁴ It further pointed out the deficiency in the current outer space law on the prevention of the weaponization of outer space and clarified the definition of terms in the proposed legal instrument on the prevention of the weaponization of outer space. Based on these working papers, the permanent representatives of China and Russia to the CD transmitted to the Conference a draft “Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects”

⁵⁷ *Id.* art 2.

⁵⁸ *Id.* art 2.

⁵⁹ CD/1679 (June 28, 2002).

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.*

⁶⁴ CD/1779 (May 22, 2006).

on February 12, 2008.⁶⁵ The draft treaty would oblige the States Parties “not to place in orbit around the Earth any objects carrying any kinds of weapons, not to install such weapons on celestial bodies and not to place such weapons in outer space in any other manners; not to resort to the threat or use of force against outer space objects; and not to assist or induce other States, groups of States or international organizations to participate in activities prohibited by this Treaty.”⁶⁶ Although most delegations to the CD support the idea and spirit of the draft treaty, discussions at the CD suggest that conclusion of such a multilateral treaty has great difficulties. First of all, a treaty on prevention of an arms race in outer space and banning space weaponization requires an agreed-upon definition of space weapons. However, the core conception of space weapons is vague. Logically speaking, anything in outer space with the ability to alter its trajectory so as to collide with another satellite could be a weapon. Systems especially designed to destroy space objects are definitely space weapons. Those systems can be placed not only in outer space, but also be based on ground, in the sea or air. For example, an anti-ballistic missile also has a capability to attack satellites. Therefore, sole prohibition of space-based weapons as proposed in the said draft treaty can play a limited role in the protection of space assets. Besides, not only those systems that are especially designed to destroy space objects are space weapons, many space objects have dual-use functions for both civil and military purposes. It is also noted that “the application of military force against satellites in the form of electronic jamming of signals to and from artificial satellites by terrestrial sources appears to be a part of current State practice.”⁶⁷ These factors will make it more difficult to define ‘space weapons’ in the negotiating process for a treaty on comprehensive prohibition of space weapons.⁶⁸

There is no doubt that China and Russia strongly support the comprehensive prohibition of the employment and use of weapons in outer space. In addition, some Americans appear not to reject the negotiation of treaty on the prohibition of space weapons by saying that: “It may be better for no one to have these weapons than for everyone to have them.”⁶⁹ The deputy spokesman of the US State Department Tom Casey also expressed his view that: “We do not want to see a situation where there is a militarization of outer space.”⁷⁰ However, the US government does not support a treaty-

⁶⁵ CD/1839 (Feb. 29, 2008).

⁶⁶ *Id.* art II.

⁶⁷ *Supra* note 8, at 75.

⁶⁸ *Id.*

⁶⁹ *Supra* note 15, at 138.

⁷⁰ Stefan A. Kaiser, *Chinese Anti-Satellite Weapons: New Power Geometry - New Legal Policy?*, 58TH INTERNATIONAL ASTRONAUTICAL CONGRESS PROC. (2007).

based prohibition of space weapons in either the UN General Assembly or the CD.⁷¹ In a letter dated on June 26, 2002, the United States emphasized that its national security was necessary and essential⁷² and all member States of the UN had the inherent right of individual and collective self-defense.⁷³ Nevertheless, the United States saw no need for new outer space arms control agreements and opposed negotiation of a treaty on outer space arms control.⁷⁴ The US believed that there had already been “a framework for the legitimate military uses of outer space,” which adequately protected States’ interests in outer space and did not require augmentation.⁷⁵ The prevailing attitude of the US key decision-makers questioned the conclusion of the treaty. For example, Hank Cooper, the chairman of the missile defense advocacy group High Frontier said: “This argument to prevent the weaponization of space is really silly.”⁷⁶ Senator Jon Kyl also openly opposed the prohibition of anti-satellite weapons.⁷⁷

The main reason for the US government to oppose such treaty was that “there was simply no need to do so since there was no space arms race.”⁷⁸ A few delegations to the CD also had the same view. They argued that: “It is pointless to work on something that does not exist and that the CD should focus on other issues.”⁷⁹

The fact is, on the contrary, even though there have not been any weapons in space and the United States had no plans to build such weapons, if the United States follows the former space policy of the Bush Administration,⁸⁰ the weaponization of outer space will be realized “not only by military satellites, but by destructive satellites, leaving other countries no choice but to follow the steps.”⁸¹ Accordingly, more delegations to the CD expressed their view that it was important to take action on prevention of the weaponization of outer space.⁸² They believe that, first, even though there is not yet an arms race, now is the time to prevent weaponization of outer space. To prevent an arms

⁷¹ *Supra* note 52, at 21.

⁷² CD/1680 (July 10, 2002), at 3.

⁷³ *Id.* at 2.

⁷⁴ *Id.* at 3.

