Special Features of the International Regulation of Space

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Space activities are in the limelight of political science now, as they were in 1960s and 1980s. There are several reasons for this. First, after the end of the Space Race between the USA and the Soviet Union, projects of joint space exploration had been initiated, but later on did not get sufficient further development. Second, the process of missile technologies proliferation goes on, with the number of member states of the so-called “Space Club” increasing. Third, in the beginning of the XXI century, a new confrontation among the great powers for the leadership in exploring the Moon, solar system planets, and near space occurred. Fourth, pioneering concepts of military space development were put forward, primarily in the field of missile defense systems with the use of space-based detection systems and space-based missile defense interceptors. Fifth, apart from the military side of the issue, competition both among countries and big companies for dominating the space services market has been intensifying more and more over last two decades. All things considered, space attracts lots of actors of the international system (states, NGOs, private enterprises), and to make space activities more accurate and efficient, the legal status of space, space activities, and space objects has to be clearly defined.

When the Space Race began, the USA and the Soviet Union, as the only owners of space technologies, decided to divide space between themselves on the basis of the Treaty of Tordesillas (Tratado de Tordesillas) of 1494 between Spain and Portugal. This treaty divided the newly discovered lands outside Europe between the two countries along the meridian 370 leagues west of the Cape Verde Islands.[1] Another option was to introduce the co-management system per sample of the Antarctic Treaty of 1959, which was considered to be the first arms control international agreement signed during the Cold War and a very sound diplomatic expression of the scientific and operational cooperation achieved “on the ice”.[2] Eventually, neither track was chosen because of the absence of mutual consent between the USA and the Soviet Union.

Initially, the necessity to work out international legal norms of space activities was related to the issue of space security. The term “space security” appeared for the first time in the academic literature in 1950s. In 1950-1980s, four distinctive theories of space security were put forward.

The first one was called space nationalism theory. H.Kahn, D. Kash, D.L. Harvey, L.C. Ciccority, M. von Bencke and E.C. Dolman introduced it in 1950s. These scholars alleged that governments had an exclusive right to protect their space assets and that international treaties did not guarantee protection of one state from military space activities (including military intervention) of the other state. Much attention within this theoretical approach to space security was given to the possibility of space militarization, on the one hand, and technological limitation and juridical restriction of this process, on the other.[3] Space nationalism theory was a success in the USA in 1980s because it corresponded to the Strategic Defense Initiative (SDI) originated and supported by Ronald Reagan’s administration.

The second space security theory was called by its creators (A.C. Clarke, W. Ley, F. Gibney and G. Feldman) the global institutionalism theory. It implies that independent actions of states aimed at protecting their space assets may lead to space militarization; that is why the only way to guarantee a peaceful nature of space activities is to establish specific international institutions that would have a legal right to manage space activities.[4] As global institutionalism theory claims, international regulation of the cosmic space should be benchmarked against international regulation of the Antarctic and oceanic space; the structure and contents of United Nations Convention on the Law of the Sea (UNCLOS) of 1982 could be an ideal model for an international space treaty appropriate for the whole international

community.

The third space security theory—technological determinism theory—was originated by V. Basiuk, N.P. Ruzic, W.A. Frutkin and H.E. York in 1970s and was extremely popular among Soviet scholars. Unlike the first two theories, this one admits that under existing in 1970s international order, it was impossible to grant control over space activities to international organizations because only sovereign states had a legal right to manage space activities. At the same time, technological determinism theory acknowledges the fact that an international body is needed to monitor space activities. But such an international organization can perform only supervisory, non-binding functions; it can only make recommendations that do not have any mandatory power.[5]

The fourth theory is the one of social interactionism. It emerged in 1980s and addressed the issue of mechanisms of space policy implementation and realization. The authors of this theory (R.E. Neushtadt, E.R. May, S. Kull, D.W. Larson) touched upon a political side of decision making process relating to space activities, rather than a legal one. If the global institutionalism theory treats the possibility to work out international legal norms of space activities as a crucial step towards creating the international regime of space activities management, social interactionism theory does not refer anyhow to international space regulation. Instead, it only describes different possible technological and political outcomes of international cooperation among two or more parties interested in performing this or that space activity, without providing any legal framework for their actions.[6]

En masse, the concept of space security, irrespective of all the attempts to provide distinctive ways and methods of working out international legal norms of space activities, does not refer either to the reasons for which international space regulation was introduced, or contents, theoretical meaning and practical significance of the international space law. As an academic discipline, space security has enjoyed large popularity only in the USA and that is why it mainly represents a set of American approaches to the issue under consideration. Today, however, none of the four theories of space security dominates. Each theory can be applied under certain circumstances to this or that case. In terms of international space law, global institutionalism theory is the clearest one, as it focuses on real measures on managing international space activities, encourages supranational legal control over space activities, and guarantees compliance of countries with international space law.

