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**Committee on the Peaceful
Uses of Outer Space
Scientific and Technical Subcommittee
Forty-seventh session
Vienna, 8-19 February 2010**

Draft report

I. Introduction

1. The Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space held its forty-seventh session at the United Nations Office at Vienna from 8 to 19 February 2010, under the chairmanship of Ulrich Huth (Germany).
2. The Subcommittee held [...] meetings.

A. Attendance

3. Representatives of the following 57 member States of the Committee attended the session: Algeria, Argentina, Australia, Austria, Belgium, Bolivia (Plurinational State of), Brazil, Bulgaria, Burkina Faso, Canada, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Kenya, Lebanon, Libyan Arab Jamahiriya, Malaysia, Mexico, Morocco, Netherlands, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Slovakia, South Africa, Spain, Sweden, Switzerland, Syrian Arab Republic, Thailand, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Venezuela (Bolivarian Republic of) and Viet Nam.
4. At its 718th meeting, on 8 February, the Subcommittee decided to invite, at their request, observers for Azerbaijan, Croatia, the Dominican Republic, Tunisia and the United Arab Emirates to attend the session and to address it, as appropriate, on the understanding that it would be without prejudice to further requests of that nature and that it would not involve any decision of the Subcommittee concerning



status. The Subcommittee took note of the application by Tunisia for membership in the Committee (A/AC.105/C.1/2010/CRP.4).

5. Observers for the International Atomic Energy Agency (IAEA), the International Telecommunication Union (ITU) and the World Meteorological Organization (WMO) attended the session.

6. The session was attended by observers for the following intergovernmental organizations with permanent observer status with the Committee: European Organisation for Astronomical Research in the Southern Hemisphere (ESO), European Space Agency (ESA), European Telecommunications Satellite Organization (EUTELSAT-IGO), Regional Centre for Remote Sensing of North African States (CRTEAN) and Asia-Pacific Space Cooperation Organization (APSCO). The European Union was also represented at the session. The session was also attended by observers for the following non-governmental organizations with permanent observer status with the Committee: Association of Space Explorers (ASE), European Space Policy Institute (ESPI), EURISY, International Academy of Astronautics (IAA), International Astronautical Federation (IAF), International Astronomical Union (IAU), International Institute for Applied Systems Analysis (IIASA), International Society for Photogrammetry and Remote Sensing (ISPRS), International Space University (ISU), Prince Sultan Bin Abdulaziz International Prize for Water (PSIPW), Secure World Foundation (SWF), Space Generation Advisory Council (SGAC), Planetary Society (TPS) and World Space Week Association (WSWA).

7. A list of the representatives of States, United Nations entities and other international organizations attending the session is contained in A/AC.105/C.1/2010/INF/[...].

B. Adoption of the agenda

8. At its 718th meeting, on 8 February, the Subcommittee adopted the following agenda:

1. Adoption of the agenda.
2. Election of the Chairman.
3. Statement by the Chairman.
4. General exchange of views and introduction of reports submitted on national activities.
5. United Nations Programme on Space Applications.
6. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).
7. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.
8. Space debris.

9. Space-system-based disaster management support.
10. Recent developments in global navigation satellite systems.
11. Use of nuclear power sources in outer space.
12. Near-Earth objects.
13. International Space Weather Initiative.
14. Long-term sustainability of outer space activities.
15. Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union.
16. Draft provisional agenda for the forty-eighth session of the Scientific and Technical Subcommittee.
17. Report to the Committee on the Peaceful Uses of Outer Space.

C. Election of the Chairman

9. At its 718th meeting, the Subcommittee elected Ulrich Huth (Germany) Chair for the period 2010-2011, pursuant to General Assembly resolution 64/86.

D. General statements

10. The Subcommittee welcomed the election of Ulrich Huth as Chair for a two-year term, starting in 2010. The Subcommittee expressed its appreciation to the outgoing Chair, Aboubekr Seddik Kedjar (Algeria), for his leadership and contribution to furthering the achievements of the Subcommittee during his term of office.

