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The 2014 updated Draft PPWT: Hitting the spot or missing the mark?☆

Fabio Tronchetti [a, b, *], Liu Hao [c, d]

[a] School of Law, Harbin Institute of Technology, China
[b] School of Law, University of Mississippi, United States
[c] Institute of Aviation Law and Standard of Beihang University (BUAA), China
[d] National Research Center of ATM Law and Standard, China

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ABSTRACT

On June 10, 2014, Russia and China presented the updated Draft Treaty on the Prevention of the Placement of Weapons in Space, the Threat or Use of Force Against Space Objects (PPWT) to the Conference on Disarmament. The original 2008 Draft PPWT had been poorly received and criticized, *inter alia*, for not addressing the most pressing threats to space objects, strategically favoring the interests of its co-sponsors and lacking reliable means of verification.

In presenting the 2014 update the Russian and Chinese representatives pointed out that it had been drafted by taking into account the criticism leveled to its 2008 version and that it should be now viewed as an international effort rather than as a mere Chinese and Russian initiative: they also added that for this reason the amended Draft PPWT constituted a solid instrument to enhance the security of space objects and stood a higher chance of success than its predecessor.

It is, thus worth wondering whether the positive attitude and high expectations of China and Russia towards the amended Draft should be shared or rejected (counteracted, opposed). The present paper gives a rather negative answer to this question. While proceeding to a substantial re-wording and re-organization of its text, the amended Draft maintains the most controversial and debatable aspects of its 2008 version. Therefore, it seems unlikely that delegations within the CD might support it.

Despite its overall negative assessment, the present paper argues that the submission of 2014 updated Draft PPWT may positively contribute, at least indirectly, to the security of space objects. The likely failure of the amended draft could be used by the CD members as an opportunity to focus their efforts in putting in place legal barriers to selected threats to space objects, such as the testing of destructive, debris-generating, ASAT devices. There are elements to believe that a ban on destructive ASAT tests could be achieved and acceptable by the majority of States.

1. Introduction

Space systems significantly contribute to the economic and social development of modern societies. Satellite applications positively affect a number of areas, such as transportation, management of resources, and response to natural disasters. Ultimately, their use improve the quality of people's life Space assets also play an important role from a military and defense perspective, as they enable real-time communication, allow precision navigation, gather intelligence, conduct surveillance, warn of missile attacks, and guide missiles [1].

Considering the importance of satellites from an economic, military and strategic perspective it is not surprising that the need to enhance their security and safeguard their full operability has been at the core of the international debate in the last decade [2]. Discussions have been fueled by the growing number of intentional (and un-intentional) threats faced by space objects. The existing international legal framework is deemed to be insufficient to reduce or halt similar threats [3]. Consequently, diplomatic and legal initiatives to ameliorate this situation have been launched. The Chinese-Russian co-sponsored Draft Treaty on the Prevention of the Placement of Weapons in Space and of the Threat or Use of Force Against Space Objects (PPWT) represents one of the prominent and most ambitious of such initiatives [4].

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* Corresponding author. 92 West Dazhi Street, 150001 Harbin, China.
E-mail addresses: fabio.tronchetti@yahoo.com (F. Tronchetti), liuhao@buua.edu.cn (L. Hao).

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Since its submission to the United Nations Conference on Disarmament (CD) in February 2008, the Draft PPWT has received a mix of positive and, mostly, negative feedbacks. While praised for taking up the challenge of increasing the security of space assets by legal means [5], the PPWT has been criticized, *inter alia*, for not addressing the most serious threats to space objects, strategically favoring the interests of its co-sponsors and lacking reliable means of verification [6]. Due to these criticisms as well as to the failure of the CD to start formal negotiations on it, the Draft PPWT made no significant progress in the years that followed its submission. This situation significantly changed in June 2014 when Russia and China presented an updated version of the Draft PPWT to the CD [7].

The 2014 amendment introduces some notable changes to the 2008 Draft both from the point of view of its content and structure. It is, thus, worth evaluating whether the 2014 updated Draft PPWT stands a higher chance of success than its predecessor. The present paper argues that, because some of the most controversial aspects of the original version of the PPWT remain, it is doubtable that the 2014 amendment will be positively received, particularly by the western States. Nevertheless, the paper also claims that the updated Draft PPWT has the potential to contribute, although indirectly, to enhance the security of space objects.

The analysis will be structured as follows: first, the topic of space security will be introduced by describing the most pressing threats to space objects. Then, a comparison between the 2008 and 2014 versions of the Draft PPWT will be made. Attention will be focused on the main criticisms directed at the former and the extent to which the latter address and improve upon them. The concluding section will put forward some recommendations for future developments in the field of space security.

