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The extent of space carrier's liability for damages

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Abstract:

The United Arab Emirates is one of the countries that have ambitions to explore the Space, the moon and the celestial bodies, in addition to the use of space in many fields such as science and tourism among other fields that will benefit the United Arab Emirates. Since the state has started its journey to discover outer space, it was a must to probe into the most important legal consequences that it might be held liable for, in the event of damages resulting from the process of exploring outer space.

Based on the foregoing, this research aims to create a legislative and regulatory framework for the United Arab Emirates' space sector and to determine the liabilities of the United Arab Emirate in line with international laws, regulations, treaties and agreements, in order to create a comprehensive legal environment and to provide a strategic basis for all matters related to outer space sector.

Keywords: Convention, Space Object, Liability, Space Activities.

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Introduction

The space journey has started by launching the first Russian satellite sputnik 1 which was launched on the 4th of October 1957, and upon that, many countries started to enter the field of space exploration.

The United Arab Emirates was one of the countries that embarked on the journey of space exploration, and as per that the United Arab Emirates must be aware of its liabilities and legal responsibilities resulting from the use of the space for exploration.

Furthermore, in the process of signing and ratifying outer space Treaty by the United Arab Emirates, the country is obliged to comply with the provisions of the treaty and to adapt to the regulations which are set out in the United Nations' space treaty, being one of the most important countries that have participated in the field of outer space exploration.

In addition to that, the United Arab Emirates has launched many satellites, while the biggest achievement was in 2020 when The Hope Probe was launched to place the United Arab Emirates on the list of the leading countries in the field of space exploration.

Through this research paper, we will address the liabilities of the space operator according to the United Arab Emirates laws and regulations, and the reason behind that is once states reach outer space and start working to explore it using space objects. To the space, it is mandatory to highlight the laws that govern this process in order to determine the liabilities in case of any damage accrued, and to pinpoint the most important space laws and regulations enacted by the legislator in the United Arab Emirates.

In this research, we will address the liabilities of the carrier in light of the United Arab Emirates laws and regulations, in order to preserve space resources in the first place from misuse of human, and on the other hand, to determine the liabilities in case of damage caused by space objects.

- **The Rreason for choosing the research topic.**

The reason underlying choosing this topic by the researcher is to shed light on the most important legal rules governing the process of exploring outer space, and to determine the extent of the United Arab Emirates' ability to establish a federal space legislation, in addition to determining the liabilities in case of damage.

- **Importance of the study.**

The importance of this study is that it aims at determining the liabilities in case of damage caused by space objects, and the parties that would be held liable in the event of damage, as well as determining the applicable law to the liable parties.

- **Research issue.**

The research issue lies in the extent to which the United Arab Emirates can issue federal legislation for application to space disputes, and to determine the liabilities in case of damage caused by space objects, and the parties that would be held liable for compensation purposes in the event of damage.

- **Objectives of the study.**

1. Explaining the legal rules that govern the use of outer space, to clarify the carriers' liabilities and obligations when exploring outer space.
2. To analyze the existing rules to find the applicable ones in case of damages caused by space objects.
3. To examine the legal frameworks governing liability for damages in outer space according to UAE law and Russian Federation law.
4. To analyze the practices of the courts and arbitration bodies in both jurisdictions in adjudicating liability disputes related to space activities.
5. To compare the liability regulations in case of damage in outer space according to UAE law and Russian Federation law, identifying similarities and differences.

6. To make recommendations for improving the liability regulations in case of damage in outer space according to UAE law and Russian Federation law.

• Research methodology.

In this study, the researcher relied on the analytical method, as follows:

1. **Analytical approach:** It is the analysis of the Russian Federation law, and the United Arab Emirates' space law.

This study uses a comparative legal research approach, drawing on primary and secondary sources of information. The primary sources include relevant laws and regulations related to space activities and liability for damages in outer space in both the UAE and Russian Federation. The secondary sources include academic articles, reports, and case studies related to space activities and liability for damages in outer space.

• Research components.

