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ENCOURAGING TOURISM FROM CULTURAL HERITAGE TO OUTER SPACE IN THE UAE THROUGH THE DEVELOPMENT OF FEDERAL LEGAL FRAMEWORKS REGULATING COLLECTIVE AND INDIVIDUAL SPACE TRAVEL VIA SPECIALIZED SPACE VEHICLES

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ABSTRACT

Space tourism represents an emerging frontier in both transportation and the tourism sector, necessitating specialized legal frameworks to ensure its safe and sustainable development. This study explores the role of space-transportation law in promoting space tourism, motivated by the need to assess how dedicated legislation can stimulate sector growth. It hypothesises that regulating space-tourism activities through clear and comprehensive legal provisions – covering licensing, operator obligations, public safety, and passenger comfort – directly contributes to creating an environment conducive to investment and the expansion of space tourism in the United Arab Emirates. Using a doctrinal and regulatory analysis, the research highlights the dual objectives of the legislation: ensuring safety and operational standards while encouraging commercial and touristic development. The study concludes that a combination of well-defined licensing procedures, operator accountability, and safety and comfort standards is essential for the sustainable growth of space tourism, recommending continued legislative refinement and regulatory oversight to support this emerging sector.

KEYWORDS: space tourism transport, space, transport requirements, carrier, public-safety elements.

1. INTRODUCTION

The transport sector, in general, constitutes the backbone of a strong economy and a vibrant society in the United Arab Emirates. This sector serves a large segment of the population residing in the country, and the individual or collective transportation of tourists using various means of transport stands at the forefront of national priorities. Tourist attractions are distributed both within and outside the UAE, which necessitates the establishment of an effective network of mass transportation that corresponds to the volume of visitors moving between these numerous destinations around the world.

Therefore, as part of efforts to promote tourism, it is essential to regulate this type of transportation through legal rules that ensure the provision of services in accordance with standards that guarantee public safety, passenger comfort, health, security, and the structural integrity of transport vehicles. Such rules also ensure the establishment of specific licensing conditions for various means of transport, define the responsibilities of service providers, outline selection and training requirements, and regulate the obligations governing specialized transport and the duties of license holders.

This legislative effort continues to expand in order to address a new form of tourism—space tourism—which has become an integral component of the UAE's tourism landscape. The establishment of the UAE Space Agency and the issuance of Federal Law No. (46) of 2023 regulating the space sector demonstrate this strategic direction. Preserving and supporting this emerging tourism sector has a positive impact on economic growth and social development in the UAE, contributing to prosperity and playing a vital role in meeting the needs of individuals.

Specialized space transport has become a fundamental element in connecting the world to new markets and unique travel destinations, creating employment opportunities, ensuring better distribution of wealth, and fostering social cohesion. Any benefits accruing to this sector generate even greater benefits for the economy and society as a whole. Therefore, it is essential for this sector to evolve in order to contribute effectively to sustainable development in the UAE. Spacecraft used for tourist travel will become a central link in the chain of continuous mobility—including in sparsely populated areas—and will constitute an integral part of public transport systems. Accordingly, it is necessary to provide space-transport vehicles that offer safe, efficient, and accessible services to those

who can afford such travel.

From this perspective, specialized space-tourism transport represents a new opportunity for individuals with the financial means—of whom there are many—who aspire to travel to outer space. Preparing specialized legislation for mass transport of space tourists using dedicated spacecraft will positively reinforce the sustainability and vitality of this emerging transport sector. This objective, however, cannot be achieved without the inclusion of legal safeguards that ensure safe and accessible travel for space tourists.

To this end, and with the aim of promoting space tourism, the idea of developing collective-transport legislation for space tourists has emerged. This effort is led by a specialized center for space transport and navigational safety, in collaboration with the UAE Space Agency. The development of a draft legislative framework governing specialized space transport follows an integrated methodology grounded in foundational principles required for preparing such regulations.

This methodology includes an in-depth examination of international best practices related to specialized space-transport requirements, drawing on the experiences of advanced nations, reviewing relevant national legislation, and assessing the current situation of space transport in the UAE. It also involves communication with relevant stakeholders to gather their perspectives and recommendations. Workshops are then organized with participants representing entities concerned with specialized space transport, both domestically and internationally, to collect feedback and insights on the objectives and components of the legal framework governing space tourism.

Subsequently, comments and recommendations are consolidated in preparation for drafting a final comprehensive law on space tourism, with the legislation aiming to:

- Define the conditions and requirements for specialized spacecraft used in space transport;
- Set the qualifications and competencies required for captains operating specialized spacecraft;
- Determine the elements and requirements of public safety in specialized space transport.

