



**Committee on the Peaceful
Uses of Outer Space
Scientific and Technical Subcommittee
Fifty-seventh session
Vienna, 3–14 February 2020****Draft report****II. United Nations Programme on Space Applications**

1. In accordance with General Assembly resolution [74/82](#), the Subcommittee considered agenda item 5, entitled “United Nations Programme on Space Applications”.
2. The representatives of Chile, China, Germany, India, Indonesia, Japan and the Republic of Korea made statements under agenda item 5. The observer for CANEUS International 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) “ActInSpace 2020 edition: contribution to Access to Space for All”, by the representative of France;
 - (b) “Space for water”, by the representative of the Office for Outer Space Affairs;
 - (c) “An overview of the outcomes of the Space Generation Congress 2019”, by the observer for SGAC;
 - (d) “Chinese international open-sharing satellite assembly, integration and testing (AIT)”, by the representative of China;
 - (e) “Italian Space Agency (ASI) experiments for the BEYOND mission: applications for a better life in space”, by the representative of Italy.

A. Activities of the United Nations Programme on Space Applications

4. The Subcommittee recalled that the General Assembly, in its resolution [74/82](#), had recognized the capacity-building activities under the United Nations Programme on Space Applications, which provided unique benefits for Member States, in particular developing countries, participating in those activities.
5. The Subcommittee recognized the unique and continuous contribution made by the United Nations Programme on Space Applications in promoting and supporting the capacity-building activities of Member States, in particular emerging spacefaring



nations. In that regard, the Subcommittee acknowledged the instrumental role played by the Office of Outer Space Affairs in implementing the Programme.

6. At the 915th meeting, on 3 February, the Director of the Office for Outer Space Affairs apprised the Subcommittee of the status of the Office's activities under the United Nations Programme on Space Applications.

7. The Subcommittee noted with appreciation that, since its previous session, in-cash and in-kind contributions, including the provision of staff on a non-reimbursable loan basis, had been offered for the activities of the Office, including the United Nations Programme on Space Applications, by the following: Agustin Codazzi National Geographic Institute (IGAC); Asia-Pacific Space Cooperation Organization (APSCO), Autonomous University of the State of Mexico; Beihang University, China; China Manned Space Agency (CMSA); China National Space Administration (CNSA); Delta State University, United States; Ecuadorian Space Institute (IEE); European Commission; European Space Agency (ESA); Federal University of Santa Maria, Brazil; GeoSAR Mexico (GEOSARMEX); German Federal Ministry for Economic Affairs and Energy (BMWi); Government of Austria (Federal Ministry for Transport, Innovation and Technology and Austrian Research Promotion Agency); Government of Brazil; Government of Chile; Government of China; Government of India (UNISpace Nanosatellite Assembly and Training (UNNATI)); Government of Luxembourg; Government of the United States (National Oceanic and Atmospheric Administration); Indian Institute of Technology, Roorkee; International Astronautical Federation (IAF); International Centre for Theoretical Physics (ICTP); Japan Aerospace Exploration Agency (JAXA); Joanneum Research Forschungsgesellschaft mbH, Austria; Mexican Space Agency; National Commission on Space Activities (CONAE), Argentina; National Disaster Risk Reduction Centre of China (NDRCC); Prince Sultan bin Abdulaziz International Prize for Water (PSIPW); Romanian Space Agency; Scientific and Technological Research Council of Turkey; Secure World Foundation (SWF); Sierra Nevada Corporation; South Asian Association for Regional Cooperation (SAARC) Disaster Management Centre; United Nations Human Settlements Programme; University of Bonn, Germany; University of the South Pacific, Fiji.