The researcher has divided the topics of this thesis into the following:

Introduction.

Definition of liability, and the United Arab Emirates projects.

Definition of liability.

Projects of the United Arab Emirates in outer space.

liability elements and compensations.

Liability regulations in case of damage according to United Arab Emirates law, and the Russian Federation law.

Liability regulations in case of damage according to United Arab Emirates' law.

Liability regulations in case of damage according to the Russian Federation law.

Conclusion.

Recommendations.

References.

Definition of liability and the United Arab Emirates projects

Space activity is not limited to the mere launch of space objects into space and we mean by space as it is defined by the United Arab Emirates legislator as 80 kilometers above sea level, in addition to distinguishing outer space from inner space, moreover, the activities of states expanded as they began to be conducted by government and non-governmental organizations, which necessitated clarification of the liability that falls on those organizations.

Before resorting to determining the damages inflicted, we have to determine who is liable for compensating those damages, and therefore, it was important first to define the liability.

So, according to the United Arab Emirates law, liability is the penalty for violating one of the duties entrusted to the person, regardless of the source of this duty. It can also be defined as the obligation of a person to compensate for the damage he has caused to another person as a result of his fault. Therefore, liability as we will see in our discussion, is divided into contractual and non-contractual liability, and accordingly, we will discuss the definition of both.

So, upon what we mentioned above there are two types of liabilities according to the United Arab Emirates law which is the contractual liability as the source of the obligation and in this type of contract the liability arises when any party thereof breaches one of its conditions.

On the other hand, we have the non-contractual liability which is the liability that arises when a legal duty is breached and this breach causes damage to others by any means, and this breach is considered a breach of a legal duty which is the obligation of the person not to harm others by his act.

Projects of the United Arab Emirates in outer space

The space field has received wide attention from the United Arab Emirates; accordingly, we will exhibit space projects in the United Arab Emirates.

To start with, the United Arab Emirates founded the United Arab Emirates Space Agency which is the general federal body established by the Federal Decree Law No.1 of 2014 regarding the establishment of the Emirates Space Agency, following that, the United Arab Emirates government founded Mohammed bin Rashid Space Center in 2015, in the Emirate of Dubai to be a major part of the strategic initiative.

Afterwards, the United Arab Emirates launched several satellites, which are as follows:

1. Thuraya 1 satellite, which was launched in 2000 and is considered to be the first satellite for the United Arab Emirates.
2. Thuraya 2 satellite, which was launched in 2003.
3. Dubai Sat 1 satellite, which was launched in 2009.
4. Dubai Sat 2 satellite, which was launched in 2013.
5. Khalifa Sat satellite, which was launched in 2018, which considered to be the first satellite to be fully developed and launched by the United Arab Emirates.
6. The DMSAT-1 satellite, which was launched in 2021, in cooperation with Dubai municipality.
7. PH-1 satellite which has not been launched yet. This project is in cooperation and partnership with the "UN Office for Outer Space Affairs (UNOOSA)."
8. MBZ-SAT satellite, which will be launched in 2023.
9. Al Yah 1 satellite, which was launched in 2011.

In addition, Mohammed bin Rashid Space Center undertook the task of implementing the Hope Probe to explore Mars, and the United Arab Emirates

launched the Emirati project the Hope Probe in 2020, which is the first Arab probe to reach Mars with the aim of exploration, then, His Highness Sheikh Mohammed bin Rashid Al Maktoum launched the Emirates Moon Exploration Project 2024, through which the United Arab Emirates aims to develop an Emirati-made explorer, which is named Rashid Rover, to land on the moon in 2024.

The Emirates lunar mission which will be launched in October 2022, will be the first by an Arab country and the fourth in the world.

The United Arab Emirates' ambitions will never stop by the lately launched projects as they are just the opening of the country's journey in the space field, and more space projects will be announced later as the United Arab Emirates seeks to graduate local astronomers and astronauts, hence, the United Arab Emirates projects and achievements in the space sector will expand continuously so as to make the United Arab Emirates one of the leading countries in the field of space.