11. Statements were made by representatives of the following member States during the general exchange of views: Algeria, Argentina, Australia, Austria, Brazil, Burkina Faso, Canada, China, Colombia, Cuba, Ecuador, France, Germany, Greece, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kenya, Malaysia, Mexico, Nigeria, Pakistan, Poland, Republic of Korea, Romania, Russian Federation, Saudi Arabia, South Africa, Spain, Switzerland, Syrian Arab Republic, Thailand, Turkey, United Kingdom and United States. A statement was also made by the representative of the Bolivarian Republic of Venezuela on behalf of the Group of Latin American and Caribbean States. The observer for Tunisia made a general statement. General statements were also made by APSCO, CRTEAN, ESPI, IAF, IAU, ISPRS, SGAC and SWF.

12. The Subcommittee welcomed APSCO as the newest permanent observer of the Committee.

13. At the 718th meeting, the Chair made a statement outlining the work of the Subcommittee at its current session and reviewing the global space activities of the

previous year, including important advances that had been made as a result of international cooperation.

14. At the 721st meeting, the Director of the Office for Outer Space Affairs of the Secretariat made a statement reviewing the work programme of the Office and provided information about the strategic framework for the biennium 2010-2011.

15. The Subcommittee conveyed its condolences to Haiti for the suffering caused by the devastating impact of the earthquake of 12 January 2010 and the massive humanitarian crisis that ensued. The Subcommittee noted that loss of life and property could be diminished if better information was made available to improve risk assessment, early warning and monitoring of disasters, and stressed the critical role that space-based systems could play in supporting disaster management by providing accurate and timely information and communication support.

16. The view was expressed that the Subcommittee should review its schedule of meetings and documentation levels with a view to identifying areas where savings might be possible. The view was also expressed that the Subcommittee should consider reviewing the status of non-governmental organizations having permanent observer status with the Committee.

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

- (a) "Summary of APRSAF-16", by the representative of Japan;
- (b) "The RIM-PAMELA international experiment opens the window into the world of very high energy physics and dark matter", by the representative of the Russian Federation;
- (c) "A look at the social and historical aspects of space research" and "Technical aspects of space constructions and bases", by the representatives of Turkey;
- (d) "Centre national d'études spatiales: summary of activities", by the representative of France;
- (e) "Third African Leadership Conference on Space Science and Technology for Sustainable Development", by the representative of Algeria;
- (f) "The United Arab Emirates' space activities", by the representative of United Arab Emirates;
- (g) "APSCO information data service system: preliminary study", by the observer for APSCO;
- (h) "Space activities of Tunisia", by the representative of Tunisia.

E. National reports

18. The Subcommittee took note with appreciation of the reports submitted by Member States (A/AC.105/953 and A/AC.105/C.1/2010/CRP.7) for its consideration under agenda item 4, "General exchange of views and introduction of reports submitted on national activities". The Subcommittee recommended that the Secretariat continue to invite Member States to submit annual reports on their space activities.

F. Symposium

19. On 8 February, the Office for Outer Space Affairs organized an industry symposium on the theme “Nurturing the development of space technology”, which was moderated by the Chair of the Scientific and Technical Subcommittee. The presentations given at the symposium included the following: “An international comparison of space technology nurturing”, by Rachel Villain of Euroconsult; “Space technology development: challenges and opportunities”, by Ahmad Sabirin Arshad of Astronautic Technology Sdn Bhd; “Critical steps in space science and technology development”, by Adigun Ade Abiodun of the National Space Research and Development Agency; “Trend of small EO satellites and their applications”, by Hyon Sock Chang of the Satrec Initiative; and “Nurturing the development of space technology”, by Mazlan Othman, Director of the Office for Outer Space Affairs.

G. Adoption of the report of the Scientific and Technical Subcommittee

20. After considering the items before it, the Subcommittee, at its [...] meeting, on [...] February, adopted its report to the Committee on the Peaceful Uses of Outer Space, containing its views and recommendations, as set out in the paragraphs below.

II. United Nations Programme on Space Applications

21. In accordance with paragraph 8 of General Assembly resolution 64/86, the Subcommittee considered agenda item 5, “United Nations Programme on Space Applications”.

