



United Arab Emirates

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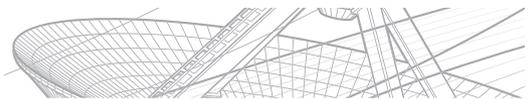
September 2016



سُبْحَانَ اللَّهِ عَمَّا يُشْرِكُونَ

“Indeed, in the creation of the heavens and Earth, and the alternation of the night and the day, and the [great] ships which sail through the sea with that which benefits people, and what Allah has sent down from the heavens of rain, giving life thereby to the Earth after its lifelessness and dispersing therein every [kind of] moving creature, and [His] directing of the winds and the clouds controlled between the heaven and the Earth are signs for a people who use reason”

(Surah Al-Baqarah -164)



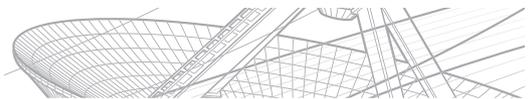
“We aim to position the United Arab Emirates among the world’s leading nations in space sciences before 2021. Our trust in God is big; our faith in the people of the UAE is great. Our resolve races with our ambitions, and our plans are clear. God willing, we are heading towards our goals.”

His Highness Sheikh Khalifa Bin Zayed Al Nahyan

President of the United Arab Emirates



His Highness Sheikh Khalifa Bin Zayed Al Nahyan
President of the United Arab Emirates and Ruler of Abu Dhabi



“The establishment of an integrated space industry in the UAE, fully supported by the required human resources, infrastructure and scientific research is a matter of high national interest.”

His Highness Sheikh Mohammed Bin Rashid Al Maktoum

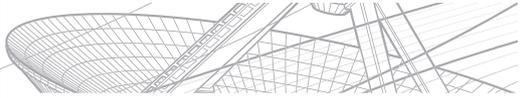
Vice President, Prime Minister, and Ruler of Dubai



His Highness Sheikh Mohammed Bin Rashid Al Maktoum

Vice President, Prime Minister, and Ruler of Dubai



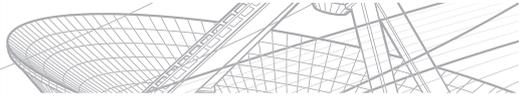


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Outer space has always been the fascination of man; to see billions of stars shining in a sea of eternity, with our blue planet swarming with life as it races along with other planets across an endless universe. This mysterious scene has been a source of inspiration and a cause for reflection for humanity across all races and cultures.

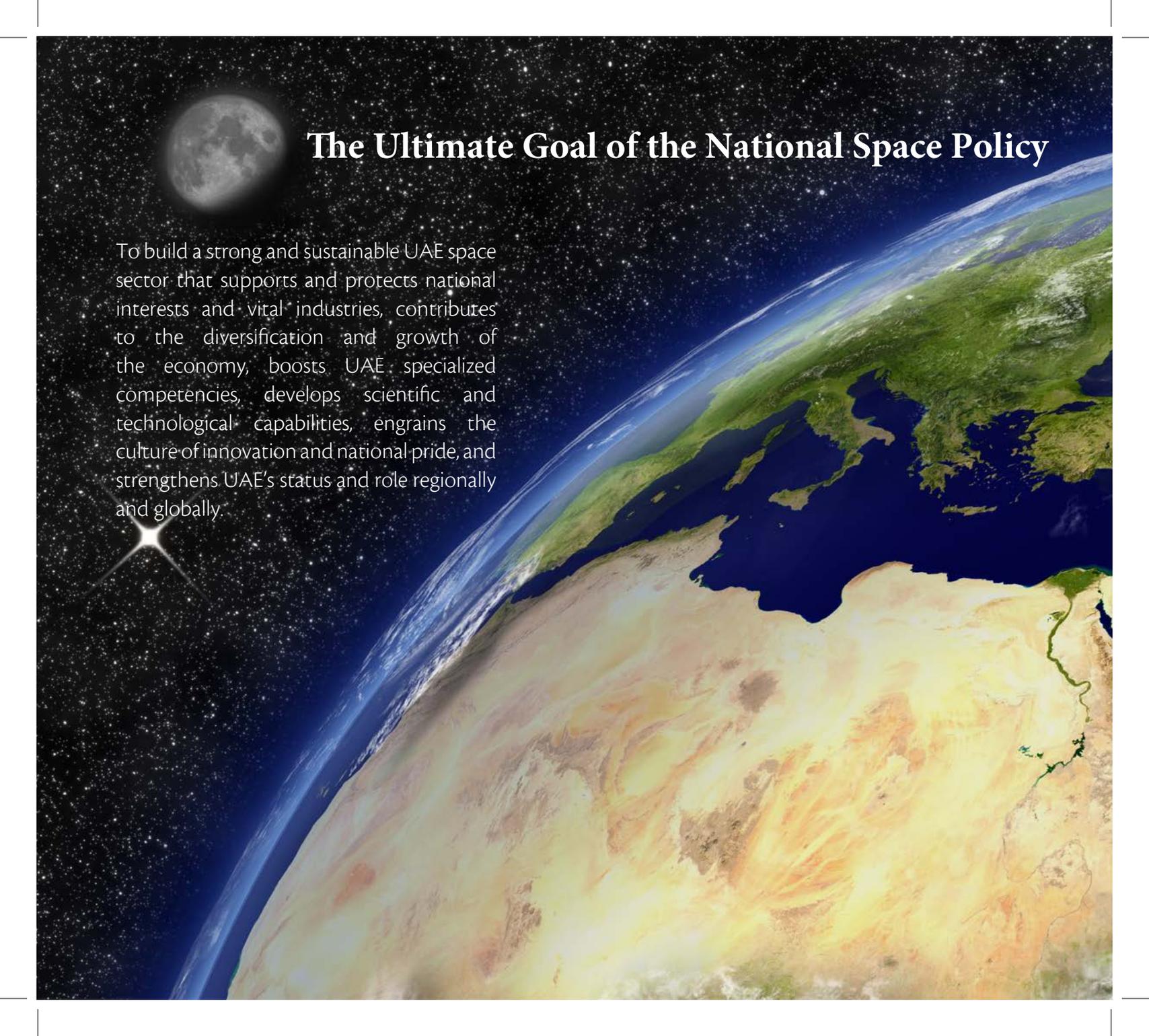
Since it was founded, the UAE has diligently sought to acquire the tools and adopt the methods that can raise the welfare of its people and the scientific and technological level of its institutions. The meeting that the late Sheikh Zayed bin Sultan Al Nahyan, UAE's founder, had with a delegation from the US National Aeronautics and Space Administration (NASA) in February 1976 in which he asked what could be seen in the Arabian desert from space, and his meeting with the Arab space scientist Farouk Al-Baz, were the first signs of the interest of UAE's government and its people in pursuing ambitions in space and space sciences.