The real need to work out international legal norms of space activities occurred in late 1950s, when the USA and the Soviet Union succeeded in running their first space programs. Almost simultaneous success of both superpowers in space potentially could lead to, on the one hand, possible declaration of the sovereignty of any country over distinctive segments of space and, on the other hand, possible launch of the weapons of mass destruction (WMD) to space and militarization of circumterrestrial space.[7]

Prior to starting elaboration of international space laws, there were a series of international organizations and United Nations Committees established on the use of space. Thus, in 1950 there was the International Aeronautics Federation, in 1958—the Committee on Space Research (COSPAR), in 1959—the United Nations Committee on Peaceful Use of Outer Space (STCS UN COPUOS), and in 1961—the United Nations Office for Outer Space Affairs (UNOOSA). These international organizations and UN Committees were not granted the right to work out universal legal norms relating to the use of space. Furthermore, their activities contradicted one another. But the mere fact of establishing such international bodies was extremely important, as it contributed a lot to maintaining a status-quo in international space security.[8] In other words, even if irreconcilable contradictions between the USA and the Soviet Union over the leadership in space remained, the involvement of the international community in the issue via the newly established legal entities to some extent eliminated the risk of open military confrontation in space, which could endanger the whole mankind, between the two parties.

In fact, the adoption of the United Nations General Assembly Resolution No. 1721 (XVI) on International Co-operation in the Peaceful Uses of Outer Space in 1961 gained momentum to further development of international space law. This document addressed the principles of the peaceful use of space, the necessity to register spacecraft launched from the Earth, and correspondent institutions responsible for launching, the requirement to codify international space activities.[9] These regulations were voluntary to follow for the countries that adopted the resolution. Later on, the regulations set up in the UN GA Resolution No. 1721 were included in the Limited Test Ban

Treaty (LTBT) signed and ratified by the USA, the Soviet Union, and the United Kingdom in 1963. Under the treaty, the compulsory ban on launching nuclear weapons into space was introduced.[10] It is widely considered that this particular limitation confirmed the real possibility to impose supranational regulation of space activities in practice.

Negotiations on the elaboration of the universal agreement on space activities were started at the XVIII session of the United Nations Security Council in 1963. The participants of the negotiations reassured of their decision to abandon the idea of launching WMD into space, placing WMD on any celestial body and in space. It is quite hard to guess whether these agreed restrictions represented the goodwill of the space superpowers or they were the recognition of the technical inability to put into practice such types of projects at that moment. On the basis of the negotiations, in 1967 the USA, the Soviet Union, and the United Kingdom signed 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). It introduced some crucial restrictions on space activities. Space exploration and space usage in the interests of the whole mankind, complete equality of all the countries in space, freedom of scientific explorations in space and full compliance with the norms of the international law, including the UN Charter, were enunciated as basic principles of the treaty. In addition, the document prohibited appropriation of space, the Moon, and other celestial bodies by any country, as well as launching WMD into space, placing WMD on any celestial body and in space, and deliberate contamination and pollution of space. The participants of the treaty undertook the responsibility to use space peacefully, to recognize astronauts as envoys of the mankind in space, and to apply to the principles of collaboration and mutual help during space exploration missions.[11]

Outer Space Treaty solved a whole set of problems accumulated by that moment. Prima facie, U.S.-Soviet space race was put into legal framework. Countries openly announced their will not to declare sovereignty over celestial bodies (this principle started to be widely used much later, when the technical progress made it possible to accomplish man-tended missions to the Moon and to realize orbital manned flights). The treaty eliminated the direct threat of launching WMD into space and complicated the execution of the works undertaken by the USA and the Soviet Union on the creation of the missile defense system(s) with the use of space-based detection systems and space-based missile defense interceptors.[12]

