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Committee on the Peaceful Uses of Outer Space

Report on the United Nations/Austria World Space Forum on the theme “Sustainability in space for sustainability on Earth”

(Online, 13–15 December 2022)

I. Introduction

1. The Office for Outer Space Affairs of the Secretariat and Austria jointly hosted the World Space Forum on the theme “Sustainability in space for sustainability on Earth”, online, from 13 to 15 December 2022.
2. The Forum provided an opportunity for space community representatives to discuss current and future activities, with a focus on the landmark “Space2030” Agenda: space as a driver of sustainable development and its implementation plan.
3. Owing to the coronavirus disease (COVID-19) pandemic, the Forum was held online, instead of in Vienna. The event was co-organized with the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology of Austria and the Federal Ministry for European and International Affairs of Austria.
4. The present report describes the background, objectives and programme of the Forum, provides a summary of the sessions and concludes with observations and recommendations.

II. Background and objectives

5. Launched in Vienna in November 2019 (see [A/AC.105/1219](#)), the World Space Forum is an event series hosted by the United Nations that is built on the recommendations generated at four high-level forums held from 2015 to 2018. That sequence of forums demonstrated the growing interest of an increasing number of actors in discussing the future of space and international cooperation along the pillars of space economy, space society, space accessibility and space diplomacy.
6. Through the World Space Forum, the United Nations aims to leverage innovative solutions and technological developments to realize the Sustainable Development Goals of the 2030 Agenda for Sustainable Development. Attention has increasingly been placed on the unique potential of space technologies in this endeavour. Building on the outcomes of the fiftieth anniversary of the United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE+50), and taking advantage of the momentum generated by the anniversary, the Forum was



aimed at ensuring that the current exchanges fully captured the political, legal and capacity-building elements of international cooperation in space for climate action.

7. As agreed at the United Nations/United Arab Emirates High-level Forum held in 2017 (see [A/AC.105/1165](#)), the High-level Forum series, which was renamed the World Space Forum in 2019, continues to serve 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 of UNISPACE+50 and the “Space2030” Agenda.

8. The “Space2030” Agenda and its implementation plan is a comprehensive and strategic document charting the way to enhance the contribution of space and its applications to sustainable development and the realization of other global agendas, namely those related to climate change and disaster risk reduction.

9. The second Sustainable Development Goals Summit will be convened in September 2023 during the General Assembly high-level week in New York. The Summit will mark the midpoint in the implementation of the 2030 Agenda for Sustainable Development.

10. At the Summit, the Heads of State and Government will comprehensively review progress in the implementation of the 2030 Agenda and the achievement of the Sustainable Development Goals and will provide political guidance for the way forward. That will also include an examination of new, science-based solutions, including advanced tools with transformative power and innovative solutions for accelerating the full achievement of the Sustainable Development Goals in the years remaining before 2030.

11. As space technology can directly and indirectly accompany shared current efforts in virtually every sector to implement the Sustainable Development Goals, the World Space Forum 2022 sought to raise awareness of the benefits of space applications for everyone, everywhere, and was aimed at:

- Centring the “Space2030” Agenda as a guiding document for enhancing space-derived economic benefits and strengthening the role of the space sector as a major driver of sustainable development.
- Connecting the “Space2030” Agenda and its implementation plan with the results, recommendations and discussions of the World Space Forums held in 2019, 2020 and 2021.
- Raising awareness of the “Space2030” Agenda in conjunction with the Sustainable Development Goals Summit planned for 2023.
- Highlighting how space technology could facilitate the implementation of the Sustainable Development Goals.
- Presenting new space technologies that enable progress and drive cooperation and partnership in the field of space.
- Bringing space actors together to exchange best practices and explore ways to jointly address challenges to humanity and sustainable development issues.