1.1. Research Contribution:

This study provides a comprehensive analysis of promoting tourism from historical and cultural sites to outer space in the United Arab Emirates, with a focus on developing federal legislation regulating both collective and individual space tourism using

specialized spacecraft. It examines the legal and regulatory challenges associated with organizing space tourism activities and proposes recommendations for establishing an effective legal framework. The research contributes significantly to the existing body of knowledge by offering an integrated perspective on federal transport and tourism legislation in the UAE, highlighting gaps in the current regulatory structure for space tourism, and proposing guidelines for ensuring safe, secure, and efficient operations of specialized space vehicles. Furthermore, the study introduces a novel interpretation of legal requirements for licensing, operational standards, and passenger safety in the context of space tourism, representing a key contribution to the advancement of UAE space tourism governance.

1.2. Research Objectives:

This research aims to explore the legal and regulatory principles governing the development of space tourism in the UAE, focusing on both individual and collective space travel using specialized spacecraft. The study seeks to identify how federal legislation can be adapted or developed to support the growth of space tourism while ensuring compliance with safety, operational, and commercial standards. Additionally, the research examines the role of licensing, operational permits, vehicle specifications, and passenger protection measures as key elements in promoting a secure and sustainable space tourism sector.

1.3. Research Justification:

The increasing interest in space tourism highlights the urgent need for a comprehensive legal and regulatory framework in the UAE. This study is motivated by the necessity to examine the gaps in current legislation and to propose practical strategies for regulating specialized space transport for tourism purposes. By addressing these legal and operational challenges, the research contributes to creating a safe, efficient, and legally sound environment that can encourage investment, innovation, and public participation in space tourism.

1.4. Research Hypothesis:

The study hypothesizes that the current UAE legal framework lacks specific provisions addressing the unique aspects of space tourism, including specialized spacecraft operations, passenger safety, and licensing procedures. These gaps may hinder the effective development and regulation of space tourism activities. The research aims to assess how

federal legislation can be adapted or developed to overcome these challenges, establish clear rules for operators and tourists, and ensure that space tourism activities comply with safety, commercial, and environmental standards.

1.5. Research Methodology:

This study adopts a doctrinal and analytical research approach, relying on an extensive review of UAE federal and local legislation, international agreements on space and transport, academic literature, and industry reports. The methodology involves analyzing existing legal frameworks, identifying regulatory gaps, and proposing recommendations for a comprehensive legal structure governing space tourism. The goal is to provide a structured legal roadmap to facilitate the safe, sustainable, and legally compliant development of space tourism in the UAE.

1.6. Statement of Novelty

This study offers a novel exploration of the legal and regulatory framework for space tourism in the United Arab Emirates, a rapidly developing sector within both the national and global space industry. Unlike existing research, which often emphasizes technical, commercial, or scientific aspects of space travel, this study uniquely examines the role of dedicated legal regulation in promoting safe, organized, and sustainable space tourism. It focuses on how specialized legislation can establish clear licensing procedures, operational standards, safety requirements, and passenger comfort measures, while simultaneously encouraging investment and sector growth. By concentrating on the UAE context, the research provides an original contribution to legal scholarship and practical policymaking, offering a roadmap for creating a secure, accessible, and investment-friendly environment for specialized space tourism using collective and individual spacecraft.

1.7. Research Structure:

The study addresses these themes through three main sections.

- Section One examines the theoretical and jurisprudential foundations of specialized space-tourism transport.
- Section Two explores the regulatory framework governing specialized space transport.
- Section Three analyzes the operational aspects of specialized space transport.

The study concludes with a final section

presenting the key findings and recommendations.

The research adopts an analytical and doctrinal methodology, supported—wherever possible—by relevant scholarly and judicial opinions.

2. DEFINITION, CHARACTERISTICS, IMPORTANCE, AND TYPES OF SPECIALIZED SPACE TOURISM TRANSPORT

The importance of transportation, in all its forms, extends to various dimensions of production, economic progress, and scientific and technological development. It plays a fundamental role in advancing the economic and social well-being of individuals (Al-Watidi, 2000; Al-'Akili, 2001; Al-Muqaddadi, 1997). Due to this significance, some have described transportation as follows: *"There is no action we take nor desire we pursue that does not—at its origin, formation, or completion—depend on the movement of persons, goods, or ideas. Transportation is life: the life of individuals and the life of nations."* (Josserand, as cited in Ali Al-Baroudi, 1975).

Transportation has also enhanced social connectivity both within states and among nations, thereby contributing to the reduction of social disparities among populations and facilitating the transfer of cultural and social developments. It thus plays a pivotal role in the civilizational advancement of societies (Al-Muqaddadi, 1997).

The importance of specialized space-tourism transport has become no less significant than that of other forms of transportation; in fact, it represents the most modern evolution of transport. This is because it serves a strategic and influential economic sector—tourism—which has become one of the most vital sources of national revenue.

Recognizing the centrality of tourism, the United Arab Emirates has prioritized the development of this sector by providing diverse tourism capabilities to attract the highest possible number of visitors and ensure year-round tourism activity. To support this goal, the UAE has expanded internal and external transport networks, explored optimal and shortest routes, improved the design and capacity of transport modes, and regulated tourist transport through the establishment of specialized legislation. Due to the success of the UAE's experience in specialized tourist transport, attention has now shifted to a new frontier: space tourism, especially as the UAE has become a global leader in space-related activities, including initiatives aimed at enabling individuals to explore outer space through specialized space-tourism missions.