However, Outer Space Treaty contained several legal gaps that allowed countries to evade the law.[13] For instance, the document did not include a ban on launching conventional weapons into space. Nothing was mentioned about the regulation of commercial space activities. The status of disputable space segments, such as geostationary and polar Earth orbits, was not identified. The hugest hiatus in the treaty was the absence of the definition of the term “space”. The International Aeronautics Federation marked the border between air space and cosmic space at a height of 100 km starting from the sea level in 1955. This definition was not legally binding. The USA, in turn, set their own demarcation line between air space and cosmic space in accordance with the type of the aircraft in use.

Under such circumstances, the need to close the gaps of Outer Space Treaty became a key prerogative for the specialists on international space law. Such an intention explains the adoption of several international space treaties in late 1960s and 1970s. In 1968, the United Nations General Assembly Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Rescue Agreement) was signed. This document fixed the commitment of the countries to render assistance to astronauts and set up norms of the return of wrecked spacecraft.[14] To enlarge the regulations of the Rescue Agreement, in 1972 the Convention on International Liability for Damage Caused by Space Objects (Liability Convention), which made it incumbent upon the countries to repair damage done to spaceship in accordance with the principles of international law and the principle of justice, was adopted.[15] In 1976 the United Nations General Assembly Convention on Registration of Objects Launched into Outer Space (Registration Convention) came into effect. This document introduced the norms relating to the mandatory provision of information about space objects, gave legal force to the UN GA Resolution No 1721, and developed the international register of operating spacecraft.[16]

Despite looking promising, international legal documents of 1968-1976 did not manage to form a new regime of security granting to international space activities. The situation changed in late 1970s, when the Soviet Union, Argentina and Poland worked out the project of the international agreement on the legal status of the Moon. On its basis in 1979 the United Nations General Assembly Agreement Governing the Activities of States on the Moon and

Other Celestial Bodies (the Moon Treaty) was signed. The Moon was declared as the general heritage of the mankind. Moreover, the agreement says that all the activities on the Moon are to be performed on behalf of all the human beings.[17] De facto, this claim was the attempt to create an international regime of the Moon's exploitation and potential benefits sharing. The agreement came in from criticism on the part of the USA. Ronald Reagan's administration affirmed that the document contradicted the principles of Outer Space Treaty of 1967, which fixed the neutral status of celestial bodies and did not allow any country to declare ownership rights over them. Also the USA called into question the clause concerning the redistribution of the recourses extracted on the Moon in the interests of the mankind. From the American perspective, the Moon recourses could not belong to anybody, or otherwise could be shared only by the space superpowers, rather than be redistributed among the countries that did not perform their own space activities.[18] In 1984 the USA refused to ratify the Moon Treaty. The Soviet Union eventually followed the example of the USA. Ultimately, the treaty came into force only in 13 countries, among which there were no space superpowers.

In 1980s the issue of remote sensing was much in the foreground. International space law had made no provision for such an activity by that moment. Thus, the discussion about the necessity to get official legal consent from the countries, above the territory of which foreign remote sensing is performed, had arisen. The USA, Western European countries, and Japan were in favor of an independent and open remote sensing data market. The Soviet Union and the developing countries insisted on receiving tentative consent from the countries, above the territory of which remote sensing was supposed to be performed by an alien state. The outcome of these debates was the adoption of the United Nations General Assembly Resolution No. 41/65 on Principles Relating to Remote Sensing of the Earth from Outer Space in 1986. This document declared the right of any country to perform remote sensing above any part of the Earth legally acceptable. The countries, above the territory of which foreign remote sensing was performed, could buy for a decent sum of money on the non-discrimination basis the access to these data.[19]

Another crucial issue, to which not much attention on the part of the specialists on international space law had been drawn before, dealt with using nuclear power supplies in space activities. In 1992 the United Nations General Assembly adopted the so-called Principles on Safe Use of Nuclear Power Sources in Space. The document defined nuclear power supplies as radioisotope generators and atomic reactors automatically installed into spacecraft, enforced rules and measures on the protection of nuclear power supplies during all space flight stages. The Principles were rather efficient, as they managed to eliminate the possibility of accusing countries of deliberate space contamination and pollution.[20]

With the crash of the Soviet Union in 1991, the USA became the only leader in space (especially in the military space sphere). However, because of extremely high costs of space activities, the USA, Russia, and the member-states of the European Union formed a cooperative system of space exploration. In late 1990s it became clear that the International Space Station (ISS) was the only successful international joint project. No further development was given to international Moon, solar system planets, and near space exploration projects.[21] In 1999 when Bill Clinton's administration announced its intention to modify the Soviet-American Anti-Ballistic Missile Treaty of 1972, a new wave of debates around international space law occurred.