12. In the implementation of the “Space2030” Agenda, it is envisioned that each Member State will implement the “Space2030” Agenda on a voluntary basis. In that regard, the World Space Forum 2022 provided a platform for Member States to actively undertake bilateral, multilateral, regional and broader international space cooperation in various forms, including in the areas of capacity-building, the sharing of information and infrastructure, the development of joint projects, and, as appropriate, the integration of space cooperation with economic and social development.

III. Attendance

13. The Forum was held virtually and 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, academic experts, policymakers, space technology researchers, representatives of the private sector in the space and non-space fields and civil society leaders.

14. A total of 1,034 individual participants, of whom 42 per cent were women, 56.1 per cent were men, 0.6 per cent were non-binary and 1.3 per cent preferred not to say, registered to attend the Forum and were granted access to the web-based communication platform.

15. Of those participants, several were members of the diplomatic community, including representatives of permanent missions to the United Nations at Vienna. Representatives from space agencies at various levels were also present, including the Algerian Space Agency, the Argentina National Space Activities Commission, the Australian Space Agency, the Austrian Research Promotion Agency, the Azerbaijan National Aerospace Agency, the Bolivian Space Agency, the Brazilian Space Agency, the Canadian Space Agency, the China National Space Administration, the Egyptian Space Agency, the Ethiopian Space Science and Technology Institute, the European Space Agency, the National Centre for Space Studies (CNES) of France, the Geo-Informatics and Space Technology Development Agency of Thailand, the German Aerospace Center (DLR), the Ghana Space Science and Technology Institute, the Indian Space Research Organisation, the Iranian Space Agency, the Israel Space Agency, the Italian Space Agency, the Japan Aerospace Exploration Agency, the Kenya Space Agency, the Mexican Space Agency, the Mohammed Bin Rashid Space Centre of the United Arab Emirates, the National Aeronautics and Space Administration of the United States of America, the National Commission for Aerospace Research and Development of Peru, the National Institute for Space Research of Brazil, the National Institute of Aeronautics and Space of Indonesia, the National Space Research and Development Agency of Nigeria, the National Space Science Agency of Bahrain, the Netherlands Space Office, the Paraguayan Space Agency, the Portuguese Space Agency, the Rwanda Space Agency, the Saudi Space Commission, the South African National Space Agency, the Swedish National Space Agency, the Turkish Space Agency, the United Kingdom Space Agency and the Zimbabwe National Geospatial and Space Agency.

16. The following 114 Member States were represented: Afghanistan, Algeria, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia (Plurinational State of), Botswana, Brazil, Bulgaria, Cameroon, Canada, Chile, China, Colombia, Costa Rica, Côte d'Ivoire, Croatia, Cuba, Czechia, Democratic Republic of the Congo, Denmark, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Finland, France, Gambia (Republic of the), Germany, Ghana, Greece, Guatemala, Honduras, Hungary, Iceland, India, Indonesia, Iran (Islamic Republic of), Israel, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Lao People's Democratic Republic, Latvia, Lebanon, Lesotho, Libya, Luxembourg, Malawi, Malaysia, Maldives, Mali, Malta, Mauritius, Mexico, Monaco, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands (Kingdom of the), New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Paraguay, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Rwanda, Saudi Arabia, Senegal, Serbia, Sierra Leone, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Switzerland, Sudan, Sweden, Syrian Arab Republic, Thailand, Trinidad and Tobago, Tunisia, Türkiye, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, Ukraine, United Arab Emirates, United States of America, Venezuela (Bolivarian Republic of) and Zimbabwe.

17. Representatives of the following United Nations entities were also present at the Forum: the Comprehensive Nuclear-Test-Ban Treaty Organization, the Food and

Agriculture Organization of the United Nations, the International Atomic Energy Agency, the International Telecommunication Union, the Economic and Social Commission for Asia and the Pacific, the United Nations Environment Programme, the United Nations Industrial Development Organization, the United Nations Office on Drugs and Crime, the United Nations Satellite Centre, the World Health Organization, the Office for Disarmament Affairs and the Office for Outer Space Affairs.

