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UNISPACE+50 thematic priority: International cooperation towards low-emission and resilient societies

Progress report by the Office for Outer Space Affairs

I. Background

1. Fiftieth anniversary of the first global United Nations Conference on the Exploration and Peaceful Uses of Outer Space, held in Vienna in August 1968, will be marked in 2018 by UNISPACE+50, an ambitious Committee undertaking to consider the current status and define the future role of the Committee, its subsidiary bodies and the Office for Outer Space Affairs in promoting international cooperation in the peaceful uses of outer space and in shaping global governance of space activities.

2. In preparation for the event, the Committee endorsed in 2016 the seven UNISPACE+50 thematic priorities (see A/71/20, para. 296): (1) Global partnership in space exploration and innovation; (2) Legal regime of outer space and global space governance: current and future perspectives; (3) Enhanced information exchange on space objects and events; (4) International framework for space weather services; (5) Strengthened space cooperation for global health; (6) International cooperation towards low-emission and resilient societies; (7) Capacity-building for the twenty-first century.

3. The objectives under the thematic priority on international cooperation towards low-emission and resilient societies are as follows:

- Define synergies between climate change mitigation efforts, disaster risk reduction and global development and reducing emissions by replacing carbon energy with renewable energy.
- Develop a road map for enhanced resiliency of space-based systems and the affiliation of existing and future Earth observation, global navigation satellite system and telecommunication constellations for disaster risk reduction and climate change monitoring and mitigation.
- Improve integrated space applications approaches and the interoperability of space-based systems and ground/in situ systems.

- Provide requirements to new developers for coverage in geographical areas not sufficiently monitored or applications that need further development.
- Identify governance and cooperation mechanisms to support this objective.

4. The Office for Outer Space Affairs has been identified as the mechanism to develop and propose a road map under this thematic priority and report regularly to the Committee and its Subcommittees on its progress on international cooperation towards low-emission and resilient societies.

5. In line with the agreement by the Committee that the respective mechanisms under each of the thematic priorities would begin preparations during the intersessional period to develop further expected outcomes and workplans with timelines under each thematic priority, for consideration and agreement by delegations at the sessions of the Committee and its Subcommittees in 2017 and thereafter (A/71/2, para. 297), the present document aims to provide an update on the current progress under the thematic priority on International cooperation towards low-emission and resilient societies.

II. Progress report on the development of a road map for the thematic priority on International cooperation towards low-emission and resilient societies

6. The Office for Outer Space Affairs leads the global efforts to promote international cooperation in the peaceful use and exploration of outer space, and in the utilisation of space science and technology for sustainable economic and social development. The Office assists Member States of the United Nations to establish legal and regulatory frameworks to govern space activities and strengthens the capacity of developing countries to use space science, technology and applications for development by helping to integrate space capabilities into national development programmes.

7. A foundation of the UNISPACE+50 initiative is the implementation of the 2030 Agenda for Sustainable Development which encompasses the Sustainable Development Goals and its targets/indicators, the Sendai Framework for Disaster Risk Reduction 2015-2030 and the commitments of nations under the United Nations Framework Climate Change Convention. Nations are now working together at defining more precisely not only the goals and/or targets but at agreeing to define indicators and their means of measurement. The thematic priorities must support these efforts of Governments so that space technology and applications do become streamlined in the planning and monitoring processes necessary to implement those global agendas.

8. The Office maintains the United Nations Register of Objects launched into Outer Space and provides technical assistance to Member States and applicable organizations on issues relating to space law, registration of space objects with the Secretary-General under the Registration Convention and General Assembly resolution 1721B (XVI); implementation of resolution 62/101 on registration practices; implementation of other obligations under the relevant treaties, principles, regulations and resolutions; and discharges other responsibilities under the Treaties and Principles on Outer Space on behalf of the Secretary-General.

9. In this context the safety, security and sustainability of outer space activities are to be seen in the overall context of resiliency. The protection of space assets, space systems and critical infrastructures, is increasingly becoming a central factor for the development of enhanced information exchange and notification procedures on space

objects and events. There are several processes involved, such as the work of the Working Group on the Long-Term Sustainability of Outer Space Activities, the work to be undertaken within UNISPACE+50 thematic priority 3 on space objects and events, and connections with the work under thematic priority 2 on the legal regime of outer space.