In light of the increased utilization of outer space, great leaps in the development of space technologies, and growth in the space industry locally and globally, the UAE seeks to benefit technologically, socially and economically from this sector; accordingly, the UAE Space Agency developed the National Space Policy, which is the most important component of the national space regulatory framework for this vibrant sector, as it articulates the government's approach, goals and directions in the domain of outer space, within its journey towards sustainable social, economic and security growth.

H.E Dr. Khalifa Mohammed Thani Al Romaithi

Chairman
(UAE Space Agency)





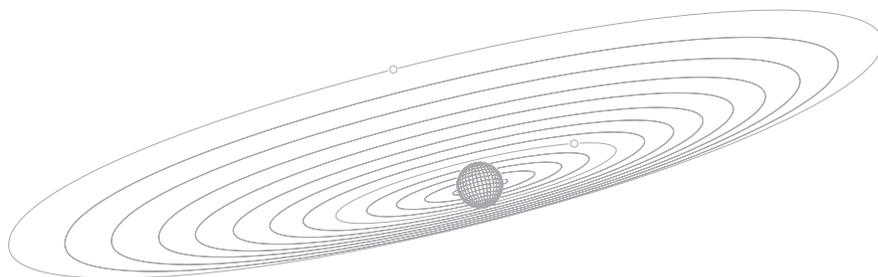
The Ultimate Goal of the National Space Policy

To build a strong and sustainable UAE space sector that supports and protects national interests and vital industries, contributes to the diversification and growth of the economy, boosts UAE specialized competencies, develops scientific and technological capabilities, engrains the culture of innovation and national pride, and strengthens UAE's status and role regionally and globally.



1. Introduction

Over the past seven decades, man's relationship with outer space has passed through different stages. The first major landmark event in this relationship was in 1957 when the first satellite was successfully launched to orbit the Earth. This represented the start of realising man's dream of exploring and exploiting outer space. The second breakthrough happened shortly thereafter in 1961 when the first man was sent to outer space, followed by a third giant step for mankind with man's landing on the Moon in 1969. Throughout this time, space activities have contributed to enhanced security, economic growth, and knowledge and human development. Space has come to be considered a bridge between humanity and the future, and exploring space is today considered a source of inspiration and an ideal example of international collaboration.



As a result, in recent years the interest among nations to explore space has increased globally, with now more than 60 countries developing programs and conducting activities related to space. This includes the UAE which has become a key regional and international player within the space sector.

The United Arab Emirates has a historical affinity with outer space. Its people long ago developed their knowledge of astronomy and navigation, and used it to travel by land and sea. The founder of the United Arab Emirates, the late Sheikh Zayed bin Sultan Al Nahyan, was so far-sighted as to receive a NASA delegation as early as 1976, thus sending a message to his people and the peoples of the region and the world that Emirati curiosity and ambitions knew no boundaries. He drew the path to continue building on his forefathers' glorious heritage and knowledge in astronomy, navigation and outer space. Since then, the UAE, with God's grace and vision and with the determination of its wise leadership,

and the dedication and devotion of its people, has been able to build a strong economy, as well as strong infrastructure and national competencies, which have made the UAE today a regional leader in space activities capable of contributing to the exploration of outer space before the golden jubilee of its foundation. The UAE now has the largest space sector in the region in terms of both diversity and size of investments. The sector is driven by several leading space centers, institutions and companies that include the Mohammed Bin Rashid Space Centre (MBRSC), Al Yah Satellite Communications Company (Yahsat), and Thuraya Telecommunications Company. The state now owns and operates more than six satellites for different uses, soon to increase to 10 satellites, and boasts AED20 billion of national investments in space technologies.

The year 2014 marked a milestone in the UAE space sector history, as in August of that year, a decision was made to establish the UAE Space Agency. One of the first Arab space agencies in the region, the UAE Space Agency marked a significant turning point in bolstering the national space sector, and in driving its development, regulation and sustainable growth.

The decision to establish the Space Agency coincided with the UAE leadership announcing its intention to participate in the international efforts to explore Mars and its atmosphere, using the first UAE, Arab and Islamic probe, scheduled to reach the red planet in 2020. The probe has been named Hope, as it aims to bring pride and hope to the Arab and Muslim youth.

Both milestones – the establishment of the UAE Space Agency and the Mars probe project –symbolize the ambitious UAE Vision 2021, which will see the establishment of a more diversified, sustainable economy that is based on knowledge and innovation. This will bring more prosperity to the people, and a stronger presence of the UAE on the regional and global scenes.

The global space economy is witnessing considerable growth and change. Outer space is getting busier, with more emerging technologies and an increasing number of countries and entities that seek to exploit the advantages of outer space, in the context of a wider contribution from the commercial and academic sectors and a higher level of cooperation between space-faring nations.

In light of these developments, the planning and management of national capabilities and capacities requires clarity in the government’s approach and goals with respect to the national space sector. For this reason, as the competent authority on this issue, and in accordance with Federal Law No.1/2014, the UAE





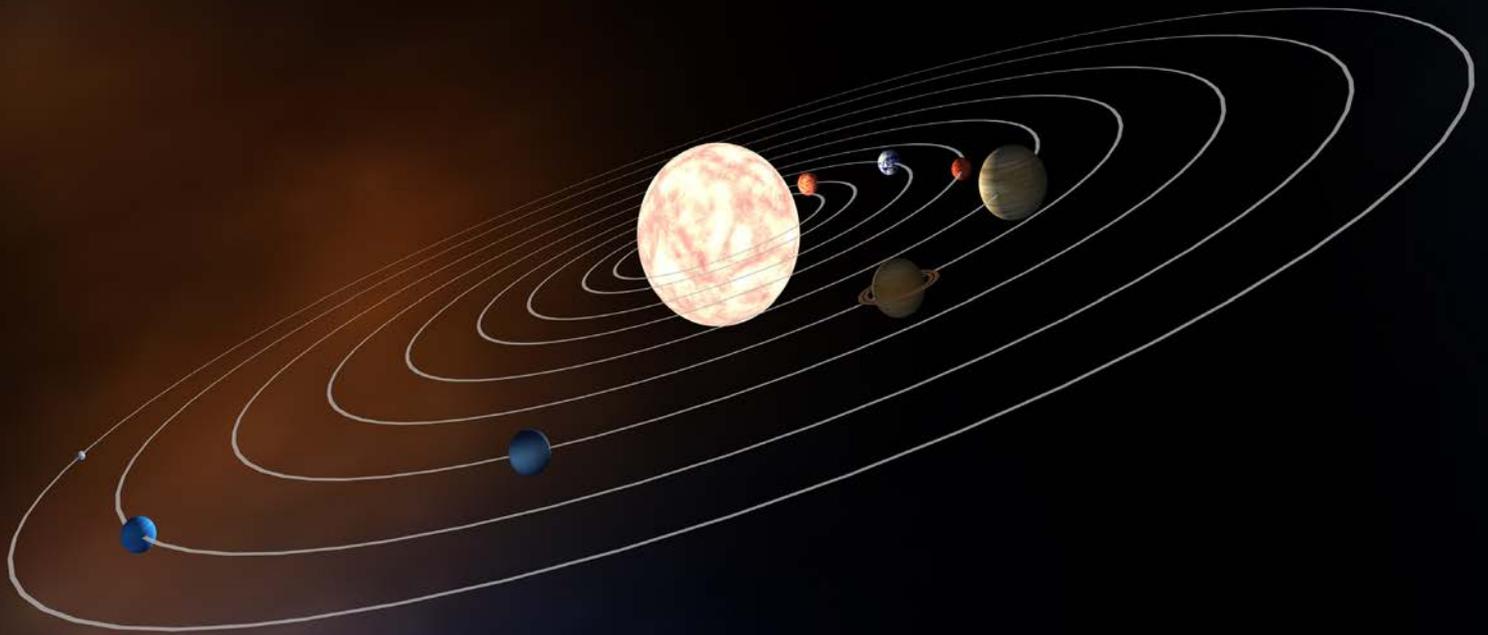
Space Agency developed the National Space Policy for the following purposes:

- Convey the Government’s approach, priorities, and ambitions in space;
- Coordinate national efforts and focus these efforts on the state’s priorities with respect to the space sector;
- Regulate the space sector, strengthen its role, and ensure its sustainability;
- Stress the importance of international cooperation in the domain of outer space.

The National Space Policy is fully aligned with other UAE policies and national strategies, and serves as an extension of the UAE Vision 2021, the Higher Policy for Science, Technology and Innovation, and the National Innovation Strategy, in regards to the space sector. In addition, the UAE Space Policy has been informed by all existing international space treaties and international laws regarding the space sector, in particular those to which the UAE is a party.

Developed based on the National Space Policy, the UAE Space Strategy will facilitate implementation of the Policy by identifying select focus areas and enablers and detailing specific initiatives and activities that

will collectively aim to achieve the Policy priorities.





The **National Space Policy** document consists of six main sections:

- 1. Introduction:** Summarizes the importance of outer space, and the most significant developments witnessed by the UAE space industry, and clarifies the main purpose of the policy;
- 2. Main Principles:** Explains how the space sector will contribute to the achievement of the national vision, priorities and goals;
- 3. Goals and Ambitions:** Describes UAE's intentions and ambitions for its space activities;
- 4. Key Enablers:** Defines the capabilities needed to support the achievement of the policy goals;
- 5. Guidelines:** Provides a set of directions and guidelines for stakeholders with respect to the activities required to support and develop the space sector, which are in line with the principles and goals of the policy; and
- 6. Implementation and Governance:** Details the success factors for this policy, and the role of the UAE Space Agency and stakeholders in executing it and in following up on its achieved progress and level of performance.

2. Main Principles



The National Space Policy shall support and complement UAE Vision 2021 as well as the overarching Higher Policy for Science Technology and Innovation and the National Innovation Strategy in addition to the strategic plans of other sectors and the UAE's policy regarding international cooperation.

The UAE space program and activities shall support and adhere to the following main principles:

2.1. Enhance the Lives of our Citizens

The UAE space program and its activities will be used to enrich our knowledge about the universe and to continuously improve the lives of all UAE citizens. The UAE space activities will also seek to enhance education, scientific studies and research, thereby contributing to the transfer of knowledge and technical skills and to the creation of local jobs. They will also help to provide better services, especially in the fields of telecommunications, broadcasting, navigation, weather and climate monitoring, as well as in urban planning and other aspects of our daily life that can benefit from space applications. Moreover, they will promote a culture of innovation, particularly within the younger generations, and be a source of national pride and happiness for the UAE people and the region.





2.2. Support UAE National Interests

The UAE Space Policy is aligned with important national interests that include safety, security and stability; the capacity to effectively manage national and regional disasters and crises; the management and discovery of natural resources; urban planning and roads planning; climate monitoring and environmental protection, monitoring and management.

2.3. Support Growth and Diversification of our Economy

The UAE seeks to continuously develop and grow national space capabilities and capacities so that the space sector can effectively contribute to the economy, respond to various sectors' needs in outer space, and raise the benchmark for the benefits that other sectors can get from space technologies and applications. Establishing a robust, sustainable, and innovative commercial space sector is a contributor to the continued growth and diversification of the UAE economy. Such diversification will strengthen the capabilities of national companies in the space sector to commercially compete on local, regional and global levels, and create an environment that is conducive to entrepreneurship and attractive for investors and global companies.

2.4. Promote Collaboration and Support UAE status

As the UAE continues to build on its successes in creating its space sector, it is moving to strengthen cooperation, coordination and partnerships in the space domain between the government sector, private sectors, academia, and research and development centers in the UAE. On the regional and international levels, in keeping with its record of openness and pursuit of world peace and cooperation as inspired by its Arabic and Muslim culture, the UAE will seek to form partnerships in the outer space domain that serve its goals, realize mutual benefits with its allies, and achieve global recognition for UAE, Arab and

Islamic space activities, whether they are governmental, scientific or commercial.

The UAE believes that space science and technology can contribute to the welfare of people, and ultimately to achieving the goals set by UN-organized conferences to address the different aspects of economic, and social development. The UAE's collaboration with the international space community will contribute to the realization of the UN goals and initiatives for sustainable development¹.

2.5. Respect International Laws and Treaties

The UAE recognizes the right of all nations to explore and use space for peaceful purposes and for the benefit of humanity. A safe, sustainable and stable space environment, free from impediments to access and utilization, is a vital national interest.

On September 27, 2015, the United Nations approved the «2030 Agenda for Sustainable Development» in New York, which sets out 17 sustainable development goals for our planet. This plan is the first global effort to provide a new development framework for the next 15 years.

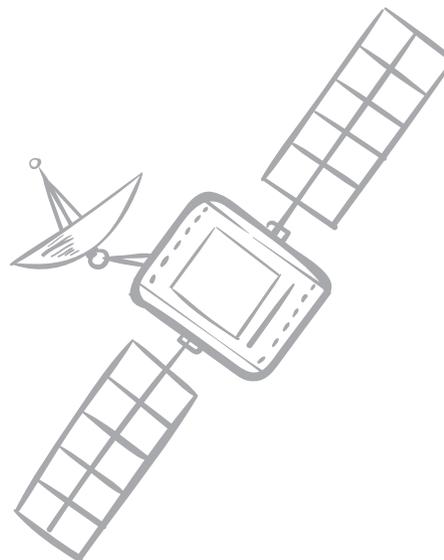




3. Goals and Ambitions

The United Arab Emirates set out ambitious goals for its national space program to strengthen the domestic space sector and expand its contribution. These goals are derived from the vision of the UAE leadership for the future. They are based on the capabilities of the UAE and its regional and global achievements in the field of space and other areas, and on the future plans to continue and increase these achievements.