IV. Programme

18. The programme of the Forum was co-developed by the Office for Outer Space Affairs, the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology of Austria and the Federal Ministry for European and International Affairs of Austria.

19. The Forum opened with a high-level segment with introductory remarks from the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology of Austria, the Permanent Representative of Austria to the United Nations in Vienna and the Acting Director of the Office for Outer Space Affairs. The opening session concluded with a keynote message, delivered on behalf of the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology, that focused on developments at the twenty-seventh Conference of the Parties to the United Nations Framework Convention on Climate Change.

20. The Forum also heard contributions from the Chair of the Committee on the Peaceful Uses of Outer Space, the Chair of the Scientific and Technical Subcommittee and the Coordinator of the Space and Global Health Platform and the Space and Global Health Network.

21. The expert exchanges in the following days focused on the theme “Sustainability in space for sustainability on Earth”, placing the “Space2030” Agenda at the centre of discussions. The Agenda has a strong focus on partnerships and cooperation among Member States, United Nations entities, intergovernmental and non-governmental organizations, industry and private sector entities and will guide the work of the Committee and its subcommittees, supported by the Office for Outer Space Affairs, as unique platforms for international cooperation on the exploration and use of outer space for peaceful purposes.

22. The closing session of the Forum featured a summary of the most important points raised during the panels and concluding remarks from the Chair of the Committee on the Peaceful Uses of Outer Space, a representative from the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology and the Acting Director of the Office for Outer Space Affairs.

23. The video recordings of each session and all presentations can be accessed through the website of the Office for Outer Space Affairs (www.unoosa.org).

V. Summary of the Forum programme

24. Session I, entitled “Leave no one behind”, focused on how space assets have transformed modes of living and how outer space systems are vital for understanding and solving global problems. As space-based services and technologies are key drivers in addressing the Sustainable Development Goals, the importance of promoting inclusiveness and equality in the space sector was highlighted. The session also addressed the vital role of the Office for Outer Space Affairs in facilitating access to space and highlighted the importance of the inclusion of all actors in the development of a sustainable, future-oriented and strong space sector.

25. That session focused specifically on overarching objectives 1, 2 and 3 of the “Space2030” Agenda and highlighted the integration of the space sector with other

sectors such as energy and education. It also highlighted the management of resources and the strengthening of the contribution of space technologies and their applications in global efforts to better support the achievement of the Sustainable Development Goals. Furthermore, the session promoted access to the use of space technologies for all and the enhancement of global access to data and broadband technologies.

26. Space technologies and their applications can enhance food systems, increase connectivity, facilitate energy transition and improve education, which can be considered key acceleration areas for the achievement of the Sustainable Development Goals. Therefore, the session focused specifically on activities to increase access to space and connectivity and contained presentations on energy and food-related projects.

27. Session II, entitled “Protect our planet”, addressed the need to be prepared for a drastically different environment in the light of the increasing social impacts of climate change and its effects. The session contained a presentation on how space-based technologies play a significant role in targeted climate action and trigger policies for the achievement of the long-term goals of the Paris Agreement. Building on the World Space Forum 2021, at which the importance of increased awareness-raising and strengthened outreach on the vitality of space technology for climate adaptation and resilience efforts had been stressed, the session focused on enhancement of the understanding and consequent utilization of the benefits of space technology. It also highlighted the unique role of the Office for Outer Space Affairs in that regard.

28. The session focused on overarching objectives 1 and 2 of the “Space2030” Agenda in order to harness the potential of space to improve quality of life and to promote the integration of the space sector into mechanisms for the implementation of the Sustainable Development Goals, with a special focus on advancing the role of space technologies in highlighting, analysing and addressing climate change.

