



International Institute of Humanitarian Law  
Institut International de Droit Humanitaire  
Istituto Internazionale di Diritto Umanitario

**42<sup>nd</sup> ROUND TABLE ON CURRENT ISSUES OF  
INTERNATIONAL HUMANITARIAN LAW  
ON THE 70<sup>th</sup> ANNIVERSARY OF  
THE GENEVA CONVENTIONS**

*“Whither the human in armed conflict? IHL  
implications of new technology in warfare”*

Sanremo, 4-6 September 2019

**Limits imposed by outer space law on military  
operations in outer space**

*Elina MOROZOVA*

Head of International Legal Service, Intersputnik International  
Organization of Space Communications

Ladies and Gentlemen,

First of all, allow me to warmly thank the International Institute of Humanitarian Law for kindly inviting me to take part in this Round Table. It is an honour for me to address you all, the experts who are truly the best in their field.

Within the framework of this session I would like to discuss some topical aspects related to the limits imposed by international space law on military operations in outer space.

**International Space Law**

Let me start with a brief reminder that space law is generally associated with five United Nations treaties.

The Outer Space Treaty,<sup>1</sup> being the first and the most comprehensive, provides a general framework for the regulation of space activities. It is on

---

<sup>1</sup> *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

this foundation that relevant provisions are further developed by the other four UN space treaties. They are the Rescue Agreement,<sup>2</sup> the Liability Convention,<sup>3</sup> the Registration Convention,<sup>4</sup> and the Moon Agreement.<sup>5</sup>

The UN space treaties are supplemented with a number of non-binding instruments – Resolutions adopted by the UN General Assembly and documents produced by the UN Committee on the Peaceful Uses of Outer Space.

Both ‘hard’ space law and ‘soft’ space law constitute *lex specialis* which, along with international law in general, governs all space activities irrespective of their nature, while military space activities have always been in the focus of the interest of each State.

## **Peaceful Uses of Outer Space**

At the beginning of the space era, when the first artificial satellite was launched,<sup>6</sup> States realized that outer space had just acquired a new practical value – that was the ultimate height ever reached by humans which could offer significant strategic benefits to the firstcomers. More so, at that time both the Soviet Union and the US successfully demonstrated their nuclear capabilities, and that influenced the formation of space law.

---

205 (entered into force on 10 October 1967). As of September 2019, 110 ratifications, 23 signatures, and 1 declaration of the acceptance of the responsibility for compliance with the Treaty.

<sup>2</sup> *Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space*, 22 April 1968, 672 UNTS 119 (entered into force 3 December 1968). As of September 2019, 98 ratifications, 23 signatures, and 3 declarations of the acceptance of the rights and obligations under the Agreement.

<sup>3</sup> *Convention on International Liability for Damage Caused by Space Objects*, 29 March 1972, 961 UNTS 187 (entered into force 1 September 1972). As of September 2019, 97 ratifications, 19 signatures, and 4 declarations of the acceptance of the rights and obligations under the Convention.

<sup>4</sup> *Convention on Registration of Objects Launched into Outer Space*, 14 January 1975, 1023 UNTS 15 (entered into force 15 September 1976). As of September 2019, 69 ratifications, 3 signatures, and 4 declarations of the acceptance of the rights and obligations under the Convention.

<sup>5</sup> *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*, 5 December 1979, 1363 UNTS 3 (entered into force 11 July 1984). As of September 2019, 18 ratifications and 4 signatures.

<sup>6</sup> Marking the start of a new scientific and political era, the first artificial Earth satellite called Sputnik 1 was launched by the Soviet Union into an elliptical low Earth orbit on 4 October 1957. The transmitter batteries of Sputnik 1 were functioning for 21 days, while the satellite itself kept orbiting the Earth till 4 January 1958.

That is why, the UN General Assembly immediately adopted a Resolution<sup>7</sup> urging States to ensure that the sending of objects through space must be exclusively for peaceful purposes. Later, the concept of the peaceful uses of space was reflected in a great number of Resolutions, other UN documents, and State practice, and is now considered fundamental in space law. The question is what this concept practically means.