10. Under the Programme on Space Applications, the Office works on enhancing the understanding and subsequent use of space technology for peaceful purposes in general, and for national development, in particular, in response to expressed needs in different geographic regions of the world. The Office serves as the Executive Secretariat of the International Committee on GNSS (ICG) which was established in 2005 under the umbrella of the United Nations, to promote the voluntary cooperation on matters of mutual interest related to civil satellite-based positioning, navigation, timing, and value-added services.

11. Through its United Nations Platform on Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), the Office develops solutions to address the limited access developing countries have to specialized technologies that can be essential in the management of disasters and the reducing of disaster risks, and promotes coordinated efforts within the United Nations, in order to accomplish the common disaster risk reduction, humanitarian and climate change goals.

12. The Office aims to find new ways to address and respond to challenges of the 21st century through enhanced use of space-based technology and solutions in support of national and global development efforts. In its road map, it aims (i) to enable collaborations based on trust, (ii) empower stakeholders and parties involved, (iii) promote agility to adapt to emerging, rapidly changing and complex situations; (iv) enable strengthened and efficient cooperation and networking; and (v) provide a safe space for cooperation for stakeholders and parties involved.

13. Progress has been made in the recent past based on a number of activities, events and consultations where concrete policy recommendations were identified. This includes recommendations from:

- The United Nations/India Workshop on Use of Earth Observation Data in Disaster Management and Risk Reduction: Sharing the Asian Experience (March 2016, A/AC.105/1125);
- The UN-SPIDER+10 Conference (June 2016);
- The UN-SPIDER Dominican Republic Expert Meeting (July 2016);
- The United Nations/Austria Climate Change Symposium (September 2016);
- The United Nations International Conference on Space-based Technologies for Disaster Risk Reduction — “Understanding Disaster Risk” (September 2016, A/AC.105/1130);
- The Dubai Declaration of the first United Nations/United Arab Emirates High Level Forum (November 2016); and
- The United Nations/Germany International Expert Meeting (December 2016).

14. Currently the Office for Outer Space Affairs is involved in a number of initiatives — such as the Global Partnership using Space-based technology applications for disaster risk reduction (GP-STAR) which will be promoted to the international community in a side meeting at the Global Platform for Disaster Risk Reduction of UNISDR (in Cancún, Mexico), the International Network on Multi-Hazard early Warning Systems (IN-MHEWS), the International Working Group on Space-based Emergency Mapping (IWG-SEM), UN Senior Leadership Group on

DRR for Resilience, the international coordination of constellation of constellations of Earth observation, GNSS and telecommunications satellites, and the early warning system on Near-Earth Objects together with the International Asteroid Warning Network (IAWN) and Space Mission Planning Advisory Group (SMPAG). These initiatives and their recommendations will be considered and streamlined to the road map of the office addressing TP6.

Enabling Dialogue and setting the vision

15. Overall the development of the road map is seen as a joint process which will build on internal and external consultations. Broad stakeholder consultations and partnerships will be built to shape the Office's road map for this thematic priority in a consultative, inclusive, and open manner. In particular, the Office will host the UN/Germany conference on international cooperation towards low-emission and resilient societies in Bonn (November 22-24, 2017), actively participate in upcoming conferences (e.g. Global Platform on Disaster Risk Reduction in Cancún, Conference of the Parties 23 in Bonn) as well as undertaking efforts to develop tools for identifying gaps and monitoring progress for Member States. The continuous and multi-platform dialogue will allow for feedback, to integrate the user requirements and expectations towards the development of a shared vision.

16. It is envisioned that the road map will lead to the greater resiliency, comprehensiveness and interoperability of space-based systems, as well as integrated space applications, for their effective use for sustainable development, disaster risk management, and climate change mitigation and adaptation, including to reduce emissions and replacing carbon energy with renewable energy. As the resilience of space asset is also under consideration within the framework of other thematic priorities, and in the work on the long-term sustainability of outer space activities, there is a need for coordination among those processes.

Capitalizing on existing expertise

17. The proposed road map to address this thematic priority will build on previous and ongoing successes and recommendations. The Office will undertake efforts to consolidate and integrate various recommendations and documents currently available, feedback and project ideas received in the UNISPACE+50 process and related preparatory events (including results of the UN-SPIDER+10 workshop), recommendations gained through technical advisory missions, policy recommendations developed from various workshops, etc.

