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**Committee on the Peaceful
Uses of Outer Space**
Scientific and Technical Subcommittee
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Vienna, 29 January–9 February 2018

Draft report

III. Space technology for sustainable socioeconomic development

1. In accordance with General Assembly resolution [72/77](#), the Subcommittee considered agenda item 6, entitled “Space technology for sustainable socioeconomic development”.
2. The representatives of Belgium, Burkina Faso, China, Egypt, Germany, Indonesia, Italy, Japan, Jordan, Pakistan and United Arab Emirates made statements under agenda item 6. A statement was also made under the item by the representative of Argentina on behalf of the Group of Latin American and Caribbean States. The observer for the World Meteorological Organization also made a statement. During the general exchange of views, statements relating to the item were made by representatives of other member States.
3. The Subcommittee heard the following scientific and technical presentations:
 - (a) “Open Universe initiative: progress report”, by the representative of Italy;
 - (b) “Fast and direct access to space for research, technology, education and capacity-building through ICE Cubes commercial service”, by the representative of Belgium;
 - (c) “IAFconnect.org: innovative space business platform as a contribution to the 2030 Agenda for Sustainable Development implementation”, by the representatives of Ukraine.
4. The Subcommittee had before it the following:
 - (a) Report on the United Nations Expert Meeting on Space for Women held in New York from 4 to 6 October 2017 ([A/AC.105/1163](#));
 - (b) Report on the United Nations/United Arab Emirates High-level Forum on Space as a Driver for Socioeconomic Sustainable Development held in Dubai, United Arab Emirates, from 6 to 9 November 2017 ([A/AC.105/1165](#));
 - (c) Note by the Secretariat on the “Space2030” agenda and the global governance of outer space activities ([A/AC.105/1166](#));



(d) Note by the Secretariat on UNISPACE+50 thematic priority 1 (Global partnership in space exploration and innovation) ([A/AC.105/C.1/114](#));

(e) Note by the Secretariat on UNISPACE+50 thematic priority 2 (Legal regime of outer space and global governance: current and future perspectives) ([A/AC.105/1169](#));

(f) Note by the Secretariat on UNISPACE+50 thematic priority 3 (Enhanced information exchange on space objects and events) ([A/AC.105/1170](#));

(g) Note by the Secretariat on UNISPACE+50 thematic priority 4 (International framework for space weather services) ([A/AC.105/1171](#));

(h) Note by the Secretariat on UNISPACE+50 thematic priority 5 (Strengthened space cooperation for global health) ([A/AC.105/1172](#));

(i) Note by the Secretariat on UNISPACE+50 thematic priority 6 (International cooperation towards low-emission and resilient societies) ([A/AC.105/1173](#));

(j) Note by the Secretariat on UNISPACE+50 thematic priority 7 (Capacity-building for the twenty-first century) ([A/AC.105/1174](#));

(k) Note by the Secretariat containing the preliminary text of the draft resolution on space as a driver of sustainable development ([A/AC.105/C.1/L.364](#));

(l) Procedural note on UNISPACE+50 thematic priority 1 ([A/AC.105/C.1/2018/CRP.3](#));

(m) Conference room paper containing revisions to the draft resolution on space as a driver of sustainable development ([A/AC.105/C.1/2018/CRP.6](#));

(n) Conference room paper containing further revisions to the draft resolution on space as a driver of sustainable development ([A/AC.105/C.1/2018/CRP.16](#)).

5. The Subcommittee recalled the preamble of General Assembly resolution [72/77](#) and noted in that context that the use of space science and technology and their applications in areas such as tele-health, tele-education, disaster management, environmental protection, natural resources management and ocean and climate monitoring contributed to achieving the objectives of the global conferences of the United Nations that addressed various aspects of economic, social and cultural development, particularly poverty eradication.

6. The Subcommittee noted that UNISPACE+50 represented an important opportunity to highlight and strengthen the role of space as a driver for socioeconomic sustainable development and the role of space in delivering on the 2030 Agenda.

7. The Subcommittee expressed its gratitude for the efforts of the Office for Outer Space Affairs in assisting the Committee, its Subcommittees and member States with regard to the preparations for the UNISPACE+50 process.

8. The Subcommittee noted that the second High-level Forum on Space as a Driver for Socioeconomic Sustainable Development had been held in Dubai, United Arab Emirates, from 6 to 9 November 2017, organized by the Office for Outer Space Affairs in collaboration with the Government of the United Arab Emirates as part of the preparations for UNISPACE+50 and with the aim of advancing the debate on the role of space science and technology in fostering global development.

9. The Subcommittee noted with appreciation that the third High-level Forum on Space as a Driver for Socioeconomic Sustainable Development would be held in Bonn, Germany, from 13 to 16 November 2018.

10. Some delegations welcomed initiatives under UNISPACE+50 that added value and could lead to the improved utilization of space-based data for sustainable development, such as the establishment of the Space Climate Observatory, as proposed in the declaration entitled “Towards a space climate observatory”, adopted at the One Planet Summit held in Paris on 11 December 2017.