It is generally accepted that 'peaceful' does not mean 'non-military', rather it means 'non-aggressive'. This interpretation shares the fundamental principle of the UN Charter, which bans the threat or use of force, but allows force for self-defense and if sanctioned by the Security Council. Hence, any military space operation is lawful as long as it does not constitute a prohibited threat or use of force and does not otherwise violate international law, including space law.

### **Limitations on Military Space Operations**

Legally binding rules which impose specific limitations on military space activities are provided for in the Outer Space Treaty and the Moon Agreement. The Outer Space Treaty establishes a legal regime for both outer space and celestial bodies, which are treated somehow differently, while the Moon Agreement only covers celestial bodies.

### **Outer space from the perspective of the Outer Space Treaty**

As regards outer space, there is a ban on nuclear weapons or any other weapons of mass destruction. States are prohibited from placing in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, installing such weapons on celestial bodies, or stationing such weapons in outer space in any other manner.<sup>8</sup>

This ban, however, does not address ballistic trajectories of objects carrying weapons of mass destruction. It means that the mere transit

---

<sup>7</sup> *G.A. Res. 1148 (XII)*, U.N. GAOR, 12<sup>th</sup> sess. (1957), point 1(f): 'Urges that the States concerned <...>give priority to reaching a disarmament agreement which <...> will provide for the following: <...> f) The joint study of an inspection system designed to ensure that the sending of objects through outer space shall be exclusively for peaceful and scientific purposes.'

<sup>8</sup> *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, art. VI, para 1.

through space of a nuclear warhead, which can be launched from point to point on the Earth, is not prohibited by the Outer Space Treaty but governed by other applicable rules of international law.<sup>9</sup>

It worth saying that the UN space treaties do not define weapons of mass destruction. On the one hand, it is well-established that chemical and biological weapons are also considered weapons of mass destruction. However, due to the absence of permanent human life in near space, the consequences of the use of such weapons might be deferent from those on the Earth. On the other hand, due to the laws of physics, the use of some other types of weapons in space may have much more destructive consequences than on the Earth, where they are not considered weapons of mass destruction.

Finally, the Outer Space Treaty itself does not prohibit the placement of conventional weapons in space. But for some States limitations can exist.

### **No first placement of weapons in outer space**

For instance, sometime ago,<sup>10</sup> Russia undertook a unilateral obligation not be the first to place any weapons in outer space, and since then has been encouraging other nations to follow the example. This political endeavour is supported by the UN General Assembly.<sup>11</sup>

As of today, 21 States have such a commitment.<sup>12</sup> For them, placement of conventional weapons in space is not permissible. At least, until any other State does it. It can actually occur quite soon as today we can see another trend as well. For instance, States are establishing space forces, decreasing vulnerability of their space assets and increasing their defence capabilities, including by the planned equipping them with weapons.<sup>13</sup>

---

<sup>9</sup> For instance, we cannot say that a transit is possible for chemical and biological weapons which are banned.

<sup>10</sup> As far back as in 1983, the Soviet Union assumed an obligation not to be the first to station any kind of anti-satellite weapons in outer space. In 2004, Russia undertook a unilateral obligation not to be the first to place any weapons in outer space.

<sup>11</sup> *G.A. Res. 73/31*, U.N. GAOR, 73<sup>d</sup> sess. (2018), point 5: ‘*Encourages* all States, especially spacefaring nations, to consider the possibility of upholding, as appropriate, a political commitment not to be the first to place weapons in outer space.’

<sup>12</sup> Argentina, Armenia, Belarus, Bolivia, Brazil, Cuba, Ecuador, Guatemala, Indonesia, Kazakhstan, Kyrgyzstan, Nicaragua, Pakistan, Russian Federation, Sri Lanka, Suriname, Tajikistan, Uzbekistan, Uruguay, Venezuela, and Viet Nam.

<sup>13</sup> On the slide, several news items were shown to illustrate the trend, including in the US, India, France, and Japan.

## Nuclear Weapons and Challenging Issues

As regards the use of nuclear weapons in space, which is prohibited by the Outer Space Treaty, consider this ban in the context of self-defence. The general question of the legality of the threat or use of nuclear weapons was earlier examined by the ICJ.<sup>14</sup> The Court could not '*conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful even in an extreme circumstance of self-defence, in which the very survival of a State would be at stake*'.