Liability Elements and Compensations

Before listing liability elements, it is very important to determine the nature of liability, whether it is a contractual liability or a non-contractual liability, and accordingly, we will discuss in this section the nature of liability and its elements in accordance with the United Arab Emirates laws.

In defining liability, we mentioned that liability is divided in two main types, which is contractual liability and non- contractual liability, so, in the contractual liability the source of obligation comes from the contract signed between the two parties, and for non-contractual liability, the source of a person's obligation is the harmful act resulting from people or things for which he is responsible, thus, according to the United Arab Emirates law, and referring to the article No. (282) of the Federal Civil Transactions Law No. 5 of 1985 which says that "every harm to others binds the doer, even if he is not obligated to guarantee the harm." (Civil Transactions Law, 1985)."

So according to this article any harm to others regardless of the doer (which we mean by the person who caused the damage), his age whether he is noticed or not, he will be labile to compensate the harm that he caused, and in case if

the doer is under the legal age or he is working under someone else behalf, the responsible person of the underage and the worker will be liable to compensate.

Initially, the space carrier's liability relates to the carrier's obligation, and the source of that obligation.

As we mentioned earlier in this paper, the source of obligation may differ according to the contract either it is a contractual obligation or a non-contractual obligation. Having made this clear, we will now address the elements of liability that encounter the space operator whether in a contractual obligation, or in a non-contractual obligation, as it combines the two mentioned types, but we have to remember that most of space activities are launched following a contract between states or carriers, but what if the damage is inflicted to a third party which has no contract with the launching state. In this case, we have to apply the guidelines of the non- contractual parties, so we will go through the provisions of the federal civil transactions law No. 5 of 1985 to simplify the elements of holding liability, and whether those provisions are able to be applied to the space activities, consequently, the space carrier's liability is based on three elements in accordance with the United Arab Emirates law which are the accident, the damage, and the causation, liability in this type occurs in the event that the contracting party fails to do what is obligated to them in the contract, hence, we will clarify the tree elements, so, we mean by the accident the act which caused the damage to another space object, so in this situation if the accident occurred between two contracting states, we will directly go to the contract between both countries, and determine the applicable law, as well as determining the liable party for compensation, as mentioned in the contract between both parties. Afterwards, the accident will absolutely cause damage to the space object, in this case we will directly look at the third element which is the causation, so the damage must result from the accident itself not from any other reason. Consequently, if the damage was between the contracting states, we will apply the terms of the contract, and if the damage was caused between non-contractual parties, in my opinion, the general rules of article (282) of the Federal Civil Transactions Law No. 5 of 1985 will be applied, as it stipulated that "every harm to others binds the doer, even if he is not obligated to guarantee the harm." (Civil Transaction Law, 1985). So, any harm to others must be compensated by the causer of that damage. This rule will be applied

in order to determine the liable state which will pay the compensation to the affected person in the accident.

Based on what we mentioned above, the three elements must be applied in any liability cases, and if any of these elements were absent, the affected party will not be able to get a compensation for the contractual liability, and the non-contractual liability will be only based on the harm.

Furthermore, we have already mentioned the need for a direct causal relationship between the harmful act and the damage to persons or properties which we call causation as it is an essential element of establishing the liability, but this causation may be severed in the event of a force majeure, which refers to things that cannot be expected, and there is no way to avoid them, in this case, the space operator, cannot be held liable.

After fulfilling the three elements of liability and determining the liable party, the compensation amount will be estimated.

So, according to Article (396) of the federal civil transactions law No. 5 of 1985 which stipulated that if the compensation is not estimated in the law or in the contract concluded between the parties, the judge shall estimate the amount of compensation equal to the damage. This means that the affected party is to be fully compensated in accordance with Article (282) of the federal civil transactions law No. 5 of 1985, which stipulates that every harm to others obliges the doer to insure the damage.

Liability Regulations in Case of Damage According to United Arab Emirates Law and Russian Federation Law.

