

Article VIII of the ABM Treaty dictated the destruction of excess numbers of or of prohibited under the Treaty ABM systems and their components, or of ABM Systems and their components outside the territory of the States, under agreed procedures as soon as possible.²⁴²

According to the rule contained in Article IX of the ABM Treaty, the Parties were under the obligation “not to transfer to other States, and not to deploy outside [their] national territory, ABM systems or their components limited by the Treaty.” There were certain worries that this provision would actually be an obstacle to the potential retirement of ABM radars and equipment for civilian use, if ever the use of ABM systems for their primary cause became obsolete.²⁴³

Article XII was a ground-breaking provision, recognising for the first time the role of national technical means of verification. An extensive analysis of the importance of verification for the purpose of maintaining outer space peaceful is to be found under title (E) of the present part of this Article. Suffice it to mention, for the time being, that the whole verification system envisioned by the ABM Treaty was a mutual confidence building mechanism between the two States, which greatly affected the perception of the international community as to how international peace and security can be guaranteed.

Under Article XV thereof, the ABM Treaty was of unlimited duration. It nevertheless allowed for the withdrawal of a Party in the exercise of its national sovereignty, under the precondition of a determination that extraordinary events related to the subject

ers, or ABM radars, capabilities to counter strategic ballistic missiles or their elements in flight trajectory, and not to test them in an ABM mode; and

(b) not to deploy in the future radars for early warning of strategic ballistic missile attack except at locations along the periphery of its national territory and oriented outward.

Id. art. VI.

²⁴² Article VIII of the ABM Treaty reads as follows: “ABM systems or their components in excess of the numbers or outside the areas specified in this Treaty, as well as ABM systems or their components prohibited by this Treaty, shall be destroyed or dismantled under agreed procedures within the shortest possible agreed period of time.” *Id.* art. VIII.

²⁴³ F. Kenneth Schwetje, *They Shall Beat Their Swords into Plowshares (In Accordance with All Relevant Arms Control Agreements)*, 27-I ANNALS AIR & SPACE L. 383, 391 (1992).

matter of the Treaty have gravely affected its national interests. Such determination and subsequent withdrawal decision was to be notified to the other Party in written form, explaining the reasons for the withdrawal, six months in advance of the desired withdrawal date.²⁴⁴

In the mid-1980s in the USA, active discussions were held with regards to the creation of a Strategic Defence Initiative (SDI). This system was basically an ABM system, and the Department of Defence made sincere efforts to broaden the scope of interpretation of the ABM Treaty, so as to render the development of a space-based SDI permissible.²⁴⁵ The discussions for the development of the programme continued during the Clinton administration, the only difference being that it was portrayed as a national defence system. The plan was not abandoned by the George W. Bush administration either, which followed a narrow interpretation of the ABM Treaty. Recognising that the development of the SDI system would violate the provisions of the Treaty, the USA preferred in December 2001 to withdraw from the ABM Treaty citing Article XV thereof, instead of cancelling the programme. The reasons put forth as justification of the “extraordinary events” causing the withdrawal were not immediately explained as required by Article XV, but given the attack on the World Trade Centre earlier in the same year, the argument of self-defence against non-State actors is greatly supported by the reinvigoration and placement on high alert of all relevant sections of the American armed forces.²⁴⁶ The continuous development of space weapons has led to an equally continuous development, or suggestion for development, of sophisticated defence initiatives, creating, thus, what could be described as a vicious circle of

²⁴⁴ The precise wording of Article XII is: “1. This Treaty shall be of unlimited duration. 2. Each Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests. It shall give notice of its decision to the other Party six months prior to withdrawal from the Treaty. Such notice shall include a statement of the extraordinary events the notifying Party regards as having jeopardized its supreme interests.” ABM Treaty, *supra* note 236, art. XII.

²⁴⁵ See Daniel Goedhuis, *Some Observations on the Attitude of West European Governments to the Development of Defensive Weapons in Outer Space*, 15-II J. SPACE L. 101 (1987).

²⁴⁶ Wolfgang K. H. Panofsky, *The President's Decision to Withdraw from the ABM Treaty* (March 2002), www.eisenhowerinstitute.org/presscenter/release06-02.htm.

weaponisation. The USA in particular have shown great interest in developing a National Missile Defence programme, to ensure protection from last-minute modified civilian space objects of enemy States targeted against it.²⁴⁷ Soon after the denunciation of the ABM Treaty negotiations started between the USA and various former Soviet States, for the creation of a ABM system based in Eastern Europe, whose purpose according to the USA is the defence against rogue States located in the Middle East, a position not shared, however, by Russia that sees such a system as a direct threat to its interests in the area.