The debates started with the discussion of the draft of the international convention on space law. This draft was elaborated by Russian lawyers, and was presented to the juridical subcommittee of the United Nations Committee on Peaceful Uses of Outer Space (COPUOS) in 2000. The convention was supposed to represent the corpus of the previously reached international space agreements, including the Moon Treaty of 1979. China, Colombia, Bulgaria, Greece, and Iran supported the Russian version of the would-be convention. In turn, the USA and the member-states of the European Union refused to discuss this draft, as it contradicted, from their point of view, the main clauses of Outer Space Treaty of 1967.[22]

Prevention of space militarization was the next issue under discussion. The then president of the Russian Federation Vladmir Putin made a policy statement on the necessity to minimize the risk of space militarization at the United Nations General Assembly meeting on 6 September 2000. He proposed to sign the international treaty that would ban launching warlike equipment into space. V. Putin's announcement was welcomed by China, but the USA refused to discuss this issue. Moreover, in 2002, Bush's administration withdrew from the Soviet-American Anti-Ballistic

Missile Treaty of 1972 and said America did not intend to be involved into any international joint project relating to the prevention of space militarization. In addition, after 9/11 terrorist attacks, the USA intensified cooperation with its NATO allies and started to develop with them the missile defense system without the participation of Russia.[23]

In mid 2000s, Russia with the support of China tried to force the issue of prevention of space militarization again. At the United Nations General Assembly meeting in 2005, Russia put forward two drafts: the first one dealt with providing collective security in space by means of prohibiting the launch of conventional weapons into space and the second one related to ensuring transparency and accountability of space activities. Proposals of the Russian diplomats were slightly modified, and eventually in 2006 the United Nations General Assembly adopted the Resolution No. 61/58 on Prevention of an Arms Race in Outer Space and the Resolution No. 61/75 on Transparency and Confidence-building Measures in Outer Space Activities. The principal message of the Resolution No. 61/58 is that the exploration of outer space "shall be for peaceful purposes and shall be carried out for the benefit and in the interest of all countries, irrespective of their degree of economic or scientific development".[24] The Resolution No. 61/75 says that the prevention of the arms race in outer space is of top priority for all countries, as the measures undertaken in this case will help avert a serious danger for international peace and security, including the weaponization of outer space.[25] Although these documents are potentially aimed at building more confidence over the peaceful nature of international space activities, still they are not legally-binding or compulsory to follow.

So far, the latest attempt to impose on the sovereign states mandatory legal norms of the regulation of space activities was undertaken in 2007, when Russia and China presented to the juridical subcommittee of the United Nations Committee on Peaceful Uses of Outer Space the draft on the prohibition of placing in space any warlike equipment, launching into space any weapons and any using any force against space objects. On 7 August 2007, UN COPUOS approved the draft. The treaty was planned to be made open for signing at the annual United Nations Conference on Disarmament in February 2008. But the USA refused to sign the treaty on the pretext that it contradicted the American national interest in securing its space assets. The U.S. Department of State forwarded to the UN a series of amendments to the draft. Because there was found no consent among counties either over the text of the draft or the amendments, the treaty proposed by Russia and China was not made open for signing at all. As a reaction to the American actions, Russia and China adopted the joint declaration on the prohibition of placing in space any warlike equipment. Naturally, the USA and the member-states of the European Union turned down the possibility to sign this document.[26] Exactly such sort of misunderstandings between all the parties interested in space issues puts serious obstacles in the way of creating a normal properly-functioning international regime of space activities regulation.

Today, international space law deals equally with the military side of the issue and the commercial one. Space tourism and private spaceflight require the international law of outer space to alter and to become more adaptive to the revolutionary development of this new economic sphere.