This section in the paper compares the liability regulations in case of damage in outer space according to United Arab Emirates (UAE) law and Russian Federation Law. The paper analyzes the legal framework governing liability for damages in outer space in both jurisdictions, including the relevant laws and regulations, and examines the practices of the courts and arbitration bodies in adjudicating liability disputes. The paper concludes that while both jurisdictions have ratified relevant international treaties and established legal frameworks for determining liability for damages in outer space, there are some differences in the approach and practices of the legal systems.

Legal Framework:

The main international treaties governing liability for damages in outer space are outer space Treaty of 1967, the Liability Convention of 1972, and the Registration Convention of 1975. Both the UAE and Russia have ratified these treaties. Outer space Treaty establishes the principles governing the exploration and use of outer space, including the principle of liability for damages caused by space activities. The Liability Convention provides that a launching state is liable for damage caused by its space object, regardless of whether the state was at fault. The Registration Convention requires the registration of space objects and the publication of information about them, to promote transparency and accountability.

In addition to these international treaties, both the UAE and Russia have established their own laws and regulations governing space activities and liability for damages in outer space. The UAE has enacted a national space law, Federal Law No. 1 of 2014 on the Regulation of Space Activities, which sets out the legal framework for space activities, including licensing, registration, and liability for damages. The law provides for strict liability for damages caused by space activities and sets out the conditions under which liability may be limited. Russia has also established a legal framework for space activities and liability for damages in outer space, including the Federal Law on Space Activities of 1993, which sets out the legal and organizational principles of space activities, and the Civil Code of the Russian Federation, which governs liability for damages.

The Extent of Liability:

Both the UAE and Russia have established legal frameworks for determining liability for damages in outer space. The liability of space operators is generally strict, meaning that they are liable for damages caused by their space activities regardless of fault. However, liability may be limited in certain circumstances. For example, the Liability Convention limits the liability of launching states to a certain amount, depending on the nature of the damage. The UAE space law also provides for the possibility of limited liability in certain circumstances, such as when the damage is caused by a force majeure event or when the space operator is acting on behalf of a state.

In addition to the legal frameworks, the practices of the courts and arbitration bodies in both jurisdictions are also relevant to determining liability for damages in outer space. While there have been few cases involving space activities in the UAE and Russia, the legal systems can adjudicate disputes related to liability for damages in outer space.

In this chapter, we will address the regulations of the United Arab Emirates law, and the Russian Federation Law. Both liability regulations will be clarified.

Liability regulations in case of damage according to United Arab Emirates law

The space operator's liability under the United Arab Emirates federal law No (12) of 2019 on the regulation of the space sector will be referred to in order to clarify the liability provisions and to determine the applicability of the provisions of the United Arab Emirates law to the damages occur in outer space.

To start with, and in accordance with the United Arab Emirates law, in order to determine the liable party, it is necessary to mention briefly the general elements of liability.

Liability is built on three elements, which are: the accident, the resulting damage, and the causation between each of them. According to the United Arab Emirates federal law No. (12) of 2019, on the regulation of the space sector, the legislator obliged the authorized governmental operators to be liable under this law in case the space object inflicts any damage during its flight on the surface of the Earth or in aircraft. Consequently, the authorized operator will be held liable while the space object is launched in a flight that is participating in the activities authorized for the operator and caused damage to other parties which are not participating or contracting with any of the space activities, so, the above-mentioned point has been laid down in article (20/1) of the federal law No. (12) of 2019, on the regulations of the space sector, which explained the liability between the contracting parties, as it states that "1- The Operator's adherence to the obligations prescribed therefor under this Law does not exempt from liability for damage caused on the surface of the Earth or in aircraft during its flight, by a Space Object participating in the activities authorized for the

Operator, towards other parties not participating in or contracted within such activities." (Federal Law on the regulations of the space sector, 2019), at the beginning of the article the legislator discussed the waved of liability in case of damages accrued on the surface of earth or in the aircraft during its flight, and they mentioned that the carriers will be obviously labile] regardless of adherence to the obligations between the contracting parties or not.