2. Setting the scene: are space objects under threat?

Until 15–20 years ago the risks faced by space objects were relatively limited. Apart from the inherent dangers deriving from the hazardous nature of space activities, space-based assets did not face any specific threat. Nowadays, due the increasing number of space launches, the congestion of the Earth's orbits and the strategic and economic relevance of satellites, the number of threats to which space objects are exposed to is significantly expanded [8]. These threats are of un-intentional and intentional nature. The former cause the temporary malfunction of, damage or destroy a space object in an accidental and non-premeditated manner. Examples of this kind of dangers are: space weather, space debris and the malfunctioning or the wrong maneuvering of a satellite [9]. The latter consist of voluntary attacks against space objects. In this regard, actions against satellites may be undertaken by using destructive space-based or ground-based anti-satellite (ASAT) weapons or through recourse to non-destructive means, such as interference, laser beams, or cyber attacks [10]. Conceivably, any spacecraft could be de-orbited to hit another active space object by effectively operating as a weapon without, however, being originally produced to serve as one.

Arguably, at the present time, the most pressing threat to space objects is represented by direct ascent, hit-to-kill, ground-based ASATs [11]. Indeed, not only these devices disintegrate the targeted satellite but their use also causes an unpredictable amount of space debris to be released in outer space; these debris menace other active space objects and undermine the long-term sustainability of outer space. The deleterious effects of hit-to-kill devices became manifest in the aftermath of the 2007 Chinese ASAT test [12]. Allegedly, the test resulted in thousands of 'space-debris- being scattered in low-Earth orbit, some of which collided with and destroyed the Russian BLITS satellite on 22 January, 2013 [13]. Several States are know to possess ASAT technology, for example the United States [14], China, and Russia [15], while others are allegedly developing it [16]. As a matter of fact, any country able to launch a satellite or build a sounding rocket could develop these types of ASATs [17].

No State has ever expressed the intention of attacking other States' space objects or transforming outer space in a battlefield. Nevertheless, such a risk potentially exists. The more States are dependent on space technology and applications the more targeting satellites becomes an advantageous move from a strategic and military perspective. A well assessed strike against a State's space systems could reduce its military capability, negatively affect the life of its citizens and, eventually, make extremely difficult for that State to continue to take part in a strategic/military confrontation with another State. Significantly, the military doctrines and national defense strategies of the most advanced States do not exclude recourse to force to protect space assets and to deter offensive actions against space objects [18].

The present paper will be focused on intentional threats of military nature and on the most elaborated legally binding initiative aimed at mitigate and reducing them, namely the PPWT.

3. The 2008 Draft PPWT

3.1. Legal background to the PPWT: international space law vs. space security

China and Russia argue that the existing legal regime governing outer space is unable to prevent the placement of weapons and an arms race in space (PAROS) [19]. In their opinion, such inability calls for a binding instrument to adequately ensure the security of space objects.

On one side, the limits of the current international legal rules regulating space activities are recognized by many [20]. As a matter of fact the 1967 Outer Space Treaty, which is the main international legal instrument regulating activities in outer space, merely prohibits the placement of nuclear weapons and weapons of mass destruction in outer space or on celestial bodies [21]. Instead, the Treaty does not explicitly restrict (so it allows) other military-related activities in outer space, such as the deployment of military satellites and conventional weapons in outer space, the testing of weapons other than nuclear weapons and weapons of mass destruction, and the transit of inter-continental ballistic missiles [22]. Consequently, outer space law does not impose any specific legal barrier to the so-called weaponization of outer space, intended as the deployment of offensive devices in orbit as well as the development, storage, and testing of ground-based ASAT devices [23].

States are, however, restricted from using force in outer space, or, more precisely, against space objects. While the UN space treaties do not specifically address this question, Article III of the Outer Space Treaty makes international law and, in particular, the Charter of the United Nation applicable to outer space activities. As under the Charter States are obliged to refrain from the threat or use of force against the territorial integrity and political independence of any State, with the exceptions of the right to act in self-defense [24] and the use of force authorized by the UN Security Council [25], these prohibitions and exceptions extend to the realm of outer space [26].

On the other side, States hold different approaches on how to address the limits of existing international space law rules with respect to the security of space objects. Some, including China, Russia, Brazil, the Group of 21, support the adoption of a binding instrument, a treaty [27]. Others, either do not see the need for a treaty (a position held by the United States under the Republican Administration) [28] or consider its negotiation and entry into force