29. The so-called triple planetary crisis, which refers to the three interlinked issues of climate change, pollution and biodiversity loss, was focused on. The session addressed how those challenges could potentially be addressed with the support of space technology. Participants gave presentations on lessons learned in the practical application of space tools to address the triple planetary crisis and shared experience on partnership development and cooperation in the domain of space and action on climate change.

30. In session III, entitled “Be prepared”, the focus was on prevention in all its aspects and how such efforts could be improved with more innovation, inclusion and foresight. Remotely sensed data provides information that allows systems and models to predict disasters and provide early warnings. Similarly, space technologies enhance the ability to anticipate and respond to various risks. The importance of space technologies for collective preparedness efforts was discussed at the session. The inclusion of technological developments and innovative approaches and solutions in prevention activities was also highlighted and discussed.

31. The session addressed overarching objective 2 of the “Space2030” Agenda, with a special focus on the promotion of space-based technologies in all phases of the disaster management cycle and the strengthening of the use of space technologies and their applications to support the development of socially and environmentally sustainable human settlements and infrastructure.

32. Despite increasing efforts to prevent climate change and its impacts, the international community must be prepared for a drastically different climate and environment in the future. Participants in the session gave a presentation on how space technology could support the need to adapt economies, infrastructure and services to account for the impact of climate change and facilitate increased adaptation efforts in developing countries.

33. Session IV focused on the theme “Space in the United Nations” and highlighted the implementation plan of the “Space2030” Agenda, which contains a proposal that

the Committee and its subcommittees and the Office for Outer Space Affairs should continue to fulfil their respective mandates to cooperate and coordinate with other relevant entities within the United Nations system, including through the Inter-Agency Meeting on Outer Space Activities (UN-Space). The session therefore looked at synergies in the work of the Committee and its subsidiary bodies and United Nations entities, focusing on advancing work under the Space and Global Health Platform and the Space and Global Health Network, established in 2022 by the Scientific and Technical Subcommittee at its fifty-ninth session. Session IV furthermore promoted dialogue on interdisciplinary and cross-sectoral space-related matters and identified synergies for greater international cooperation in the peaceful exploration and use of outer space and in the utilization of space science and technology for sustainable development.

34. Session IV was jointly organized with UN-Space, the formal inter-agency mechanism for cooperation on and coordination of space-related activities within the United Nations system. Recalling that the implementation plan of the “Space2030” Agenda contains an agreement that the Committee on the Peaceful Uses of Outer Space, its subsidiary bodies and the Office for Outer Space Affairs should continue to fulfil their respective mandates and to cooperate and coordinate with other relevant entities within the United Nations system, including through UN-Space, the session therefore looked at synergies in the work of the Committee and its subcommittees and United Nations entities, focusing in particular on advancing the work under the Space and Global Health Platform and the Space and Global Health Network, established in 2022 by the Scientific and Technical Subcommittee at its fifty-ninth session.

35. Forum participants welcomed the adoption of General Assembly resolution [77/120](#) on space and global health, which contained specific recommendations on the use of space technology, applications, practices and initiatives in support of global health, and resolution [77/121](#) on international cooperation in the peaceful uses of outer space, which noted with satisfaction the establishment of the Space and Global Health Platform, based in Geneva, to promote effective collaboration on space and global health issues among Member States and United Nations system entities and welcomed the establishment of the Space and Global Health Network.

36. The session facilitated dialogue on strengthening space-related cooperation among various stakeholders in support of global health and discussed the need to increase the contributions of space science, technology and applications to enhance space life sciences and digital health technologies, such as telehealth, telemedicine and tele-epidemiology, for the prevention and control of diseases, the promotion of health and the advancement of medical research and health practices.

37. The discussions in session V, which was entitled “Boost partnerships”, addressed a core objective of the “Space2030” Agenda, namely, the need for additional steps to make the United Nations system more inclusive. In the light of the increasing importance and influence of the private sector and civil society and their centrality to the achievement of many of the actions outlined in the “Space2030” Agenda, the importance of partnerships for capacity-building were also taken into account at the Forum.