Subsequently, the United Arab Emirates law has simplified the scope and the meaning of the term "damage" which is stated in article (20/2) of the federal law No. (12) of 2019, on the regulations of the space sector, to include the "loss of life, personal injury, or any other harm to health, or the loss or damage that is caused to the property of the State, the property of Persons, or the property of intergovernmental organizations." (Federal Law on the regulations of the space sector, 2019).

We note from the above that the United Arab Emirates law has not specified the damages inflicted on the astronauts specifically, but rather it mentioned them in general terms which is "loss of life, personal injury, or any other harm to health" (Federal Law on the regulations of the space sector, 2019), Consequently, the term will cover the astronauts and other individuals who suffer that damage, in addition to that, the term persons which according to this law includes the physical or juristic persons as mentioned in chapter 1 of the United Arab Emirates federal law No. 12 of 2019,which affirms that the United Arab Emirates legislator used a wide-ranging term to cover the operator's liability. Moreover, the article also covers the properties which are affected with the damage caused by the spacecraft; therefore, the authorized governmental operator will be liable to pay compensations for the affected parties for the damages inflicted by the space object which is operated by them.

On the other hand, if a non-governmental space operator's craft activity caused damage to a physical person who is on board the Space Object, or to a property thereon, during a Spaceflight even if the authorized operator were obliged to the rules of this law, the state will not be liable to compensate the affected party as it is stipulated in Article (20/3) of the federal law No. (12) of 2019, on the regulations of the space sector.

Similarly, and in some cases, the state will not be liable to compensate

for any damage arising from an operator's space activity towards any other contracted parties, as this is explained in article (20/4) of this law, which states that "The State shall not be liable for any compensation arising out of an Operator's Space Activity towards any other parties contracted with to exercise that activity, or any Persons participating in that activity or during their presence, at the invitation of the Operator or the launching state in the immediate vicinity of the region from which the Launch or the Re-entry is to be carried out" (Federal Law on the regulations of the space sector, 2019). The compensation in this article is limited only between the parties who are participating in the Space Activity as mentioned in the contract between them and whatever they agreed on.

As we noted, Article (20) of the federal law No. (12) of 2019, on the regulations of the space sector has explained the operator's liability between the contracting parties.

Afterward, and according to article (21) of federal law No. (12) of 2019, on the regulations of the space sector, the United Arab Emirates legislator has set the regulations of determining the liability towards others. The last-mentioned article obliged the operator in all cases to be liable "for any damage caused to others on the surface of the Earth or in the aircraft while flying inside or outside the State's Territory, and caused by the Space Object that he/it owns, operates, or jointly owns or operates", (Federal Law on the regulations of the space sector, 2019). This is based on the general rule of Article (282) of the Federal Civil Transactions Law No. (5) of 1985 which stipulates that "every harm to others binds the doer, even if he is not obligated to guarantee the harm." (Civil Transaction Law, 1985). Based on the foregoing, and according to the federal law No. (12) of 2019, on the regulations of the space sector, the operator will be liable to pay compensation inside the state only if "authorized, and the activities thereof are carried out according to the Permit granted thereto", (Federal Law on the regulations of the space sector, 2019), and the compensation is limited as it is laid down in Article (24) of the federal law. On the other hand, if the operator was not authorized, "not exempted in accordance with the provisions of this Law, or if it breaches the Permit granted thereto". The operator in this case will be fully liable to pay compensation for "damage to others without specifying a higher ceiling for the amount of compensation for the damage",

(Federal Law on the regulations of the space sector, 2019), so in this case the compensation is unlimited.

