



# General Assembly

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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

### Chile

[Original: Spanish]

#### Introduction

1. On 17 July 2001, Supreme Decree No. 338 was issued, creating a Presidential Advisory Committee known as the Chilean Space Agency and signed by the President of the Republic, the Secretary-General of the Presidency and the Ministers for Foreign Affairs, National Defence, Finance, Transport and Telecommunications and Education.

2. Considering the expediency of developing and increasing knowledge in the field of space sciences and the benefit to be derived from the application of space technology to various areas of national activity, the firm intention of the Government of Chile to accord the highest priority to the development of space policy and its applications to the country's economic and social development, the need to ensure that Chile's views are given due consideration by international organizations and that the country enjoys the benefits of international cooperation in outer space affairs, the desire of the Government of Chile to demonstrate to the international community that it advocates the use of outer space for peaceful purposes and in that regard wishes to adopt a consistent approach that reflects Chile's position, and the urgent need for an institution that represents all national sectors and, on the basis of participation and consideration of all interests, affords cooperation to the President of the Republic of Chile and serves as coordinating authority for the various competent Government agencies, the following functions have been assigned to the Advisory Committee:

(a) To advise the President of the Republic on all matters concerning the identification, formulation and implementation of policies, plans, programmes, measures and other activities relating to space, to serve as coordinating authority for the competent public bodies and to help bring foreign policy on outer space affairs into line with national space policy by fostering coordination between the Ministry of Foreign Affairs and other ministries represented in the Chilean Space Agency and by making the appropriate recommendations;

(b) To propose national space policy and the measures, plans and programmes required for the implementation thereof;

(c) To serve as coordinating authority for the implementation of national space policy and related programmes, plans and measures;

(d) To serve at both the national and international levels as coordinating authority for the various public bodies with competence in matters relating to space development;

(e) To promote and propose the conclusion of international agreements with a view to facilitating and channelling international cooperation;

(f) To promote and propose the conclusion of agreements or other instruments that encourage public and private contributions to space development;

- (g) To propose criteria for the allocation of national resources, or resources made available through international cooperation, to space development;
- (h) To provide advice on the formulation of national plans and programmes to study, develop and utilize the full potential of space technology;
- (i) To propose campaigns to promote scientific, technological and academic exchange as well as training, research and public information in the field of space activities;
- (j) To maintain systematic and up-to-date information on space activities conducted at the national and international levels;
- (k) To draw up and propose a draft law creating a permanent institutional framework for space activities.

#### **Strategic objectives for 2004**

3. The strategic objectives of the Chilean Space Agency for 2004 were:
- (a) To promote the approval by the national congress of the organic law creating the Chilean Space Agency;
  - (b) To promote draft national policy on space;
  - (c) To conduct a feasibility study on the establishment in Chile of a national centre for receiving, processing, storing and distributing satellite images;
  - (d) To participate in the signing of an intergovernmental agreement with the Russian Federation on outer space;
  - (e) To participate in the International Air and Space Fair (FIDAE), held in Santiago from 29 March to 4 April 2004, by setting up an exhibition stand and helping to organize a special international conference entitled "International Conference on Space and Water: Towards Sustainable Development and Human Security" on 1 and 2 April 2004.

#### **Key tasks in 2004**

4. The following tasks of the Chilean Space Agency for 2004 are in progress or are awaiting implementation:
- (a) Establishment of working definitions and plan for drafting legislation and national policy on outer space;
  - (b) Project "OFF-SET" of the Chilean Air Force (FACH). Definition of the role of the Agency, acquisition of information compiled by the Production Promotion Corporation (CORFO) and formulation of a work plan;
  - (c) Budget for the period 2004-2005;
  - (d) Ongoing development of the Chilean Astronaut Project. Dispatch of a set of scientific experiments to the International Space Station (ISS);
  - (e) Visit to Chile of President Vladimir Putin of the Russian Federation in November 2004 (within the framework of the sixteenth ministerial meeting of the Asia-Pacific Economic Cooperation (APEC), held in Santiago on 17 and 18 November 2004). Inclusion in the agenda of the signing of an intergovernmental

agreement on matters relating to outer space, and signing of a memorandum of understanding between the space agencies;