This raises essential questions: How can specialized space-tourism transport be defined?

What is its position among other forms of passenger transport? Does this mode possess features that distinguish it from conventional transport? What is its significance compared with other types of transport? And is it limited to one form, or does it encompass multiple categories?

To answer these questions, this section is divided into four subsections. The first subsection defines specialized space-tourism transport; the second discusses its characteristics; the third explores its importance in promoting space tourism; and the fourth identifies its various forms.

2.1. Definition of Specialized Space-Tourism Transport

To accurately determine and categorize the elements of specialized space transport, the UAE Space Law has provided definitions for various components of space-related transportation. These include definitions of:

- space missions,
- crewed spaceflights,
- orbital spaceflights,
- suborbital flights,
- space-support missions,
- space objects,
- launch vehicles,
- operators and licensees.

However, the law does not define *specialized space-transport contracts*, nor does it define the transport of passengers or tourists into space, or the transport of luggage or cargo in the space sector. This necessitates developing a jurisprudential understanding of these concepts, as presented below.

2.1.1. Definition of Specialized Space-Tourism Transport and the Specialized Space-Tourism Transport Contract

The UAE legislator adopted a broad and flexible definition of space transport that encompasses all forms of travel to outer space—including specialized space tourism. Under the UAE Space Law, a *spaceflight* is defined as:

"A space activity involving the transport of individuals, living organisms, equipment, or other payloads to outer space, through it, below it, or returning from it—whether the mission is orbital, suborbital, or above Earth's orbit."

This wide-ranging definition is sufficiently comprehensive to include all types of space transport, including specialized space-tourism transport. Accordingly, specialized space-tourism transport may be defined—within the meaning of the above provision—as:

“The collective transport of passengers or tourists to outer space using specialized spacecraft.”

As for the *specialized space-tourism transport contract*, the UAE legislator left its regulation implicitly to competent authorities – primarily the UAE Space Agency. Given the importance and unique nature of this contract, it must be regulated uniformly to encompass all rights and obligations of the parties involved.

Based on general contract principles and the legal structure governing transport contracts, the specialized space-tourism transport contract may be defined as:

“A written agreement between the space carrier and the space tourist (or their representative), under which the carrier – against payment – undertakes to transport the passenger or tourists aboard qualified spacecraft meeting safety standards, from a designated location within the UAE to a destination in outer space, and to return them to the designated location within the timeframe specified in the contract.”

This understanding is consistent with Article 4 of the UAE Space Law, which lists the activities subject to regulation, including:

“Crewed spaceflights, long-term human habitation in space, and the construction or use of facilities in space or on celestial bodies, whether permanent or temporary.”

This legislative reference underscores the necessity of regulating space-tourism transport contracts, given their relevance to crewed space missions.

2.1.2. Definition of Space Passenger Transport and Space Tourist Transport

The UAE Space Sector Regulation Law defines the *operator* as:

“A person who engages in space activities or other activities related to the space sector that are subject to this Decree-Law and the regulations issued pursuant to it.”

It also defines the *licensed operator* as:

“Any operator who has obtained the necessary authorization to carry out its activities in accordance with the provisions of this Decree-Law.”

However, the law does not provide definitions for *space passenger transport* or *space tourist transport*. Yet, the broad and flexible definitions of *operator* and *licensed operator* allow the concepts of a *space passenger* and a *space tourist* to fall within their scope.

Accordingly, space passenger transport may be defined as:

“Any form of transportation conducted by

licensed spacecraft on designated space routes, operating on specialized space corridors with predetermined schedules and published fares, offered as a regular service to passengers by licensed carriers authorized to provide this activity.”

Similarly, space tourist transport may be defined as:

“Regular or non-regular transportation of individuals or tourist groups by spacecraft, conducted through scheduled or chartered spaceflights to space destinations or attractions, or for leisure and recreational purposes within outer space.”

This underscores the need for a dedicated legislative framework regulating space transport in general and space-tourism transport specifically.

2.1.3. Definition of the Space Passenger and the Space Tourist.

Because the UAE Space Law is a general regulatory framework for the sector, it does not define *space passengers* or *space tourists*. This necessitates the introduction of an independent legislative instrument that defines these categories clearly to avoid confusion in the application of legal rules during space missions.

A space passenger may therefore be defined as:

“Any natural person who uses spacecraft designated for specialized passenger transport into space – whether for a crewed orbital or suborbital flight – regardless of the purpose of travel.”

A space tourist may be defined as:

“A natural person who uses spacecraft dedicated to space-tourism transport for the purpose of visiting space sites or attractions, or for leisure or recreational activities within outer space.”

2.4. Definition of Baggage and Cargo in the Context of Space Tourism

The UAE Space Law refers to the concept of baggage and cargo under the category of *dual-use goods*, which are defined as:

“Goods with combined civilian, commercial, or military uses, regulated in accordance with the applicable legislation in the State.”