⁷⁵ *Id.* at 4.

⁷⁶ Frank M. Walsh, *Forging a Diplomatic Shield for American Satellites: The Case for Reevaluating the 2006 National Space Policy in Light of a Chinese Anti-Satellite System*, 72 J. AIR L. & COM. 759, 763 (2007).

⁷⁷ *Supra* note 13.

⁷⁸ *Supra* note 76, at 761; *Supra* note 72, at 4.

⁷⁹ *Supra* note 8, at 7.

⁸⁰ The 2006 US national space policy reads that: “The United States will: preserve its rights, capabilities, and freedom of action in space; dissuade or deter others from either impeding those rights or developing capabilities intended to do so; take those actions necessary to protect its space capabilities; respond to interference; and deny, if necessary, adversaries the use of space capabilities hostile to U.S. national interests.” See *Supra* note 4.

⁸¹ Adam G. Quinn, *The New Age of Space Law: The Outer Space Treaty and the Weaponization of Space*, 17 MINN. J. INT’L L. 475, 494 (2008).

⁸² *Supra* note 8, at 7.

race in outer space is much easier than to control it once started. Second, the international community should focus on other serious problems such as poverty, hunger, disease and deprivation instead of pursuing an expensive competition in outer space. Third, space-faring countries must avoid bringing terrestrial geopolitical conflict into outer space, a province of all mankind.⁸³

The second reason why the US government opposed any space weapon ban treaty was that the treaty would tie the American hands in the development of space technology for securing strategic advantage and legitimate defense objectives. The notion has been criticized because “it would threaten the very benefits and developments it is supposed to protect.”⁸⁴

Although there are difficulties in the negotiation of a treaty on the comprehensive prohibition of space weapons, it does not lead to a conclusion that the possibility of negotiation of such a treaty is completely excluded. Looking back to the 1970s when the Soviet Union and the United States had bilateral negotiations for the purpose to ban anti-satellite weapons, there is still a possibility of negotiation of treaty on the prohibition of some anti-satellite weapons.

During 1976-1978, the Soviet Union tested a series of anti-satellite weapons. The Soviet Union’s technology was more advanced than the United States, which might have motivated the Carter Administration to initiate a proposal to the Soviet Union in 1977 to abandon space weapon testing. The Soviet Union and the United States held three rounds of negotiations on the prohibition of anti-satellite weapons. The US-Soviet negotiations stopped after the Soviet’s invasion of Afghanistan in 1979.⁸⁵

Today, Russia is not the only State that can compete with the United States on anti-satellite technology. China’s anti-satellite capability has led the American media to discuss whether to negotiate disarmament agreements with China, to which the United States could not have turned a deaf ear. Even the American Congressman Edward J. Markey called on President Bush to propose the conclusion of an international agreement to ban the development of space weapons and anti-satellite systems to protect the US satellites.⁸⁶ More encouragingly, under the new space policy of the Obama Administration, the United States intends to resume its leadership on space issues with a “worldwide ban on weapons that interfere with military and commercial satellites.”⁸⁷ Also, the United States “will consider proposals and concepts for arms

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ U.S. Congress Office of Technology Assessment, *Anti-Satellite Weapons, Countermeasures, and Arms Control* (1985), at 96.

⁸⁶ *Supra* note 70.

⁸⁷ Ensure Freedom of Space (Feb. 18, 2009), available at www.whitehouse.gov (last visited on Sept. 20, 2011).

control measures if they are equitable, effectively verifiable, and enhance the national security of the United States and its allies.”⁸⁸ If more efforts are made by China, Russia, Group 21 and other countries, it may be possible to bring the United States back to the negotiation table for a treaty on prohibiting at least some anti-satellite weapons.

C. Transparency and Confidence-Building Measures in Outer Space Activities

1. *Variety of Transparency and Confidence-Building Measures*

The importance of the application of transparency and confidence-building measures in outer space activities has been long recognized.⁸⁹ Confidence-building measures (“CBMs”) will play an important role in eliminating the causes of mistrust, fear, misunderstanding and miscalculation with regard to relevant military activities and intentions of other States, strengthening international peace and security and contributing to the prevention of all wars. They “may serve the additional objective of facilitating verification of arms limitation and disarmament agreements.”⁹⁰ The existing outer space treaties already provide a range of transparency and confidence-building measures in outer space activities.⁹¹ According to a Study of a Group of Government Experts on the application of confidence-building measures in outer space,⁹² the proposals advanced over the past decade fall into the following categories: (1) to increase the transparency of space operations generally; (2) to increase the range of information concerning satellites in orbit specifically; or (3) to establish rules of behavior governing space operations, etc.⁹³ A resolution on transparency and confidence-building measures in outer space adopted by the General Assembly in 2006 invited all member States to submit to the Secretary-General concrete proposals on international outer space transparency and confidence-building measures in the interest of maintaining international peace and security, promoting international cooperation and the prevention of an arms race in outer space.⁹⁴ Many countries have responded.⁹⁵ Russia was of a view that such measures might be carried out in various ways,

⁸⁸ See National Space Policy of the United States of America (June 28, 2010), available at http://www.whitehouse.gov/sites/default/files/national_space_policy_6-28-10.pdf (last visited on Sept. 20, 2011).