The denunciation of the ABM Treaty has led to a swift in the subject of the discussion, from the militarisation of outer space to the weaponisation of outer space, with numerous States designing, and as shown above, testing ASAT systems and other space-related weapons. However, this is not the only contemporary challenge the international community is facing.

In May 2011 the US Department of Defence announced that henceforth it would consider all attempts of “cyber-attacks” against its facilities, installations and major contractors as an armed attack against the USA and react accordingly.²⁴⁸ While not specifically mentioning who the perpetrators of these cyber-attacks were, lots of hints led to the recognition of China as being on the receiving end of the American statement. And indeed, just two days after this announcement, a paper written by two Chinese Military School Professors was published, ascertaining China’s position that it would react to any challenge posed and that it was in fact the USA that engaged in a shadow war of hacking and electronic system infiltration.²⁴⁹ Whatever the truth may be behind both these statements, it is evident that satellite military or military-related systems are in the front line of these cyber-attacks,

²⁴⁷ Patrick A. Salin, *Space Law, The U.S. National Missile Defense Initiative and The Common Concern for Global Security*, 27 ANNALS AIR & SPACE L. 535, 542 (2002).

²⁴⁸ Siobahn Gorman & Julian E. Barnes, *Cyber Combat: Act of War – Pentagon Sets Stage for U.S. to Respond to Computer Sabotage with Military Force*, WALL ST. J., (May 31, 2011, 12:01 AM), <http://online.wsj.com/articles/SB10001424052702304563104576355623135782718>.

²⁴⁹ Associated Press & Lambraki Journal Corporation, *Beijing Accuses Washington of a “Shadow Internet War”*, June 3, 2011, www.in.gr [in Greek] (citing a relevant article published in *China Youth Daily* by Professors of the Chinese Military Sciences Academy).

thus causing completely new concerns about international peace and security. It would thus be prudent to briefly address the issue of cyber-attacks against satellites and other space-related systems.

“Cyber-attack” is an attack on or through cyberspace,²⁵⁰ i.e. the Global Information Infrastructure,²⁵¹ and constitutes part of what is commonly known in the armed forces as “informative warfare.”²⁵² Commercial satellites also used for military purposes are considered prime targets for this kind of warfare, since no direct confrontation with a traditional organised army is required, while the results of a successful attack are anything but negligible.²⁵³

But as already discussed in Part I of the present Article, in order for a State to lawfully exercise its right to self-defence, it must be faced with an armed attack. The question at hand is whether a cyber-attack can be considered as an armed attack, under the *Nicaragua* rationale. It has been suggested that since a cyber-attack against a satellite, if not performed in self-defence or under Security Council authorisation,²⁵⁴ can effectively incapacitate it,²⁵⁵ thus infringing the sovereign rights of the launching State.²⁵⁶ The combination of these three elements suffices for a cyber-attack to be considered an armed attack.²⁵⁷ If that is the case, for which the present author is highly sceptical, then the following considerations must be taken into account.

First, what is the status of the programmers engaged in hacking enemy systems? The traditional *ius in bello* recognises only two categories of persons: combatants and civilians. As already discussed in Part I of the present Article, combatants must be distinguished from civilians at all times, and military targets must not be concealed among civilian property, so as to respect the

²⁵⁰ *The Use of Force in Response to Cyber Attack on Commercial Space Systems*, *supra* note 22, at 1220.

²⁵¹ US National Defence Panel, *Transforming Defence: National Security in the 21st Century*, www.dtic.mil/ndp/FullDoc2.pdf.

²⁵² *The Use of Force in Response to Cyber Attack on Commercial Space Systems*, *supra* note 22, at 1221.

²⁵³ See James Adams, *Virtual Defense*, 80 FOREIGN AFF. J. 105 (2001).

²⁵⁴ G.A. Res. 3314 (XXIX), art. 6, U.N. Doc. A/RES/3314 (Dec. 14, 1975).

²⁵⁵ *Id.* art. 2.

²⁵⁶ *Id.* art. 3(b).

²⁵⁷ *The Use of Force in Response to Cyber Attack on Commercial Space Systems*, *supra* note 22, at 1258.

principle of distinction. Are these requirements met in the case of hacking teams engaging in cyber-attacks against satellite systems of various States under the directions of their State? Little is known as to where the “base” of such persons is located, if they are military or civilian personnel, if they are wearing uniforms and carry visible military insignia, as per the requirements of Article 48 of the First Additional Protocol to the Geneva Conventions. The fact remains that, if we accept that a cyber-attack constitutes an armed attack, then the persons responsible for perpetrating such attack are to be considered combatants, with all the protection and hazards that such a characterisation entails under International Humanitarian Law.