8. The Subcommittee noted that, since its last session, in 2019, the Office had concluded memorandums of understanding, funding agreements and framework agreements in relation to its capacity-building activities, which included the implementation of the United Nations Programme on Space Applications. The Office had also extended agreements with the air force of Chile; the China National Space Administration; the Ministry of Digital Development, Defence and Aerospace Industry of Kazakhstan; the Government of Luxembourg; the United States National Oceanic and Atmospheric Administration; the Mohammed bin Rashid Space Centre of the United Arab Emirates; the European Commission; the International Civil Aviation Organization; the European Space Agency; the Secure World Foundation; the Space Generation Advisory Council; the Asteroid Foundation; the Keldysh Institute of Applied Mathematics of the Russian Academy of Sciences; the University of Bonn, Germany; Airbus Defence and Space GmbH; Avio S.p.A.; and the Sierra Nevada Corporation.

9. The Subcommittee noted that the Government of Japan, through the Kyushu Institute of Technology, and the Government of Italy, through the Politecnico di Torino and the Istituto Superiore Mario Boella, in collaboration with the Istituto Nazionale di Ricerca Metrologica, had continued to provide long-term fellowship programme opportunities for students from developing countries under the United Nations/Japan Long-term Fellowship Programme on Nanosatellite Technologies, and the United Nations/Italy Long-term Fellowship Programme on Global Navigation Satellite Systems and Related Applications, respectively.

10. The Subcommittee noted the Drop Tower Experiment Series, which was a fellowship programme of the Office for Outer Space Affairs, undertaken in collaboration with the Centre of Applied Space Technology and Microgravity and the

German Aerospace Center (DLR), in which students could study microgravity by performing experiments in a drop tower. In the current cycle of the fellowship programme, an international team consisting of members from the Polytechnic University of Milan, the University of Seville and the University of Colorado Boulder was awarded the fellowship through a competitive selection process. The announcement of opportunity for the seventh cycle of the Drop Tower Experiment Series was currently available, with the deadline for the submission of applications set for 28 February 2020.

11. The Subcommittee noted the continued collaboration between the Office for Outer Space Affairs and the Government of Japan, in collaboration with JAXA, in implementing the United Nations/Japan Cooperation Programme on CubeSat Deployment from the International Space Station Japanese Experiment Module (Kibo), known as “KiboCUBE”. The programme had been launched in September 2015. As the first country to be awarded under the Programme, Kenya launched its first CubeSat, named 1KUNS-PF, from Kibo in May 2018. CubeSats developed by teams from Guatemala, Mauritius, Indonesia and Moldova, which had been selected for the second, third and fourth rounds of the KiboCube programme, would come after the mission of Kenya. The final selection result for the fifth round was announced on 7 February 2020, on the occasion of the fifty-seventh session of the Subcommittee, with the Central American Integration System (SICA) selected as the winner. The objective of the cooperation programme was to promote international cooperation and capacity-building in space technology and its applications under the Human Space Technology Initiative by providing opportunities for educational and research institutions in developing countries to deploy CubeSats from Kibo.

12. The Subcommittee noted the continued cooperation between the Office for Outer Space Affairs and the Government of China, through the China Manned Space Agency, in implementing the United Nations/China cooperation on the utilization of the China space station initiative under the United Nations Programme on Space Applications and the Human Space Technology Initiative, as part of the Access to Space for All initiative. That innovative and forward-looking cooperation was aimed at providing scientists around the world with an opportunity to conduct their own experiments on board the China space station, thus opening space exploration activities to all countries and creating a new paradigm for building capabilities in space science and technology. The first opportunity to conduct scientific experiments on board the China space station had been open to all Member States, in particular, developing countries. As an outcome of the application and selection process, nine projects were selected for implementation on board the China space station in the first cycle. The nine projects involved 23 institutions from 17 Member States in the Asia-Pacific region, Europe, Africa, North America and South America.

13. The Subcommittee noted the Hypergravity Experiment Series (HyperGES), which was a fellowship programme of the Office for Outer Space Affairs undertaken in collaboration with ESA. Under the programme, students could better understand and describe the influence of gravity on systems by performing experiments in the Large Diameter Centrifuge facility located at the European Space Research and Technology Centre of ESA in Noordwijk, the Netherlands. The first announcement of opportunity under HyperGES was currently available, with the deadline for the submission of applications set for 31 January 2020. The expected applications had been well received and were under consideration for final selection.