38. Session V focused on overarching objectives 1, 3 and 4 of the “Space2030” Agenda, with a dedicated focus on improving access to space for all; ensuring that all countries could benefit from space science and technology applications and space-based data; and enhancing capacity-building, education and training in space science and applications.

39. Session V highlighted opportunities for improving access to Earth observation-related data and strengthening the capacity of users to apply data and knowledge to decision-making. Presenters shared relevant capacity-building experiences and addressed structural approaches and new platforms to foster data access and related training and other capacity-building. Discussions focused on strategies for scaling up and maximizing the reach of those activities.

40. Session VI, entitled “Use Space Sustainably”, discussed the era of renewed exploration and use of outer space, which featured active programmes to return humans to the Moon and beyond and the planned launch of mega-constellations consisting of thousands of new satellites. In the context of a rapid increase in global investment in space activities as a result of expectations of permanent future dependence on space applications, experts in the fields of space science, policy and technology have called attention to the fact that humanity’s continuous access to space will be threatened if the exponential and unsustainable proliferation of space activities continues. Ensuring that all of humanity can continue to use outer space for peaceful purposes and socioeconomic benefit, both now and in the long term, requires international cooperation, discussion and agreements designed to ensure the peaceful, safe and sustainable use of outer space.

41. The session focused on overarching objectives 1 and 4 of the “Space2030” Agenda, with a dedicated focus on building partnerships and strengthening international cooperation on the peaceful uses of outer space. It also focused on the global governance of outer space activities in order to ensure the long-term sustainability of outer space activities and the preservation of the outer space environment for peaceful uses.

42. Session VI featured discussions on national and international mechanisms for effective action by governmental and non-governmental actors to strengthen collaboration and the development of effective tools to achieve the goal of the sustainable use of space for peaceful purposes and for the benefit of humankind. Participants in the session gave presentations on possible steps to ensure the long-term sustainable use of outer space and discussed actions to facilitate the sustainable use of space and to secure the long-term benefits of space for all so that all countries could benefit socioeconomically from space science and technology applications.

43. In addition to the presentation sessions, the Forum included two rounds of discussion at the end of each day to discuss how best to leverage the “Space2030” Agenda with a view to positioning space within the Sustainable Development Goals Summit proceedings and raising awareness on the importance of space for the achievement of the Sustainable Development Goals.

VI. Observations and recommendations

Overarching objective 1. Enhance space-derived economic benefits and strengthen the role of the space sector as a major driver of sustainable development

44. Presenters at the Forum highlighted that awareness-raising through tangible and concrete facts is key to generating an increasing mindfulness of the importance of space to daily life. The need for more examples and compelling applications was stressed.

45. In that regard, a study assessing the socioeconomic impact of investment in space was referenced by a participant. That study revealed that, for every euro invested in the space sector, there was a 1.36 per cent return on investments made in upstream activities and a 2.41 per cent return on investments made in downstream activities. The participant recommended further similar studies, particularly national studies, to assess the benefits and impacts for end users.

46. One Forum participant mentioned the importance of international catalysts for reducing the burden of coordination with different stakeholders at discrete national implementation agencies.

47. The second Sustainable Development Goals Summit, to be held under the auspices of the General Assembly, was recommended as an outstanding occasion at which Member States could take stock of what has been achieved under the “Space2030” Agenda, a unanimously adopted General Assembly resolution, and at

which they could highlight the importance of the role of space for sustainable development.

Overarching objective 2. Harness the potential of space to solve everyday challenges and leverage space-related innovation to improve the quality of life

48. Forum participants stressed that more space data are currently generated than can actually be processed. While those data have become more accessible for the end user in recent years, there remains a lack interoperability between the various sets of data. Furthermore, there was a strong call to increase capacity development, especially in developing countries, in order to increase the use of space data for sustainable development.

