



# General Assembly

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## Committee on the Peaceful Uses of Outer Space

### Report on the United Nations/United Arab Emirates High-level Forum: Space as a Driver for Socioeconomic Sustainable Development

(Dubai, United Arab Emirates, 6–9 November 2017)

#### I. Introduction

1. The second High-level Forum on space as a driver for socioeconomic sustainable development was organized by the Office for Outer Space Affairs of the Secretariat in collaboration with the Government of the United Arab Emirates, through the United Arab Emirates Space Agency, and was hosted by the Mohammed Bin Rashid Space Centre. The Forum was co-sponsored by the Secure World Foundation, Sierra Nevada Corporation's Space Systems and the International Committee on Global Navigation Satellite Systems.
2. In the lead-up to the fiftieth anniversary of the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE+50), a milestone that will present a unique opportunity to highlight the key societal benefits of space and consequently define stronger future international collaboration in the peaceful uses of outer space for the benefit of all humankind, the second High-level Forum advanced the debate on the role of space science and technology in fostering global development. The Forum thus provided a unique opportunity for representatives of the collective space community to address the global governance of outer space activities leading up to UNISPACE+50.
3. The Forum concluded with specific observations and recommendations (see sect. III) which, inter alia, underscored the valuable opportunity that the "Space2030" agenda represented in promoting space as an important pillar of the global agenda.
4. As agreed at the first High-level Forum (see [A/AC.105/1129](#)), the Forum served as a driver for exchange to promote dialogue between Governments, international organizations, industry, the private sector, academia and civil society, to connect the four pillars (space economy, space society, space accessibility and space diplomacy), UNISPACE+50 and "Space2030", and to facilitate partnerships with the Office for Outer Space Affairs.
5. The present report describes the background, objectives and programme of the Forum, provides a summary of the sessions and concludes with the observations and recommendations made and agreed upon by participants.



## A. Background and objectives

6. The second High-level Forum was widely regarded by members of the broader space community as an important platform for providing updates and recommendations on the potential of space innovations for addressing new and emerging sustainable development challenges, as well as a platform for exchange in the ever-changing space sector.

7. Space technology provides the means to transform traditional approaches in virtually any sector of the economy. The General Assembly, in its resolution [71/90](#) on international cooperation in the peaceful uses of outer space, expressed its conviction that space science and technology and their applications provide indispensable tools for viable long-term solutions for sustainable development and can contribute more effectively to efforts to promote the development of all countries and regions of the world, and stressed in that regard the need to harness the benefits of space technology towards implementing the 2030 Agenda for Sustainable Development.

8. The various factors relating to access to space, space technology data and facilities, the importance of global efforts to develop the entire space arena for the benefit of humanity, the need for Governments to develop regulatory frameworks and mechanisms at the national, regional and international levels, and the role of international mechanisms for cooperation in the peaceful exploration and use of outer space were discussed, addressed and promoted during the high-level segment of the Forum.

9. The aim of the Forum was to address the wealth of options and arguments about why space was important for society, the need to guarantee access to space activities, the need for a cooperative regulatory instrument and a mechanism for cooperation to ensure the benefits of space for societies, the role of space in the attainment of the 2030 Agenda for Sustainable Development, and how space could be a driver for socioeconomic sustainable development.

10. The overall objective of the Forum was to build stronger partnerships and strengthen international cooperation and coordination in the peaceful uses of outer space at all levels, through a joint effort towards UNISPACE+50 and “Space2030”. The specific objectives of the Forum were therefore as follows:

(a) Increase awareness about ongoing space activities and trends in the use of space technology and services that aid sustainable development;

(b) Acknowledge the relevance of the space sector for a country’s economy, society and diplomacy;

(c) Recognize the benefits of space as a core sector for socioeconomic development;

(d) Identify strategies to link space activities as a driver for socioeconomic development;

(e) Draft recommendations on utilizing innovative space activities to address emerging sustainable development challenges;

(f) Foster the establishment of partnerships to aid in addressing space for sustainable development;

(g) Provide recommendations on how voluntary actions by Governments, international organizations, research and development institutions, academia and other relevant stakeholders could support partnerships for increased used of space as a driver for socioeconomic development.

## B. Programme

11. The programme of the second High-Level Forum was developed by the Office for Outer Space Affairs in cooperation with representatives of the Mohamed Bin Rashid Space Centre and the United Arab Emirates Space Agency.

12. The primary purpose of the sessions held on 6 and 7 November was to bring together experts to present their views and work, as well as to present lessons learned and new ideas grouped according to the four thematic pillars, including the interactions and interlinkages of those pillars, as outlined in and relating to the Dubai Declaration.