14. The Subcommittee continued to express its concern about the still-limited financial resources available for carrying out the capacity-building activities of the Office, including the United Nations Programme on Space Applications, and appealed to Member States to provide support through voluntary contributions.

15. The Subcommittee noted that the Programme continued to implement the Access to Space for All initiative, which was focused on developing the capacity of Member States to access the benefits of space and which offered to its partners research opportunities to develop the technologies needed to send hardware into

space, access to unique ground and orbital facilities for experiments in microgravity and access to space data and training on their use, including on astronomical data.

16. The Subcommittee also noted that the Programme was aimed at promoting, through international cooperation, the use of space technologies and space-related data for sustainable economic and social development in developing countries by establishing or strengthening the capacity in those developing countries to use space technology; raising the awareness of decision makers about the cost-effectiveness and additional benefits to be obtained from such technologies and data; and strengthening outreach activities to increase awareness of those benefits.

17. The Subcommittee further noted the following activities under the United Nations Programme on Space Applications, conducted by the Office in 2019, together with Member States and international organizations:

(a) United Nations/Jordan Workshop on Global Partnership in Space Exploration and Innovation, held in Amman from 25 to 28 March 2019 ([A/AC.105/1208](#));

(b) United Nations/China Forum on Space Solutions, on the theme “Realizing the Sustainable Development Goals”, held in Changsha, China, from 24 to 27 April 2019;

(c) United Nations/Romania International Conference on Space Solutions for Sustainable Agriculture and Precision Farming, held in Cluj-Napoca, Romania, from 6 to 10 May 2019 ([A/AC.105/1214](#));

(d) Workshop on the International Space Weather Initiative, organized by the Abdus Salam International Centre for Theoretical Physics and supported by the Office for Outer Space Affairs, held in Trieste, Italy, from 20 to 24 May 2019 ([A/AC.105/1215](#));

(e) Workshop on the applications of global navigation satellite systems, organized by the University of the South Pacific and co-sponsored by the Office for Outer Space Affairs and the International Committee on Global Navigation Satellite Systems, held in Suva from 24 to 28 June 2019 ([A/AC.105/1216](#));

(f) United Nations/Austria symposium on the theme “Space: a tool for accessibility, diplomacy and cooperation”, held in Graz, Austria, from 2 to 4 September 2019 ([A/AC.105/1220](#));

(g) Twenty-seventh Workshop on Space Technology for Socioeconomic Benefits, on the theme “Ensuring inclusiveness and equality through space-based applications and space exploration”, organized by IAF and supported by the Office for Outer Space Affairs, held in Washington, D.C., United States, from 18 to 20 October 2019 ([A/AC.105/1218](#)).

18. The Subcommittee was informed that the Office for Outer Space Affairs had organized, and continued to organize, capacity-building events, including within the United Nations Programme on Space Applications, with the Governments of Austria, Brazil, India, Mongolia and Spain, as well as with IAF. The Subcommittee was also informed that those events were to cover the following topics: space-based solutions for climate action; astronomy and protection of astronomical observation facilities; global navigation satellite systems (GNSS); space weather; and capacity-building in space technology and applications. The Subcommittee noted that the Office would present reports and further information on the events at its fifty-eighth session, in 2021.

19. The Subcommittee noted that, in addition to the United Nations conferences, training courses, workshops, seminars and symposiums conducted in 2019 and planned for 2020, the Office for Outer Space Affairs had conducted or was planning to conduct other activities under the Programme, with emphasis on:

(a) Providing support for capacity-building efforts in developing countries through the regional centres for space science and technology education, affiliated to the United Nations;

- (b) Strengthening its long-term fellowship programme, to include support for the implementation of pilot projects;
- (c) Ensuring the mainstreaming of the gender perspective into all of its activities;
- (d) Promoting the participation of young people in space activities;
- (e) Supporting or initiating pilot projects as a follow-up to activities of the Programme in areas of priority interest to Member States;
- (f) Providing technical advice, upon request, to Member States, bodies and specialized agencies of the United Nations system and relevant national and international organizations;
- (g) Enhancing access to space-related data and other information;
- (h) Applying an integrated and cross-sectoral approach to activities, as appropriate.