18. The Office for Outer Space Affairs has a demonstrated portfolio of success of support at national level which is the focus of the global agendas for development. This experience must be consolidated in that context.

19. Implementing the road map at national and regional levels implies partnerships with entities established at those levels and able to implement components of the road map. The network of regional support offices of UN-SPIDER is a successful model where mandated organisations take on themselves the implementation and monitoring of activities with their Member States or in their region. The complementarity accessible through such networks is unique and could apply to a wide range of areas of interest of International cooperation towards low-emission and resilient societies.

Analysis of emerging needs and identification of gaps

20. Based on a first internal road map development process the following starting points have been identified and will be prioritised and expanded over the next months:

- Address specifically the needs at member state level, next to regional and global levels and interconnect the different scales.
- In disaster risk reduction, deepen the role of UN-SPIDER and specifically foster the use of integrated space-based technologies and applications and Earth Observation in the context of the Sendai Framework for Disaster Risk Reduction 2015-2030.
- In the context of climate change, address next to mitigation efforts also opportunities in the context of climate change adaptation and the Warsaw International Mechanism on Loss and Damage.
- Be a facilitator on the use of space applications in the development arena and specifically target the Sustainable Development Goals.
- Develop a road map for enhanced resiliency of space-based systems.
- Be a facilitator on space-based information in the wider domain of data/geospatial data itself and connect with new emerging data driven communities outside the traditional space/geospatial domain.
- Develop an enhanced mode for advisory support building on and learning from the experience of UN-SPIDER.
- Further strengthen the links of Earth observation and global navigation satellite systems as well as space-based telecommunication technology.
- Increase access to space through an international coordination of existing and upcoming constellation of constellations of Earth observation, GNSS and telecommunications satellites towards a more comprehensive geographic coverage, more adapted spatial resolution, revisiting time, etc.

Monitoring and evaluation

21. The Office aims to follow a results-based management approach that ensures that all activities and deliverables contribute to the achievement of desired results and higher level goals under its overarching vision on international cooperation. In monitoring the progress of its activities, it is envisaged to develop an indicator-based approach. This indicator-based approach could be accompanied by a dedicated catalogue of solutions that can be applied at the level of each thematic priority.

22. It is expected that monitoring and evaluation processes will lead to greater learning, adjustment and decision-making. This continual process of feedback and adjustment will make activities under this thematic priority flexible and more responsive to new developments in the field of outer space activities and the environment within which they operate.

Means of implementation

23. A vehicle for strengthening international cooperation in the peaceful uses of outer space will be the enhanced and revitalized global partnership, led by Governments. At the same time, enabling international environment and enhanced global governance of outer space activities will be advanced by stronger national

capacities in utilizing benefits offered by space science, technology and applications for sustainable development.

24. In this regard, the Office would like to encourage Member States to mobilize and share knowledge, expertise, technology and financial resources, to support its efforts on international cooperation towards low-emission and resilient societies, including through voluntary contributions to the Trust Fund in Support of the United Nations Programme on Peaceful Uses of Outer Space, in order to enable the Office to complement the efforts of Governments and support the achievement of the sustainable development goals though increased use of the space-derived benefits, in particular in developing countries.

Inclusive approach

25. Activities under the future road map for International cooperation towards low-emission and resilient societies of the Office should be formulated to enable Member States and other stakeholders to benefit from the multi-stakeholder expertise, technology and resources, through the involvement of governments, private sector, civil society, the scientific community, academia, philanthropy and foundations, volunteers and other stakeholders. The coordination must put in place means ensuring the benefits reach the end-users in a relevant manner and format, including the most vulnerable at the local level.

Gender mainstreaming

26. Mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality.

27. The Office will ensure that the gender perspective is mainstreamed, as appropriate, into all of its activities by designing, implementing and monitoring, with the full participation of women, effective, efficient and mutually reinforcing gender-sensitive policies and programmes, including development policies and programmes at all levels, to foster the empowerment and advancement of women.

Public information and outreach

28. Public information and outreach are critical components of the road map. Increased awareness through effective outreach leads to greater use of space-derived solutions at the national and local level to be used in formulation of informed decisions for policies. The Office will aim at using effective means of outreach and awareness on the importance of space science, technology and applications for sustainable development initiatives.

III. Next steps

29. The Office will continue developing the above road map elements, with the view of presenting the updated progress report for consideration by delegations at the upcoming sessions of the Legal Subcommittee and the Committee in 2017.