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Committee on the Peaceful Uses of Outer Space

International cooperation in the peaceful uses of outer space: activities of Member States

Note by the Secretariat

Addendum

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II. Replies received from Member States

China

[Original: English]

1. China's space industry has made great progress since the Government of China issued a white paper entitled "China's space activities" in 2000. In order to give people around the world a better understanding of the development of China's space industry over the past five years and its plans for the near future, the Government of China issued the white paper entitled "China's space activities in 2006" in October 2006.
2. The new white paper consists of five chapters: (a) aims and principles of development of China's space industry; (b) progress made in the past five years; (c) development targets and major tasks for the next five years; (d) development policies and measures; and (e) international exchanges and cooperation.
3. The white paper "China's space activities in 2006" will be distributed at the forty-fourth session of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space, to be held from 12 to 23 February 2007.

Czech Republic

[Original: English]

1. The coordination of the space activities of the Czech Republic attained a qualitatively higher level following the signing of the Plan for European Cooperating States (PECS) Charter of the European Space Agency (ESA) in Prague on 24 November 2004. The other ESA cooperating States participating at PECS are Hungary and Romania. The arrangement is a continuation of the cooperation with ESA that was initiated in 1998, within the limited framework of the ESA Scientific Experiment Development Programme (PRODEX). That collaboration has become closer under the Charter agreement, which should increase funding as well as opportunities for applied research and for private companies to develop space technologies in the Czech Republic.
2. The PECS Charter specifies the activities through which the Czech Republic will participate in both research and industrial projects of ESA. The projects are funded by contributions from the Czech Republic to the PECS programme of at least 1 million euros per year. To start the programme, 11 proposals have been selected by ESA programme boards and Czech officials. The overall budget for those proposals is 2.8 million euros, of which about 50 per cent will be spent in the field of space science and more than 20 per cent will be spent on the ground segment, almost 15 per cent on Earth observation projects and 3 per cent on satellite navigation. Other projects will be added in coming years following the evaluation of project proposals submitted to the Czech Space Office. The European Cooperating States Agreement is valid for five years, after which it can be prolonged.
3. A further development of ESA-Czech Republic relations in 2006 was the accreditation of the Czech Republic as an observer in two programme bodies of ESA: the International Relations Committee and the Earth Observation Programme Board. That important step, in line with the general strategy of the Czech Republic,

provides access to the decision-making process of ESA and should lead to full membership in ESA.

4. In January 2006, the Directorate for Human Spaceflight, Microgravity and Exploration of ESA introduced the Announcement of Opportunity for the “International Space Station: a Unique Research Infrastructure” (SURE) project, which provides an opportunity to perform fundamental and applied research projects on board the International Space Station. The SURE project is an ESA initiative funded by the European Commission under the Sixth Framework Programme. It is open to scientists, as well as small and medium-sized enterprises from European Union member States and associated countries, priority being given to new European Union member States, including the Czech Republic.

5. That approach provides a first opportunity for Czech scientists and enterprises to benefit from the financial support of the European Commission to perform research on board the International Space Station, as well as to act as user group leaders, responsible for various experiment activities, including their supervision, and acting as the interface between ESA and the user group members.

6. To better coordinate numerous space-related activities, the Czech Board for Space Activities has been reorganized under the auspices of the Ministry of Education, Youth and Sports of the Czech Republic. That advisory body is responsible for developing recommendations for the Government’s coordination of national and international space activities that take place in the country. The Board consists of experts designated by the Ministry of Education, Youth and Sports, the Ministry of Foreign Affairs, the Czech Academy of Sciences and other governmental and private entities involved in space-related activities. The Ministry of Foreign Affairs remains responsible for representing the Czech Republic before the Committee on the Peaceful Uses of Outer Space. The practical administration and management of space projects is mandated to the Czech Space Office, which is a non-profit organization supporting various activities, including the organization of seminars and workshops.

7. The Czech Republic, as a member State of the European Union, also participates in the space-related activities of the European Commission. The most important joint initiative undertaken by the European Commission and ESA is the Galileo satellite navigation system. A coordination board on global navigation systems was established by a governmental decree in October 2005 concerning the Ministry of Transport in order to ensure adequate participation in the Galileo programme.