The UAE will strive to achieve the following goals through its national space program:



3.1. Expand the Utilization of Space to Protect and Support Vital Sectors

The UAE aims to strengthen the role of the space sector in supporting social, economic, political and national security initiatives, activities and programs, as well as in improving and protecting services and business in vital domestic sectors. The national space sector will contribute to building various capabilities such as: national security; disaster and crisis management; education and research; public health; telecommunications and broadcasting; transportation and logistics; and other critical national functions. The UAE will seek to achieve this goal by developing national space technologies, capabilities and human





capital, and by raising awareness of space activities and their importance and benefits. Achieving these goals also requires strengthening the linkage and integration between space and terrestrial applications and services, and promoting the informational support role of space applications in decision-making and in planning in general. In addition, we will continuously assess the national space capabilities and identify emerging opportunities to increase and expand the scope of these benefits.

3.2. Develop a Sustainable, Competitive and Innovative Commercial Space Industry

The UAE space program aims to diversify the economy and build a knowledge-based model that leverages technology and high-value-added activities. Therefore, the UAE will strive to build, develop and sustain an active, diversified commercial space industry, to become a regional and global leader in this field. This goal will be achieved through a variety of effective measures which include, but are not limited to: enactment of economic incentives and an attractive regulatory environment to attract global companies and investments to the space sector; encouragement of entrepreneurship and innovation; development of national space professionals; support of basic and applied research and development; encouragement of continuous improvement in the planning, management and investment in domestic space projects so as to ensure their sustainability and their chances of success.

In addition, the UAE is planning other effective measures including: raising awareness of the various space activities and applications and creating more diverse opportunities to utilize and link them to other space or terrestrial applications and services; encouragement of the public sector to leverage the applications and technologies of the UAE commercial space industry; as well as continuous evaluation and improvement of the supporting infrastructure of the national space sector.

3.3. Conduct Scientific Space Missions

The UAE believes in the important role that space programs, projects and scientific missions including those related to astronomy, play in enriching national and global knowledge, building national technologies and competences, and driving innovation. The best example of the UAE's conviction in this role is the work on sending the "Hope" mission to Mars by 2021.

The UAE's efforts to promote space-related scientific programs and projects, including sending space missions, or participating in space missions of other nations, will be viable through continuous and increasing government support; obtaining and developing capabilities for space exploration and Earth observation; encouragement of scientific research and development of programs that aim to strengthen UAE space capabilities and technology, expand their utilization, and coordinate the related efforts. .

Efforts will also be made on elevating the UAE's status to become a center of excellence for the education and development of professionals in the fields of astronomy, space science and technology, and engineering. The UAE will also work on developing education initiatives related to space science and astronomy, conducting outreach campaigns to raise awareness of space activities, developments and science, and promoting international collaboration, thereby inspiring the Emirati people and instilling national pride.

3.4. Promote a Safe and Stable Space Environment that Supports Sustainable Space Activities

The increase in the number of countries and entities utilizing the space environment has increased the possibility of space object collision and interference and the proliferation of space debris, raising important concerns on the sustainability of space activities – particularly in the current context of a growing number of space-faring nations.





The UAE will therefore support relevant national and international efforts that aim to improve the planning, access to and efficient use of radiofrequency spectrum and orbital slots; support transparency, openness, coordination and information sharing regarding space operations and activities; improve safety and security of space activities and the space environment, including cyber and terrestrial infrastructure security; mitigate space debris; increase space situational awareness operations and capabilities; assure access to, in, and from space; as well as other efforts to address issues that affect the sustainability of space activities.

3.5. Establish and Expand UAE's Leadership in Space Regionally and Internationally

The UAE is working hard to establish and expand its regional and international presence and leadership in space through collaboration and partnerships, with special focus on supporting UAE initiatives in: peaceful use of space; developing space capabilities, especially in disaster management and relief; telecommunications, navigation, land observation, and scientific, technological and space exploration programs. The UAE shall invest in innovative and lucrative commercial space projects that help to develop the space industry in the Arabic and Islamic world, and strive to position the UAE as a regional hub for space business and activities.

The national space program comprises an ongoing series of space-related activities, projects, initiatives and programs that belong to the United Arab Emirates and are adopted and implemented in accordance with the National Space Policy.



4. Key Enablers



To achieve the National Space Policy goals successfully and efficiently, the UAE space sector requires a number of key enablers that underpin the implementation of the various initiatives and activities.

All relevant entities in the UAE shall therefore collaborate to develop and expand the following key enablers:

4.1. Continuous Awareness of the Importance of Space and its Activities

The UAE space agency will work, in cooperation and coordination with relevant government entities, academic institutions, research and development centers and private institutions in the space sector, to prepare and implement programs at all levels that aim to disseminate and increase national awareness of:

- The importance of space and its different uses;
- Prominent national regional and global space activities;

- The latest developments and achievements of space exploration;
- National and international policies, laws, regulations and measures related to the regulation of space.

4.2. Develop Qualified UAE Space Professionals

Relevant government authorities, academic institutions, and the commercial space industry, with cooperation and coordination of the UAE Space Agency, shall develop and implement programs to:

- Increase student participation in Science, Technology, Engineering, and Mathematics (STEM) programs;
- Attract Emirati talent and skilled professionals to work in the space sector;
- Develop, retain, and increase opportunities for skilled space professionals;
- Incentivize and enable increased female participation in the space workforce.

Skilled space professionals include, but are not limited to: aerospace engineers; scientific personnel; space system operators; space law, policy, and regulation experts; space-related educators; and commercial space investment experts.

4.3. Effective and Attractive Space Regulatory Environment

The UAE seeks sustainable growth in its space capabilities, with particular focus on the commercial





space sector, by creating a progressive and attractive legal and regulatory environment that supports space projects, attracts international companies and investments, encourages entrepreneurship and supports small and medium-sized enterprises. The UAE Space Agency, in collaboration with the concerned government authorities, shall develop and set a national space regulatory framework that seeks to achieve the following in the UAE space sector:

- Increase transparency, effectiveness, and resilience;
- Provide appropriate protection of intellectual property rights;
- Provide insurance policies and facilities suitable to various space activities;
- Facilitate the sharing of appropriate data and information to support value-added industries;
- Provide proper incentives for activities that facilitate achievement of the national space goals;
- Minimize the regulatory burden on commercial space activities to the extent necessary to meet domestic and international legal obligations; and
- Set import, export, (and re-export) regulations that are responsive to both commercial and security requirements.

4.4. Active Management of Radiofrequency and Satellite Orbital Resources

The allocation of radiofrequency and orbital slots are essential for space operations and services. The UAE Space Agency, in collaboration and coordination with the relevant government authorities and domestic space industry, shall:

- Promote radiofrequency spectrum allocation and orbital assignments that support UAE present and future needs of governmental, scientific and commercial space activities.
- Support international cooperation, research and technology that support efficient and rational use

of radiofrequency spectrum and orbital slots.