20. The Subcommittee also noted the highlights of the activities of the regional centres for space science and technology education, affiliated to the United Nations, namely, the African Regional Centre for Space Science and Technology Education – in English Language; the African Regional Centre for Space Science and Technology – in French Language; the Centre for Space Science and Technology Education in Asia and the Pacific; the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean; the Regional Centre for Space Science and Technology Education for Western Asia; and the Regional Centre for Space Science and Technology Education in Asia and the Pacific (China).

21. Some delegations expressed the view that the United Nations had to continue to actively promote its role in the cooperation between developing and developed countries, as well as among developing countries, in order to strengthen the infrastructure and technology of the space sector, in particular through capacity-building, information-sharing and the transfer of technology, which could accelerate development in various aspects of life. The delegations expressing that view were also of the view that it was important to promote collaboration between developing and developed countries in order to ensure equitable access to space science and technology.

B. Regional and interregional cooperation

22. The Subcommittee recalled that the General Assembly, in its resolution [74/82](#), had emphasized that regional and interregional cooperation in the field of space activities was essential to strengthen the peaceful uses of outer space, assist Member States in the development of their space capabilities and contribute to the implementation of the 2030 Agenda for Sustainable Development. To that end, the Assembly had requested relevant regional organizations and their groups of experts to offer any assistance necessary so that countries could carry out the recommendations of regional conferences. In that regard, the Assembly had noted the importance of the equal participation of women in all fields of science and technology.

23. The Subcommittee noted that the eighth African Leadership Conference on Space Science and Technology for Sustainable Development, on the theme “Prospects and challenges of African space development”, had been hosted at the Economic Commission for Africa, in Addis Ababa, from 2 to 4 December 2019. The Congress would in future be held on a biennial basis; the South African National Space Agency would host the next congress in Durban, South Africa, by the end of October 2021.

24. The Subcommittee also noted that the international conference entitled “Space and Sustainable Development 2020” (CEDS 2020) would be held at the Faculty of Physical Sciences and Mathematics of the University of Chile from 1 to 3 July 2020. The objective of the conference would be to contribute to the examination and

discussion of four topics: opportunities and challenges presented by space activity; the development of space science and technology; innovation and industrial development; and the use of space as a global challenge and its contribution to sustainable development.

25. The Committee further noted that the twenty-sixth session of the Asia-Pacific Regional Space Agency Forum, on the theme “Advancing diverse links towards a new space era”, had been held in Nagoya, Japan, from 26 to 29 November 2019. The twenty-seventh session of the Forum would be held in Viet Nam in the fall of 2020.

26. The Subcommittee noted that, over the past decade, APSCO had provided benefits to its member States through various cooperative activities aimed at making full use of its uniquely wide geographical coverage area and effectively sharing its resources.

VI. Space-system-based disaster management support

27. In accordance with General Assembly resolution [74/82](#), the Subcommittee considered agenda item 9, entitled “Space-system-based disaster management support”.

28. The representatives of Belarus, Canada, China, Colombia, Germany, India, Indonesia, Iran (Islamic Republic of), Japan, Mexico, Peru, the Republic of Korea, the Russian Federation and the United States made statements under agenda item 9. 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) “EO-ALERT: a novel satellite architecture for detection and monitoring of extreme events in real time”, by representatives of Austria;

(b) “Flood monitoring and damage assessment in agriculture by space remote sensing”, by a representative of the Islamic Republic of Iran.

30. The Subcommittee had before it the following:

(a) Report on activities carried out in 2019 in the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response ([A/AC.105/1212](#));

(b) Note by the Secretariat containing the report on the Bonn international conference on the theme “Space-based solutions for disaster management in Africa: challenges, applications, partnerships” ([A/AC.105/1223](#)).

31. The Subcommittee noted with satisfaction the progress achieved through activities held in 2019 under the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), including the international conference on the theme “Space-based solutions for disaster management in Africa: challenges, applications, partnerships” held in Bonn, Germany, from 6 to 8 November 2019, and the continuing advisory and other support provided through UN-SPIDER in the field of emergency response efforts.