22. At the 726th meeting, the Expert on Space Applications made a statement outlining the activities carried out and planned under the United Nations Programme on Space Applications.

23. The representatives of China, Colombia, Greece, India, Japan, Switzerland, the United States and [...] made statements under agenda item 5.

24. The Working Group of the Whole was reconvened under the chairmanship of S. K. Shivakumar (India), in accordance with paragraph 9 of General Assembly resolution 64/86. The Working Group of the Whole held [...] meetings, from [...] to [...] February 2010. 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.

25. The Subcommittee heard a presentation entitled “Aiding basic space science in developing nations: the official development assistance programme of Japan”, by the representative of Japan.

A. Activities of the United Nations Programme on Space Applications

26. The Subcommittee had before it the report of the Expert on Space Applications, which outlines the mandate and orientation of the United Nations Programme on Space Applications (A/AC.105/969, paras. 2-8). The Subcommittee noted that the Programme for 2009 had been carried out satisfactorily and commended the work accomplished by the Office under the Programme.

27. The Subcommittee noted with appreciation that, since its previous session, additional resources for 2010 had been provided by various Member States and organizations, as acknowledged in the report of the Expert (A/AC.105/969, paras. 55 and 56).

28. The Subcommittee expressed its concern that the financial resources available for carrying out the Programme remained limited. The Subcommittee appealed to Member States to continue supporting the Programme through voluntary contributions. The Subcommittee was of the view that the limited resources of the United Nations should be focused on activities with the highest priority.

29. The Subcommittee noted that the activities of the Programme in 2010 (see para. 33 below) would place emphasis on the following areas, inter alia: socio-economic benefits of space activities, small satellite technology for sustainable development, space weather, global navigation satellite systems, mountain regions and space law.

1. Year 2009

Meetings, seminars, symposiums, training courses and workshops

30. With regard to the activities of the United Nations Programme on Space Applications carried out in 2009, the Subcommittee expressed its appreciation to the following for co-sponsoring the various workshops, symposiums and training courses that had been held within the framework of the Programme referred to in the report of the Expert on Space Applications (A/AC.105/969, para. 52 and annex I):

(a) The Governments of Austria, Azerbaijan, Bhutan, India, Iran (Islamic Republic of), Peru, Republic of Korea, Switzerland and the United States;

(b) APSCO, ESA, IAA, IAF, the Japan Aerospace Exploration Agency (JAXA) and the National Aeronautical and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA) of the United States.

Long-term fellowships for in-depth training

31. The Subcommittee expressed its appreciation to the Government of Italy, which, through the Politecnico di Torino and the Istituto Superiore Mario Boella and with the collaboration of the Istituto Elettrotecnico Nazionale Galileo Ferraris, had continued to provide four 12-month fellowships for postgraduate studies in global navigation satellite systems (GNSS) and related applications.

Technical advisory services

32. The Subcommittee noted with appreciation the technical advisory services provided under the United Nations Programme on Space Applications in support of

activities and projects promoting regional cooperation in space applications, as referred to in the report of the Expert on Space Applications (A/AC.105/969, paras. 46-51).

2. Year 2010

Meetings, seminars, symposiums, training courses and workshops

33. The Subcommittee recommended the approval of the following programme of meetings, seminars, symposiums, training courses and workshops for 2010:

(a) United Nations/Republic of Moldova/United States of America Workshop on the Applications of Global Navigation Satellite Systems, to be held in Chisinau in May;

(b) United Nations/Turkey/European Space Agency Workshop on Space Technology Applications for Socio-economic Benefits, to be held in Antalya, Turkey, in September;

(c) United Nations/Austria/European Space Agency Symposium on the Use of Small Satellites for Sustainable Development, to be held in Graz, Austria, in September;

(d) United Nations/International Astronautical Federation Workshop on Applications of Global Navigation Satellite Systems, to be held in Prague in September;

(e) Eleventh United Nations/International Academy of Astronautics Workshop on Small Satellites in the Service of Developing Countries, to be held in Prague in September;

(f) United Nations/Plurinational State of Bolivia/European Space Agency Workshop on Space Technology's Contribution to Sustainable Development in the Mountain Regions of Andean Countries, to be held in La Paz in the third quarter of 2010;

(g) United Nations/National Aeronautics and Space Administration/Japan Aerospace Exploration Agency Workshop on the International Space Weather Initiative, to be held in Luxor, Egypt, in November;

(h) United Nations/Thailand/[European Space Agency] Workshop on Space Law, to be held in Bangkok in November.