- Develop capabilities and procedures to resolve the issues of radiofrequency interference, locate its origins and mitigate its impacts.

4.5. Effective Science, Technology and Innovation Programs

The relevant government authorities, academic institutions and private sector entities, with support and coordination from the UAE Space Agency, shall establish programs to encourage and conduct basic and applied research in the field of space science and technology, for scientific and commercial purposes. The objectives of these research programs are:

- Providing, building and increasing space-related capabilities;
- Decreasing costs of space goods and services;
- Developing next-generation space technologies in the field of space exploration;
- Encouraging innovation and entrepreneurship, especially for value-added space activities;
- Strengthening and extending the use and benefits of space technology and applications;
- Increasing the role of space technology and applications in supporting critical national functions and services.

4.6. National, Regional and Global Collaborations, Coordination and Partnerships

The stability and sustainability in space cannot be achieved without the cooperation of all parties concerned. Therefore, space activities require effective national, regional and international cooperation, coordination and partnerships. The UAE will aim to:





Promote Coordination and Collaboration on the National Level

Effective and successful achievement of UAE goals related to space requires the UAE Space Agency to coordinate the various national efforts and foster effective collaboration and communication among all stakeholders in public, private, academic and educational sectors as well as research and development centers and other concerned parties, with the aim of:

- Raising the level of cooperation and coordination in the planning and implementation of the national space program and monitoring its progress.
- Development and implementation of national legislation, regulations and standards in the space sector.
- Sharing and exchanging information effectively.
- Encouraging the maximum utilization of domestic space services, products and initiatives.
- Effectively and proactively coordinating UAE preparation and participation in international conferences, events and forums.

Promote Regional and International Coordination and Collaboration

The UAE Space Agency shall work to promote internal and external coordination of the UAE's position on international space-related issues. The Agency shall also promote effective regional and international collaboration and partnerships with other space agencies, research centers, universities, academic and educational institutions, as well as international companies that provide space technologies, products, services and projects.

Some of the most important aspects of international cooperation that will be of priority to the UAE going forward include:

- Building technical and human capabilities in the space sector.

- Developing space capabilities in the fields of security, safety and disaster management.
- Developing capabilities, technologies and applications in land observation and remote sensing, including weather and climate monitoring, environmental protection, management and exploration of resources.
- Sharing and exchanging information and expertise, and collaboration in big data management.
- Fostering partnerships in important scientific projects, and in the innovative and commercially viable space projects, and developing space capabilities, technologies and applications for navigation.
- Supporting measures to build mutual trust and promoting the principles of transparency and access to technologies and to space-related data and assets.

Developing standards and regulations that enhance the security and stability of the space environment, including debris mitigation.

4.7. Adequate Investment and Financial Support

The UAE Space Agency, in collaboration with relevant government entities and supportive financial institutions shall develop appropriate financing mechanisms to fund national governmental and scientific space projects. The Agency shall work with the private sector lenders and investors to put suitable measures and procedures that facilitate access to financing options for commercial space companies in all stages of development – from startups, and small and medium enterprises, to established multinational corporations.

The UAE may enact funding provisions or investment decisions to support SME's and corporations working in the domestic space sector, in accordance with the goals of this Policy, in order to: encourage entrepreneurship; attract investment; facilitate the creation of companies and projects in the domestic space sector aiming to contribute to economic diversification; facilitate the development and transfer of technology and knowledge; generate knowledge-intensive jobs; and obtain other economic and strategic benefits.





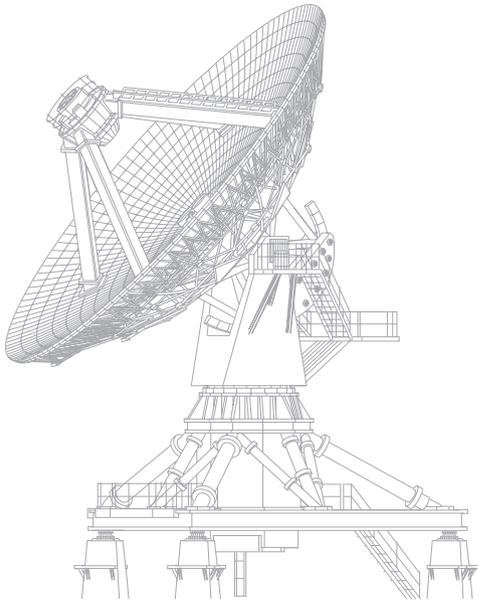
4.8. Supporting Facilities and Infrastructure

The UAE Space Agency, in collaboration with relevant stakeholders shall:

- Identify and facilitate the creation of facilities and infrastructure needed for the development and manufacturing of critical space technologies, applications and services;
- Coordinate various national efforts to minimize costs and avoid redundancy;
- Continuously evaluate and improve the level of effectiveness of space infrastructure security and protection, and enhance connectivity and interoperability, as needed;
- Identify and develop services, facilities and procedures that facilitate the creation and day-to-day operations of companies in the domestic space sector, to provide an attractive environment that meets the needs of the sector.



5. Guidelines



To support the development and growth of the UAE space sector, and achieve the National Space Policy goals in line with its principles, the stakeholders in the United Arab Emirates will implement the following guidelines which fall into three key interdependent areas of space activities: national functions; science and exploration, and commercial activities.

5.1. National Functions Guidelines

5.1.1. Support to National Security

Effective space capabilities and capacities shall be used to protect and safeguard the UAE, its citizens and allies; and to provide informational support for decision-making in these areas. The UAE government authorities and national entities, with support from the Agency, will continue to:

- Enhance the level of security and protection of the national space capabilities, including cyber security and business continuity;
- Develop and acquire space capabilities and technologies, and collaborate with international partners for the purposes of space situational awareness; identify potential threats and improve preparedness;
- Develop and acquire appropriate capabilities and technologies to enable various national security activities in times of peace, crisis, and conflict, and ensure continuity of government and critical operations;
- Promote regional and international cooperation to mutually benefit and leverage the space capabilities of other allied countries, exchange information to improve crisis management and recovery, and provide appropriate support when needed to ensure business continuity;
- Develop and acquire space capabilities and technologies and cooperate with international partners for the purposes of maritime domain awareness, border and ports security, and early warning systems against various threats.

5.1.2. Enhancement of Disaster Monitoring and Response

Relevant government authorities and national stakeholders, in collaboration with the UAE Space Agency, shall:

- Identify existing national space capabilities in the area of disaster and crisis monitoring, response and relief, to enhance existing capabilities and to develop new capabilities as needed;
- Identify national space capabilities used in other fields that can be used for disaster monitoring, response and relief;
- Improve the linkage and interoperability between terrestrial and satellite services so as to enhance national capabilities in disaster monitoring, response and relief;



- 
- Include existing capabilities in the current plans for the warning, monitoring and supporting relief efforts in natural disasters at the national, regional and global level;
 - Strengthen international cooperation in leveraging space capabilities for disaster monitoring, response and relief.