13. On 8 and 9 November, the Forum brought together decision makers from Governments, space agencies and other stakeholders to discuss and exchange views on the preparations for “Space2030”, UNISPACE+50 and on the subsequent results. The main purpose of the high-level panels was to focus on the Forum’s contribution towards UNISPACE+50 and “Space2030”. The panels covered the following thematic areas:

(a) International cooperation and challenges towards UNISPACE+50 and “Space2030” in order for the international community to lay the basis for the use of space for the benefit of all humankind and to collectively address cross-border concerns;

(b) “Space2030” as an opportunity for innovation, integration and investment in order to generate the widest participation possible in the promotion of space technology, with a view to addressing issues that are transnational in their nature and to dealing with global concerns, and in order to strengthen unified efforts at all levels and among all relevant stakeholders of the space sector in addressing the overarching long-term development concerns of society, with concrete deliverables pertaining to space for development.

14. Two special sessions on the topics of space debris and youth were held on the sidelines of the Forum, and a technical tour to the Sharjah Centre for Astronomy and Space Sciences was organized by the Mohamed Bin Rashid Space Centre.

15. All presentations and statements made during panel discussions are available on the website of the Office for Outer Space Affairs ([www.unoosa.org/oosa/en/ourwork/hlf/2017/HLF2017.html](http://www.unoosa.org/oosa/en/ourwork/hlf/2017/HLF2017.html)).

## C. Attendance

16. The Forum brought together participants from national, regional and international public and private organizations and institutions, including decision makers from government agencies, high-ranking officials from regional and international agencies, representatives and experts from United Nations agencies, experts from the space community, experts from entrepreneurial, business and academic communities, policymakers, experts from international centres of excellence, researchers involved in the use of space technologies, representatives of the private sector in the space and non-space fields and civil society leaders.

17. Funds provided by the United Nations, the Government of the United Arab Emirates and the co-sponsors were used to defray the costs of air travel and accommodation for 33 participants. A total of 156 specialists in space and science technology attended the Forum.

18. The following 42 Member States were represented at the Forum: Austria, Belgium, Bhutan, Botswana, Brazil, Cameroon, Canada, China, Colombia, Egypt, France, Germany, Greece, India, Italy, Japan, Kazakhstan, Kenya, Kuwait, Lao People’s Democratic Republic, Lebanon, Luxembourg, Mauritius, Mexico, Mongolia, Morocco, Nepal, Nigeria, Oman, Romania, Russian Federation, Saudi Arabia, South Africa,

Sudan, Sweden, Switzerland, Thailand, Tunisia, Turkey, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland and United States of America.

19. The representatives of the following 25 intergovernmental and non-governmental organizations and industries attended the Forum: Air and Space Academy, Asia-Pacific Space Cooperation Organization, Breakthrough Initiatives, Caelus Partners, Committee on Space Research, Deep Space Industries, Digital Globe, EURISY, European Global Navigation Satellite Systems Agency, European Space Policy Institute, For all Moonkind, Inc., Group on Earth Observations, International Collaborative Aerospace and Energy Development (CANEUS), Interstellar Ventures, Leoni Corporate Advisors, Moon Village Association, Noosphere Ventures, OneWeb, Secure World Foundation, Sierra Nevada Corporation, Space Generation Advisory Council, Space Trust, SpaceLand, Tyvak, Vieira de Almeida (VdA) and World Economic Forum.

20. Representatives of the Department of Public Information, the United Nations Development Programme and the International Civil Aviation Organization were also present at the Forum.

## **II. Summary of the Forum programme**

21. The session on space economy highlighted the activities of emerging space actors and underlined new opportunities and challenges, which would in turn enable the continued exploration and eventual settlement of outer space. The need was underlined for collaborative efforts among all stakeholders to promote the emerging space economy and the development of its governance.

22. Participants noted that the recommended policies and practices could foster the development of a sustainable space economy through the generation of opportunities and the inclusion of new actors, which would give fresh impetus to space exploration and thus bring about a paradigm shift with the creation of new jobs, products and services.

23. Space society was regarded as one of the most cross-cutting pillars, since actions and recommendations relating to the pillars of space economy, space accessibility and space diplomacy directly or indirectly affected society. In that regard, participants recognized space as a global commons and, on the basis of its broad societal benefits, noted the importance of preserving the space environment for a sustainable future.