(f) Conferences on space in Chile in November 2004: eleventh Latin American Symposium on Remote Sensing and Spatial Information Systems and the International Symposium of the Latin American Society on Remote Sensing and Spatial Information Systems (SELPER), held at the Diego Portales Convention Center, from 22 to 26 November 2004; Pan Ocean Remote Sensing Conference (PORSEC), held at the University of Concepción from 29 November to 3 December 2004;

(g) Intergovernmental agreement with Argentina and memorandum of understanding with the National Institute for Aerospace Technology (INTA) of Spain;

(h) Chile's accession to the ad hoc Group on Earth Observations (GEO);

(i) Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (International Charter "Space and Major Disasters"). Chile's accession to GEO through the National Emergencies Office of the Ministry of the Interior;

(j) Feasibility study on the use of geostationary orbit positions assigned to Chile for telecommunications satellites.

#### **Integration of the Chilean Space Agency into the international community**

5. Table 1 below shows the bilateral cooperation agreements concluded by the Chilean Space Agency.

Table 1  
**Bilateral cooperation agreements concluded by the Chilean Space Agency**

<i>Date of signing</i>	<i>Type</i>	<i>Country or organization</i>	<i>Signed by</i>	<i>Areas of cooperation</i>
20 March 2002	Agreement (memorandum of understanding)	Brazil	Chile: Nelson Hadad Heresy Brazil: Múcio Roberto Días	Study of Earth phenomena; space technology, training and dissemination
3 April 2002	Agreement (memorandum of understanding)	France (Centre national d'études spatiales (CNES))	Chile: Nelson Hadad Heresy France: Alain Besousan	Implementation of scientific programmes; application programmes; space technology, satellite navigation, space law and other issues of mutual interest
24 April 2002	Agreement (memorandum of understanding)	Ukraine (National Space Agency of Ukraine (NSAU))	Chile: Nelson Hadad Heresy Ukraine: Valery Komarov	Scientific programmes, application programmes, space technology, ground-based infrastructure, presentation of launch service, satellite navigation, space law and cooperation

<i>Date of signing</i>	<i>Type</i>	<i>Country or organization</i>	<i>Signed by</i>	<i>Areas of cooperation</i>
12 December 2002	Declaration	Israel	Chile: Isidro Solis Palma Israel: Josef Regev	Space technology and its applications; peaceful use of outer space; space research
12 June 2003	Memorandum of understanding	Office for Outer Space Affairs	Chile: Isidro Solis Palma Office for Outer Space Affairs: Sergio Camacho	Effective and practical application of space science and technology with a view to achieving the sustainable economic and social development of Chile and other countries, and raising awareness of the benefits of space research and the use of satellite technology to alleviate poverty and promote sustainable development
5 September 2002	Summary of negotiations	China	Chile: Nelson Hadad China: Luan Enjie	Space science, space technology applications, ground-based facilities and facilities used in the application of satellite data, launch services, space law and staff exchanges and training
30 October 2001	Provisional agreement	Russian Federation	Chile: Deputy Director of Special Policy, Ministry of Foreign Affairs Russian Federation: Deputy Director-General of the Russian Aviation and Space Agency	Cooperation in the aerospace, nuclear, technical, military and scientific fields and in mining, with a view to the future creation of a legal framework for interaction in those areas of activity: necessity to ensure that outer space remains a weapon-free zone