8. One promising Galileo application is the Signal-in-Space Network through the Internet (SISNET), a new technology that combines the powerful capabilities of satellite navigation with the Internet. The highly accurate navigation information of the European Geostationary Navigation Overlay Service (EGNOS) is now available, usually through wireless networks of the Global System for Mobile Communications or the General Packet Radio Service, irrespective of the visibility of any geostationary satellite. The Czech Republic proposes to continue development of the current tools based on the ESA/SISNET system (including the possibility of building a special SISNET point in the Czech Republic) and to use such tools to develop specific applications. That project will disseminate information on the possibilities of use of EGNOS and SISNET among the new

European Union member States. It will increase practical knowledge and experience in the Czech Republic, prepare local enterprises for use of global navigation satellite systems and inform the public about Galileo applications. Further, it will develop new tools for using SISNET in Europe.

9. The 26th General Assembly of the International Astronomical Union, held in Prague from 14 to 25 August 2006, was attended by almost 2,500 astronomers. The first General Assembly of the International Astronomical Union to be held in Prague was in 1967, and its success led to the venue being selected for the meeting of 2006.

10. Following an established pattern, there was an extensive scientific programme of 6 symposiums, 17 joint discussions and 7 special sessions, as well as 4 invited discourses, on essentially all topics of contemporary astronomy. A new feature of the General Assembly held in Prague was the sessions on “hot topics”, designed to capture the excitement of the most recent astronomical activities. The most visible outcome of the deliberations was the new definition of a planet, according to which the number of planets of the solar system was reduced to eight. Other resolutions of the General Assembly dealt with coordinate reference systems and the Charter for Communicating Astronomy with the Public.

11. In that context, the Czech contribution to the study of hazardous near-Earth objects (NEOs) is of importance. Two main scientific institutions investigate the characteristics of asteroids in their research programmes: the Astronomical Institute of the Academy of Sciences of the Czech Republic at Ondřejov, near Prague, and the Astronomical Observatory at Klet mountain (at an altitude of 1,070 metres) in southern Bohemia.

12. The NEO project at the Astronomical Institute has two main tasks: first, photometric observations of NEOs, primarily for rotation studies and the identification of binaries, and second, their astrometry (precise measurements of the position of NEOs and the computation of their orbits). The NEO project has been supported by the grant agency of the Academy of Sciences of the Czech Republic and by the Space Frontier Foundation within the Watch project.

13. By the end of October 2006, a total of 825 catalogued asteroids (those with known orbits) had been discovered from Klet Observatory. That number puts the Klet Observatory among the top 15 world observatories in that field, and those observations include the astrometric measurements of 13 newly discovered and potentially hazardous asteroids. While the majority of the Klet Observatory’s photographic discoveries are main belt asteroids, two Amor-type asteroids and one Trojan asteroid have been found.

14. Each October, the Czech Republic holds World Space Week. The Czech Republic has a long tradition of public astronomical observatories and planetariums, which promotes public awareness of not only astronomy but also space science and technology applications. The first World Space Week was organized in the country in 2002 by the Czech Space Office. More than 25 entities from around the country worked to encourage broad participation, in particular that of young people. Recently, the focus has been on media presentations, lectures and exhibits, as reflected in the respective reports of the Spaceweek International Association.

Guinea

[Original: French]

1. As a West African country belonging to a group of developing countries with a less advanced level of technological progress, Guinea does not currently carry out any activities in outer space. However, given the increased number of activities in space, Guinea is interested in keeping outer space secure and free of waste and all other risks so that it can be used more effectively.
2. The creation of the Ministry of the Environment of Guinea and, within its headquarters, the National Centre for Environmental Observation and Monitoring, is a response to the multiple concerns arising from environmental problems. The main task of the Centre is environmental monitoring, with the aim of safeguarding the well-being of the population. Human activities that have an impact on the environment are problematic because that impact does not respect geographical boundaries.
3. Because Guinea is not yet a member of the Committee on the Peaceful Uses of Outer Space, the forty-fourth session of the Scientific and Technical Subcommittee provides an occasion for Guinea to understand the working methods, the conditions for participation and the role that Guinea could play with a view to becoming a member, as some developing countries already have.