B. International Space Information Service

34. The Subcommittee noted with satisfaction the publication of *Highlights in Space 2009*, which had been compiled in a CD-ROM from a report prepared in cooperation with IAF and the International Institute of Space Law. The Subcommittee expressed its appreciation to the contributors for their work.

35. The Subcommittee noted with appreciation that the Secretariat had continued to enhance the International Space Information Service and the website of the Office for Outer Space Affairs (www.unoosa.org).

C. Regional and interregional cooperation

36. The Subcommittee noted that the schedule of nine-month postgraduate courses for the period 2008-2011 offered by the regional centres for space science and technology education, affiliated to the United Nations, was included in the report of the Expert on Space Applications (A/AC.105/969, annex III).

37. The Subcommittee noted with appreciation that a publication on performance assessment and the future of the Regional Centre for Space Science and Technology Education in Asia and the Pacific had been made available to the Subcommittee at its current session.

38. The Subcommittee recalled that the General Assembly, in its resolution 64/86, had emphasized that regional and interregional cooperation in the field of space activities was essential to strengthen the peaceful uses of outer space, assist States in the development of their space capabilities and contribute to the achievement of the goals of the United Nations Millennium Declaration¹ and to that end fostered interregional dialogue on space matters between Member States.

39. In that regard, the Subcommittee noted that the third African Leadership Conference on Space Science and Technology for Sustainable Development had been held in Algiers from 7 to 9 December 2009 with financial support from the Office for Outer Space Affairs. The Conference was hosted by the Government of Algeria and organized by the Algerian Space Agency. At the Conference, Algeria, Kenya, Nigeria and South Africa signed an agreement on the African Resource Management constellation. Recommendations were made in several areas of cooperation among African countries, including space-based disaster forecast and management support, Earth observation for monitoring global climate change, water resources management and desertification, and capacity-building in space policy and space law. The fourth African Leadership Conference will be hosted by the Government of Kenya in 2011.

40. The Subcommittee also noted that the sixteenth session of the Asia-Pacific Regional Space Agency Forum (APRSAF) had been held in Bangkok from 26 to 29 January 2010. The theme of the session was "Space applications: contributions towards human safety and security". At the Forum, participants considered, inter alia, activities related to the Step 2 phase of Sentinel Asia, the APRSAF Satellite Technology for the Asia-Pacific Region (STAR) Programme, the Space Application for Environment programme, global navigation satellite systems and space education and awareness. The seventeenth session of APRSAF will be hosted by the Government of Australia in November 2010.

41. The Subcommittee further noted that the Asia-Pacific Space Cooperation Organization (APSCO) had organized several activities in 2009, including a training course on remote sensing technology and application, held in China, and the first APSCO symposium on space technology and applications, held in Thailand. The workplan of APSCO for 2010 included activities in spatial data sharing, atmospheric research and the development of an Asia-Pacific ground-based optical satellite observation system. A second APSCO symposium on space technology and

¹ General Assembly resolution 55/2.

applications, on the theme of agriculture and food security, will be held in Pakistan in September 2010.

42. The Subcommittee further noted the preparations being made for the Sixth Space Conference of the Americas, to be hosted by the Government of Mexico in November 2010, with a preparatory meeting to be held in Chile in June 2010. Representatives of Colombia, Ecuador and Mexico, as well as of the pro tempore secretariat of the Fifth Space Conference of the Americas, established by the Government of Ecuador, and the International Group of Experts, met in Quito on 16 and 17 December 2009 with financial support from the Office for Outer Space Affairs. The meeting resulted in a detailed workplan for the remaining preparations in the lead-up to the Sixth Space Conference of the Americas, including activities in the areas of tele-health, sustainable mountain development, disaster management, space policy and space law, and institutional aspects of regional cooperation and coordination.
