



# General Assembly

Distr.: General  
18 August 2004  
English  
Original: Russian

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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

### Ukraine

[Original: Russian]

1. The space activities of Ukraine in 2003 were directed towards meeting the country's obligations under international programmes and projects, implementing the priority projects of the Third National Space Programme for the period 2003-2007 and improving the effectiveness of the work of the national space sector through restructuring and commercialization, increasing large-scale introduction of advanced space technologies, creating the conditions for increasing competition and private initiative and establishing broad cooperation with international financial, scientific and technical and other organizations. Activities that were carried out to implement priority projects under the Third Programme are described below.

#### 1. Development of space technologies

##### (a) Satellite radio-navigation system

2. Work continued on the establishment of a space navigational timekeeping system in Ukraine, including the development of the ground segment of the system and its integration into the ground infrastructure of the European Geostationary Navigation Overlay.

3. The implementation of the system will allow the formation in Ukraine of a navigation area meeting world standards for air, sea and land transportation safety. Modern satellite navigation support will play an important role in servicing existing and developing new transport routes between European and Asian countries and will bring Ukraine significant economic returns.

4. Ukraine is planning to work on the system in cooperation with the principal users of the information produced, in particular the Ministry of Transport. Among the main tasks in the near term is the implementation of a differential ground subsystem of the Global Navigation Satellite System of the Russian Federation, the Global Positioning System of the United States of America and the European Satellite Navigation System, Galileo. A target date of 2008 has been set for integrating the Ukrainian space navigation timekeeping system into the evolving Galileo.

##### (b) Remote sensing

5. Work continued on the design of the Sich-1M and Mikrosputnik satellites for remote sensing. In 2003, production and testing of the Sich-1M satellite and its auxiliary systems and scientific instrumentation were completed. Operating trials were developed and performed to test the basic hardware and software of the ground-based flight control system, and trials were also developed and produced for the principal components of the Sich-1M special ground complex.

6. Work is nearing completion on the production and testing of the Mikrosputnik satellite, which is scheduled to be launched with the Sich-1M satellite as an accompanying payload. This satellite is designed for use in developing

manufacturing technologies for new-generation spacecraft and for remote sensing tasks. In 2003, a thermal model and units for experimental trials were produced, and work was completed on the independent design of on-board instrumentation and Mikrosputnik units. Work is continuing on the organization of launch-site trials to prepare for the launch of the Sich-1M and Mikrosputnik satellites from the Plesetsk cosmodrome (Russian Federation). Applied science programmes were developed for using remote data from those satellites. Scientific research was carried out to develop a method for using remote data for monitoring the atmosphere, land, seas and oceans. A programme of modernization was also carried out to upgrade the ground-based infrastructure for the management and reception of remote data from these satellites and from foreign satellites such as the Meteor-3M of the Russian Federation and Terra and Aqua of the United States.

## **2. Space research**

7. Space research in 2003 was directed towards preparing for the conduct in 2004 of the international experiment Variant on board the Sich-1M satellite. The experiment will be carried out by scientists from Ukraine and also from Austria, Bulgaria, Germany, Hungary, Poland, the Russian Federation and the United Kingdom of Great Britain and Northern Ireland.

8. The project was designed for the reception of data from space in the optical, infrared and very high frequency ranges. Apparatus installed on board the Sich-1M satellite allows Earth observation with a resolution of up to 24 metres over a swathe of 2,000 kilometres. The programme for the use of Sich-1M data is aimed at a wide range of users in Ukraine, the Russian Federation and other countries. The project has a number of research and development aims, in particular in the areas of efficient use of natural resources, monitoring of natural disasters and anthropogenic hazards, and investigation of the factors influencing weather and climate formation.

9. The foundations were laid for a Ukrainian project based on domestic microsatellites for ionospheric research employing multi-positional measurements of plasma parameters.

10. Work was completed on the programme to provide the National Space Technology Operating and Test Centre in Evpatoria with antenna equipment for astrophysical research on very long baseline radiointerferometry technology. In 2003, Ukrainian specialists were involved in this research in connection with preparations for the large-scale international space project Radioastron, scheduled for launch in 2006. Solar research continued under the international project Coronas-F. Under the overall Russian-Ukrainian programme to prepare scientific and technological experiments on the International Space Station, the system definition phase was started for the development of scientific equipment. The first experiments in the programme are scheduled for the end of 2005.

## **3. Space systems**

11. Space systems were further developed in the following areas:

(a) Space transport systems: work continued on the design of a new generation of competitive launching systems through the modernization of the existing standard and converted launch vehicles;

(b) Basic space platforms: work is being completed on the design of a new-generation basic space platform (Mikrosputnik project).