32. The Subcommittee noted that, with the continued support of its network of partners, representatives of UN-SPIDER had carried out the following activities: (a) a technical advisory mission to Peru; (b) follow-up activities in Cameroon, Ecuador, the Lao People’s Democratic Republic, Mongolia, Myanmar and Sri Lanka; and (c) an advisory support activity in Ethiopia. During those activities, specific requirements had been addressed and follow-up to the UN-SPIDER technical advisory missions carried out in previous years had been provided.

33. The Subcommittee noted with satisfaction the capacity-building efforts that had been made in generating tailor-made space-based information for countries affected

by landslides (Cameroon, Colombia and Guatemala) and countries experiencing volcanic activity (Guatemala and Indonesia).

34. The Subcommittee noted that UN-SPIDER had co-organized two training courses for project managers on how to use the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (International Charter on Space and Major Disasters), one in Beijing, on 10 September 2019, and one in Bonn, on 5 November.

35. The Subcommittee also noted the planned outreach activities of the Office for Outer Space Affairs, represented by UN-SPIDER, and its developing partnerships with United Nations entities, international organizations and Member States to continue to promote the use of space-based tools and information in global and regional initiatives, such as those carried out under the Sendai Framework for Disaster Risk Reduction 2015–2030, the 2030 Agenda for Sustainable Development and the Paris Agreement.

36. Some delegations expressed their satisfaction for the ongoing activities of States members of the Committee to increase the availability and use of space-based solutions in support of disaster risk reduction. Those activities included promoting the use of emergency Earth observation and cartographic data during natural or technological disasters under the International Charter on Space and Major Disasters, the Sentinel Asia initiative and the Copernicus Emergency Management Service. In that regard, it was noted that Eswatini, Ghana and Tunisia had become members of the Charter and that UN-SPIDER was working with Costa Rica, South Africa, Viet Nam and Zimbabwe on becoming authorized users.

37. The view was expressed that the activities conducted by several Member States, whether directly or through the International Charter on Space and Major Disasters or Sentinel Asia, to facilitate access to satellite imagery and space-based information had successfully supported disaster response efforts following Cyclone Idai in Zimbabwe and floods in Cameroon, Iran (Islamic Republic of) and South Africa. The delegation expressing that view was also of the view that efforts to raise awareness of the Charter and the Copernicus Emergency Management Service were important to encourage States to use such services.

38. The view was expressed that open access to critical data, whenever and wherever possible, improved information products and decision tools used to mobilize early disaster management action. The delegation expressing that view was also of the view that this underlined the importance of regional partnerships in addressing the transboundary consequences of disasters and finding solutions.

39. The view was expressed that UN-SPIDER should strengthen its technical support programmes in developing countries and raise awareness among Member States and their civil protection agencies of the data and relevant instruments at their disposal through its knowledge portal.

40. The view was expressed that the activities of Sentinel Asia, in which more than 100 organizations in the Asia-Pacific region participated and which had conducted approximately 300 emergency observations since its launch in 2006, continued to be highly useful. The delegation expressing that view was also of the view that Sentinel Asia contributed greatly to strengthening preparedness, and thus resilience, to emergencies, in line with the Sendai Framework.

41. The view was expressed that space-based emergency mapping could be achieved more effectively with the help of international collaboration and that a multilateral approach to disaster and climate change management should be encouraged.

42. Some delegations expressed the view that, in the context of disaster risk reduction, additional research on the negative effects of space weather on infrastructure and communication systems was necessary to better understand the phenomenon and its impacts and that, in the context of disaster management, strengthening coordination among national institutions and organizations was needed.

43. The Subcommittee noted with satisfaction other activities of Member States in the area of disaster management and risk reduction, such as the promotion, with the support of UN-SPIDER, of the universal access initiative of the International Charter on Space and Major Disasters and the provision of national and regional data portals for the dissemination of information in near real time.