49. In that regard, it was highlighted that a larger and more diverse stakeholder community with strengthened and increased capacity could eventually lead to greater impact and to the increased use of space-related innovation to improve the quality of life. Space education and capacity-building at all levels, including among the general public, developers, policymakers and decision-makers, were mentioned as key drivers to increase the understanding and acceptance of the importance of geospatial information.

50. Forum participants stressed the importance of growing collaboration and strong partnerships beyond the space sector with the objective of reducing silos and increasing participation and contribution from non-space industries. In that regard, the importance of addressing user needs and tailoring space applications to user requirements, with a clear understanding of where such tools could be helpful, was highlighted.

51. Forum participants noted with satisfaction that session IV was the first concrete step in the implementation of General Assembly resolutions [77/120](#) and [77/121](#) and encouraged greater participation of the health and space community in the work of the Space and Global Health Network, with the objective of increasing the use and application of space science and technology in the global health domain as a means of promoting equitable, affordable and universal access to health for all.

Overarching objective 3. Improve access to space for all and ensure that all countries can benefit socioeconomically from space science and technology applications and space-based data, information and products, thereby supporting the achievement of the Sustainable Development Goals

52. It was noted that access to adequate financing and funding is key for the increased use and application of space technology for development. The “Space2030” Agenda was referenced as an important document to support national efforts to increase budgets for space science and research. In that regard, participants highlighted the importance of connecting financing needs to concrete policy documents.

53. The “Space2030” Agenda was welcomed for highlighting that space is a catalyst for sustainable development. In that connection, the participants emphasized the importance of the broadest possible inclusivity in the space sector and stressed that efforts regarding diversity in space were an absolute must for the achievement of the objectives of the “Space2030” Agenda.

54. Forum participants stressed that consideration should be given to including in the post-2030 Agenda an increase to space-based services and applications. That process should begin as soon as possible as part of the various processes currently underway to prepare for the post-2030 period.

Overarching objective 4. Build partnerships and strengthen international cooperation in the peaceful uses of outer space and in the global governance of outer space activities

55. In Forum discussions, a participant referred to the fact that the Guidelines for the Long-term Sustainability of Outer Space Activities were mentioned in the report of the Secretary-General entitled “Our Common Agenda”. They offered support for any follow-up action on that Agenda, for the preparations for the Summit of the Future and for the implementation of the “Space2030” Agenda.

56. In that regard, the important roles of the Committee on the Peaceful Uses of Outer Space, as a platform, and the Office for Outer Space Affairs, as a facilitator, in connecting international stakeholders and providing entry opportunities, especially for developing countries, was highlighted as an important way to foster international collaboration and cooperation.

57. Forum participants were reminded of the open call of the Office for Outer Space Affairs, under the project on awareness-raising and capacity-building related to the implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities, which is supported by the United Kingdom Space Agency, to gather and highlight operational case studies on how the Guidelines have been put into practice and the related lessons learned.

VII. Conclusions

58. The Forum, in the run-up to the planned Sustainable Development Goals Summit, provided an opportunity to raise awareness of the “Space2030” Agenda and to make use of the Agenda as a central guiding document to enhance space-derived economic benefits and strengthen the role of the space sector as a major driver for sustainable development.

59. In that regard, the Forum provided an outstanding platform for stakeholders to discuss current and future activities under the theme “Sustainability in space for sustainability on Earth”. Furthermore, the Forum facilitated the exchange of best practices and cooperation among relevant stakeholders in support of the Sustainable Development Goals and in preparation for the Sustainable Development Goals Summit in 2023.

60. The Forum brought together experts and policymakers from regional, national and local institutions, private organizations, academic institutions, non-governmental organizations and international organizations to allow for an inclusive, diverse and multilateral dialogue on the theme.

61. In its closing remarks, Austria announced its continued support for the World Space Forum and stated that, in 2023, the Forum would take place in Vienna, in cooperation with the Government of Austria.
