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English only

Committee on the Peaceful Uses of Outer Space
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Report on the United Nations Office for Outer Space Affairs/ Holy See Seminar Exploration and Development of Space Opportunities and Issues in the Context of the Sustainable Development Goals (27–28 March 2018)

I. Introduction and Background

1. The year 2018 marks the fiftieth anniversary of the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE+50), a milestone that is seen as a unique opportunity to visibly highlight key societal benefits of space and subsequently to define a stronger future international collaboration in the peaceful uses of outer space for the benefit of all humankind as well as to advocate for a better use of space science and technology in context of the implementation of the Sustainable Development Goals.

2. The shared goal for UNISPACE+50 is to build, together with all stakeholders, a comprehensive framework for the contribution of space activities to the achievement of the Sustainable Development Goals, addressing overarching, long-term development concerns, and which is based on the peaceful exploration and uses of outer space. UNISPACE+50 will take into account the interdependencies in the space sector and foster international cooperation, paying special attention to the future space-faring and developing countries while carefully considering the long-term sustainability of outer space activities.

3. Given this context the Office for Outer Space Affairs has joined forces with different stakeholders to jointly prepare towards UNISAPCE+50 and to promote space as an invaluable tool that can help Member States achieve the Sustainable Development Goals. Space science, technology and applications can help us monitor climate change, survey crops, respond to disasters, track diseases, learn remotely, achieve gender equality, and more. The framework of the Sustainable Development Goals therefore provides an additional framework for work of the Office for Outer Space Affair's work, and the office strives throughout its activities to promote and facilitate the use of space for the fulfilment of the Sustainable Development Goals.

4. The mandate of the Office for Outer Space Affairs is to bring the benefits of space to humankind and the Office is committed to ensuring that those benefits reach everyone, everywhere. Given the Holy See's strong interest in matters related to the protection of the environment and the recurring call of Pope Francis to globally address the defining challenges of our time, a joint Office for Outer Space affairs and

Holy See ‘Seminar Exploration and Development of Space Opportunities and Issues in the Context of the Sustainable Development Goals’, provided a suitable framework for an exchange of views on how space science and technology can directly and indirectly escort the common global efforts to address climate change and the Sustainable Development Goals.

5. The outcomes and recommendations identified at the seminar are also providing inputs for the Office of Outer Space Affairs’ preparations for UNISPACE+50 and especially promote the Office’s goal to holistically address global concerns and fulfilling the specific need to invite the broader space community for participation support.

6. The Seminar brought together 30 experts from international organizations, governments and non-governmental organizations as well representatives of the private sector and research institutions and civil society leaders.

7. The present report describes the background, objectives and programme of the expert meeting, and provides a summary of the observations and recommendations made by the participants as well as provides concrete conclusions.

II. Programme

8. The Seminar was aligned with the objective of UNISPACE+50 to strengthen international coordination and cooperation in the use and applications of space science and technology. In particular, the Seminar contributed to the efforts of the Office for Outer Space Affairs to identify the priority areas where collaborations could be launched and examine possible partnerships that could be established.

9. After a keynote presentation by the Director of Office for Outer Space Affairs, the participants exchanged their views in four different sessions on 1. Space, Climate Change and Disaster Management, 2. Space and Sustainable Development Goals, 3. Space and Humanitarian Aid and 4. Space as a tool for diplomacy and peace.

10. The participants discussed how space technology can support global efforts to address the goals set in the Sustainable Development Goals and how space offers viable tools not only “to amass information or to satisfy curiosity but rather to become painfully aware, to dare to turn what is happening to the world into our own personal suffering and thus to discover what each of us can do about it.” (Encyclical Letter Laudato Si’ of the Holy father Francis “On care for our Common home”)

11. In the encyclical letter Laudato Si: On Care for Our Common Home, the attention is drawn to the various degradations to our common home and the dignity of human life through rampant consumerism and the relentless pursuit of profits at the expense of our environment. It reminds us just how inseparable is the bond between concern for nature, justice for the poor, commitment to society, and interior peace. The encyclical letter further points to the intimate relationship between the poor and the fragility of the planet, and the fundamental interconnectedness of everything in the world.