44. Some delegations expressed the view that search and rescue missions were a useful part of disaster management, as was the commitment of providers of search and rescue data for disaster management through the International Charter on Space and Major Disasters. It was highlighted that the activities of the International Satellite System for Search and Rescue and the Search and Rescue Satellite-Aided Tracking System saved thousands of lives every year.

45. The Subcommittee noted the in-kind contributions, including the provision of experts, made in 2019 by States members of the Committee and regional support offices to the technical advisory missions and related activities conducted by the Office for Outer Space Affairs through UN-SPIDER, as well as their efforts to share experiences with other countries.

46. The Subcommittee noted with appreciation the voluntary contributions made to the Office for Outer Space Affairs and its UN-SPIDER programme by member States, including the cash contributions from China and Germany, and again encouraged other member States to provide to the activities and programmes of the Office, including UN-SPIDER, all necessary support on a voluntary basis, including increased financial support, in order to enable it to better respond to requests for assistance by Member States and to fully carry out its workplan over the next years.

XI. Future role and method of work of the Committee

47. In accordance with General Assembly resolution [74/82](#), the Subcommittee considered agenda item 14, entitled “Future role and method of work of the Committee”.

48. The representatives of Belgium, Brazil, Costa Rica, Indonesia, the Russian Federation and Switzerland made statements under agenda item 14. During the general exchange of views, statements relating to the item were made by representatives of other member States.

49. The Subcommittee had before it the note by the Secretariat on governance and method of work of the Committee on the Peaceful Uses of Outer Space and its subsidiary bodies ([A/AC.105/C.1/L.384](#)).

50. The Subcommittee recalled that, at its sixty-second session, the Committee had decided to introduce a regular item entitled “Future role and method of work of the Committee” in the agendas of both subcommittees to allow for discussion of cross-cutting issues ([A/74/20](#), para. 321 (h)).

51. The Subcommittee welcomed document [A/AC.105/C.1/L.384](#) as an important basis for further consideration under the multi-year workplan on the governance and method of work of the Committee and its subsidiary bodies ([A/73/20](#), para. 382). The Subcommittee noted that proposals made by delegations for future measures were presented in the note by the Secretariat in order to assist the Committee and its subcommittees in their considerations.

52. The Subcommittee also noted that discussions on organizational matters and method of work had also been held at the present session in the Working Group of the Whole and that a number of recommendations had been made by the Working Group on overall time management.

53. In addition to the measures recommended by the Working Group of the Whole, the Subcommittee noted that the Committee and both subcommittees needed to further consider the overall governance and method of work under the corresponding multi-year workplan referred to in paragraph 51 above.

54. The Subcommittee welcomed the additional measures already introduced by the Secretariat for the present session, including the provision of administrative information on the session web page on the website of the Office for Outer Space Affairs to assist delegations in their pre-session preparations, the listing of working group meetings in the indicative schedule of work of the annotated provisional agenda for the present session and the possibility to upload in-session statements on the session web page on a voluntary basis.

55. The view was expressed that further consideration should be given to the possibility of instituting the intersessional electronic exchange of views on appropriate matters on the agendas of the Committee and its subcommittees in order to stimulate informal consultations for the benefit of overall in-session considerations and preparations for the sessions by delegations.

56. Some delegations expressed the view that, with regard to proposals to replace consensus by voting procedures, the consensus rule of the Committee should be maintained, because, even if voting could be a solution to decide on procedural matters, there would always be a complex grey zone in distinguishing substantive matters from procedural ones.

57. The view was expressed that, in the overall consideration of the future role and method of work of the Committee, it was important to maintain the profile and significance of this intergovernmental body to ensure that the Committee and its subcommittees, supported by the Office for Outer Space Affairs, remained unique platforms for international cooperation in the peaceful uses of outer space. The delegation expressing that view was also of the view that it was important that other intergovernmental forums within the United Nations system do not duplicate the mandate of the Committee.

58. The Working Group of the Whole was reconvened, under the chairmanship of P. Kunhikrishnan (India), in accordance with paragraph 10 of General Assembly resolution 74/82. 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.