Another challenging issue is the use of nuclear weapons for planetary defence. It is argued that in such circumstances nuclear weapons may be the only option. I would say that the wrongfulness of the use of such weapons to destroy an asteroid approaching the Earth or a habitable space station could be precluded under the plea of necessity.<sup>15</sup>

---

<sup>14</sup> *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, ICJ Reports 1996, p. 226, at p. 266, para 105: 'However, in view of the current state of international law, and of the elements of fact at its disposal, the Court cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a State would be at stake.'

<sup>15</sup> The International Law Commission in the Commentaries to Draft Articles on Responsibility of States for Internationally Wrongful Acts (November 2001, Supplement No. 10 (A/56/10)), at p.81 referring to *Affaire de l'indemnité russe, Russie, Turquie, 1912* (UNRIAA, vol. XI (Sales No. 61.V.4)), at p. 443: '... the obligation for a State to execute treaties may be weakened "if the very existence of the State is endangered, if observation of the international duty is ... self-destructive;" also see Articles on Responsibility of States for Internationally Wrongful Acts, art. 25: '1. Necessity may not be invoked by a State as a ground for precluding the wrongfulness of an act not in conformity with an international obligation of that State unless the act: (a) is the only way for the State to safeguard an essential interest against a grave and imminent peril; and (b) does not seriously impair an essential interest of the State or States towards which the obligation exists, or of the international community as a whole. 2. In any case, necessity may not be invoked by a State as a ground for precluding wrongfulness if: (a) the international obligation in question excludes the possibility of invoking necessity; or (b) the State has contributed to the situation of necessity;' it is also sometimes suggested that the wrongfulness of the use of nuclear weapons for the purposes of planetary defence may be precluded, if the situation does qualify as distress (see Articles on Responsibility of States for Internationally Wrongful Acts, art. 24: '1. The wrongfulness of an act of a State not in conformity with an international obligation of that State is precluded if the author of the act in question has no other reasonable way, in a situation of distress, of saving the author's life or the lives of other persons entrusted to the author's care. 2. Paragraph 1 does not apply if: (a) the situation of distress is due, either alone or in combination with other factors, to the conduct of the State invoking it; or (b) the act in question is likely to create a comparable or greater peril').

## **Celestial Bodies from the perspective of the Outer Space Treaty**

The legal regime of celestial bodies, in terms of their military use, is stricter than that of outer space. According to the wording of the Outer Space Treaty, the Moon and other celestial bodies must be used 'exclusively for peaceful purposes'.<sup>16</sup> Besides the ban on nuclear weapons and other weapons of mass destruction, the testing of any type of weapons is not allowed on celestial bodies. The establishment of military bases, installations and fortifications, and the conduct of any military maneuvers are also prohibited.

## **Celestial Bodies from the perspective of the Moon Agreement**

The legal framework of military space activities on celestial bodies was further developed in the Moon Agreement. It introduces additional limitations, which are obligatory for 18 States.<sup>17</sup>

The Moon Agreement prohibits weapons of mass destruction not only on but also in celestial bodies. Another new limitation relates to orbits around, or other trajectory to or around, celestial bodies – they must also be free from weapons of mass destruction. By prohibiting the use of trajectories, the Moon Agreement seems to forbid gravity assistance from being used to redirect such weapons. As a consequence, objects carrying weapons of mass destruction must not transit along celestial bodies' orbits.

The Moon Agreement reiterates the prohibition of the threat or use of force, as specified in Article 2(4) of the UN Charter,<sup>18</sup> and prohibits any

---

<sup>16</sup> *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, art. IV, para 2. In the doctrine, two main views exist on the interpretation of the notion 'peaceful purposes'. The first one provides that celestial bodies are fully demilitarized, and any activity of military nature is prohibited on celestial bodies. The other viewpoint adopts a narrower interpretation stating that only those military activities are prohibited on celestial bodies which are directly listed in the second paragraph of article IV of the Outer Space Treaty.