More specifically, private space activities have undergone three development stages.[27] At the first stage, the categories of shareholders and stakeholders in space activities were very limited. Governments and their space agencies were accountable for launching, operating, and controlling space objects. The role of private companies was merely nominal. They were allowed only to be manufacturers of spaceship for the public entities, downstream customers of space-based applications, and providers of subsidiary services for the benefit of the governments. For this reason, Outer Space Treaty of 1967 (Articles V, VI, VII, VIII), Rescue Agreement of 1968, Liability Convention of 1972 (Articles I, V, XI, XII) and Registration Convention of 1976 (Articles I, II, IV) focused exclusively on the rights and obligations of state space agencies, rather than private enterprises.[28] In other words, these international treaties dealt with the immediate realization of space activities (the duty of governments) and did not touch upon preparatory downstream application and supportive activities (the duty of private sector).

The second stage of private space activities development demanded from private entities to start to independently render launch services and operate space objects. From the legal perspective, this implied that governments got obliged to exercise jurisdiction over private companies and to make them meet the requirements of liability and responsibility in accordance with international space law. To achieve this goal, many countries, primarily the USA (Commercial Space Launch Act of 1984) and Russia (Law of the Russian Federation on Space Activities № 5663-1

of 1993), decided to enact national space laws, national licensing systems and national supervision mechanisms in order to ensure that private space activities were under control both of the government and international space law. At that moment, the combination of international space treaties and national space legislation, governance and regulation is sufficient for the proper private space activities functioning.[29]

Space tourism and private spaceflight represent the third development stage. As a legal category, space tourism is a quite vague notion. It underlines only motivation (people are engaged in this activity for pleasure and entertainment, rather than for scientific or training purposes) as a key indicator that distinguishes space tourism from traditional spaceflight. In addition, space tourism can be divided into orbital one and suborbital one. The first orbital touristic spaceflight took place in April 2001, when Dennis Tito arrived with a one-week visit to the Russian module of the ISS at a ticket price of 20 million U.S. dollars. Since that time at least seven private orbital touristic space trips have been taken by private entities.[30]

Nevertheless, in legal terms one cannot define orbital touristic spaceflight as a purely private enterprise at least for technical reasons. If the private character of passengers is out of question, still only public spacecraft (Soyuz vehicles) are technically viable to travel to the ISS, which is also a public destination itself. In turn, the suborbital touristic spaceflight implies a few-hour trip to the edge of outer space and back. Such a ride, if is taken on a private basis, legally falls into the category of private space tourism beyond any doubt, as spacecraft in use are completely financed, owned and operated by private companies (such as Virgin Galactic, XCOR and Rocketplane) and the motivation (that is for pleasure) is absolutely clear.[31] The term “private spaceflight” has a broader meaning, since such a flight can be taken not exclusively for touristic purposes. Most generally, lawyers define private spaceflight as suborbital spaceflight, whose primary task is to offer individuals the opportunity to fly on board private spaceship to a place of destination (or from one place to another); to save a considerable amount of time, in the process of such a trip an individual can enter, traverse and leave the edge of outer space. In future some companies (e.g. Bigelow Aerospace) even plan to build, launch, and operate space hotels, which are likely to be legally defined as private destinations in outer space.[32]

On the whole, because of the state orientation of current international space law, the legal status of private operators and their activities (space tourism and private spaceflight) is defined primarily through national legislation. The development of private space activities goes much faster than the development of international space law. It seems very unlikely that in the nearest future the state orientated model will be substituted by the state plus private sector orientated one. However, technical advances may soon demand from international space law to set up necessary universal legal framework for private space activities. Among most disputable issues at the international level in this case will be the ones of certification, space traffic management, authorization, control, registration, and liability arrangements.[33]