This flexible definition encompasses both baggage and cargo. Legally, the distinction between them lies in the fact that:

- Baggage is carried by or accompanies the passenger or tourist;
- Cargo is transported by the carrier using specialized spacecraft intended for transporting goods.

To avoid ambiguity and ensure the proper

application of legal rules, the following definitions may be adopted:

Baggage:

“Any hand-carried or checked luggage delivered to the carrier or retained by the passenger during space transport, remaining in the passenger’s possession or under their supervision, consisting of items permitted by the carrier’s regulations without additional fees, and subject to weight, size, and safety restrictions.”

Cargo:

“Materials, equipment, or objects – whether industrial, animal, agricultural, food-related, raw materials, or substances in solid, liquid, or gaseous form – transported by spacecraft designated for cargo transport as part of specialized space-transport missions.”

These definitions serve as essential foundations for any future legislative framework governing space-tourism transport in the UAE.

2.2. Characteristics of the Specialized Space Tourism Transport Contract

It is evident from the legal provisions governing the space sector in the United Arab Emirates – particularly Federal Decree-Law No. (12) of 2019 on the Regulation of the Space Sector – that the specialized space tourism transport contract is a modern type of contract requiring a dedicated legislative framework. This need arises due to the highly technical nature of space activities, the sensitivity of such operations, and their direct connection to the safety of individuals and property in a high-risk space environment. The key characteristics of this contract may be summarized as follows:

First: A Nominate Contract

The specialized space tourism transport contract requires legislative intervention to be classified as a “nominate contract,” through direct regulation within a specific statute. Given the novelty of space tourism transport and the absence of detailed legislation governing it – aside from general references in the Space Sector Regulation Law – it becomes essential for the legislator to define the nature, rules, and legal effects of this contract.

Second: A Consensual but Formal Contract

Although civil contracts are generally consensual, the specialized space transport contract cannot be concluded solely through the exchange of offer and acceptance. Due to its technical nature and sensitivity, it must also meet certain legal formalities, including:

- registration and licensing under Articles (5)

and (6) of the Space Sector Regulation Law,

- compliance with procedures established by the competent authority,
- obtaining specific technical or security approvals where necessary.

Hence, while consent forms the basis of its creation, the contract is deemed formal in terms of its completion and legal effect.

Third: A Bilaterally Binding Contract

The space transport contract creates reciprocal and interdependent obligations for both parties. The space operator is obligated to transport the tourist along the designated space route and within the agreed-upon schedule, using licensed spacecraft that meet safety standards. In return, the tourist must pay the transport fare and comply with all technical and safety requirements related to space travel, including pre-flight training and health and safety protocols.

Fourth: A Contract of Exchange (Onerous Contract)

The specialized space tourism transport contract is based on mutual exchange: the tourist receives the transport service and its associated benefits and experiences, while the operator receives the agreed financial consideration. It is therefore not a gratuitous arrangement but a commercial exchange of value.

Fifth: A Commercial Contract

Pursuant to Article 6 of the Federal Commercial Transactions Law, transport in all its forms is considered a commercial activity. Since space transport is carried out by licensed operators for profit, this commercial classification extends to the specialized space tourism transport contract, subjecting it to the legal rules governing commercial acts – such as the presumption of joint liability among commercial debtors, commercial evidentiary rules, and recognition of the operator’s professional commercial status.

2.3. The Importance of Specialized Space Tourism Transport in Promoting Space Tourism

This section examines the importance of tourism to the UAE economy, followed by an analysis of the role of specialized space transport in promoting space tourism, as outlined in the two subsections below.

2.3.1. The Importance of Tourism in the United Arab Emirates

The significance of tourism in the UAE is clearly reflected in its substantial contribution to the national economy. This is evident through the large share of direct contribution to the UAE’s GDP, the overall contribution of the sector to GDP, the number of jobs

it generates, and the substantial value of investments directed toward the tourism sector.

According to the World Travel and Tourism Council (WTTC) report, published in English on the official portal of the UAE Government, the importance of tourism to the UAE economy can be confirmed numerically as follows:

1. **Direct Contribution to GDP:**In 2016, the direct contribution of the travel and tourism sector to the UAE's GDP amounted to AED 68.5 billion (USD 18.7 billion), representing 5.2% of GDP. The sector was expected to grow by 3.2% in 2017 and by 5.1% annually from 2017 to 2027, reaching AED 116.1 billion (USD 31.6 billion), or 5.4% of GDP by 2027.
2. **Total Contribution to GDP:**The sector's total contribution amounted to AED 159.1 billion (USD 43.3 billion), equivalent to 12.1% of GDP. It was expected to grow by 2.9% in 2017 and by 4.9% annually to reach AED 264.5 billion (USD 72 billion), or 12.4% of GDP by 2020.
3. **Employment Generation:**The sector directly provided 317,500 jobs in the UAE, representing 5.4% of total employment. This figure was expected to increase by 2.3% in 2017, with an annual growth rate of 2.4% to reach 410,000 jobs (5.9% of total employment) by 2027.
4. **The total contribution of the travel and tourism sector to employment—including jobs supported indirectly—amounted to 10.4% of total employment (617,500 jobs). This figure was expected to rise by 1.8% in 2017 to 628,500 jobs, and by 2% annually to reach 770,000 jobs by 2027, representing 11.1% of total employment.**
5. **Sector Investment:**Investments in the sector amounted to AED 26.2 billion (USD 7.1 billion), representing 7% of total national investment. The investment value was expected to grow by 11% annually over the next ten years, reaching AED 74.5 billion (USD 20.3 billion) by 2027, equivalent to 11.2% of total investments.

2.3.2. The Role of Specialized Space Transport in Promoting Space Tourism

Tourism, as emphasized by numerous scholars (Abu Ismail, 1967; Al-Muqaddadi, 1997), is one of the most important components of national development strategies in many countries, including the UAE. This importance stems from the sector's deep connection with other productive sectors, its role in generating national income, and its contribution to social and economic development.

Development plans in the UAE highlight the

necessity of establishing adequate networks of diverse transport systems connecting production areas, commercial centers, and tourism destinations. This is essential for analyzing tourism sector economics, evaluating tourism projects, and ensuring coordinated growth aligned with comprehensive development requirements, thus achieving functional integration between tourism and other vital economic sectors.

As part of this strategic vision—and with the goal of promoting tourism—the UAE has enacted several federal and local legislations regulating the tourism sector, such as Dubai Local Order No. (6) of 2006 on Travel Agencies. Additionally, administrative bodies such as Dubai's Department of Tourism and Commerce Marketing and the Abu Dhabi Tourism Authority oversee the sector.

The UAE Federal Law regulating the space sector represents a preliminary step toward enabling investment in space tourism through collective or individual space transport for tourists. Article 2 of the Space Sector Regulation Law sets out the law's objectives, including (as stated in Clause 2): "*to encourage investment and promote the participation of the private and academic sectors in the national space sector and related activities.*"

Specialized space tourism transport is governed by legal rules that differ from those regulating traditional terrestrial passenger transport. Space tourism transport legislation uniquely emphasizes public safety and security requirements, offering legal guarantees that contribute to secure and accessible mobility for space tourists.

Later in this study, we will examine the extent to which the UAE Space Sector Regulation Law includes legal provisions that ensure safe and seamless transport for space tourists. This will involve analyzing:

- the classification requirements for space tourism transport,
- specific conditions for each type of space tourism transport,
- technical and safety requirements for spacecraft used in tourism operations,
- conditions governing operators and licensed space service providers,
- obligations of license holders offering specialized space transport services,
- safety provisions, and
- the duties of space transport operators under a comprehensive operational guide.

2.4. Forms of Specialized Space Tourism Transport

The types of specialized transport vary according to the safety requirements of each transport category. The UAE Space Sector Regulation Law includes general standards for public safety, security, and comfort for each type of specialized space mission. Safety equipment must be available on spacecraft, covering all components, designated flight paths, and stopovers, to ensure the safe transport of tourists and their luggage from one location in space to another, or vice versa.

In this section, we examine the forms of specialized space transport contracts. The law recognizes multiple forms of specialized space transport based on the type and purpose of the space mission, as follows:

1. **Space Flight:** Defined in Article 1 of the UAE Space Sector Regulation Law as: *“A space activity involving a space object transporting individuals, living beings, equipment, or other payloads to outer space, through it, sub-orbital, or returning from it, whether the flight is orbital, sub-orbital, or above Earth’s orbit.”*
2. **Manned Space Flight:** Also defined in Article 1 of the law as: *“Any space flight using a space object to transport any member of a space crew or any participant in a human spaceflight, or both.”*
3. **Orbital Space Flight:** Defined in Article 1 as: *“A space flight aimed at completing an orbit around the Earth, not necessarily reaching outer space.”*
4. **Sub-Orbital Space Flight:**
5. Defined in Article 1 as: *“A space flight intended to enter outer space without completing an orbit around the Earth.”*
6. **Space Support Flight:**
7. Defined in Article 1 as: *“Any flight conducted within the national airspace intended to support space activities and related training and experiments.”*

It should be noted that the UAE Space Sector Regulation Law does not specifically address space tourism. Instead, it generally encourages investment in the space sector, as emphasized in Article 2 of the law, which implicitly includes the space tourism sector.

Specialized space tourism transport falls under the category of *manned space flights*, which are also considered regulated space activities. However, space tourism transport requires further legal specificity due to its unique characteristics and importance. It is essential to explicitly define *space tourism transport* as the organized or unorganized transport of individual tourists or tourist groups using specialized spacecraft for leisure or recreational trips, whether on regular or occasional flights into space.