<sup>17</sup> Armenia, Australia, Austria, Belgium, Chile, Kazakhstan, Kuwait, Lebanon, Mexico, Morocco, Netherlands, Pakistan, Peru, Philippines, Saudi Arabia, Turkey, Uruguay, and Venezuela.

<sup>18</sup> For instance, when signing the Moon Agreement, France made a statement supporting exactly such an interpretation. See the Interpretative statement: 'France is of the view that the provisions of article 3, paragraph 2, of the Agreement relating to the use or threat of force cannot be construed as anything other than a reaffirmation, for the purposes of the field of endeavour covered by the Agreement, of the principle of the prohibition of the threat or use of force, which States are obliged to observe in their international relations, as set

other hostile act or threat of hostile act. Neither the Moon Agreement, nor *travaux préparatoires* provide details of what legal content was given by the drafters to the notion of a ‘hostile act’. We can assume that there might be an act which is hostile in its nature but is less grave than the use of force, both being prohibited by the Moon Agreement.

### **Prior Consultations**

Another set of rules, which comes close to the regulation of military operations in space, is a twofold mechanism of prior consultations.<sup>19</sup> On the one hand, such consultations must be undertaken; on the other hand, they may be requested.<sup>20</sup>

This mechanism is triggered when a State has reason to believe that a planned space activity may cause potentially harmful interference to activities of other States. Though there is no definition of harmful interference in space law,<sup>21</sup> military operations may have an element of interference with space activities of other actors. For instance, space debris can be regarded as causing such interference. Hence, if a State plans a destructive military operation that creates space debris on orbits which are

---

forth in the United Nations Charter’ (for the status of the Moon Agreement and reservations made hereto, see UN Treaty Collection, status webpage of the Moon Agreement).

<sup>19</sup> To date, consultations in accordance with this mechanism have been neither initiated nor requested.

<sup>20</sup> *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, art. IX: ‘...If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space, including the Moon and other celestial bodies, would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space, including the Moon and other celestial bodies, it shall undertake appropriate international consultations before proceeding with any such activity or experiment. A State Party to the Treaty which has reason to believe that an activity or experiment planned by another State Party in outer space, including the Moon and other celestial bodies, would cause potentially harmful interference with activities in the peaceful exploration and use of outer space, including the Moon and other celestial bodies, may request consultation concerning the activity or experiment.’

<sup>21</sup> In contrast, international telecommunications law does contain a definition of ‘harmful interference’. See the Radio Regulations of the International Telecommunication Union. Edition 2016, Volume I, No. 1.169: ‘harmful interference: Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with Radio Regulations’. Similar definition is specified in the Annex to the Constitution of the International Telecommunication Union, No. 1003.

intensively used by other States, such a State is expected to undertake prior consultations.

It is important to say that space activities to which interference can be caused, must be peaceful. If not, the mechanism of prior consultations is not applicable.

You can also note that the wording leaves certain discretion to States. In deciding whether there is a reason to believe, a State should take into account all the available circumstances and assess them reasonably and impartially on a case by case basis.

Finally, the Outer Space Treaty neither obliges States to enter into proposed consultations, nor requires the States involved to reach a resolution of the issue, and no prior consent is necessary for a State to proceed with its planned space operation.

### **Responsibility for National Space Activities**

What is also unique in space law, is the regime of international responsibility for national activities in outer space. If compared with the customary law of State responsibility,<sup>22</sup> the threshold for the attribution of a conduct to the relevant State is lower. States are responsible not only for space activities of governmental agencies but also for the activities of non-governmental entities,<sup>23</sup> which include private companies and individuals.

This certainly applies to any space activity that is licensed by a State. It is also argued that (a) all space activities which are conducted on the territory of a State and (b) all space activities which are conducted by the

---

<sup>22</sup> Under customary rules of State responsibility reflected in the Articles on Responsibility of States for Internationally Wrongful Acts (arts. 4-11), for the conduct to be attributable to a State, it is necessary that certain circumstances are established and proved. The conduct of organs of a State, conduct of persons or entities exercising elements of governmental authority, conduct directed or controlled by a State, and conduct acknowledged and adopted by a State as its own can be attributed to a State in a particular situation.

