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THIRD UNITED NATIONS CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE

Draft report of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space

Note by the Secretariat

The General Assembly, in its resolution 52/56 of 10 December 1997, agreed that the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) should be convened at the United Nations Office at Vienna from 19 to 30 July 1999 as a special session of the Committee on the Peaceful Uses of Outer Space, open to all States Members of the United Nations. In the same resolution, the Assembly also requested the Preparatory Committee and the Advisory Committee to carry out the preparatory work, including the preparation of the draft report of the Conference by those bodies. The Committee on the Peaceful Uses of Outer Space and its Scientific and Technical Subcommittee have acted as the Preparatory and Advisory Committees for UNISPACE III, respectively.

The text contained in the annex to the present note was prepared by the Secretariat on the basis of comments made by the Advisory Committee at its 1999 session during its section-by-section consideration of the text contained in document A/CONF.184/PC/1, which had been prepared by the Secretariat on the basis of comments made by the Preparatory Committee, at its 1998 session, on the first full draft report, as contained in document A/CONF.184/PC/L.1. The first full draft report had been prepared by the executive secretariat on the basis of comments made by the Advisory Committee at its 1998 session on the structure and content of the text contained in document A/AC.105/C.1/L.218, which had elements to be included in the draft report.

The present revised version of the draft report will be submitted to the Preparatory Committee for finalization at its 1999 session, to be held from 14 to 16 June 1999, so that the draft report can be forwarded to the Conference for consideration.

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Annex

Draft report of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space

Contents

Summary

I. Introduction (Parts I-III)

Outer space is the province of all humankind, and therefore should be used for peaceful purposes. In the twentieth century, humanity has made significant progress in the development and use of space science and technology to address human needs. At the threshold of a new millennium, the global community is faced with challenges to its sustainable development and is also presented with significant opportunities for scientific and socio-economic development. Global cooperation in space science and technology can help meet those challenges and opportunities.

Since the launch of Sputnik-I in 1957, humankind has sent satellites into orbit to provide daily information on the Earth's weather and data for use in the management of natural resources and disasters and for environmental monitoring, and to provide communication linkages, which have shrunk distances between communities, resulting in greater interdependence among nations. Scientific satellites and orbital platforms have deepened our understanding of the universe, of our planet's place in the universe and of interactions between our Earth and the life-giving Sun.

The United Nations has accorded significant importance to the promotion of greater international collaboration in those areas. The Committee on the Peaceful Uses of Outer Space, established by the General Assembly in 1959, and the Committee's Scientific and Technical as well as Legal Subcommittees have fostered international cooperation in different aspects of space science and technology and their applications, including those for sustainable development. The Assembly has also adopted several treaties and sets of principles, laying the ground rules for the peaceful and fruitful conduct of space activities.

Recognizing the need for a global dialogue on those key issues, the United Nations held two space conferences in Vienna, in 1968 and in 1982. Those conferences led to many new initiatives, including the creation of the United Nations Programme on Space Applications, the expansion of its mandate and the establishment of regional centres for space science and technology education. Such initiatives and others aimed at building in developing countries the human and institutional capacities for understanding and use of space technologies for socio-economic development. Several United Nations agencies have also joined in the efforts to meet those objectives within their respective mandates.

And yet, many challenges remain. Today, continued population growth and unsustainable patterns of production and consumption are putting increasing pressure on the Earth's environment and on scarce natural resources. Each year, natural disasters cause damage in the billions of dollars and claim countless human lives. Improved space capabilities and international cooperation could assist in dealing with those issues and could also enhance economic and social progress. There is also a need to devise more effective mitigation measures against space debris and to improve our understanding of the effects of solar storms.

To address those challenges, and to take advantage of new opportunities, the General Assembly decided in its resolution 52/56 of 10 December 1997 to convene the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) in Vienna from 19 to 30 July 1999, under the theme "Space Benefits for Humanity in the Twenty-First Century". The Conference is an invitation to the international community to take stock of the significant developments that have taken place since 1982, including geopolitical changes, numerous scientific and technological advances, the contributions of new "space-faring" nations

and the important role of the private sector. Accordingly, the primary objectives of the Conference are:

- To promote the effective means of using space solutions to address problems of regional or global significance;
- To strengthen the capabilities of Member States, especially developing nations, to use the results of space research for economic and cultural development;
- To enhance international cooperation in space science and technology and its applications.

UNISPACE III presents a unique opportunity for the world's experts and decision makers to meet and exchange information and ideas to advance the human condition into the next millennium.

II. Harnessing the potential of space at the start of the new millennium (Part IV)

A. Protecting the environment

1. Scientific knowledge of Earth and its environment

Planet Earth is facing the increasing threats of rapid environmental changes, including climate change and its attendant consequences, deforestation, desertification and land degradation, further depletion of the ozone layer, acid rain and a reduction in biodiversity. Such changes would have a profound impact on all countries, yet many important scientific questions remain unanswered.