3. THE REGULATORY ASPECT OF SPECIALIZED SPACE TOURISM TRANSPORT

Given the strategic importance of the tourism sector in the United Arab Emirates, the government has subjected it to a series of federal and local legislations aimed at regulating this vital commercial sector. Currently, specialized tourism transport is governed by the legal framework applicable to collective passenger transport under the Land Transport Law.

In order to promote and regulate space tourism, the UAE enacted the Space Sector Regulation Law of 2023, which governs space activities in general, including both commercial and tourism-related activities.

This chapter addresses the regulatory framework of specialized space tourism transport, which requires, on the one hand, a license to conduct activities and, on the other hand, an operating permit. The topic of licensing will be examined in the first section, while the operating permit will be discussed in the second section.

3.1. Licensing to Conduct Specialized Space Tourism Transport Activities

Undoubtedly, the law differentiates licensing conditions based on the type of applicant: natural persons, legal entities, and agents. Additionally, the law includes provisions regarding the consideration of license applications, modification of licenses, and license revocation.

Accordingly, this section will examine these issues as addressed in the UAE Space Sector Regulation Law, while also highlighting the need for further legal regulation concerning licensing for the operation of specialized space tourism transport. The discussion is structured into the following subsections:

3.1.1. Licensing of Natural Persons, Legal Entities, and Agents

The UAE Space Sector Regulation Law does not currently establish specific conditions for each type of license – whether it is for a natural person, a legal entity, or an agent. At this stage, the provisions are general in nature. The law defines the term *person* in Article 1 to include both natural and legal persons. It also contains provisions regarding the objectives of the law, the activities subject to regulation, the permits for space activities, and specific rules concerning manned space flight activities.

We will analyze these conditions using a

structured academic approach, dividing the topic of licensing into the following points:

1. Licensing for Natural Persons and Legal Entities

Undoubtedly, licensing requirements for natural persons differ from those applicable to legal entities. We will first address licensing for natural persons and then for legal entities.

a) Licensing for Natural Persons: A natural person is defined as an individual who possesses legal personality, i.e., the capacity to acquire rights and assume obligations (Al-Shamsi, 2000). A natural person may conduct their activities either personally or through a project (establishment) that carries out specialized transport activities (Al-Akili, 2001).

It is necessary to differentiate licensing conditions based on the type of individual establishment, particularly with respect to the number of spacecraft owned. For example, establishments owning no more than ten spacecraft may be subject to different requirements than those owning more than ten spacecraft. These conditions may address:

- The nationality of the owner, specifying whether only citizens or also foreigners may engage in the activity.
- Documentation required to obtain a license for operating space transport activities.
- Application forms prepared by the UAE Space Agency.
- Ensuring spacecraft are equipped with safety features and meet all technical standards required by licensing authorities.
- Specifications regarding spacecraft dimensions, payloads, weights, and safety equipment, in accordance with regulatory requirements.
- Submission of an organizational plan detailing the administrative and technical structure of the space tourism transport activity, including labor, equipment, and machinery requirements.

b) Licensing for Legal Entities: A legal entity is defined as a group of individuals who unite their efforts for a specific purpose or allocate funds to achieve a specific goal (Al-Shamsi, 2000). Under UAE law, legal entities primarily refer to companies registered under the UAE Companies Law. According to Article 8 of the UAE Companies Law of 2021, a commercial company is: *“A contract under which two or more persons agree to participate in an economic project aiming to generate profit, contributing capital or labor, and sharing the resulting profit or loss.”*

Accordingly, companies with legal personality

may be established to conduct specialized space tourism transport activities, subject to general and specific conditions set by the UAE Space Agency. Examples of such conditions include:

- Proof of suitable location(s) for conducting the activity.
- Specifications for spacecraft dimensions, payloads, weights, and safety features meeting licensing standards.
- The number of spacecraft required for operations.
- The size and specialization of the technical team for operation and maintenance.
- An organizational plan for the operational headquarters, maintenance workshops, and emergency teams for vehicle repairs, including arrangements for off-site repairs if necessary or contracts with specialized repair companies.
- Other requirements as determined by the UAE Space Agency.

2. Licensing for Agents

The licensing of agents is essential due to the complexity of specialized space tourism transport during preparation, execution, and completion phases. Licensed operators may appoint one or more agents at destination points (e.g., in space) or to assist in operational activities (Thomas, 2001).

Specific conditions must be met for agent licensing, including:

- The type of activity for which the agent is licensed.
- The type of specialized space transport entrusted to the agent.

3.1.2. License Application and Renewal

Articles 5 and 6 of the UAE Space Sector Regulation Law address licensing, renewal, revocation, and surrender in general terms, without specifying detailed procedures. The UAE Space Agency may grant a license or authorization once the applicant fulfills all required conditions. The Agency also has the authority to approve license renewal if the applicant meets the renewal criteria established by the Agency.

3.1.3. Suspension, Revocation, Cancellation, and Surrender of the License

The UAE Space Sector Regulation Law addresses these matters generally in Article 5, covering suspension, revocation, cancellation, and surrender of licenses for conducting space activities, according to the conditions set by the Agency.