Second, the principles of necessity and proportionality must be taken into consideration when deciding on what action to take against these cyber-attacks. Only the action that is necessary for the defence against the specific attack must be taken. The action must be proportionate to the objective the military seeks to achieve, meaning that it must not create excessive suffering or collateral damage to civilians and other non-military objectives.²⁵⁸ That being the case, it would seem that an armed response to a cyber-attack would be disproportionate and unnecessary, unless it can be restricted only against the programmers/combatants engaged in the informative warfare and only within the walls of their base, for it is doubtful that their combatant status follows them throughout the day, even after they have left their work station. A more adequate measure would seem to respond to cyber-attacks by cyber-attacks, introducing thus an element of reciprocity in the treatment of the situation and the personnel involved therein. However, even these cyber-attacks must be proportionate. A State cannot order the destruction of the complete network of another State, if that is even possible, in response to a cyber-attack. Actions must remain restricted to the extent of the loss suffered or the injury attempted, at least for as long as international law does not directly address these newly emerging issues.

²⁵⁸ See Part I for relevant bibliography.

C. Proposals for dewateronisation: the Russian-Chinese Draft PPWT.

Following the completion of the most recent ASAT tests, China and Russia decided to come together and propose a draft for a new space treaty. In March 2008 they proposed a draft treaty, whose title was “Treaty on the Prevention of Placement of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects.”²⁵⁹ In its Preamble the drafters of the PPWT recognise the right of every nation to freely explore and use outer space and by implication that the existence of weapons in space might threaten the rights of others. They also note that outer space should be kept as a sphere outside any military confrontation, thus assuring the survival of satellites. Finally, the importance of the commitments achieved through PAROS for the proper use of space by all nations is also recognised. The draft PPWT aims to address and resolve some issues that the two proposing States felt remained unanswered by the current legal regime governing outer space.

The first issue that the PPWT takes note of is the need to have a fixed delimitation of the air space / outer space boundary. Article 1 (a) of the PPWT sets this boundary at approximately 100 km over the ocean level of the Earth. In fact, this suggestion is nothing more than a repetition of an informal agreement reached amongst States, while official discussions on the matter remain open within the COPUOS.

The second very important definition provided by the PPWT is that of “weapons in outer space.”²⁶⁰ The proposed definition includes “any device placed in outer space, based on any physical principle, specially produced or converted to eliminate, damage or disrupt normal function of objects in outer space, on the Earth or in its air, as well as to eliminate population, components of biosphere critical to human existence or inflict damage to them.”²⁶¹ However, a careful reading of this definition will show that the issue of earth-based ASAT weapons is not dealt with at all. If the

²⁵⁹ 2008 Draft Treaty on the Prevention of Placement of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects, www.reachingcriticalwill.org/political/cd/papers08/1session/Feb12%20Draft%20PPWT.pdf [hereinafter PPWT].

²⁶⁰ *Id.* art. 1(c).

²⁶¹ *Id.*

purpose of the PPWT is indeed to prevent the use of force in outer space, then ASAT weapons cannot be left outside the regulatory scope of its provisions, as that would create a significant loophole undermining the very philosophy of the treaty from the inside. The truth of the matter is that a fixed and agreed upon definition of what constitutes a space weapon, or for that matter simply a weapon, has not yet been reached, although scholars have made various suggestions and interpretations.²⁶² Furthermore, “a weapon will be considered as “placed” in outer space if it orbits the Earth at least once, or follows a section of such an orbit before leaving this orbit, or is stationed on a permanent basis somewhere in outer space.”²⁶³ This definition also does not cover earth-based ASAT weapons, although one could argue that the clause about following just a section of an orbit might be a hint to that direction.

Last but not least, as far as the definitions go, the PPWT provides a definition for the term “space object,” which is admittedly rather obscure under the current legal regime. The proposed definition reads as follows:

The term “outer space object” means any device, designed for functioning in outer space, being launched into an orbit around any celestial body, or being in the orbit around any celestial body, or on any celestial body except the Earth, or leaving the orbit around any celestial body towards this celestial body, or moving from any celestial body towards another celestial body, or placed in outer space by any other means.²⁶⁴

The proposed definition is fairly comprehensive and encompassing of all potential scenarios of the use of a space object. From the definition it is made clear that objects such as ballistic missiles or sounding rockets are not covered by the PPWT, which could, again, be proven detrimental to the purposes of the treaty.

²⁶² See Theresa Hitchens, *Monsters and Shadows: Left Unchecked American Fears Regarding Threats to Space Assets Will Drive Weaponization*, 5 DISARMAMENT FORUM 15 (2003); Justin McClelland, *The Review of Weapons in Accordance with Article 36 of Additional Protocol I*, 850 INT'L REV. RED CROSS 397, 404 (2003).

²⁶³ PPWT, *supra* note 259, art. 1(d).