<sup>23</sup> *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, art. VI: 'States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the Moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty.'

State's national entities on any territory, are national space activities of that State for which it is responsible. Not only it is important when responsibility for internationally wrongful act is invoked, it may affect the determination of the parties of an armed conflict<sup>24</sup> and the application of neutrality law.<sup>25</sup>

## **International Liability**

Now, let's discuss liability in space law.

It is a general rule, that a launching State is internationally liable for damage caused by its space object on the Earth, in air space, or in outer space.<sup>26</sup> This rule will be suspended between the belligerents and will not be applicable to armed conflicts. Still, it is relevant to military space operations in peacetime.

It is important here, that liability can only be invoked if damage is caused by a space object, for example, as a result of a physical collision. If damage is caused not by a space object, for instance, by the use of the radio-frequency spectrum, it will not be covered by the rules of liability.

---

<sup>24</sup> For instance, would a State be regarded a party to an armed conflict if its national non-governmental entity, which is duly licensed (scenario 1) or which acts with no license (scenario 2), enters into an armed conflict due to an activity in outer space, since such an activity, according to international space law, would be (or could be) attributed to that State as that State's national activities in outer space?

<sup>25</sup> For instance, during an armed conflict, it would be necessary for neutral States to terminate services that are not neutral, including those provided by non-governmental entities.

<sup>26</sup> *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, art. VII: 'Each State Party to the Treaty that launches or procures the launching of an object into outer space, including the Moon and other celestial bodies, and each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such object or its component parts on the Earth, in air space or in outer space, including the Moon and other celestial bodies.' The provision was further developed in the *Convention on International Liability for Damage Caused by Space Objects*, 29 March 1972, 961 UNTS 187, which is usually regarded as *lex specialis* to article VII. Article II of the Convention provides for regime of absolute liability: 'A launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the Earth or to aircraft in flight,' while its article III – for fault-based liability: 'In the event of damage being caused elsewhere than on the surface of the Earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible.'

## Registration

Another set of rules which is relevant to space objects, is the registration regime.

The Registration Convention requires that the launching State registers its space objects and submits information to the UN Secretary-General.<sup>27</sup> The submission of information by States which are not bound by the Convention can be, and actually is, performed on a voluntary basis, in accordance with the Resolution of the UN General Assembly.<sup>28</sup>

The registration regime covers all space objects, including dual-use and military ones. Today, States are registering such satellites, however, it remains States' discretion how their general function is described.

For instance, the Athena-Fidus satellite, which is known to serve French defence, is described by France as 'telecommunications satellite' with no reference to its use for military space activities. To compare, Eutelsat 3B, a purely commercial satellite, is given the same description by France. In these cases, the UN Register does not help to determine whether these space objects are military or non-military. Alongside these examples, there are examples when the military nature of space objects is disclosed. Please see for yourself these examples on this slide<sup>29</sup> that States are given flexibility to determine what information is submitted to the UN.

In doing so, States should keep in mind that the Register is a primary source of information on space objects and is public. It can be used by

---

<sup>27</sup> *Convention on Registration of Objects Launched into Outer Space*, 14 January 1975, 1023 UNTS 15, art II para 1: 'When a space object is launched into Earth orbit or beyond, the launching State shall register the space object by means of an entry in an appropriate registry which it shall maintain. Each launching State shall inform the Secretary-General of the United Nations of the establishment of such a registry;' art. IV para 1: 'Each State of registry shall furnish to the Secretary-General of the United Nations, as soon as practicable, the following information concerning each space object carried on its registry: (a) Name of launching State or States; (b) An appropriate designator of the space object or its registration number; (c) Date and territory or location of launch; (d) Basic orbital parameters, including: (i) Nodal period; (ii) Inclination; (iii) Apogee; (iv) Perigee; (e) General function of the space object.'

<sup>28</sup> *G.A. Res. 1721B(XVI)*, U.N. GAOR, 16th sess. (1961), point 1: 'Calls upon States launching objects into orbit or beyond to furnish information promptly to the Committee on the Peaceful Uses of Outer Space, through the Secretary-General, for the registration of launchings.'