A distinction is made between temporary and

permanent suspension of specialized space transport activities:

- If the licensee wishes to temporarily suspend operations, they must follow the specific procedures established for this purpose.
- If the licensee intends to permanently cease specialized space transport operations, a different set of procedures must be followed.

License suspension is at the discretion of the UAE Space Agency. The licensee, their heirs, guardians, or liquidators, as appropriate, may request license cancellation under conditions specified by the Agency. The license issued by the Agency is personal under the law and may only be transferred in accordance with the conditions set by the Agency.

3.2. Operating Permit (Operation Card)

The UAE Space Sector Regulation Law does not explicitly address the topic of the operating permit (operation card). However, given its critical role in organizing specialized space tourism transport, it is necessary to address this issue.

A licensee is not permitted to conduct specialized space transport activities without obtaining an operating permit. The operation card contains information specified by the UAE Space Agency and is classified into categories based on the type of space flights involved in the specialized transport activity. Additionally, procedures must be established for cases of loss or damage to the operating permit, ensuring continuity and legality in the conduct of space tourism transport operations.

4. OPERATIONAL ASPECT OF SPECIALIZED SPACE TOURISM TRANSPORT

The UAE Space Sector Regulation Law addresses the operational aspect of specialized space transport from two perspectives. The first concerns permits for space activities, while the second addresses manned space flights. Each aspect will be discussed in a separate section.

4.1. Permits for Space Activities

In this section, we examine space transport documentation in the first subsection, followed by licensee obligations in the second subsection.

4.1.1. Documents for Specialized Space Tourism Transport

It is essential to have documents specific to space transport. The licensee engaged in specialized space transport must issue documents as determined by the UAE Space Agency. These include individual travel tickets indicating the full name of the

passenger, the passenger's address, ID card or passport number, departure and arrival points, the name and address of the space carrier, and travel and return dates if applicable.

Additionally, it may be necessary to issue a baggage registration card for passengers' luggage, specifying the number of pieces, type of luggage, approximate weight, passenger name and address, carrier name and address, and departure location.

The licensee is required to maintain records detailing the spacecraft owned or operated, staff members, and passenger lists for each space flight. The licensee must provide the Space Agency, upon request, with complete data regarding each flight, including all information about the transport vehicle, personnel, passenger lists for specialized space tourism transport, flight paths, and other relevant documents and data.

4.1.2. Obligations of the Licensee for Specialized Space Tourism Transport

Article 5 of the UAE Space Sector Regulation Law clearly imposes several obligations on the licensee, which are issued under specific decrees. These obligations relate to the vehicle used, which must be licensed in accordance with the law. For example, they include:

- Holding the appropriate captain's license for the spacecraft,
- Possessing vehicle insurance documents,
- Carrying insurance for passenger cargo if applicable,
- Adhering to permitted payloads and weights for space routes,
- Complying with UAE laws and regulations concerning space transport,
- Following the flight path issued and regulated by the Space Agency,
- Maintaining coordination with local authorities and relevant entities regarding designated routes,
- Obtaining permits to operate heavy spacecraft from relevant domestic or foreign authorities,
- Being fully knowledgeable about the UAE Space Transport Guide through specialized training courses provided by the Space Agency, in addition to any other obligations required by the Agency to ensure a safe and smooth space flight.

4.2. Manned Space Flight Activities

Article 6 of the UAE Space Sector Regulation Law addresses manned space flight activities. We observe that it focuses on three main aspects: public safety

elements, structural integrity, security, and health specifications, and passenger comfort standards.

4.2.1. Public Safety Elements

The UAE law does not explicitly address the operation of specialized space tourism transport in terms of spacecraft classification, public safety measures, structural integrity, security, health, or passenger comfort. However, Article 6 mandates consideration of public safety, including:

- Verification that the individual is fully informed of the risks associated with the spaceflight,
- Written consent from the individual to undertake the flight,
- Proof of completion of necessary training,
- Certification of the individual's physical and health fitness,
- Confirmation that the operator has completed all necessary risk and safety assessments,
- Presence of an appropriate emergency plan.

Spacecraft can be categorized based on public safety considerations into two main types:

1. Light suborbital tourist spacecraft, with a passenger capacity limited to a specified number excluding the flight crew.
2. Heavy orbital tourist spacecraft, with a capacity exceeding a specified number of passengers excluding the flight crew.

Safety requirements for these spacecraft include, for example:

- Automated fire suppression systems in engines or passenger cabins, or the presence of fire extinguishers,
- Engine capability sufficient to lift and safely return the spacecraft,
- No sharp protruding parts on the exterior,
- Non-flammable fuel tanks,
- Electrical safety with thermally and electrically insulated cables,
- Thermally insulated engine compartment using non-combustible materials,
- Properly maintained tires able to support the vehicle's weight and rim specifications without deformation, cracks, or protrusions,
- Rearview and close/far monitoring cameras,
- Three-point seatbelts for the pilot and front seats, and two- or three-point belts for other seats,
- Additional passenger restraints and safety measures as determined by the UAE Space Agency according to international standards.