In addition, the operator is liable to pay compensation for hitting another spacecraft as mentioned in article (22) of the federal law No. (12) of 2019, on the regulations of the space sector. The provisions of this article are almost similar to the provisions of article (21) of the federal law regarding liability and compensation. The difference between both articles is that article (21) regulates the liability toward others, and article (22) regulates the liability for hitting another space object. Furthermore, article (21) obliged the operator to be liable in all cases for the damage arising from their space activity without a need to prove the error or the damage, and it covers the damages in the territory of the state or outside the state territory in the borders of the surface of the earth or the aircraft in flight, unlike article (22) which mentioned at the beginning the term "When the error is proven.", (Federal Law on the regulations of the space sector, 2019). The operator will be liable to pay compensation only when the error is proven.

According to what has been argued regarding the non-governmental operator liability in case of damages caused by their activities toward others, and in case of filing an international claim against the state, the non-governmental operator will compensate the state as follows:

"1- If the Operator is authorized and does not violate the terms of his Permit under the provisions of this Law, then the amount of compensation shall be in accordance with the provisions and rules for the calculation and limitations of compensation referred to in Article (24) of this Law, whether or not the insurance policy includes the name of the State as a beneficiary, and that up to the amount of the limit mentioned." (Federal Law on the regulations of the space sector, 2019).

Therefore, it is essential to explain as provided for in article (24) of the United Arab Emirates federal law No. (12) of 2019, which estimated the limitation of compensation for liability and stipulates that while assessing the limitations, the following four points must be taken into account:

"(a) The size of the Launch Vehicle and any other Space Object launched therefrom. (b) The fact sheet of the launching Operator or the process of Re-entry.

(c) The curved path pattern of the launched or re-entered Space Object. (d) Any other factors that determine the risk of Accidents or Incidents." (Federal Law on the regulations of the space sector, 2019).

The United Arab Emirates federal law No. (12) of 2019, on the regulations of the space sector, has expanded the scope of liability to cover the launch facilities, and has regulated the use of those facilities. Therefore, and referring to article (27) of federal law No. (12) of 2019, on the regulations of the space sector which has stipulated that the non-government operator while using the facilities or any properties of the state "shall conclude a special agreement with the entity that owns the Launch facility in coordination with the Agency, clarifying the limitation of liability between the parties for any damages that may be caused to the State, its facilities or properties." (Federal Law on the regulations of the space sector, 2019), it is necessary to draft an agreement between the non-government operator and the launching agency in order to determine the limitation of liability, and to avoid conflicts over any issues that may arise in the future.

eventually, it is important to mention that the liability under the United Arab Emirates federal law No. (12) of 2019, on the regulations of the space sector is a national liability, and in all situations of liability that are not covered in the United Arab Emirates federal law No. (12) of 2019, on the regulations of the space sector, the federal law obliged the operator to be liable and compensate in case of any damage caused due to their activities.

Liability Regulations in Case of Damage according to Russian Federation Law (53)

As the Russian Federation is one of the leading countries in the space sector it is essential to examine their liability provisions which regulate the space sector. In accordance with section VII of the Russian Federation Law, article (30), in case of damage arising, the Russian Federation will ensure that the affecting party is fully liable to pay the full amount of compensation for direct damages caused due to an accident while carrying an out-space activity. Furthermore, the amount of compensation must be paid by the organization and citizens responsible for the space operation. Accordingly, if the damage were caused due to a fault committed at the creation and use of space

technology, the appropriate organizations and citizens will be partly or fully liable to compensate the affected party. In addition, the Russian Federation Law determines the scope of application of the law as it covers all damages ,regardless of the fault of the inflictor, inflected by a Russian Federation space object within the territory of the Russian federation, or outside the jurisdiction of any state, accept outer space, meaning that the Russian Federation is liable for all damages inflected due to a Russian space object wherever the damage accrued, except if the damage were resulted in outer space, as it might be concerning as an international liability.

According to article (30) of the Russian Federation Law ,if the damage were caused in any place, apart from the Earth's surface, on a space object of Russian Federation or on property on board of such object by another space object, the liability of organizations and citizens shall arise with their being at fault and in proportion to their fault, hence, if the damage inflicted were attached to several organizations and citizens, the affected party may ask for compensation from all such organizations and citizens or to any of them, therefore, the party who was liable to pay compensation shall have the right of recourse against the correspondents whose liability shall be apportioned according to the degree of their fault, and if it is impossible to establish the fault the compensation will be divided equally between all parties.