12. Satellite technology allows the global citizens to directly support global efforts addressing the concerns of our times and provides facts as well as solutions to the global decision makers to support the plan of action for people, planet and prosperity.

13. The joint seminar offered a framework to discuss the transformative power and innovative solutions space technology can provide in the support of the realization and implementation of the 2030 Agenda for Sustainable Development and the targets set in the Paris Agreement. Specifically, in that regard, the seminar concluded with a recommendation on the need for organizing an event on how the space community can improve its communications efforts on the value of ‘Space for Sustainable Development’.

14. At the side lines of the seminar during a ‘baciamano speciale’ after the general audience, the Director of the Office for Outer Space Affairs was able to hand over a

personal UNISPACE+50 invitation letter to Pope Francis as well as a small present, showing a satellite image from St. Peter's Square, and to briefly discuss with the Pope the importance of bringing the benefits of space activities to humankind.

III. Observations and Recommendations

15. UNISPACE+50 coincides with an evolving and ever more complex space arena. The growth of space activities since 1968 has been phenomenal. Today space activities are carried out by a much greater number of participants, both governmental and non-governmental, and the diversity of participants and space activities is much, much greater than it was in 1968. This dramatic growth of space actors and space activities holds both great promise, and at the same time great cause for concern.

16. The year 2018 marks the 50th anniversary since the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space, UNISPACE, in 1968. It also marks the 50th anniversary of the iconic "Earthrise" image taken by Apollo 8 astronaut Bill Anders as their spacecraft orbited the moon on Christmas Eve in December 1968. This is one of the most influential photographs ever taken and was really transformative for humanity. Until that point humans had not seen the Earth in its totality in the vast vacuum of space. That image contributed greatly to our visceral understanding of the vital importance of being good stewards of the Earth, our one and only common home.

17. The participants to the seminar noted the importance to sensitize especially decision makers as well as the broader public in a tangible and understandable format on the importance of space related topics. To be able to expand the information on the importance of space to a larger audience, the communication approach has to be rethought towards communicating the benefit for the people and individuals to make a broader community and final beneficiaries aware of the importance of space in our society.

18. Outreach and awareness raising as well as public information becomes especially important in space-related subjects as certain topics are easily misunderstood, misinterpreted, or may potentially be overhyped. Especially in outer space the importance of putting a topic in context becomes imperative in order not to provoke misreading.

19. The potential societal benefits of Earth observation, satellite navigation and communication in relation to sustainability and protection of the Earth are difficult to communicate to the general public, who know very little about space, and a different approach has to be identified, perhaps on that uses the visual power of Earth observation imagery to depict the most pressing issues on Earth and functions as an eye opener for decision makers and the public.

20. Furthermore, the promotion of space as an essential part of an infrastructure of a developed society, as well as the understanding of space as a global commons, will contribute to the understanding of the importance of space in our common society and daily lives.

21. In this way 'space-based decision-making' could contribute to and support informed decision making and facilitate evidence based awareness raising in order to overcome the need to recurrently stress common knowledge about our planet.

22. In 2014, the number of devices connected to the internet surpassed the number of humans on Earth. Space-systems are now part of multi-layered information infrastructures that cover every point of the Earth, providing abundant, low-cost data and services. Access to this abundance of data is no longer primarily limited by access to technology, which is becoming ever simpler to use more affordable. Instead, access to this abundance of data and services is now often limited by regulatory barriers built on the economics of scarcity, rather than the economics of abundance.

23. Space science and technology and their applications play, and will continue to play, a significant role in implementing, achieving and contributing to the monitoring of the goals and targets of the comprehensive 2030 Agenda for Sustainable Development. In this regard all countries, irrespective of their degree of economic or scientific development, are participants in, contributors to and beneficiaries of the exploration and peaceful uses of outer space. Hence, the long-term sustainability of space activities is a matter of interest and importance, not only for current and aspiring participants in space activities, but also for the international community as a whole.