6. Table 2 below shows the draft bilateral cooperation agreements.

**Table 2**  
**Draft bilateral cooperation agreements**

<i>Country</i>	<i>Agency</i>	<i>Background</i>
Argentina	National Commission on Space Activities (CONAE)	Inter-institutional Agreement on Scientific and Technological Cooperation between the Secretariat of Science and Technology of the Ministry of Culture and Education of Argentina and the National Commission for Scientific and Technological Research (CONICYT) of Chile, signed on 20 August 1991; Basic Agreement on Technical and Scientific Cooperation between the Government of Argentina and the Government of Chile, signed in Santiago on 26 August 1994. On 5 July 2002, Chile's final proposal was sent by telefax to the Embassy of Argentina in Santiago. On 30 September 2004, an official communication was sent to the Special Policy Directorate (DIPESP), inviting Chile to sign an intergovernmental agreement with Argentina on outer space affairs.

<i>Country</i>	<i>Agency</i>	<i>Background</i>
Netherlands	Netherlands Agency for Aerospace Programmes (NIVR)	On 4 February 2002, the Chilean Space Agency notified the Special Policy Directorate of its interest in strengthening cooperation with the Netherlands on outer space affairs.
Italy	Italian Space Agency (ASI)	The Italian Space Agency made financial resources available to Chile. A framework agreement on economic, industrial, scientific, technological, technical and cultural cooperation was concluded on 8 November 1990.
Canada	Canadian Space Agency (CSA)	On 4 July 2002, the Chilean Space Agency transmitted a request, through the Special Policy Directorate, to the Chilean Embassy in Canada to establish official contact with CSA, with a view to examining the feasibility of signing a framework cooperation agreement and enlisting support for the implementation of the Chilean Astronaut Project. During a visit to the CSA in October 2004, the Chilean Space Agency was informed of Canada's willingness to sign a letter of intention.
Spain	National Institute for Aerospace Technology (INTA)	During the International Air and Space Fair of 2002, contact was established with General Eduardo Zamarripa, Deputy Director-General of INTA, and proposals are shortly to be submitted by both parties for the signing of an inter-agency cooperation agreement. On 30 September 2004, an official communication was transmitted to the Chief of Defence Staff of the Ministry of National Defence, containing draft memorandums of understanding with INTA.
India	Indian Space Research Organization (ISRO)	During the first quarter of 2002, the Chilean Embassy in India transmitted a proposal for an agreement between the Chilean and Indian space agencies for consideration by ISRO. As at October 2004, an agreed text for a memorandum of understanding between the Indian and Chilean space agencies is available, to be signed at the earliest convenience.
Germany	German Aerospace Center (DLR)	On 9 May 2002, the Chilean Space Agency requested the Special Policy Directorate of the Ministry of Foreign Affairs to establish official contact with the Embassy of Germany in Chile and with DLR.
Republic of Korea	Korea Aerospace Research Institute (KARI)	Initial contact with KARI was made on 3 January 2002, when the Special Policy Directorate transmitted information to Chile regarding the Korean aerospace programme. On 29 August 2002, the Chilean Embassy in the Republic of Korea sent notification through the Special Policy Directorate that a visit to KARI facilities had taken place. As at October 2004, a memorandum of understanding between KARI and the Chilean Space Agency is ready for signing at the earliest convenience.
Austria	Austrian Space Agency (ASA)	On 27 February 2002, bilateral talks between the Chilean and Austrian space agencies took place at ASA. Contacts are shortly to be renewed and a framework agreement for cooperation on outer space affairs is to be signed.
South Africa	South African Space Agency	At the end of 2001, a draft proposal was drawn up for an agreement between the Chilean Space Agency and the South African Space Agency on cooperation in the exploration and use of outer space for peaceful purposes.

