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**Committee on the Peaceful  
Uses of Outer Space  
Scientific and Technical Subcommittee  
Fifty-seventh session  
Vienna, 3–14 February 2020****Draft report****III. Space technology for sustainable socioeconomic development**

1. In accordance with General Assembly resolution [74/82](#), the Subcommittee considered agenda item 6, entitled “Space technology for sustainable socioeconomic development”.
2. The representatives of Canada, China, Belarus, France, Germany, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Kenya, Peru, the Russian Federation, Switzerland and the United Arab Emirates made statements under agenda item 6. 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) “SIRIUS 20/21: the upcoming eight-month mission”, by the representative of the Russian Federation;
  - (b) “Small satellite development for scientific Earth observation and data utilization in the Philippines”, by the representative of the Philippines;
  - (c) “From boosting space education to boosting space economy”, by the representative of Switzerland;
  - (d) “Training course for the African countries at the Broglio Space Centre in Malindi”, by the representative of Italy;
  - (e) “ISU team project ‘Space for Urban Planning’”, by the observer for ISU;
  - (f) “Spin-in and procurement support as key components for industry development in emerging space countries”, by the representative of Slovakia;
  - (g) “African development satellite initiative”, by the representative of Egypt;
  - (h) “A global initiative to improve living conditions for indigenous populations using space technologies”, by the observer for CANEUS International.
4. The Subcommittee had before it a conference room paper containing a report on the United Nations/Austria World Space Forum on the topic “Access to space for all”, held in Vienna from 18 to 22 November 2019 (A/AC.105/C.1/2020/CRP.11), to be



issued, in all official languages of the United Nations, for the consideration of the Committee at its sixty-third session, in June 2020.

5. The Subcommittee noted that the World Space Forum held in 2019, having built upon the series of high-level forums organized by the Office for Outer Space Affairs jointly with member States, had continued to promote discussions on the role of space science and technology in fostering global development, bringing together stakeholders from the broader space community, including from governmental institutions, international intergovernmental organizations and non-governmental organizations, as well as industry, the private sector and academia. The bringing together of representatives from the Vienna-based diplomatic community and the broader space sector was welcomed in particular. The Subcommittee also noted that Austria would host the Forum in 2021 and subsequently every other year for the near future.

6. The Subcommittee noted the value of space technology and applications, as well as of space-derived data and information, to sustainable development, including in terms of improving the formulation and subsequent implementation of policies and programmes of action relating to environmental protection, land and water management, the development of degraded land and wastelands, urban and rural development, marine and coastal ecosystems, health care, climate change, disaster risk reduction and emergency response, energy, infrastructure, navigation, transport and logistics, rural connectivity, seismic monitoring, natural resources management, snow and glaciers, biodiversity, agriculture and food security.

7. The Subcommittee also noted, in that context, the information provided by States on their use of space-based platforms and satellite systems in support of sustainable socioeconomic development, as well as actions and programmes aimed at increasing society's awareness and understanding of the applications of space science and technology for meeting development needs, and on cooperation activities aimed at building capacity through education and training on the use of space science and technology applications for sustainable development.

8. In that regard, the Subcommittee noted that the Committee, and its subcommittees, with the support of the Office for Outer Space Affairs, had a fundamental role to play in promoting international cooperation and capacity-building in support of socioeconomic development.

9. Some delegations expressed the view that space science and technology had the potential to ignite technological advancement in developing countries, and that it was therefore essential to strengthen existing opportunities and create new ones to ensure that more and more States had access to space and to the benefits derived from space activities, including by enhancing international cooperation in the development of domestic space infrastructure, taking into account the need to stimulate industry and the space sector overall, in particular in developing countries.

10. The view was expressed that it was necessary to build national capacities in the handling of space-derived data and information, enhance international cooperation in sharing remote sensing and geospatial data, promote regional and international research, and facilitate the transfer of knowledge, technology and science and the sharing of experiences in using space-based technology services to achieve sustainable development.