5.1.3. Support to Humanitarian Aid

The UAE plays a leading and influential role in supporting humanitarian needs around the world. Relevant government authorities and national stakeholders, in collaboration with the UAE Space Agency, shall work to promote the utilization of space applications and technologies in this regard, and the development of national capabilities that support and promote the role of the UAE in the international cooperation programs related to humanitarian aid.

5.1.4. Support to Key UAE Industries

Space capabilities will be used to develop and boost the capacities and capabilities of various sectors and vital areas that are important to the state. The UAE Space Agency will work with other government entities and institutions working in the space domain, as well as other concerned parties in the UAE, to achieve the following:

- Develop and procure the required space capabilities and technology.
- Support business continuity, security and safety at the national level; expand the opportunity for other sectors to benefit from space capabilities, and identify available opportunities.

- Strengthen the linkage among various space services, and between space and terrestrial services.
- Support the strategic planning in the UAE and its leadership and competitiveness in various sectors, such as telecommunications, transport, planning, logistics and financial industries, among other sectors.

5.1.5. Utilizing Space Technology to Improve the Quality of Life of UAE People

- Relevant government authorities, academia, research and developments centers, and private entities in the space industry, with support and coordination from the UAE Space Agency, shall harness all opportunities, capabilities, services and activities in the field of space, as appropriate, for:
- Continuously improving the level of security, safety and protection of the environment and public health.
- Enhancing information support for public administration and policy-making; supporting initiatives that improve the quality of education, especially in science, technology, engineering and mathematics.
- Creating job opportunities that require a high level of knowledge in science and engineering.
- Raising the standard of living and services provided to UAE citizens and residents.
- Promoting a culture of continuous innovation.
- Promoting national pride and happiness among UAE citizens.

5.1.6. Support to Natural Resources Management

Natural resources exploration, utilization, investment, and preservation are critical to the economy of the





UAE. Relevant government authorities and academia, research and developments centers, and private entities in the space industry, with support and coordination from the UAE Space Agency, shall develop space capabilities and technology solutions in this domain to:

- Support the management and monitoring of existing petroleum deposits and infrastructure, including: reserves, pipelines and transport integrity and security, and processing and refinement facility integrity and security;
- Explore new natural resources, including new gas and petroleum reserves, and provide support to their extraction;
- Support land management and urban planning, and enable rational and efficient use of natural resources;
- Identify and manage water resources, support rational use and preservation of water, improve efficiency in access and distribution, develop advanced desalinization capabilities, and enable precision agriculture.

5.1.7. Support to Smart Cities and e-Government

- The development of smart cities and the implementation of e-government initiatives contributes to the ability of the government to effectively respond to the needs of its citizens and residents, to enable future growth and sustainable economic and social development, and to execute the National Happiness and Positivity Program.
- With the support and coordination by UAE Space Agency, relevant government authorities and national entities working in the space sector, shall work to identify existing space capabilities, and develop new capabilities as needed, in order to:
- Support the planning, development and management of smart cities, utilities, infrastructure and

- public services, and contribute to the continuous improvement in efficiency and cost reductions.
- Support the provision of highly responsive government services and continuous improvement of their quality.
 - Enhance protection, flexibility and business continuity.

5.1.8. Support to International Efforts for the Promotion of Sustainable Space Activities

The UAE shall support, as appropriate, national and international activities and initiatives related to space that:

- Provide continuous improvement of planning and rational use of the radiofrequency spectrum and orbital slots;
- Support the principles of transparency, openness, coordination and exchange of information regarding space operations and activities;
- Raise the level of safety and security (including cyber security) and terrestrial infrastructure;
- Support measures to mitigate space weather and space debris;
- Develop space situational awareness capabilities and operations;
- Ensure the principle of the right of way, to and from, in space;
- Enhance the sustainability of regional and global space activities.





5.2. Science, Technology and Exploration Guidelines

5.2.1. Develop and Encourage UAE Scientific and Aerospace Engineering Professionals

The success of the UAE's space program is based upon a foundation of knowledgeable and innovative engineers and scientists. The UAE Space Agency shall collaborate with relevant government authorities, academia and industry to:

- Identify critical areas in space-related science, technology and engineering that require additional human resources with professional skills;
- Develop curricula for the educational development of future space scientists, engineers, and related professionals;
- Create and implement exchange programs with foreign governments, academic institutions, and industries for the purpose of broadening and educating Emirati space professionals and facilitating knowledge transfer.

5.2.2. Enhance Land and Climate Observation and Support Environment Protection.

Environment, climate and desertification monitoring are essential for sustainable development and the continuation of life and prosperity in the UAE. Relevant government authorities and industry stakeholders, with the support of the UAE Space Agency, shall:

- Conduct programs and activities that enhance the regional and global understanding of the climate;
- Support domestic programs for Earth observation and environment protection;
- Promote contribution to the regional and international programs related to Earth observation and environmental protection;
- Develop technological solutions and applications to expand the Earth observation activities and related knowledge, and to support innovations that aim to achieve improvements and better utilization;
- Study, benefit from, and conserve the flora and fauna;
- Use space data with multi-dimensional modelling in the study of natural and industrial phenomena, and their impact on UAE territory.

5.2.3. Support National Space Technology Development

The UAE Space Agency and relevant government authorities, in collaboration with and the support of academic institutions, research centers, and private sector entities, shall establish and maintain a coordinated program to support and facilitate the development of new space technologies, with the objective of meeting the requirements of various national space activities; increasing commercial, scientific, and government space capabilities; decreasing costs; and expanding opportunities for and through innovation. This may take the form of studying and encouraging multiple-use of space technologies and solutions, integrating space and terrestrial applications and services, or taking advantage of the Internet of Things and Big Data management in space applications.





5.2.4. Create Programs to Support Space Exploration' efforts.

The UAE Space Agency and relevant government authorities, in collaboration with academic institutions, research centers and private sector entities, shall develop and implement a national plan to promote UAE space exploration activities. This plan would include:

- Setting ambitious goals for on-going exploration efforts that started with the “Hope” mission to Mars, and that continue with the exploration and study of Earth-like planets in the solar system;
- Evaluating national and international initiatives to explore outer space, analyzing the most important results and lessons learned, and identifying key initiatives that may provide an opportunity for the UAE to contribute to such areas;
- Becoming an integral international partner in the study and exploration of the Solar System in particular, and outer space in general, including exploration of available resources there;
- Developing a plan to contribute to future manned missions to outer space, including the missions that seek to extend the human presence and survival in outer space and on the surface of the Moon, Mars, asteroids and other celestial bodies;
- Identifying the necessary capabilities to undertake space missions, contributing to international efforts in the areas of outer space exploration and working to develop and identify opportunities for collaboration and partnerships in this regard.