Satellites can provide the synoptic, continuous and long-term global observation needed to understand the Earth's system more comprehensively, in conjunction with the use of modelling technology, to address issues such as (a) the influence of the Sun on the Earth's environment; (b) global climate change; and (c) impacts on the environment and human health caused by anthropogenic activities and changes in the ozone layer.

2. Environment and natural resources and remote sensing

Weather forecasting, disaster management and the management of Earth's resources are areas where remote sensing is contributing successfully to the improvement of the human condition. Reliable weather forecasting and longer-term climate predictions have become an essential part of our daily life. Satellites increasingly provide important information for early warning and management of the effects of disasters and information that is useful in the management of agriculture, forestry, minerals, water resources and fisheries. All these applications need continuous data acquisition and will benefit from improvements in remote sensing technologies and associated data analysis.

Measures should be taken to maximize the benefit of remote sensing systems through increased availability and affordability of data and information products; improved provision of technical information, training and financial support for developing countries to understand and use remote sensing data and derived information; improved understanding on the part of decision makers of the importance and usefulness of remote sensing data and derived information in the development process; and improved coordination among ongoing and planned programmes and initiatives to eliminate duplicated efforts and to identify gaps.

B. Facilitating and utilizing communications

Communications and broadcast satellites have progressed from small, low-power satellites with low-gain antennas to large complex platforms with high transmission power, precise pointing, a very high frequency reuse and longer design life. Such technological advances have led to a progressive emergence of new telecommunications services and applications. Newly proposed or enhanced satellite services include mobile telephony, data, imaging, video teleconferencing, digital audio, multimedia and global Internet access. Wide-ranging applications being planned include distance learning, corporate training, collaborative work groups, telecommuting, telemedicine, electronic commerce, direct-to-home video and satellite news-gathering, as well as the distribution of music, software, scientific data and global financial and weather information.

Rapid advances in communications and information technologies have had many positive effects, but have also widened the gap between those who can use those technologies to access more information more quickly and those who cannot. New satellite communications systems can reduce that information gap. In addition, countries with poor communications and information infrastructures should consider establishing legislative and regulatory frameworks, assessing how space technology can meet their information and communications needs and investing in telecommunications infrastructure accordingly.

C. Improving and using position/location capabilities

There are currently two global satellite navigation systems (GSNS), the Global Positioning System (GPS) of the United States of America and the GLObal NAvigation Satellite System (GLONASS) of the Russian Federation. The use of transmitted signals to determine position, velocity and time from these military systems has been offered free of charge to civilian users. The services are used largely in the field of transportation and surveying, but new applications, such as in meteorology and geology, satellite navigation, telecommunications timing and geographical information systems (GIS), have emerged. With a view to further developing the capabilities of such systems, the United States is embarking on a major enhancement of GPS as well as implementing the Wide Area Augmentation System (WAAS), Europe is implementing the European Geostationary Navigation Overlay System (EGNOS), and Japan is implementing the Multi-functional-Transport-Satellite-based Satellite Augmentation System (MSAS). Europe is considering a follow-up system, the Global Navigation Satellite System-2 (GNSS-2). International acceptance of such systems for navigation and other civil applications purposes depends on the guarantees of open access and continuity for civilian use and the enhancement of the system through overlay or augmentation. Building on the widespread use of the above-mentioned GSNS today, regional and global coordination is essential to achieve seamless multimodal satellite-based radio navigation, timing and positioning services for all users.

D. Furthering knowledge and building capacity

The ability to develop and use space science and technology depends critically on the availability of human resources with appropriate knowledge and skills. Research, education and training are the cornerstones for furthering knowledge and are part of the overall capacity-building process. In addition, capacity-building includes establishing policies, establishing institutional frameworks and physical infrastructures, ensuring funding support and gaining experience, the latter by undertaking research and operational activities. A key element of the effort to build such capacities in the developing countries is the establishment, under the

auspices of the United Nations Programme on Space Applications, of the regional centres for space science and technology education. Those centres should be endowed by the United Nations with appropriate financial and other support.

E. Enhancing education and training opportunities for youth

Planning of space activities should be accompanied by appropriate long-term strategies for human resource development, with emphasis on the cross-cultural experience and interdisciplinary training of future decision makers and managers in space activities. While educational activities are already undertaken for young people in some countries by space agencies, the United Nations and others could provide educational and training opportunities for students and young scientists and engineers. Efforts should also be strengthened to provide young people with opportunities to express their unique and innovative ideas and visions for space activities. Accordingly, UNISPACE III extends invitations to young space professionals to express their visions and perspectives on future space endeavours.

[Summary of section (e), "Visions and perspectives of youth", could be inserted.]