24. It was underlined that the coming generations would especially profit from a common understanding and knowledge about our Earth. Satellite technology has the power to raise awareness of the fragility of our environment, thus trigger actions already today in order to avoid deferring problems to future generation.

25. Dedicated awareness raising for young people is imperative in order to build intergenerational alliances to jointly solve common issues and it is important to pass the message that the current generation is the first to be able to document and see the changes on our planet.

26. It was stressed that space capacity-building and awareness raising already starts in schools, and the benefits of Science, Technology, Engineering and Mathematics (STEM) have to be promoted more broadly. As an example, the possibility to teach trainers and teachers at national level has to be strengthened in order to create the multiplying factor. In that regard, especially the European approach could function as a role model applicable to the world scale.

27. Institutional outreach and awareness raising will become more and more important in the future in order to support development cooperation in and for outer space. One of the recurring issues has to be overcome which is to improve the understanding what space can offer opposite to the question what is needed from space technologies.

28. In order to overcome this stalemate situation and to resolve the question of user needs vs. actions it was underlined that institutional capacity building is essential. Concrete actions have to be implemented and networks should be created to find a joint framework for the implementation of strategic directions. It was recommended that “Space2030” should play an important part especially through its institutional awareness raising capacity.

29. A key proposal is to translate problems into action and to lobby for concrete solutions rather than abstract possibilities in the daily use of space. In this regard, the already freely available data has to be translated in actions that harness its problem-solving capacities.

30. For a collaborative informed decision-making process data sharing is essential and it is therefore imperative to raise awareness and promote the usefulness of satellite data in the mitigation and preparedness phases and not only in response and recovery phases. UNISPACE+50 should therefore address the importance for UN-SPIDER to deliver its full mandate addressing the full disaster cycle the full scope of possible disasters as well as expand the mandate of the “International Charter on Space and major disasters” in this regard.

31. Space accessibility is essential for developing countries and UNOOSA’s CubeSat efforts should be strengthened at UNISPACE+50, through the invitation to more stakeholders to join this unique approach.

32. The participants to the symposium underlined that space solutions should not be imposed but that its benefits should be promoted to be able to build confidence, trust and understanding of space technology. The compendium of space solutions compiled by the Office for Outer Space Affairs Space Solutions was named as a tool to address this recommendation in order to overcome the question on what can be done with space vs. the requirements, and move beyond the current fragmented approach in the space arena.

33. Data sharing policies among astronomers based on a “gift economy” could function as a model to motivate other research communities to share data. Governments have paved this way for an open access and free data sharing policy of astronomical data, as one way of overcoming the limited capacity of groups that generate vast amounts of astronomical data to analyse and interpret it all by themselves. Making data freely available means that it is much more likely to be used.

34. Not only is access to data essential but as well the possibility to becoming a member of the community. Participation in international events to be able to exchange and contribute to a global community is essential and therefore Office for Outer Space Affairs fellowship programme and support to experts from developing countries are perfectly designed to overcome possible existing barriers to access the global community.

35. The space landscape is changing drastically and today’s biggest needs will be tomorrow’s biggest opportunities. The future of space will be market driven and therefore economic regulations will proof essential for the future of space especially when policy decision are blocking access to the market.

36. The High-Level Forum was stressed as a framework inclusiveness, transparency, openness and interconnectedness and to offer an opportunity to use the moment and to keep the door open for the broader space community to contribute to the targets set in the Sustainable Development Goals.

IV. Conclusion

37. The participants to the seminar specifically welcomed that the Office for Outer Space Affairs has developed the four pillars Space Accessibility, Space Society, Space Economy and Space Diplomacy in order to make space more accessible and understandable to policy makers.

38. Additionally, the Sustainable Development Goals provide a powerful framework and vehicle for starting the discussion on the importance of space and especially in this regard the High-Level Forum was recommended as a platform for dialogue between delegations outside the regular committee meetings as well as a forum for the broader space community to raise awareness on the importance of the exploration and peaceful uses of outer space.