<i>Country</i>	<i>Agency</i>	<i>Background</i>
Japan	Japan Aerospace Exploration Agency (JAXA: formerly the National Space Development Agency (NASDA))	Following the inauguration, on 24 May 2002, of two remote NASDA terminals at the Peldehue Satellite Tracking Station of the Center for Space Studies of the University of Chile, key links were established with JAXA executives and with the Ambassador of Japan in Chile.
United Kingdom of Great Britain and Northern Ireland	British National Space Centre (BNSC)	Chile has been given access to information on the BNSC space programme, owing to the excellent contacts between the Chilean Space Agency and the University of Surrey in England that were established during implementation of the Air Force Satellite (FASAT) Space Programme of the Chilean Air Force.
European Union		European Union initiative for a scientific and technological cooperation agreement between the European Union and Chile, establishing the type of cooperation to be afforded and underlining the importance of the application of satellite technology for sustainable development in Chile.
	International Space University (ISU)	In February 2002, Karl Doetsch submitted a proposal for a memorandum of understanding between ISU and the Chilean Space Agency. That draft agreement is awaiting implementation by Chile. In October 2004, an agreement was reached with the President of ISU to renew contacts.
	Surrey Space Centre (SSC), United Kingdom	Following a series of communications with the company Surrey Satellite Technology (SSTL) and the Surrey Space Centre, at which the company is based in the United Kingdom, the Director-General and Chief Executive of the SSC, Martin Sweeting, was invited to Chile to attend the International Air and Space Fair (FIDAE) in 2002 as a special guest and give a lecture on outer space at the Preparatory Meeting of the Group of Experts for the Fourth Space Conference of the Americas. In that context, and in accordance with the meetings held with Martin Sweeting, work has begun on the drafting of an agreement on cooperation between the SSC and the Chilean Space Agency on matters of mutual interest pertaining to outer space and satellites. The United Kingdom is eager to sign a memorandum of understanding with SSTL.

### **Key achievements**

7. The key achievements of the Chilean Space Agency can be summarized as follows:

- (a) Establishment of a general coordination office within the Agency, with executive and technical directorates, a basic corporate image (postal address, telephone, telefax, e-mail and web address) and an optimal cost-benefit ratio, taking into account a minimum budget;
- (b) Preparation of texts of a draft law creating the Agency and setting out the national space policy;
- (c) Consolidation of the national space community through the ad honorem Technical Advisory Committee (31 organizations and more than 60 experts in science, technology and law);

- (d) Integration into the international space community. This includes membership in the Committee on the Peaceful Uses of Outer Space and GEO; memorandums of understanding with Brazil, China, France, the Russian Federation and Ukraine and the Office for Outer Space Affairs; and establishing links with Argentina, Austria, Canada, India, Italy, the Republic of Korea and ISU;
- (e) National information dissemination at the International Air and Space Fairs (FIDAE) in 2002 and 2004;
- (f) Space camps of the Americas;
- (g) Institutional support for a series of scientific projects to be implemented on board the ISS by the first Chilean astronaut;
- (h) Support for the creation of space agencies in the region, for example, in Colombia, Uruguay and Venezuela (Bolivarian Republic of);
- (i) Official visits by delegations from Canada, China, Peru and the Republic of Korea;
- (j) Creation of a permanent exhibition on space at the National Aeronautics and Space Museum;
- (k) Creation of a new website;
- (l) Active participation in the Space Conference of the Americas and in the work of the joint science and technology committees of the Ministry of Foreign Affairs;
- (m) Sponsorship of projects using funds raised through national competitive bidding;
- (n) Preliminary bids received for space systems in Chile comprising ground stations, technology transfer, microsatellite and nanosatellite projects, contribution to existing constellations and Earth observation missions. Bids have been tendered by the space organizations and agencies of Argentina, Canada, Europe, France, Israel, the Republic of Korea, South Africa, Spain, the United Kingdom and others.