<sup>29</sup> For instance, CSO 1 which is described by France as a 'defence satellite'; SICRAL 2 which is identified by Italy as 'military telecommunications satellite'; all the Russian Cosmos series satellites are generally identified as 'intended for assignments on behalf of the Ministry of Defence of the Russian Federation'; the SKYNET 5D satellite which, as notified by the United Kingdom, 'provides secure military communications capability to British Armed Forces and friendly nations'.

attack planners, when targeting, in order to verify that the potential target is a legitimate military objective and not a civilian object. Therefore, if the general function of a purely military satellite is, during an armed conflict, intentionally deceptively described as civilian, such an act may be viewed as perfidy.

What is also important from the military perspective, every space object requires registration. For instance, when swarms of nano-satellites are co-launched in space to orbit a strategic satellite, thereby inspecting or protecting it, each of them must be registered.

The good news is that humans in space are not required to be registered.

## **Rescue and Return**

Under international space law, astronauts are considered the ‘envoys of mankind’. As such, they must be rendered all possible assistance in the event of distress and be returned to their States. More so, there is a duty for astronauts to render assistance to each other.

Here, it is important to say that astronauts, even those who participate in civil space programmes, are often members of the military. So, a question arises whether all astronauts, including those involved in military space operations in peacetime, are entitled to the same level of protection. Neither the UN space treaties, nor State practice<sup>30</sup> distinguish between military and non-military astronauts. Hence, taking into account the ‘sentiments of humanity’, the protection in peacetime seems to equally apply to all astronauts.

However, it would seem reasonable to assume that the outbreak of an armed conflict could constitute a ‘fundamental change in circumstances’,<sup>31</sup>

---

<sup>30</sup> For instance, Ambassador Arthur Goldberg, when reporting on the Outer Space Treaty drafting and negotiations to the US Senate Committee on Foreign Relations, expressly stated that agreement was reached during negotiations on the point that the protection shall be applied unconditionally to all astronauts, including military persons. See Statement by Ambassador Goldberg, ‘Hearings Before the Committee on Foreign Relations, United States Senate’, 90<sup>th</sup> Congress, 1<sup>st</sup> Session, 1967.

<sup>31</sup> *Vienna Convention on the Law of Treaties*, 23 May 1969, 1155 U.N.T.S. 331, art. 62: ‘A fundamental change of circumstances which has occurred with regard to those existing at the time of the conclusion of a treaty, and which was not foreseen by the parties, may not be invoked as a ground for terminating or withdrawing from the treaty unless: (a) the existence of those circumstances constituted an essential basis of the consent of the parties to be bound by the treaty; and (b) the effect of the change is radically to transform the extent of obligations still to be performed under the treaty. 2. A fundamental change of circumstances may not be invoked as a ground for terminating or withdrawing from a treaty: (a) if the

which could change an astronaut's status from that of an 'envoy of mankind' to that of a 'combatant'. Even though IHL allows for the targeting of 'all members of the armed forces, whether or not they are actually engaged in combat',<sup>32</sup> the engagement of astronauts in military space activities supporting combat operations should be assessed on a case by case basis.<sup>33</sup>

Rescue and return obligations are also set forth with regard to space objects, however, with a lower degree of dedication on the part of States.<sup>34</sup> The question of space objects in an armed conflict seems to be an easier one. While the Rescue Agreement is suspended between belligerents, the enemy's space objects can be captured and destroyed, provided that other applicable rules of international law are complied with.

### **Fundamental Principles of Space Law**

When conducting military space operations, States should also take into consideration other fundamental principles of international space law which can be found in the Outer Space Treaty.<sup>35</sup> Some of them are considered to

---

treaty establishes a boundary; or (b) if the fundamental change is the result of a breach by the party invoking it either of an obligation under the treaty or of any other international obligation owed to any other party to the treaty. 3. If, under the foregoing paragraphs, a party may invoke a fundamental change of circumstances as a ground for terminating or withdrawing from a treaty it may also invoke the change as a ground for suspending the operation of the treaty.'

<sup>32</sup> Yoram Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict* (2004), p. 94. See also Michael N. Schmitt, *State-Sponsored Assassination in International and Domestic Law*, 17 *Yale J. Int'l L.* (1992), p. 674: 'Second, lawful targeting in wartime has never required that the individual actually be engaged in combat. Rather, it depends on combatant status'.