F. Information needs and the global approach

Information technology includes a cluster of technologies in the field of computing, software, microelectronics, telecommunications, databases and networking. Information systems are fundamental tools for organizing, handling and integrating data through appropriate algorithms and generating information in the form that is most suited to the intended user group. They are valuable for monitoring events, for research and applications, for education and training and for decision-making. Information infrastructures are essential elements of development in any country. Space technology is a potent tool for gathering information and for communicating it rapidly and efficiently over wide and remote areas.

However, many developing countries have not yet established information infrastructures and thus lack access to information as a basic resource for development. It is critical for those countries to invest in building up their national information infrastructure. Furthermore, the resolution of environmental and other issues at the global and regional levels will require a greater integration of national information networks into regional and global ones. This can be facilitated by the use of appropriate space technologies and by the adoption of common standards, distributed networks and common user interfaces.

G. Spin-offs and commercial benefits from space activities—promoting technology development and exchange

Products and services derived from space technology have improved the quality of life all over the world in countless ways. Space research and development promotes and incorporates innovations in many high-technology areas, such as computer software and hardware, advanced electronics and materials, telecommunications, health sciences, remote sensing, launch services and satellite manufacturing. Other major beneficiaries from space technology investments and spin-offs include transportation, environmental monitoring, public safety and computer and information technology sectors.

Space agencies are increasingly entering into partnerships with the private sector for the attainment of their programme objectives. Furthermore, commercial firms have become the

primary investors in certain parts of the space market, such as satellite telecommunications. Next to telecommunications, remote sensing, launch services and geographic information systems may be among the most significant areas for commercial space activities. Directly and indirectly, space technology is now used by thousands of companies worldwide to bring new products, processes and services to the world market and at ever lower, more affordable prices.

For developing countries, relevant space-related technologies can be used to address social and economic problems effectively. However, notable barriers to the transfer of such technologies exist and include development and acquisition costs, weak infrastructures, lack of defined government policy and support and limited private investment and training opportunities in developing countries. By successfully addressing those issues, developing countries would create a more favourable environment for and a greater use of space technologies.

H. Promotion of international cooperation

In its resolution 51/122 of 13 December 1996, the General Assembly reaffirmed the commitment of Member States to promote international cooperation in the exploration and peaceful uses of outer space for the benefit and in the interest of all States, taking into particular account the needs of developing countries. The fading away of cold war tensions has dramatically altered the way in which the space-faring nations conduct space activities. They and other countries have come to recognize both the advantages of working together to identify common goals and the need to optimize their financial and other resources. An example is the International Space Station, the largest project involving international cooperation in space to date. The countries participating in it have the opportunity to apply technologies connected with the presence of humankind in space and to carry out research, particularly in the sphere of medicine.

In view of their universal importance, environmental monitoring and disaster management may be two of the areas where the potential is greatest for enhancing international cooperation. In order to promote cooperation at all levels, the use of the following mechanisms should be enhanced: international intergovernmental and non-governmental organizations and arrangements, ad hoc inter-agency mechanisms, bilateral and regional agreements, programme-specific agreements and transnational commercial activities. International space law as developed by the United Nations through the Committee on the Peaceful Uses of Outer Space reflects the importance of and provides the framework for international cooperation. So far, the United Nations has drawn up and approved five treaties and five sets of legal principles on matters relating to the peaceful uses of outer space.[1]

To develop political support for international cooperation in space activities, there should be multilateral consensus to implement common space goals, identified, *inter alia*, by the General Assembly in its resolution 51/122, at the highest decision-making level. To enhance its role in promoting international cooperation in the peaceful uses of outer space, the United Nations should ensure that the agenda of the Committee on the Peaceful Uses of Outer Space and its subcommittees reflect the full scope of issues of relevance to contemporary space activities. Steps should also be taken to improve the coordination of space activities within the United Nations system. The full implementation of those activities by the United Nations and Member States will promote the peaceful and fruitful exploration and utilization of outer space for the betterment of this and future generations.

Notes

[1]The five treaties and agreements are the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (the "Outer Space Treaty"), adopted on 19 December 1966, opened for signature on 27 January 1967, entered into force on 10 October 1967, 94 ratifications and 27 signatures; the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (the "Rescue Agreement"), adopted on 19 December 1967, opened for signature on 22 April 1968, entered into force on 3 December 1968, 83 ratifications and 25 signatures; the Convention on International Liability for Damage Caused by Space Objects (the "Liability Convention"), adopted on 29 November 1971, opened for signature on 29 March 1972, entered into force on 1 September 1972, 76 ratifications and 25 signatures; the Convention on Registration of Objects Launched into Outer Space (the "Registration Convention"), adopted on 12 November 1974, opened for signature on 14 January 1975, entered into force on 15 September 1976, 39 ratifications and 4 signatures; and the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (the "Moon Agreement"), adopted on 5 December 1979, opened for signature on 18 December 1979, entered into force on 11 July 1984, 9 ratifications and 5 signatures.