Kenya

[Original: English]

1. Introduction

1. In Kenya, activities in space science and technology date to 1962, when an Italian scientist from the University of Rome “La Sapienza” expressed interest in conducting space science research on the Kenyan coast. That led to an exchange of letters between the University of Rome, on behalf of the Government of Italy, and the then Royal College of the University of East Africa in Nairobi, on behalf of the Government of Kenya. The San Marco satellite project at Malindi on the east coast of Kenya was thus established, and the first satellite was launched from Kenyan soil in 1967, just 10 years after the launch of the Russian Sputnik 1, in 1957.
2. Kenya became a member State of the Committee on the Peaceful Uses of Outer Space in 1973, pursuant to General Assembly resolution 3182 (XXVIII) and a letter dated 11 February 1974 (A/9492) from the President of the General Assembly to the Secretary-General. Kenya was the thirty-seventh State to join the committee.
3. Many applications of space science and technology can be found in Kenya, including disaster response and mitigation, weather forecasting, minerals prospecting, agriculture, water resource management, land mapping and telecommunications.
4. Kenya, together with Algeria, Nigeria and South Africa, has established the African Resource and Environmental Management (ARM) satellite constellation system for the better management of African resources.

2. Space science policy

5. In 1992, the Government of Kenya established the national science and technology task force to draft a space science and technology policy. In 1993, the task force submitted its report, and a cabinet memorandum was drafted by the Minister of State for Defence leading to Cabinet approval for the establishment of the national space science and technology secretariat within the Ministry of State for Defence.

6. The secretariat was to be given the responsibility of spearheading all space science and technology initiatives and preparing a draft science and technology policy, to be the guiding document in those matters. However, the secretariat has not yet been established. In 2006, the ARM initiative provided incentives to take action and establish it.

3. African Resource and Environmental Management initiative

7. During the forty-third session of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space, in February 2005, representatives of three member States, Algeria, Nigeria and South Africa, discussed the idea of establishing a body to help in the management of the natural resources and the environment of Africa. The representatives agreed to hold a consultative meeting in Algiers in May 2005. Due to the strategic location of Kenya, the group of three countries agreed to invite Kenya to the second consultative meeting, held in South Africa in September 2005. The third meeting was held in Nigeria in November 2005, followed by the meeting in Algiers in July 2006. At the next meeting, to be held in Nairobi in 2007, it is hoped that the four countries will sign a declaration of intent.

4. San Marco project

8. The San Marco project is situated at Malindi, on the east coast of Kenya. It was established by a memorandum of understanding, signed by the Government of Italy and the Government of Kenya. The project comprises a launching platform, a ground station for tracking and control of satellites and a remote sensing station. Malindi was chosen because of its location on the east coast of the African continent and its proximity to the equator.

9. The Malindi base has been used to launch satellites and for the tracking and control of satellites by the European Space Agency, the National Aeronautical and Space Administration of the United States of America and by governmental and private bodies.

5. Regional Centre for Mapping of Resources for Development

10. The Regional Centre for Mapping of Resources for Development was established in Nairobi in 1975 under the auspices of the Economic Commission for Africa and the Organization of African Unity (now called the African Union). It is a non-profit intergovernmental organization with 15 members: Botswana, Comoros, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Namibia, Seychelles, Somalia, Sudan, Swaziland, Uganda, United Republic of Tanzania and Zambia.

11. The core services of the Centre include professional training at different levels in surveying and mapping, digital photogrammetry, digital cartography, remote sensing, geographic information systems (GIS), the Global Positioning System (GPS), database development and management and general information technology. The Centre also provides advisory services in the areas of surveying and mapping, the applications of remote sensing, GIS and GPS, resource assessment and management, the development of geospatial databases and environmental management. The Centre offers repair and calibration services for surveying and mapping equipment.

6. Department of Resource Surveys and Remote Sensing

12. The Department of Resource Surveys and Remote Sensing was established within the Ministry of Environment and Natural Resources in 1976, with funding from the Government of Kenya and support from the Canadian International Development Agency.

13. The Department is mandated to collect, store, analyse and disseminate geospatial information on natural resources in order to facilitate informed decision-making for sustainable development, with the aim of alleviating poverty and land degradation. The data collected by the Department form the basis for the preparation of policies and development plans for decision-making in Kenya.

7. Kenya Meteorological Department

14. The Kenya Meteorological Department of the Ministry of Transport and Communication is a pillar in the worldwide efforts to monitor, understand and predict weather and climate in order to implement reliable and sustainable development initiatives.