11. The view was expressed that the Space Climate Observatory initiative should be coordinated closely with the existing Global Climate Observing System to ensure optimal synergy and efficiency.
12. The Subcommittee welcomed the work undertaken by the Action Team on Exploration and Innovation, established as the mechanism of UNISPACE+50 thematic priority 1, and, in that connection, took note of document [A/AC.105/C.1/114](#) and conference room paper A/AC.105/C.1/2018/CRP.3, which provided an update on the Action Team's work.
13. The Subcommittee noted that the Action Team had met on the margins of the present session and that, in line with the Action Team's terms of reference (A/AC.105/2017/CRP.21, annex I), the outcome of the second International Space Exploration Forum, to be held in Tokyo on 3 March 2018, would be added to the report on thematic priority 1. The Subcommittee also noted that the updated document would be before delegations at the sixty-first session of the Committee in 2018 as document [A/AC.105/1168](#).
14. The Subcommittee noted with satisfaction the work by the Office on the "Space for women" initiative, which was aimed at promoting the empowerment of women and achieving gender equality in the space sector through targeted capacity-building and technical advisory activities to encourage the involvement of women and girls in science, technology, engineering and mathematics education.
15. The view was expressed that developed countries should share space technology at a faster pace in order to enhance the capacity of developing nations.
16. The view was expressed that the direct transfer of technologies, skills and support materials, with a view to facilitating the development and use of space technology, would contribute to the attainment of objectives set out in the 2030 Agenda for Sustainable Development.
17. The Subcommittee noted the crucial role of space data and technology in decision-making and early warning measures in the public health domain and reaffirmed the importance of the work of its Expert Group on Space and Global Health.
18. The Working Group of the Whole was reconvened with Mylswamy Annadurai (India) as Chair, in accordance with paragraph 9 of General Assembly resolution [72/77](#). At its [...] meeting, on [...] February, the Subcommittee endorsed the report of the Working Group of the Whole, which is contained in annex I to the present report.

IX. Near-Earth objects

19. In accordance with General Assembly resolution [72/77](#), the Scientific and Technical Subcommittee considered agenda item 12, entitled "Near-Earth objects".
20. The representatives of China, Egypt, Germany, Indonesia, Japan, Mexico, Pakistan, the United Arab Emirates and the United States made statements under agenda item 12. Statements were also made by the observers for IAWN and SMPAG. During the general exchange of views, statements relating to the item were made by representatives of other member States.
21. The Subcommittee heard a scientific and technical presentation entitled "Status report on the work of IAWN" by the observer for IAWN.
22. The Subcommittee had before it a conference room paper submitted by the Chairs of IAWN and SMPAG containing a proposal on re-naming the agenda item on near-Earth objects (A/AC.105/C.1/2018/CRP.11).
23. The Subcommittee heard status reports by IAWN and SMPAG and noted with appreciation their efforts to share information with regard to discovering, monitoring and physically characterizing potentially hazardous near-Earth objects in order to

ensure that all nations, in particular developing countries with limited capacity to predict and mitigate an impact of a near-Earth object, were aware of potential threats.

24. The Subcommittee noted that nearly 22 million observations of asteroids had been collected in 2017 by the worldwide network of astronomical observatories in 47 countries. It also noted that, as at 1 January 2018, the number of known near-Earth objects had exceeded 17,500, of which 2,056 had been discovered in 2017, with 1,877 asteroids now catalogued whose orbits took them within 8 million kilometres of the Earth's orbit.

25. The Subcommittee noted further progress in asteroid observation missions: Hayabusa2, the sample return mission of the Japan Aerospace Exploration Agency, was scheduled to arrive at the target asteroid "Ryugu" in June or July 2018; and the NASA sample return mission OSIRIS-REx, an international mission also involving Canada, France and Japan, was scheduled to arrive at the target asteroid "Bennu" in the third quarter of 2018.

26. The Subcommittee noted efforts to pursue research into asteroid impact mitigation technology options, such as the NASA Double Asteroid Redirection Test (DART) mission and the European Union-funded NEOShield-2 project, which was coordinated by Airbus Defence and Space, Germany, and had 11 partner organizations. The final results of the latter, which had been presented on 26 October 2017 to the European Commission, would serve to minimize the necessary preparation time for a near-Earth object deflection mission.

27. The Subcommittee noted a number of national activities and preparedness plans relating to near-Earth objects. Such activities included the work by the NASA Planetary Defense Coordination Office, which led the efforts of the Government of the United States to coordinate the response to any near-Earth object impact threat, working closely with the country's Federal Emergency Management Agency and Department of Defense, as well as other national agencies and international partners. Other activities were the establishment of the space debris observation and data application centre by the China National Space Administration (CNSA), responsible for near-Earth object monitoring, data processing and early warning analysis; and efforts by the United Arab Emirates Space Agency, together with the national Government and through international and national partnerships, to establish reporting and responding mechanisms on space objects and debris and appropriate preparedness plans.