39. Following the many observations addressing the need to improve existing communications approaches the participants to the seminar recommended the organization of a dedicated expert meeting on “How to communicate the benefits of Outer Space”.

40. UNISPACE+50 will provide an opportunity for States and the international space community to reflect on how the benefits of space activities could be extended to all humankind by linking space activities to the 2030 Agenda for Sustainable Development, while at the same time considering how to address questions concerning how humankind can preserve the space environment for safe and peaceful conduct of space activities for the benefit of current and future generations.

41. Participants considered how the benefits of space activities could be extended to all humankind by linking space activities to the 2030 Agenda for Sustainable Development in a global vision Space 2030 for the contribution of space activities to the attainment of the Sustainable Development Goals. This global vision rests on the four pillars of the Space Economy, Space and Society, Space Accessibility and Space Diplomacy.

42. With regard to the UNISPACE+50 pillar on the Space Economy and its link to the Sustainable Development Agenda, participants noted that the timely accomplishment of all the Sustainable Development Goals are in jeopardy if we are unable to harness the capabilities provided by space systems. UNISPACE+50 therefore offers a timely opportunity to reflect on how we can transform the paradigm

of the space economy from one of making very expensive space services and products available to a few people, to one that harnesses the abundance of space-derived data and services for societal benefit in the form of very inexpensive services and products made available to millions of people. Such a change in paradigm would lower entrance and accessibility barriers and create opportunities to engage more actors and open up new markets for space-derived data and services to meet the needs of the poor in a financially sustainable way.

43. With regard to the UNISPACE+50 pillar on Space and Society, the participants reflected on the importance of communicating the societal benefits of space activities to the broad public and the need to expose people to the results of space data in ways that everyone can understand. Participants also noted the numerous opportunities for citizen science provided by the space community and agreed that greater engagement with the public, as well as greater transparency by countries in the sharing of data, sharing policies and motivations for space activities will enhance the UNISPACE+50 thematic pillar on Space and Society. Participants further noted that UNISPACE+50 will be an opportunity to broaden the narrative of space exploration to make it much more inclusive, multi-cultural and inter-generational than it is at present.

44. With regard to the UNISPACE+50 thematic pillar on Space Accessibility, participants noted that this pillar should be understood to encompass also accessibility to space-derived data and services for everyone on Earth, not just accessibility to the outer space environment for the conduct of space activities. In this regard participants noted that space-derived data (both current and archival) should be made as widely accessible as possible to maximise the application of those data to address pressing humanitarian and environmental challenges. The participants further noted that sharing data and cooperating on analyses helps to build trust and consensus on the validity of the data and interpretations derived therefrom.

45. With regard to the UNISPACE+50 pillar on Space Diplomacy, the participants noted that, when the Earth is viewed from space, the atmosphere is the one and only common border that matters, and that seeing Earth from space is the key to seeing our own common future clearly. The Earth’s orbital environment is a global common that needs to be protected by a global vision of this common as a limited, shared natural resource that must be utilized for the benefit of all humankind. UNISPACE+50 offers an opportunity to strengthen cooperative international space governance and the responsible uses of outer space. In this regard, participants noted the importance of the universalization of the Outer Space Treaty and other international treaties governing the exploration and peaceful uses of outer space, as one of the means of preserving the safety, security and sustainability of outer space activities for the benefit of all humanity, now and in the future.

46. The participants to the seminar regard “Space2030” as a unique opportunity for the Committee on Peaceful Uses of Outer Space as well as the Office for Outer Space Affairs to develop the first broad ranging vision dealing with space activities under the auspices of United Nations at a crucial time for the definition of the future of Space and Global Space Governance. “Space2030” should therefore aim to strengthen international cooperation in the peaceful uses of outer space and outline a comprehensive and inclusive long-term vision for as space diplomacy creates space governance and discussion on space governance creates diplomacy.