⁸⁹ G.A. Res. 43/78H (Dec. 7, 1988); G.A. Res. 44/116U (Dec. 15, 1989); G.A. Res. 45/55B (Dec. 4, 1990).

⁹⁰ Special Report of the Disarmament Commission to the General Assembly at its Third Special Session Devoted to Disarmament, U.N. Doc. A/S-15/3 (May 28, 1988), at 31.

⁹¹ Transparency and Confidence-Building Measures in Outer Space Activities, U.N. Doc. A/65/123 (July 13, 2010), at 21, 30, & 42.

⁹² Study on the Application of Confidence-Building Measures in Outer Space, U.N. Doc. A/48/305 (Oct. 15, 1993).

⁹³ *Id.* at 187.

⁹⁴ U.N. Doc. A/RES/61/75 (Dec. 18, 2006).

⁹⁵ *Supra* note 91; U.N. Doc. A/65/123 Add.1 (Oct. 27, 2010).

“including exchange of information, familiarization visits, notifications, consultations and thematic workshops.”⁹⁶ Austria suggested the establishment of “rules of behavior” or “rules of the road” as possible confidence-building measures.⁹⁷ Countries such as Cuba, Argentina, Oman, Colombia, Bangladesh and Chile also submitted various concrete measures.⁹⁸

2. Code of Conduct for Outer Space Activities

To avoid difficulties in the conclusion of a multilateral treaty banning space weapons, the Henry L. Stimson Center initiated a space security project on the negotiation of a code of conduct between space-faring nations to prevent incidents and dangerous military activities in space. A “Model Code of Conduct for the Prevention of Incidents and Dangerous Military Practices in Outer Space” was drafted in 2004.⁹⁹ Key activities to be covered under such a code of conduct include avoiding collisions, dangerous maneuvers and simulated attacks; creating special caution zones around satellites; and prohibiting the use of lasers and directed energy devices and developing safer traffic management practices.¹⁰⁰ The Code of Conduct was discussed in the NGO Committee on Disarmament, Peace and Security.¹⁰¹

In parallel with above draft Code of Conduct, the European Union, motivated by the evolution toward space weaponization of the early 2000s and in seeking to bypass US opposition under the Bush Administration to legally binding instruments,¹⁰² proposed a “comprehensive code of conduct on space objects and space activities.”¹⁰³ According to the proposal, the code would “lay down the basic rules to be observed by space-faring nations” on a voluntary basis and open to all States.¹⁰⁴ The EU indicated that in the implementation of such a comprehensive code of conduct, States could abide by the following best practices:¹⁰⁵

- (a) Refrain from any manoeuvre or action that could cause, directly or indirectly,

⁹⁶ *Supra* note 91, at 22.

⁹⁷ *Id.* at 33.

⁹⁸ *Id.* See also Andrey Makarov, *Transparency and Confidence-building Measures: Their Place and Role in Space Security*, SECURITY IN SPACE: THE NEXT GENERATION, PROC. 69-77 (Mar. 31 - Apr. 1, 2008).

⁹⁹ Michael Krepon & Michael Heller, *A Model Code of Conduct for Space Assurance*, 77 DISARMAMENT DIPLOMACY (2004).

¹⁰⁰ *Id.*

¹⁰¹ A Code of Conduct for Outer Space, Disarmament 2007: Critical Disarmament Issues (2008), at 27-39.

¹⁰² Space Security 2010 from Foundation to Negotiations, UNIDIR PROC. 14 (Mar. 29-30, 2010).

¹⁰³ Transparency and Confidence-Building Measures in Outer Space Activities, U.N. Doc. A/62/114/Add.1 (Sept. 17, 2007), at 7.

¹⁰⁴ *Id.* at 8.

¹⁰⁵ *Supra* note 103, at 7-8.

- damage to or the destruction of satellites or space objects, and refrain from activities in space that create space debris;
- (b) Avoid accidents and collisions with other objects in space; create special areas of caution in space and around satellites, designated by their controlling States and deserving of specific consideration by others;
 - (c) Put in place consultation mechanisms for resolving expeditiously any incident that has given or might give rise to concern;
 - (d) Provide information, on an annual basis, on the number and type of satellites launched during the preceding year;
 - (e) Maintain a register in which the information furnished by notification is recorded so as to avoid duplication;
 - (f) Provide appropriate prior notification to the launching State of a satellite if another State plans to approach that satellite;
 - (g) Ensure that comprehensive information is provided by each launching State on its space assets and that it adheres to and fully implements the 1975 Registration Convention, giving information on eccentricity, inclination and orientation; and
 - (h) Consider possible additional cooperative measures aimed at enhancing compliance.