#### **4. Cooperation with international organizations**

##### **(a) Inter-Agency Space Debris Coordination Committee**

12. In 2003, a delegation from the National Space Agency of Ukraine (NSAU) represented the country at the twenty-first session of the Inter-Agency Space Debris Coordination Committee in Bangalore, India. With its integrated and multidimensional approach to tackling the space debris problem, Ukraine meets the standards of the leading space-faring countries in terms of the intensity of its efforts. Research and practical measures are being directed towards several objectives, including:

- (a) Preventing and reducing space debris resulting from the launch of carrier rockets;
- (b) Preventing outer space pollution due to satellite exploitation;
- (c) Studying space debris using Ukraine's radiocommunications systems;
- (d) Modelling the processes involved in hypervelocity collisions of macroscopic space debris fragments with construction elements of space objects and with samples of construction materials;
- (e) Developing and implementing technical standards documentation to define general requirements for mitigating orbital pollution due to the exploitation of space technology.

##### **(b) European Organization for the Exploitation of Meteorological Satellites**

13. On 14 April 2003, a licence agreement was signed by NSAU and the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT) for the cost-free use of half-hour high-resolution data images transmitted from the Meteosat satellite of EUMETSAT.

14. The conclusion of the agreement will make it possible for NSAU and the State meteorological service, Gosgidromet, to receive digital data from the EUMETSAT Meteosat geostationary satellite, transmitted in coded form at half-hourly intervals.

#### **5. Space launches**

15. In 2003, under the Sea Launch programme, three launches were made by the Zenit-3SL launch vehicle from the Odyssey floating launch platform in the equatorial Pacific near Christmas Island.

16. On 10 June 2003, at 1656 hours Kiev time, the Zenit-3SL launch vehicle was successfully launched with the Thuraya-2 satellite, which was designed by Boeing of the United States for the Thuraya Satellite Telecommunications Company of the United Arab Emirates. The Thuraya-2 satellite allowed Thuraya Satellite Telecommunications to establish telecommunication services reaching 100 countries in the Middle East, North and Central Africa, South and Central Asia and Europe.

17. On 8 August 2003, at 0630 hours Kiev time, the Zenit-3SL launch vehicle was launched with the EchoStar IX satellite, which is one of a series of television

satellites owned by the EchoStar Communications Corporation. EchoStar-IX brought to nine the total number of EchoStar satellites, providing digital television to 8 million users.

18. On 1 October 2003, at 0703 hours Kiev time, the Zenit-3SL launch vehicle was launched with the Galaxy 13 satellite. The Galaxy-13/Horizons satellite is jointly owned by PanAmSat Corporation of the United States and JSAT Corporation of Japan. It was produced by Boeing Satellite Systems on the basis of the Boeing GO1HP unit and has 48 active retransmitters. The satellite is used to relay digital television broadcasts, transmit data and provide Internet services for the Central and North American regions, including Alaska, and the Hawaiian islands.

## **6. Bilateral cooperation**

19. Ukraine sought actively to strengthen the position of its domestic enterprises in the world market for space technology and services, to meet its international obligations in the space sphere and to concentrate efforts on the priorities set for space activities.

20. Its efforts were focused chiefly on creating a framework under international law for a joint project with Brazil to design the Cyclone-4 space rocket at the Alcantara cosmodrome. An intergovernmental treaty and implementing agreements for the project were signed and the project is now being implemented.

21. In 2003, Ukraine continued active collaboration with the Russian Federation between the two countries' space agencies and their commercial space sectors. This collaboration is based on extensive industrial cooperation, participation in international projects and joint long-range plans of action agreed by the space agencies. Priorities included the preparation for launch of the Sich-1M remote sensing satellite, work on the international commercial space projects Sea Launch, Dnepr and Land Launch, and collaboration between scientific institutes on space research, especially the programme of research and experiments aboard the Russian segment of the International Space Station.

22. China came to the fore in 2003 as a major space partner of Ukraine. Under long-term collaboration programmes for 2001-2005, several trade agreements were signed, providing a significant stimulus to Ukraine's scientific and technological capabilities.

23. Cooperation with the European Union is gradually increasing. Coordination was established with the European Space Agency and the European Commission, and a joint working group was established on Ukraine's cooperation with the Commission in the areas of space research and the peaceful uses of outer space.

24. Cooperation with Egypt and the Republic of Korea was revitalized. As a result, work has begun with Egypt on the design of a remote sensing satellite for the country's use.

25. Most of the project goals under the Third Programme derive clearly and naturally from objective factors in modern Ukrainian society and social development. They are supported by international law and have been formulated in the policy documents of the Government, the programme of cooperation with the European Commission, the strategy for socio-economic development outlined in the annual report of the Ukrainian Parliament and recent decrees of the President of

Ukraine. The goals are prompted by the problems that the country needs to solve as part of its reconstruction process on a basis of sustainable development: improving financial, economic, socio-political, demographic and environmental security; developing electronic communication throughout Ukrainian society, furthering the sciences and education; conserving resources and biodiversity; improving disaster management; and tackling other problems of a similar nature.

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