24. Several examples and initiatives were presented that would contribute to broadening the societal benefits resulting from space activities, including the proposed SpaceLand Centre in Mauritius, which was envisioned as an international hub for research and development activities relating to microgravity and would benefit African and Asian countries, the proposed orbital space mission, which would offer Member States the opportunity to participate in an orbital space mission using Sierra Nevada Corporation's Dream Chaser spacecraft, and the establishment of a regional centre for space science and technology education in the Russian Federation.

25. During the session on space accessibility, the importance of collective action to connect space and society was highlighted. The topics that were presented addressed accessibility in a comprehensive manner, touched on issues relating to access to data, education and science, and underlined the importance of familiarity with regulatory frameworks for space activities, knowledge of existing services and end-user needs. Various approaches to space accessibility through private initiatives were also presented and discussed.

26. The session on space diplomacy addressed a broad variety of institutional procedures and mechanisms at the national, regional and international levels, where diplomacy played an important role. Participants noted that the Dubai Declaration adopted at the first High-level Forum was already becoming a point of reference in the broader space community and provided essential observations and recommendations for further consideration.

27. The concept of global governance of outer space activities was central to international efforts to address the strategic importance of governance for the safety, security and sustainability of outer space activities. The Committee on the Peaceful Uses of Outer Space, assisted by the Office for Outer Space Affairs, must continue to strengthen its unique role in the global governance of outer space activities.

28. Two sessions on the proposed global space partnership for the Sustainable Development Goals were held on 6 and 7 November as side meetings, at which the Office for Outer Space Affairs presented the initiative in detail. As a comprehensive and inclusive partnership designed to close gaps that prevented countries from making full use of space assets and to improve the cost-effectiveness of the ongoing global actions through the coordination of existing efforts, it would serve as a trusted voice of the international space community.

29. In that regard, participants exchanged views on new initiatives, such as the Space for Development Profile and the Space Solutions Compendium, the Capacity-building Network and the Global Compact for Space, which represented integral tools for the successful implementation of the proposed partnership. The work carried out on the partnership by the Office for Outer Space Affairs was welcomed by participants, in particular those from developing countries, the private sector and academia.

30. The three parallel sessions provided an opportunity for participants to exchange in-depth views and for the dissemination of information on policies and strategies to promote sustainable development, capacity-building and a range of different international initiatives and case studies.

31. The Forum was also addressed via video message by the President of Mauritius, who briefed participants on the proposed SpaceLand Centre in Mauritius, and by the Minister of Science and Technology of Thailand, who made a proposal regarding the possibility of opening a liaison office of the Office for Outer Space Affairs in Bangkok.

32. In view of the increase in space accessibility owing to the availability of enabling technologies, a special session highlighted the issue of space debris as a global concern and addressed international efforts regarding space debris mitigation.

33. The session on youth focused on the increased participation of young people in science, technology, engineering and mathematics education. The speakers highlighted the different ways of attracting younger generations to science, technology, engineering and mathematics education and to a career in the space arena.

### **III. Observations and recommendations**

34. The second High-level Forum underscored the valuable opportunity provided by the “Space2030” agenda to promote space as an important pillar of the 2030 Agenda for Sustainable Development. Participants welcomed UNISPACE+50, as the upcoming global space summit, for the opportunity it offered to address the ever-changing space environment, and as a venue for diplomacy through space, space through diplomacy, and space being the new frontier for peace on Earth. The unique broad-based constituency and action-oriented approach of UNISPACE+50 satisfied the need to overcome the growing space divide through a shared vision for space, the “Space2030” agenda.

35. Building upon the Dubai Declaration adopted at the first High-level Forum, participants in the second High-level Forum made the following observations and recommendations.