5.2.5. Embark on Space Programs that Increase UAE's Status in this Field

The UAE seeks to become a regional and global hub in space exploration and to provide its citizens and the citizens of our region with hope, inspiration and pride. Relevant government authorities, academia, research and development centers, astronomy centers, and other international partners, in collaboration with and with the support of the UAE Space Agency, shall embark on, or contribute to, inspirational programs, such as:

- Manned and unmanned exploration missions, and scientific efforts to enable human colonization of space;
- Ancillary industries and the use of robots and three-dimensional printing and manufacturing in space;
- Exploration, mining, extraction and utilization of resources in space;
- Improving the capacity of commercial space flights, including orbital and suborbital flights;
- Cooperation in regional space exploration initiatives, and the development of regional capabilities that improve access to space benefits.

These programs will be supported by media coverage and promotional campaigns to spread awareness about the UAE's space activities at the local, regional and global levels, and to instill inspiration and national pride.





5.3. Commercial Sector Guidelines

5.3.1. Promote UAE Products and Services

UAE space services and commodities have proven beneficial for the UAE and the whole world. In order to support these national space commodities, it is important that they are used by, and bring benefits, to different entities in the state. The UAE Space Agency shall collaborate with relevant government authorities and private institutions to actively promote the use and sale of UAE commercial space services, products and solutions domestically and internationally. The Agency will also promote the beneficial use of space-related technologies and applications developed by government institutions to clients from the private sector.

5.3.2. Support Economic Diversification and Develop New Markets

The UAE Space Agency, in collaboration with relevant government authorities shall work to encourage companies operating in the domestic space sector to enhance their contribution to the economy and to the improvement of the country's knowledge- and technology-based industries and high value-added-activities.

The Agency will also work as much as possible to help companies operating in the domestic space sector, especially UAE companies, to identify and increase the opportunities available to them and to their services, products and technologies to access new markets and other economic sectors. The Agency will encourage initiatives and activities aimed at linking and integrating different space services and technologies, among themselves and with terrestrial services and technologies, in order to enhance opportunities and market diversification for these companies.

5.3.3. Create a Competitive and Sustainable Commercial Space Industry

The UAE Space Agency, in collaboration with relevant government authorities, academic institutions and space industry stakeholders, shall:

- Encourage and facilitate private-sector space activities in the UAE;
- Create an attractive, transparent and flexible regulatory environment to attract investments and international companies;
- Support domestic innovation and the development of new space technologies;
- Stimulate and support the development of specialized national human resources for the space industry;
- Support the development of new markets to take advantage of space services, technologies and applications for the private and public sector;
- Encourage long-term growth for UAE businesses operating in space and promote, as much as possible, the use of national human capital;
- Seek, to the maximum practical extent, the procurement of commercial space goods and services to meet government needs;
- Direct appropriate government investment in the private space sector, in a way that meets national needs and supports the State; and
- Adopt export, re-export, and import regulations that effectively control the transfer of sensitive technologies, including related information, to unauthorized parties;





5.3.4. Promote and Sustain Innovation

Innovation is a part of the UAE culture and national identity. The UAE commercial space sector will grow and thrive through continuous innovation. The UAE Space Agency, in collaboration with, and the support of, relevant government authorities, academic institutions and private sector entities, shall create and support innovation initiatives that support existing and new space capabilities with the aim of enhancing the efficiency of space technologies, applications and services and expanding their scope of use as much as possible.

5.3.5. Promote Creative Entrepreneurship and Commercial Space Projects

The UAE recognizes that entrepreneurship catalyzes economic growth, increased employment, and innovation. The UAE Space Agency shall provide support to relevant government authorities, private sector entities and other relevant stakeholders to identify new commercial opportunities for market and technology growth. The UAE Space Agency will facilitate research, regulatory and financial incentives to support entrepreneurial endeavors. It will abstain from activities that discourage or compete with UAE commercial sector activities, unless required for critical national interests such as national security or public safety.

The Agency will also seek to provide appropriate support and motivation for innovative and inspiring commercial space projects that bring transformational changes or historic achievements in space activities, and at the same time contribute to the development and expansion of capabilities, knowledge and human capital in the UAE.

Examples include: space projects related to space manufacturing by robots, ancillary industries, three-dimensional printing, commercial space flights, including orbital and sub-orbital, as well as projects that deal with the exploration and exploitation of resources in space, and other projects that may create a global revolution in the field of exploration, the utilization of space and its resources, and the spin-off of space technologies.

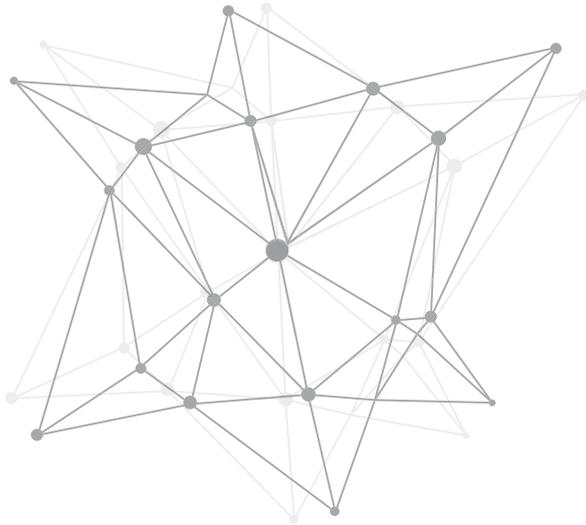
5.3.6. Support the Development of Space Industry Standards

Fair and competitive global trade flourishes when there are reasonable industry standards that promote efficiency, protection, security, transparency, interoperability and consistency. The UAE Space Agency shall work with relevant government authorities, academia, industry, and international partners to adopt and develop best appropriate standards to enhance the domestic and international environment for space trade and industry.





6. Implementation and Governance



The success of our Nation's space program relies on the effective adoption and implementation of the National Space Policy by stakeholders. This requires regular monitoring and governance to ensure efficiency, effectiveness and progress in the planning and implementation of all initiatives and activities emanating from the National Space Policy.

This will depend on the following success factors:

6.1. Effective Stewardship of the UAE National Space Program

The UAE Space Agency, in collaboration with and support of relevant national stakeholders, shall lead the development, implementation and monitoring of effectiveness and impact of the National Space Policy.

The Agency shall seek to translate the policy, through the National Space Strategy and corresponding Implementation Roadmap, into a series of on-going activities, projects and initiatives of national priority, which will be coordinated, consistent and complementary to each other, all within a comprehensive and unified national space program.