<sup>33</sup> The mere fact that there is an enemy's astronaut on the International Space Station should not be enough to target him or her. Since in case of outbreak of an armed conflict international space law and international humanitarian law will both constitute *legi speciali* regarding the status of astronauts, such case leads to the conflict of laws. A customary rule known as the 'Martens Clause' provides, *inter alia*, that in situations which are not covered by specific provisions of international law, conduct in the armed conflict shall be governed by principle of humanity. It seems reasonable to assume that the principle of humanity analogously can apply in the situation of conflict of laws.

<sup>34</sup> Compare the wording of the Rescue Agreement in the context of space objects, which is 'take such steps as it finds practicable to recover the object or component parts' (Art. 5, para 2), with the wording of the Rescue Agreement concerning astronauts, which is 'immediately take all possible steps to rescue them and render them all necessary assistance' (Art. 2).

<sup>35</sup> Above all is the freedom of use of outer space enshrined in art. I of the Outer Space Treaty. It is exactly this principle which makes it possible to launch satellites for

be customary in nature, but the scarcity of State practice makes it legally complicated to correctly apply these principles to military space operations in peacetime. Their application to military space operations in times of hostilities is even more challenging. In this regard, let me tell you about some recent developments.

## Recent Developments

At least two international projects are currently being implemented, which are aimed at objectively articulating and clarifying international law applicable to military activities in outer space. The first one is called MILAMOS<sup>36</sup> where an international group of experts is drafting the Manual on International Law Applicable to Military Uses of Outer Space and I am honoured to participate in this project as Core Expert and Associate Editor. The other project is called Woomera<sup>37</sup> where an

---

telecommunications, broadcasting, and remote sensing. What is important, it can be done without seeking a permission from the State which territory is overflowed by the satellite. Even though such a State might not be happy with a foreign satellite's imaging its territory from space, it is limited in the choice of measures that can be applied lawfully. For instance, it can conceal its critical infrastructure, however an intentional dazzling or blinding of a foreign satellite to keep it from viewing a specific area can violate the other State's right to use outer space freely.

Closely related to the freedom of exploration and use, is the principle of non-appropriation of outer space provided for by art. II of the Outer Space Treaty.

Another principle, which says that the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and shall be the province of all humankind (art. I of the Outer Space Treaty), obliges States to look beyond their respective purely national interests when conducting space activities.

This principle is given substantive effect in other provisions of the Outer Space Treaty, which require that in the exploration and use of outer space States shall be guided by the principle of cooperation and mutual assistance and shall conduct all their activities in outer space with due regard to the corresponding interests of other States (art. IX of the Outer Space Treaty).

<sup>36</sup> The MILAMOS Project is aimed at the creation of the manual articulating and clarifying existing international law applicable to military uses of outer space in time of peace, including challenges to peace. The project is carried out under the auspices of McGill Centre for Research in Air and Space Law, in cooperation with partner institutions, with the expected date of release in 2020. For details, please visit <https://www.mcgill.ca/milamos/>.

<sup>37</sup> The Woomera Project is aimed at the creation of the manual articulating and clarifying existing international law applicable to military space operations being therefore focused on the time of an armed conflict. The project is carried out under the aegis of the University of Adelaide, the University of Exeter, the University of Nebraska, and the University of New South Wales – Canberra with the expected date of release in 2021. For details, please visit <https://law.adelaide.edu.au/woomera/>.

international group of experts is working on the Manual on the International Law of Military Space Operations and I am happy to see honoured experts from this project in the room.

Here, in the city of San Remo, where the Manual on International Law Applicable to Armed Conflicts at Sea has originated, it is needless to explain the importance of such manuals for the promotion of the rule of law and for ensuring its common understanding. Conflicts in space are not inevitable and international cooperation can help avoid tough scenarios and protect the unique space domain, so it remains available for the benefit of the current and future generations in all States. That is, for sure, our common desire.

This brings me to the end of my presentation and, hopefully, opens promising discussions. Thank you all for listening.