28. The Subcommittee noted that the IAWN steering committee had held its fifth meeting on 30 January 2018, on the margins of the current session of the Subcommittee. The meeting had brought together international experts from a variety of disciplines related to the detection, characterization and notification of the potential hazard to the Earth posed by asteroids and comets, and actions that could be taken to prevent or minimize the devastating effects of an asteroid impact.

29. The Subcommittee also noted that there were five new signatories to the Statement of Intent for Participation in IAWN, bringing the total number of signatories to 13. The signatories represented observatories and space institutions from China, Colombia, Mexico, the Republic of Korea, the Russian Federation and the United States, as well as Europe, and even included an amateur observer from the United Kingdom.

30. The Subcommittee noted that signatories to the Statement of Intent for Participation in IAWN recognized the importance of collaborative data analysis and being adequately prepared for communication with a variety of audiences about near-Earth objects, close approaches to the Earth by such objects, and impact risks. Signatories contributed a variety of ground- and space-based assets to detect and observe near-Earth objects and also contributed abilities in orbit computation, potential impact prediction and modelling of potential impact effects. A new web page was being launched by IAWN, hosted by the University of Maryland, and was available at <http://iawn.net>.

31. The Subcommittee noted that, since the fifty-fourth session of the Subcommittee, SMPAG had held two meetings: its ninth meeting had been held in Toulouse, France, on 11 October 2017 and had been hosted by the National Centre for Space Studies of France (CNES); and its tenth meeting had been held on 31 January 2018, on the margins of the session of the Subcommittee. Both meetings had been supported by the Office for Outer Space Affairs in its role as the secretariat to SMPAG, pursuant to General Assembly resolution 71/90. The Subcommittee was informed of the progress made under the SMPAG workplan, as contained in the reports on those meetings, available at <http://smpag.net>.
32. The Subcommittee noted that the Austrian Research Promotion Agency (FFG) and CNSA had become members of SMPAG, and that the European Southern Observatory (ESO) had become the fifth permanent observer of the Group. SMPAG currently had 18 members (space agencies) and 5 permanent observers (other entities).
33. The Subcommittee also noted that ESA, as the current SMPAG Chair, had been elected for another two-year term (2018–2020).
34. The Subcommittee noted that the SMPAG Ad Hoc Working Group on Legal Issues, established in 2016 and coordinated by the German Aerospace Centre (DLR), had held its meeting on 30 January, on the margins of the current session of the Subcommittee. The aim of that meeting had been to work on a draft report, in accordance with its scope of work to identify, formulate and prioritize relevant legal issues relating to the work of the Group and consider legal issues relevant to the work of SMPAG in the context of existing international treaties governing activities in outer space.
35. The Subcommittee noted the SMPAG statement on deflection missions that the Group had prepared in one of its previous meetings. In that statement, the Group had stressed that, given the degree of international interest in asteroid research and awareness of the impact hazard, advantage should be taken of opportunities to investigate asteroid deflection physics, techniques and effects as part of science and technology demonstration missions.
36. The Subcommittee noted that IAWN and SMPAG continued to work with the Office for Outer Space Affairs on issues related to general communication on near-Earth objects by the public, communication with Member States in the event of an impact warning and the possibility of including a near-Earth object module as part of the Office's UN-SPIDER technical advisory missions on disaster preparedness. The latter was related to the work of IAWN to provide information to relevant parties, such as emergency response agencies.
37. The Subcommittee noted that a brochure on near-Earth objects and planetary defence was being prepared by IAWN, SMPAG and the Office for Outer Space Affairs. It would be launched in all the official languages of the United Nations for UNISPACE+50 in June 2018.
38. The Subcommittee noted a proposal by IAWN and SMPAG to re-name the item on its agenda entitled "Near-Earth objects" to "Near-Earth objects and planetary defence", with the aim of better reflecting and raising awareness among member States of all the aspects of ongoing activities, from near-Earth object discovery, monitoring and characterization, to determining the most effective and appropriate methods for mitigating risks from hazardous near-Earth objects and understanding the practical and legal implications of such activities.
39. The view was expressed that introducing the term "defence" into the agenda item on near-Earth objects could be misunderstood by the general public and decision-makers and that work in the area of mitigating a potentially hazardous near-Earth object was still ongoing.
40. The Subcommittee noted that the fifth IAA International Planetary Defence Conference had been held in Tokyo from 15 to 19 May 2017, and had been attended

by 192 experts from 24 countries. The sixth conference was planned to be held in the second quarter of 2019 in Washington, D.C.

41. The Subcommittee also noted that the next meeting of the IAWN steering committee and of SMPAG would take place in conjunction with the meeting of the Division for Planetary Sciences of the American Astronomical Society, which was to be held in Knoxville, Tennessee, United States, from 21 to 26 October 2018.