4.2.2. Structural Integrity, Security, and Health

Specifications

These specifications are managed by the UAE Space Agency and spacecraft specialists. Designs for tourist spacecraft must ensure:

- Availability of spare parts compliant with UAE standards for a defined period,
- Vehicle stability to prevent overturning when empty or loaded,
- Engine cooling system compliant with international standards,
- Speed reduction systems in addition to brakes,
- Vehicle dimensions and ground clearance compliant with specifications,
- Maneuverability within a specified radius,
- Shock absorbers for all wheels,
- Movable pilot seat with barrier protection and three-point harness,
- Clearly marked emergency exits with sufficient lighting, functional during accidents,
- Manual operation of doors from inside and outside,
- Front towing hooks,
- Other safety and structural requirements as mandated by the UAE Space Agency.

4.2.3. Passenger Comfort Specifications

Passenger comfort standards are also established by the UAE Space Agency and vehicle specialists. Tourist spacecraft designs must ensure:

- Air conditioning systems,
- Ventilation for gases and smoke,
- Adequate spacing between consecutive seats for safety,
- Suspension systems to minimize vibrations transmitted to the cabin,
- Noise levels within the cabin (from engines, exhaust, or mechanical components) below specified thresholds,
- Exterior finishes (paint, color, window tint) resistant to heat, moisture, and dust,
- Independent driver cabin to maintain comfort,
- Communication systems for the driver to external authorities,
- Number and distribution of doors (main and emergency) proportionate to passenger count, operable remotely by the driver,
- Emergency exits via windows with breakable glass and clear instructions,
- Maximum aisle space for passenger movement and entry/exit,
- Adequate spacing for passenger standing areas,
- Individual reading lights controllable by

passengers,

- Other passenger comfort features as regulated by the UAE Space Agency.

4.2.4. *Establishing a Specialized ADR Framework for UAE Space Tourism*

As space tourism emerges as a novel and high-stakes sector in the UAE, establishing an Alternative Dispute Resolution (ADR) system specifically tailored to this industry becomes essential. Traditional dispute resolution mechanisms may not adequately address the unique technical, safety, and contractual complexities associated with specialized space travel, such as liability for spacecraft malfunctions, passenger safety, or delays in suborbital and orbital trips. A dedicated ADR framework could include specialized arbitration panels and mediation bodies with expertise in aerospace law, international space regulations, and tourism contracts. Such a system would enable rapid, cost-effective, and technically informed resolution of disputes, ensuring both investor confidence and passenger protection. Moreover, integrating clear ADR clauses into space tourism contracts would foster predictability and reduce litigation risks, thereby supporting the sustainable growth of UAE's space tourism sector while aligning with international best practices in high-risk, high-value industries (Daradkeh.lafi).

5. CONCLUSION

At the conclusion of this study, the researcher reached a set of findings and recommendations:

5.1. Findings

1. To support, encourage, and develop the tourism sector, the UAE legislator enacted a special law to regulate the space sector. This law refers to transport via manned space flights, under which the transportation of tourists in spacecraft is subject to specific legal rules and procedures established by the UAE Space Agency.
2. The UAE law does not provide definitions for space tourism transport or space tourists, to distinguish them from other types of space transport.
3. The law does not regulate specialized space tourism transport in terms of setting specific

licensing conditions and procedures, which would ensure the activity is performed under state supervision. Instead, it provides general rules for manned space flights and leaves the formulation of specific requirements to the UAE Space Agency.

4. The law does not set specific requirements for spacecraft pilots involved in specialized space tourism transport, nor does it outline the obligations of licensed operators to ensure safe and comfortable transport for tourists.
5. The law does not establish standards for public safety, security, and structural integrity in spacecraft used for tourist transport, nor does it define passenger comfort standards. These matters are left to the rules set by the UAE Space Agency.

5.2. Recommendations

It is recommended that the UAE legislator submit the requirements for specialized space tourism transport to technical authorities for review of the conditions and requirements for manned space tourism flights. This review should precede submission to the competent legislative authority for enactment in an appropriate legal framework that supports and encourages space travel.

When drafting the proposed legislation on specialized space tourism transport, it should include several key axes:

1. Naming and Definitions: Terms related to specialized space tourism transport.
2. Licensing Process: Conditions and procedures for obtaining licenses for specialized space tourism transport.
3. Obligations and Conditions: Requirements for specialized space tourism transport.
4. Operating Permits and Types of Spacecraft: Classification and operational permits for spacecraft.
5. Obligations of the Licensed Operator: Duties and responsibilities of operators.
6. Public Safety Elements: Safety standards and emergency measures.
7. Insurance and Spacecraft Associations: Liability, insurance, and operators' clubs.
8. Establishing a Specialized ADR Framework for UAE Space Tourism disputes.

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