The Agency responsibilities in this regard include:

- Raising awareness among national stakeholders about the National Space Policy, its principles and goals;
- Developing and coordinating the strategy and implementation plan for the National Space Policy;
- Coordinating and allocating specific tasks and roles to stakeholders related to the activities, projects and initiatives set in the strategy and implementation plan of the National Space Policy;
- Monitoring progress;
- Receiving semi-annual reports from the stakeholders that will include space related activities done [in the past 6 months], and planned space related activities, with an explanation of how these activities are related and aligned with the National Space Policy Goals, Enablers, and Guidelines;
- Conducting a performance evaluation of the effectiveness and impact of the initiatives;
- Reporting annually on the status of the implementation and effectiveness of the Policy, including major obstacles, to The Cabinet of the United Arab Emirates with appropriate commentary.

6.2. Active Stakeholder Involvement and Coordination

The UAE Space Agency shall establish and chair the National Committee for Oversight and Implementation of the National Space Policy, with active participation from key national stakeholders. The role of the Committee will be to:

- Coordinate the implementation of the UAE National Space Policy, the National Space Strategy and the Implementation Roadmap outlining the initiatives and projects of the national space program, including assignment of tasks, roles and responsibilities in each of these initiatives;
- Coordinate implementation monitoring and performance evaluation and report on the progress of each initiative;

- Monitor the progress in executing the National Space Strategy and Implementation Roadmap
- Identify strengths, weaknesses, inadequacies and areas of future improvement, and suggest appropriate recommendations.

6.3. Regular and Comprehensive Assessment of the Space Sector to Identify Key Gaps and Opportunities.

To meet the goals and guidelines of the National Space Policy, the UAE Space Agency, in cooperation and coordination with the relevant government entities, academic institutions, research and development centers and private institutions working in the space sector, and utilizing the output of the aforementioned national Committee, shall study, assess and identify the following:

- Core competencies and curricula needed to develop Emirati space professionals;
- Major space capabilities (including technologies) and programs that enable industry growth and economic diversification and support various areas of national interest;
- Best options available for future science and exploration missions;
- Potential competitions, prizes and other mechanisms and activities that could spur innovation in the space sector;
- Global collaboration opportunities and major regional and international events that help position the UAE as a regional hub and worldwide leader in space;
- Shortcomings and potential improvements in infrastructure that can help enable the success of the UAE space sector; and

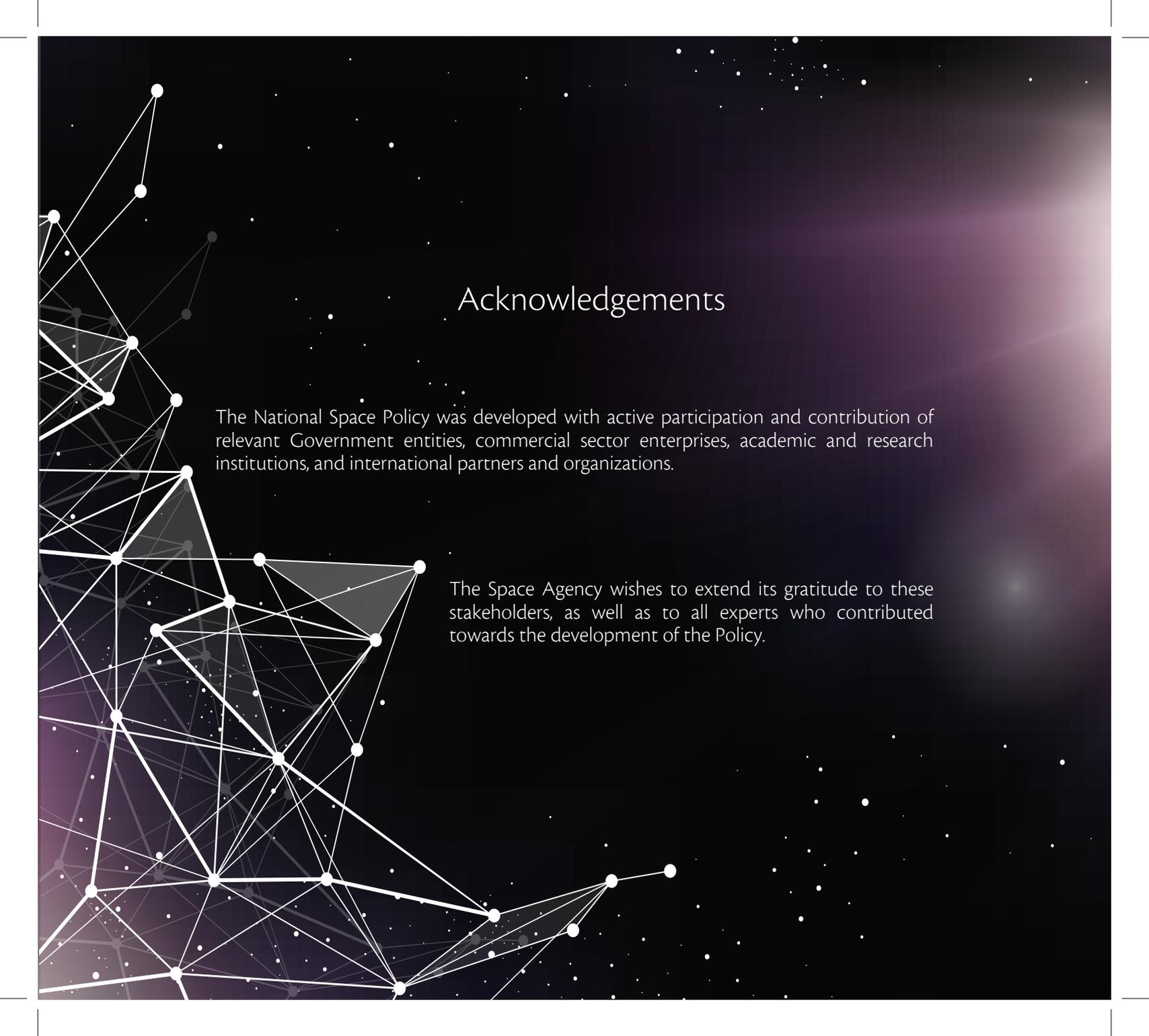


- Potential improvements in the laws and regulations of the space sector and of related sectors.

6.4. Regular Policy Review and Improvement

The UAE Space Agency, in coordination with the relevant national stakeholders, shall review the National Space Policy every five years, or as determined necessary by the Agency; the main objective of this review is to stay up to date with the latest global and domestic developments and trends in the field of space, and to identify necessary improvements to the Policy if any. The Agency will report relevant recommendations and seek approval for them.

The National Space Policy shall enter into force upon the date of its issuance.



Acknowledgements

The National Space Policy was developed with active participation and contribution of relevant Government entities, commercial sector enterprises, academic and research institutions, and international partners and organizations.

The Space Agency wishes to extend its gratitude to these stakeholders, as well as to all experts who contributed towards the development of the Policy.