15. The Department also provides oceanographic and other environmental data, including vegetation monitoring services. Public services include daily weather forecasts for the public, and for aviation and maritime use. Those short-, medium- and long-range weather forecasts are integrated into the national economic planning and management programmes.

8. Climate Prediction and Applications Centre of the Intergovernmental Authority on Development

16. The Climate Prediction and Applications Centre of the Intergovernmental Authority on Development was established in Nairobi in 1989 by 24 countries of eastern and southern Africa under the auspices of the World Meteorological Organization and the United Nations Development Programme.

17. The main objective of the Centre is to contribute to climate monitoring and prediction for early warning of extreme climatic events and the mitigation of their adverse impact on agricultural production, food security, water resources, energy and health, among other social and economic sectors. The Centre gives advisories and timely early warning on droughts, floods and other extreme climatic events.

9. National Council for Science and Technology

18. The National Council for Science and Technology was established within the Ministry of Science and Technology in 1977 by a parliamentary act, Chapter 250 of the Laws of Kenya. The Council has a mandate to provide advice to the Government of Kenya on all matters related to scientific and technological activities and research necessary for development.

10. Status of ratification of international agreements relating to activities in outer space

19. Kenya has so far ratified the following international agreements relating to activities in outer space:

(a) The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies¹ of 1966;

(b) The Convention on International Liability for Damage Caused by Space Objects² of 1971.

20. Other agreements to which Kenya has acceded include the following:

(a) The Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water³ of 1963;

(b) The Agreement Relating to the International Telecommunications Satellite Organization "INTELSAT"⁴ of 1971;

(c) The Convention on the International Maritime Satellite Organization⁵ of 1976;

(d) The Convention of the International Telecommunication Union⁶ of 1992.

Philippines

[Original: English]

1. Recognizing the important role of space technology and its applications in its national economic and social advancement, the Philippines took a first step in developing a national programme on space technology applications by convening the first National Congress on Space Technology Applications and Research, a nationwide assembly of the space technology stakeholders in the country that was held on 15 November 2005. Among the participants of the first National Congress were local government units, academic and research institutions, government and private organizations and private companies involved in activities related to space technology. The event was organized by the Department of Science and Technology

¹ United Nations, *Treaty Series*, vol. 610, No. 8843.

² *Ibid.*, vol. 961, No. 13810.

³ *Ibid.*, vol. 480, No. 6964.

⁴ *Ibid.*, vol. 1220, No. 19677.

⁵ *Ibid.*, vol. 1143, No. 17948. In 1994, the Organization changed its name to the International Mobile Satellite Organization.

⁶ United Nations, *Treaty Series*, vol. 1825, No. 31251.

of the Philippines through the Philippine Council for Advanced Science and Technology Research and Development, which serves as the sectoral council of the Department of Science and Technology in the field of advanced science and technology and related fields.

2. The National Congress brought together space technology users, providers and developers in the Philippines in an effort to craft and push for national programmes promoting the use of and research into technologies such as remote sensing, geographic information systems and space satellite communications in aid of national development programmes. In particular, the National Congress explored the uses and benefits of space technology in addressing concerns such as natural resources accounting, environmental management, disaster monitoring and mitigation, communications, poverty alleviation and sustainable development planning.

3. The first National Congress on Space Technology Applications and Research resulted in the formulation of a cohesive space technology national programme taking into account the Millennium Development Goals, the Water Sector Development Strategy and the outcome of the World Summit on the Information Society. To that end, the first National Congress saw the adoption of a national action agenda, flagship projects and capacity-building programmes for the development of the space technology sector in the Philippines. The Congress also identified mechanisms for mobilizing local and international funding for the programme and for strengthening cooperation and coordination among stakeholders at the national, regional and international levels.

4. Preparations for the first National Congress were based on workshops held across the Philippines months before the Congress was convened. Input was solicited from representatives of relevant government, private sector and academic and research institutions from the various regions and provinces in the Philippines on issues and problems that could be addressed through space technology applications, as well as proposed solutions. Those workshops covered topics such as satellite communication applications, meteorological satellite applications, monitoring of natural hazards, disaster management using satellite-based information and communication technologies and space education development.

5. The report on the first National Congress on Space Technology Applications and Research will be distributed on CD-ROM at the forty-fourth session of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space, to be held from 12 to 23 February 2007.