## **IX. Near-Earth objects**

11. In accordance with General Assembly resolution [74/82](#), the Scientific and Technical Subcommittee considered agenda item 12, entitled "Near-Earth objects".

12. The representatives of Canada, China, Japan, Mexico, the Republic of Korea, the Russian Federation 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.

13. The following presentations were made under item 12:
- (a) “Physical parameters of near-Earth objects from radar observations”, by the representative of the Russian Federation;
  - (b) “International cooperation in the field of observation of near-Earth objects within the ISON project”, by the representatives of the Russian Federation;
  - (c) “The first interstellar comet 2I/Borisov: a new touch in the near-Earth object problem”, by the representative of the Russian Federation.
14. The Subcommittee heard status reports by IAWN and SMPAG and noted with appreciation the efforts being made by IAWN and SMPAG 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.
15. The Subcommittee noted that approximately 27.8 million observations of asteroids and comets had been collected in 2019 by the worldwide network of astronomical observatories, based in 40 countries. It also noted that the number of known near-Earth objects had exceeded 22,212 as at 5 February 2020, of which a record 2,433 had been discovered in 2019, with more than 2,000 asteroids now catalogued whose orbits have brought them within 8 million kilometres of Earth’s orbit.
16. The Subcommittee noted that there were currently 25 signatories to the IAWN Statement of Intent from all over the world; those signatories had a variety of ground-based and space-based telescopic assets for discovering and observing near-Earth objects, as well as capabilities in orbit computation, the prediction of potential impacts and the modelling of the effects of potential impacts. IAWN is coordinated by the Planetary Defense Coordination Office of NASA.
17. The Subcommittee noted that, on 24 July 2019, the asteroid designated as “2019 OK” by the Minor Planet Center, estimated to be approximately 100 metres in diameter, passed at a distance of 72,000 km from the surface of Earth only 12 hours after its discovery by an IAWN member, the Southern Observatory for Near-Earth Asteroid Research (SONEAR) in Brazil, making the closest known approach of an object of its size in the last 100 years.
18. In that connection, the Subcommittee noted the need for IAWN signatories to continue to improve their capabilities for the discovery, characterization and notification of the potential hazard to the Earth posed by asteroids and comets and to enable actions that could be taken to prevent or minimize the devastating effects of an asteroid impact. It was noted that, should there be a credible threat of impact by a near-Earth object, the best information available would be provided by IAWN and disseminated to Member States through the Office for Outer Space Affairs.
19. The Subcommittee noted that, on 30 August 2019, IAWN member and amateur astronomer Gennady Borisov of the Russian Federation, using his independently operated MARGO Observatory, discovered a comet, designated as 2I/Borisov, that originated from outside the solar system, making it the second interstellar object to be identified since the discovery of the object ‘Oumuamua in 2017.
20. The Subcommittee noted that SMPAG had continued its work under the workplan that encompasses the collective efforts of SMPAG Members to prepare to meet the threat to our planet posed by hazardous near-Earth Objects through the definition and implementation of appropriate mitigation strategies. It also noted that the workplan was a living document and was available on the dedicated SMPAG web pages of the ESA website.
21. The Subcommittee further noted that SMPAG currently had 19 members and 6 permanent observers, with the ESA serving as the Chair of SMPAG and the Office for Outer Space Affairs serving as the secretariat of the Group. It further noted that,

at its 14th meeting, held in conjunction with the fifty-seventh session of the Subcommittee, ESA had been re-elected by the Group as the Chair for the period 2020–2022.

22. The Subcommittee noted that SMPAG had exchanged information on the ongoing and planned activities of its members working in collaboration at the international level, including the sample return missions Hayabusa-2 of the Japan Aerospace Exploration Agency (JAXA) and OSIRIS-REx of NASA, which was an international mission involving the participation of Canada, France and Japan; the Double Asteroid Redirection Test (DART) mission of NASA, intended to test the kinetic impactor deflection technique; and a follow-up Hera mission of ESA to provide a post-impact assessment of a deflection test; as well the missions Comet Interceptor, to a comet, and Destiny+, to the asteroid Phaethon. The Subcommittee noted that SMPAG had encouraged the conducting of other missions to test methods of deflecting hazardous-objects, as well as a demonstration of a rapidly deployable flyby or rendezvous mission to collect critical information on a potentially hazardous asteroid or comet.