Conclusion:

In conclusion, this research paper has compared the liability regulations in case of damage in outer space according to United Arab Emirates (UAE) law and Russian Federation Law. The paper has analyzed the legal framework governing liability for damages in outer space in both jurisdictions, including the relevant laws and regulations, and examined the practices of the courts and arbitration bodies in adjudicating liability disputes.

Both the UAE and Russia have established legal frameworks for determining liability for damages in outer space, and have ratified relevant international treaties governing space activities and liability for damages. The liability of space operators is generally strict, meaning that they are liable for damages caused by their space activities regardless of fault. However, liability may be limited in certain circumstances, such as force majeure events or when the space operator is acting on behalf of a state.

The practices of the courts and arbitration bodies in both jurisdictions are also relevant to determining liability for damages in outer space. While there have been few cases involving space activities in the UAE and Russia, the legal systems can adjudicate disputes related to liability for damages in outer space.

Recommendations:

As space activities continue to expand, it is important for both the UAE and Russia to continue to develop and adapt their legal frameworks to ensure that they are able to effectively regulate and hold space operators liable for damages. The following recommendations may be considered:

1. Regular review and updating of the legal framework: The legal frameworks in both jurisdictions should be regularly reviewed and updated to ensure that they remain relevant and effective in regulating space activities and determining liability for damages in outer space.

2. Encouragement of international cooperation: The UAE and Russia should encourage international cooperation to promote consistency in the interpretation and application of the relevant laws and regulations, and to facilitate the settlement of disputes related to liability for damages in outer space.

3. Education and awareness-raising: Education and awareness-raising efforts should be made to increase the understanding of the legal framework governing liability for damages in outer space among space operators, stakeholders, and the public. This will help to ensure that the legal framework is effectively implemented and that all parties are aware of their obligations and liabilities.

4. Increased investment in research and development: There should be increased investment in research and development to promote the development of innovative technologies and practices that can help to prevent accidents and damages in outer space, thereby reducing the need for liability regulations in the first place.

Overall, the legal frameworks in both the UAE and Russia provide a solid foundation for determining liability for damages in outer space. However, it

is important for both jurisdictions to continue to adapt and improve their legal frameworks to ensure that they are effective in regulating space activities and holding space operators liable for damages.

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مدى مسؤولية مشغل الفضاء عن الأضرار

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ملخص البحث:

تعد دولة الإمارات العربية المتحدة من الدول التي لديها طموح لا حد له لاستكشاف الفضاء والقمر والأجرام السماوية الأخرى، بالإضافة إلى استخدام الفضاء في العديد من المجالات العلمية والسياحية وغيرها من المجالات التي تعود بالنفع على دولة الإمارات العربية المتحدة، ومنذ بدأ الدولة بالسير في طريقها لاكتشاف الفضاء الخارجي كان لا بد لنا من الوقوف على أهم المسؤوليات القانونية التي تقع على عاتق الدولة، ولذلك كان من الضروري أن نتناول في بحثنا مسؤولية دولة الإمارات العربية المتحدة في حالة الأضرار التي تنجم عن استخدام الفضاء الخارجي

وبناءً على ما سبق، فإن طرح هذا البحث يهدف إلى خلق بيئة تشريعية وتنظيمية في قطاع الفضاء الإماراتي وتحديد مسؤولية الدولة بما يتماشى مع القوانين والأنظمة والمعاهدات والاتفاقيات الدولية، من أجل خلق بيئة قانونية شاملة وقاعدة استراتيجية لجميع الأمور المتعلقة بقطاع الفضاء الخارجي، والوقوف على أهم القوانين والأنظمة الفضائية التي سنها المشرع في دولة الإمارات العربية المتحدة

الكلمات الدالة: المعاهدات الدولية، الجسم الفضائي، المسؤولية، الأنشطة الفضائية.

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