Apart from the above mentioned controversial issues, there remains another serious legal gap: the concept of “astronaut”, as it is defined in international space treaties, does not fit well with the contemporary proposals for commercial space tourism. In accordance with general principles of the interpretation of international treaties, when defining any object, the ordinary meaning of the term has to be applied (Article 31.1 of the Vienna Convention on the Law of Treaties). Another basic rule of the interpretation of international treaties is that a special meaning can be given to some object if the intention of the parties is unclear (Article 31.4 of the Vienna Convention on the Law of Treaties).[34] The term “astronaut” was defined in the preamble and paragraph 3 of the United Nations General Assembly Resolution № 1802 (XVII) of 1962; in paragraph 9 of 1963 Space Principles Resolution; in article V paragraph 1 of Outer Space Treaty of 1967. In all these documents, an astronaut most generally can be defined as an envoy of the mankind in outer space that should be helped, rescued and returned to the state of registry of his space vehicle when required. With minor variation, similar definitions of the term “astronaut” appear in Rescue Agreement of 1968, Liability Convention of 1972, Registration Convention of 1976 and the Moon Treaty of 1979. Although these documents refer to astronauts as to the “personnel of a spacecraft”, the general meaning of the concept is not changed.[35]

By now, astronauts have been described in all the international space documents as highly trained state-employed professionals with a specific range of duties and responsibilities, rather than as ordinary untrained people (clients or

customers of some private company) that could go into space on a commercial basis. With the development of space tourism the ambit of the term “astronaut” becomes unclear. The USA has already imposed national rules for space tourism that make an undubious distinction between a space crew and space flight participants (Commercial Space Law Amendments Act of 2004, Human Space Flight Requirements for Crew and Space Flight Participants: Final Rule of 2006).[36] The American initiative is rather comprehensible, as it specifies the type and the grade of responsibility each individual on board bears. Consequently, it would be reasonable if specialists on international space law borrowed this idea and made it applicable at the supranational level for the whole international community.

Finally, there arises the issue of responsibility and liability for outer space private and commercial activities. In the case of space activities fully undertaken by a state, the government of the state bears full responsibility for its actions. In accordance with the draft articles on Responsibility of States for Internationally Wrongful Acts adopted by the Drafting Committee of the United Nations International Law Commission in 2001, internationally wrongful acts of a state bring about international responsibility of this state. In turn, the characterization of the act as internationally wrongful is defined in conformity with the principles of international law, rather than national legislation.[37] Similarly, as Article V of Outer Space Treaty of 1967 and Articles 2, 3, 4, of Rescue Agreement of 1968 read, states are obliged to render all possible assistance to astronauts (personnel of a spacecraft) in the event of accident, distress and emergency, even if at the moment of asking for help astronauts (personnel of a spacecraft) are on the high seas or any territory not under the jurisdiction of any state.[38] As for private space activities, from the legal point of view it is unclear what are the rights and duties of private space tourism providers and their clients, how these rights and duties are distributed between them and the government and who has to pay for the costs of, for example, rescue that may proceed from private space tourism. Another vague question in the current international space law is the one of the jurisdiction over an ISS space tourist who is not a citizen of any ISS participant state. So far, all the ISS private visitors have had right citizenships. However, in respect to other nationalities there are no appropriate laws.[39]

All in all, the majority of methods of space activities regulation, which continue to be widely used today, were worked out either by American or Soviet lawyers in the second part of the XX century. For many years the agenda of space activities regulation has been defined by key clauses of Outer Space Treaty of 1967. Theoretically, international space legal documents (agreements, treaties, declarations, resolutions) signed in 1970s-1990s dealt with the issue of maintenance of the space co-management system between the USA and the Soviet Union and with the issue of prevention of space militarization. Practically, they answered the purpose of closing legal gaps of Outer Space Treaty of 1967. In 1990s-2000s, the situation on the world arena has changed. America’s achievement of the undoubtful leadership in space (especially in the military space sphere) put an end to the balanced system of international space co-management. Development of private space activities definitively confirmed that the international legal system of space activities regulation based on Outer Space Treaty of 1967 and subsequent international legal documents became completely obsolete. Today, paucity of mutual understanding among countries over space issues is a huge problem. If the international community does not return to the negotiation table and does not elaborate contemporary international space laws, negative consequences might be expected. On the one hand, these consequences may have economic implications, such as intensification of competition over commercial activities in space, shifting of responsibility and liability for outer space private and commercial activities from a state to private companies or vice versa. On the other hand, such consequences may lead to higher risks in global space security, fragmentation and segmentation of space, appropriation of space objects, which is likely to be achieved through open military confrontation. The renewal of international legal documents should be run in full accordance with international principles of law. The involvement of international bodies into this process, primarily the United Nations Organization, is required.

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