²⁶⁴ *Id.* art. 1(b).

Article II of the PPWT introduces the basic prohibition of placement of weapons in space and of their use or threat of use. In particular, it reads as follows:

States Parties undertake not to place in orbit around the Earth any objects carrying any kind of weapons, not to install such weapons on celestial bodies, and not to station such weapons in outer space in any other manner; not to resort to the threat or use of force against outer space objects; not to assist or encourage other states, groups of states or international organizations to participate in activities prohibited by the Treaty.²⁶⁵

The issue mentioned in the definitions is yet again noted here. The prohibition only includes those weapons that are placed in space, the emphasis being solely put in this domain. No mention is made as to earth-based, sea-based or air-based ASAT weapons, which could still be used by the member States of the treaty, if it were to be adopted. A potential solution to this problem could be given by the provision of Article III of the PPWT, according to which State Parties “shall take all necessary measures to prevent any activity prohibited by the Treaty on its territory or in any other place under its jurisdiction or control.”²⁶⁶ However, this provision too seems problematic, as States can still act from places beyond any national jurisdiction or control, such as the high seas or the international air space. It could be argued that “place” would also include State aircraft and warships found in these locations; however an interpretation according to the ordinary meaning of the word²⁶⁷ would preclude such an assumption. Additionally, the prohibited use of force is directed only against space objects and not other States in general. This would mean that an attack with an earth-based, fixed or mobile, weapon operating through space against another State would not be covered by the PPWT. Despite this, one should not fail to notice that the prohibition of weapons contained in both Articles II and III encompasses all kinds of weapons, not just nuclear and weapons of mass

²⁶⁵ *Id.* art. 2.

²⁶⁶ *Id.* art. 3.

²⁶⁷ VCLT, *supra* note 99, art. 33,§1.

destruction, as is the case with the relevant provisions of the Outer Space Treaty and the Moon Agreement.

Articles IV and V act as the fall-back provisions for the application of general public international law alongside those of the PPWT. They respectively read as follows:

Article IV: Nothing in this Treaty can be interpreted as impeding the rights of the States Parties to explore and use outer space for peaceful purposes in accordance with international law, which include but are not limited to the Charter of the United Nations and the Outer Space Treaty.

Article V: Nothing in this Treaty can be construed as impeding the realization by the States Parties of the sovereign right for self-defense in accordance with Article 51 of the Charter of the United Nations.

These provisions seem to be in accordance with the existing legal regime, both of general public international law and of space law in particular. The choice of separation in two articles, one making a general reference to the rights recognised under the Charter and the Outer Space Treaty and one with explicit reference to the right of self-defence, is presumably aimed to clarify any confusion created with the obligation to use outer space for peaceful purposes.

Article VI of the PPWT is perhaps the most poorly drafted article contained in the proposal. It addresses the issue of verification in the following words:

With a view to facilitate assurance of compliance with the Treaty provisions and to promote transparency and confidence-building in outer space activities the States Parties shall practice on a voluntary basis, unless agreed otherwise, agreed confidence-building measures.

Measures of verification of compliance with the Treaty may be the subject of an additional protocol.²⁶⁸

This Article more or less proposes that verification of the spatial activities of the other State Parties to the treaty is done

²⁶⁸ PPWT, *supra* note 259, art. 6.

through voluntary measures, after a relevant agreement. The whole mechanism is rather confusing and it obviously leaves a rather wide margin of negotiations for the States to resolve any pertinent issues at a later time, with an additional protocol. To be noted, that such a protocol may, and not shall, be adopted, meaning that the States could very well turn a blind eye on the obligation to agree upon the measures of verification to be voluntarily used under the PPWT.

Last but not least, the draft PPWT envisions the creation of an Executive organisation of the treaty, with, among others, dispute settlement resolution powers. The relevant provisions are included in Articles VII and VIII, the text of which follows:

Article VII: When a dispute arises between States Parties concerning the application or the interpretation of the provisions of this Treaty, the parties concerned shall first consult together with a view to settling the dispute by negotiation and cooperation.

When the parties concerned do not come to an agreement after consultation, the disputed situation that has arisen may be referred to the Executive organization of the Treaty along with provision of the relevant argumentation.

Each State Party shall undertake to cooperate in the settlement of the disputed situation that has arisen with the Executive organization of the Treaty.

Article VIII: To promote the implementation of the objectives and the provisions of the Treaty, States Parties shall establish the Executive organization of the Treaty which shall:

- a) receive for consideration inquiries by any State Party or a group of States Parties related to the grounds that have arisen to believe that the violation of the Treaty by any State Party is taking place;
- b) consider matters concerning the compliance with the obligations taken by States Parties;
- c) organize and conduct consultations with the State Parties with the view to settle down the situation that has