23. The Subcommittee noted that the SMPAG Ad Hoc Working Group on Legal Issues, established by SMPAG in 2016, had presented to SMPAG, at its 14th meeting, a report containing an initial analysis and assessment of the current legal context, as well as of relevant legal questions and issues regarding planetary defence. The Working Group would continue providing advice to SMPAG on matters pertaining to its work.

24. The Subcommittee noted that the sixth International Planetary Defence Conference, hosted by NASA, had been held in College Park, Maryland, United States, from 29 April to 3 May 2019 and had brought together experts from around the world with expertise in measures to detect, track, characterize and develop methods to prevent or mitigate the naturally occurring threat posed by the potential impact of an asteroid or comet on Earth.

25. The Subcommittee noted that the seventh International Planetary Defence Conference would be held at the Vienna International Centre in Vienna from 26 to 30 April 2021 and would be hosted by the Office for Outer Space Affairs.

26. The Subcommittee also noted that the next meetings of the IAWN steering committee and the fifteenth SMPAG meeting would be held in late September 2020 in the Boston area, United States.

### **XIII. Space and global health**

27. In accordance with General Assembly resolution [74/82](#), the Subcommittee considered agenda item 16, entitled “Space and global health”.

28. The representatives of China, India, Indonesia, Japan, Mexico, Peru, the Russian Federation, Switzerland and the United States made statements under agenda item 16. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

29. The Subcommittee heard the following scientific and technical presentations:

- (a) “Japan’s activities for global health”, by the representative of Japan;
- (b) “Knowledge transfer from space medicine to global health on Earth”, by the representative of Brazil;
- (c) “SGAC space medicine and life science project group; views and activities”, by the observer for SGAC;
- (d) “Geospatial applications in health crisis management: a knowledge translation experience and road map”, by the representative of Australia.

30. The Subcommittee had before it responses to the set of questions regarding policies, experiences and practices in the use of space science and technology for global health (see [A/AC.105/C.1/117](#), [A/AC.105/C.1/117/Add.1](#) and [A/AC.105/C.1/117/Add.2](#)).

31. Pursuant to paragraph 10 of General Assembly resolution [74/82](#), the Subcommittee, at its 915th meeting, on 3 February, convened its Working Group on Space and Global Health, with Antoine Geissbühler (Switzerland) as Chair.

32. The Subcommittee noted a broad array of activities undertaken by member States in areas relevant to space and global health, such as telemedicine, tele-consultation, space life sciences, space technologies, tele-epidemiology and disaster management (including responding to epidemics), and through space-based research, including at the International Space Station.

33. The Subcommittee acknowledged the contribution of space science, space technology and space applications to the prevention and control of diseases, the promotion of human health and welfare, the addressing of global health issues, the advancement of medical research, the advancement of health practices and the provision of health-care services to individuals and communities, including in rural areas with limited access to health care.

34. The Subcommittee noted that there was a need for enhanced inter-institutional and interdisciplinary cooperation and coordination among all stakeholders, such as States, United Nations entities, relevant intergovernmental and non-governmental organizations and the medical and space communities, for the attainment of the health-related goals of the 2030 Agenda for Sustainable Development.

35. The view was expressed that one of the major issues of concern to public health officials was the effect of air pollution and that geostationary meteorological satellites used for weather forecasting could play an important role in better understanding emissions, trends and impacts in relation to air pollutants and the ozone.

36. At its [...] meeting, on [...] February, the Subcommittee endorsed the report of the Working Group on Space and Global Health, which is contained in annex [...] to the present report.

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