36. The “Space2030” agenda, as a forward-looking vision, should:
- (a) Include initiatives and programmes designed to bridge the space divide, make space accessible to everyone, everywhere, and foster synergies and collaboration between the space and the non-space sectors;
  - (b) Facilitate international cooperation in space exploration and innovation between space nations and emerging space nations and within the broader space community;
  - (c) Address challenges relating to the safety, security and sustainability of outer space activities, including, inter alia, space debris and space weather, as well as cyber-security issues related to space activities, as appropriate;
  - (d) Increase international efforts to effectively use space-based data, science, technology and applications, including for the monitoring of climate variables, in order to address sustainable development- and climate-related challenges.
37. The “Space2030” agenda should build upon existing frameworks and international cooperation to address those challenges and forge new areas of coordination, such as in space traffic management, space weather and global health, in order to ensure global challenges are met with global solutions.
38. The “Space2030” agenda should also include in its strategic objectives improved gender balance and youth involvement in the space sector.
39. UNISPACE+50, as the first United Nations global space summit of the twenty-first century, will provide a unique opportunity for the Committee on the Peaceful Uses of Outer Space and the Office for Outer Space Affairs to strengthen their unique roles in the global governance of outer space activities and as facilitators of international cooperation in the peaceful uses of outer space for the benefit of all humankind.
40. In that regard, the capacities of the Office for Outer Space Affairs should be strengthened so that it can fully support the Committee in adequately addressing new needs and new complexities.
41. The Working Group on the Long-Term Sustainability of Outer Space Activities of the Scientific and Technical Subcommittee is encouraged to complete a compendium of guidelines, look into ways and means of sharing experience, knowledge and progress, and investigate normative and organizational frameworks for ensuring the effective and continuous implementation of the guidelines.
42. The Office for Outer Space Affairs should leverage its unique role as a capacity-builder, global facilitator and gateway to space in the United Nations system to develop programmes and initiatives that will better connect space to societies, democratize access to space, empower societies to benefit from space-related activities and ensure that those activities are available to everyone at any time, with equal opportunities to take advantage of them.
43. In that regard, the Office for Outer Space Affairs should forge partnerships, including with industry and the private sector, to provide broader opportunities to access space for the purposes of science, innovation, research and development, education and capacity-building, and to support countries in attaining the Sustainable Development Goals, in particular for the benefit of developing countries. An example of such an initiative is the proposed orbital space mission using the Dream Chaser spacecraft.
44. The global space partnership for the Sustainable Development Goals should be established as an essential and comprehensive coordination mechanism to facilitate the optimal service delivery of existing space assets and to foster partnerships for the development of innovative systems and solutions.
45. In implementing the global space partnership for the Sustainable Development Goals, the Forum encourages the further development of the initiatives proposed by

the Office for Outer Space Affairs, such as the Space for Development Profile, which would enable countries to assess their progress in the development of space capabilities, the Space Solutions Compendium, which would allow countries to identify and use adapted solutions, and the Capacity-building Network, which would provide research opportunities, hands-on training programmes and other educational opportunities.

46. A global space fund for development is proposed, modelled on existing United Nations funding mechanisms, to support the coordination and implementation of activities under the global space partnership for the Sustainable Development Goals.

47. In that regard, the Office for Outer Space Affairs should pursue a global compact for space as an entry point for industry, the private sector and non-governmental actors to engage in cooperation activities with the Office.

48. A regional centre for space science and technology education, affiliated with the United Nations, should be established at Roscosmos Academy in Moscow, in order to provide a network for universities and research institutions.

49. In order to deliver its services at the regional and local levels more effectively, the Office for Outer Space Affairs should explore the possibility of opening a liaison office in Bangkok.

50. The Office could explore similar opportunities with other countries that express an interest.

51. In order to leverage the awareness-raising opportunities provided by UNISPACE+50, the international community should consider:

(a) Utilizing UNISPACE+50 to promote the universalization of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies;

(b) Declaring a United Nations international year of space;

(c) Proclaiming universal heritage sites in outer space.

52. The Forum should be held on an annual basis to continue to foster exchanges, cooperation and shared visions among a broad community of space actors, including Governments, international intergovernmental and non-governmental organizations, industry and the private sector, academia and civil society.

53. The Office for Outer Space Affairs could work with Member States that express an interest in hosting the Forum for one or more years. Those Member States should preferably inform the Office of their interest three years in advance.

54. The Forum should address new initiatives and efforts of the global space community to strengthen the use of space for the attainment of the Sustainable Development Goals and as a critical tool for their measurement. The Forum should promote innovation and investment in, and integration and advancement of, space technologies and know-how for stronger international cooperation in the peaceful uses of outer space.

## IV. Conclusions

55. The second High-level Forum provided an opportunity to build on the exchange of views at and the results of the first High-level Forum. While in 2016 participants had collaboratively developed the framework for discussions under the four pillars of space economy, space society, space accessibility and space diplomacy, at the second High-level Forum the in-depth discussions focused on the next steps towards UNISPACE+50 and “Space2030”.

56. The third High-level Forum will be held at the United Nations campus in Bonn, Germany, from 5 to 8 November 2018. It will be organized by the Office for Outer Space Affairs in collaboration with the Government of Germany and with the

support of the German Aerospace Centre and the European Space Agency. The Office invites all Member States and the community at large to express their interest in providing support for the third High-level Forum. Member States are also invited to present their proposals to host High-level Forums from 2019 onwards.

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