On December 3, 2008, the Council of the European Union issued a “Draft Code of Conduct for Outer Space Activities”¹⁰⁶ to the EU member States. Under the Draft Code of Conduct, the subscribing States are responsible for taking “all the adequate measures to prevent outer space from becoming an area of conflict.”¹⁰⁷ They will, in conducting outer space activities, refrain from any intentional action which might cause damage or destruction of outer space objects.¹⁰⁸ The Draft Code of Conduct will also serve as a basis for consultations with key third countries in order to reach a text that is acceptable to more countries.

In comparison with other means to solve the problem of the weaponization of outer space, a code of conduct for outer space activities has many advantages. Instead of defining space weapons, a code of conduct focuses on “the key element of no harmful interference with space objects”¹⁰⁹ which would avoid the difficult agreement of the definition of space weapons and encourage transparency and confidence-building among the actors of space activities. Because it does not impose strict obligations, a code of conduct is easier to be accepted by space-faring countries. This is especially true when

¹⁰⁶ Council Conclusions and Draft Code of Conduct for Outer Space Activities, Council of the European Union (Dec. 3, 2008).

¹⁰⁷ *Id.* at 2.

¹⁰⁸ *Id.* at 4.2.

¹⁰⁹ Michael Krepon, *A Code of Conduct for Responsible Space-Faring Nations*, CELEBRATING THE SPACE AGE: 50 YEARS OF SPACE TECHNOLOGY, 40 YEARS OF THE OUTER SPACE TREATY, PROC. 171-172 (APRIL 2-3, 2007).

the US new national space policy of 2010 indicated the possibility that it would “consider proposals and concepts for arms control measures if they are equitable, effectively verifiable, and enhance the national security of the United States and its allies.”¹¹⁰ A code of conduct can be created in a group of like-minded or like-interested countries and extended to other countries. The procedure of concluding a code of conduct is simpler than that of multilateral treaty because negotiation and entry into force of a treaty takes time. A code of conduct does not clearly prohibit space weapons; however, prohibiting harmful interference with space objects would serve the same purpose as banning anti-satellite weapons. Besides, the scope of a code of conduct is even broader. It covers feasible measures to tackle the space debris issue and to reduce risks of collision occurring between space objects and space debris.

Neither codes of conduct nor the CBMs have binding force. China always pointed out that while the CBMs contributed to the positive development of international relations, the CBMs, on their own, could not eliminate the danger of weaponization in outer space.¹¹¹ Therefore, the CBMs or codes of conduct cannot replace a treaty.

IV. Conclusion

For half a century, mankind has greatly benefited from space activities. Space technology has provided great potential for the development of national economies and defense. Space technology has also become an indispensable part of people's daily life: they watch satellite weather forecasts before going out; they are guided by GPS systems to drive to a strange place; and they sit at home watching Olympic Games taking place on another continents. However, if space technology is used to develop space weapons, it would threaten world peace and security. To guarantee that outer space and celestial bodies will be used only for peaceful purpose and outer space will not become another arena of armed conflict, the United Nations and many member States have endeavored to prevent space weaponization. Amendment of Article IV of the Outer Space Treaty to fill the gap in the existing international regime governing space weapons has been proposed since 1968. However, an amendment is only binding on the State parties that accept the amendment. Besides, prohibition of space weapons without a verification mechanism cannot prohibit space weapons effectively. A multilateral treaty on the comprehensive prevention of weaponization of outer space with appropriate

¹¹⁰ *Supra* note 88, at 7.

¹¹¹ CD/1217 (Aug. 19, 1993), at 14.

verification mechanism is more desirable. But due to a lack of general agreement on the definition of space weapons and lack of political willingness from some space-faring powers, it will be difficult to conclude a new treaty on the comprehensive prohibition of space weapons in the foreseeable future. To achieve this goal, there is a need for continuous endeavors to be made jointly by all countries and concerned organizations. Feasible verification measures must be worked out. The definition of space weapons in the proposed draft treaty may be revised to include all kinds of weapons, no matter whether they will be launched into outer space from space-base, air-base, land-base, or sea-base. At the present stage, a combination of various CBMs, a code of conduct, better practice and unilateral commitment not to first place space weapons into the Earth orbit, outer space or on celestial bodies would serve the same purpose as a space weapon ban treaty if all space-faring nations commit themselves, *inter alia*, not to harmfully interfere with space objects of other countries and to avoid collisions between space objects. In this way, the CBMs can be intermediate steps towards a final solution-conclusion of a multilateral treaty on comprehensive prohibition of space weapons in the future.