#### **Activities in 2004**

8. The activities conducted by the Chilean Space Agency in 2004 can be summarized as follows:

- (a) Participation in the creation of a permanent exhibition on space at the National Aeronautics and Space Museum of the General Directorate of Civil Aeronautics (DGAC). Support was given to the space modelling competition held at FIDAE 2004 and followed by a prize-giving ceremony on 21 August 2004, the anniversary of DGAC, which provided the judging panel. The permanent exhibition is scheduled to open in 2005, either on the anniversary of the Chilean Air Force or on that of the Museum itself;
- (b) Participation in the propulsion research programme of the Military Polytechnic Academy;
- (c) Support for the Chilean Astronaut Project;



(d) On 4 June 2004, the Chilean Space Agency attended a seminar organized by the Chilean Senate and entitled "Chilean aerospace development: foundations for the formulation of policies for the 21st century", both as coordinator for the panel on space and also as an exhibitor;

(e) A delegation of representatives of the Chilean Space Agency attended the forty-seventh session of the Committee on the Peaceful Uses of Outer Space, held in Vienna from 2 to 11 June 2004, where it announced the results of the International Conference on "Space and Water: Towards Sustainable Development and Human Security", held within the framework of FIDAE 2004;

(f) The Chilean Space Agency was both conference participant and international coordinator at the space seminar in Colombia, which was also attended by the space agencies of Argentina, Brazil and Peru and by the Office for Outer Space Affairs. Chile is supporting Colombia in its efforts to create a national space agency by offering guidance and sharing its own experience in space-related issues;

(g) International Air and Space Fair (FIDAE 2004), held in Santiago from 29 March to 4 April 2004. The Chilean Space Agency exhibited its activities with an exhibition stand covering 96 square metres. It also sponsored and assisted in setting up a space pavilion, with the participation of project ASTRO-Chile, the Space Camp of the Americas and a demonstration robot from the Latin American University of Science and Technology (UNICIT);

(h) On the occasion of FIDAE 2004, the Chilean Space Agency co-organized the International Conference on Space and Water: Towards Sustainable Development and Human Security, on 1 and 2 April 2004, which was chaired by Raimundo González Aninat, Ambassador of Chile to Austria and former Chairman of the Committee on the Peaceful Uses of Outer Space;

(i) Official visit of a delegation from the Canadian Space Agency (CSA) from 5 to 9 April 2004, commencing on Monday, 5 April at the Diego Portales Convention Center and followed by visits to the space agencies of Santiago and La Serena;

(j) Participation in the work of the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space at its forty-third session, held in Vienna from 29 March to 8 April 2004;

(k) Launch of a new web site ([www.agenciaespacial.cl](http://www.agenciaespacial.cl)) in September 2004, currently on a server for which the Agency is under contract and with an honorary administrator;

(l) Participation in the forty-seventh session of the Committee on the Peaceful Uses of Outer Space, held in Vienna from 2 to 11 June 2004;

(m) Support for space camps:

(i) Support given to the Space Camp of the Americas, which took place in January 2004, inaugurated by the Vice-Minister for Aviation and closed in the presence of the Minister for Foreign Affairs and the Vice-Minister for Education at the premises of the Telefonica company and at the Planetarium, respectively;

- (ii) On 2 and 3 October 2004, a spring space camp took place in La Serena, Chile, with the main aim of promoting careers in space science, technology and exploration among American students;
- (n) Participation in the first workshop on geodesy and geo-informatics at the University of Concepción, co-organized by the University of Concepción, through the Programme on Geodynamic Sciences (PROGEO) and the German Geodesy Commission (DGK) and held from 5 to 12 October 2004 at the central campus;
- (o) Participation in the first meeting, on 7 September 2004, on Argentine-Chilean integration, science and technology, the aim of which was to strengthen ties between institutions and individuals engaged in scientific, technological and university projects;
- (p) The General Coordinator of the Chilean Space Agency attended the fifty-fifth International Astronautical Congress 2004, held in Vancouver, Canada, from 4 to 8 October 2004, and organized by the International Astronautical Federation;
- (q) Participation in World Space Week in Chile, an event coordinated by the Office for Outer Space Affairs and held each year from 4 to 10 October with the involvement of the Chilean Space Agency, which designates a member of its Technical Advisory Committee to set up a web page for the event and coordinate the publication of information on national activities;
- (r) Official visit to the CSA and Canadian space industry sites;
- (s) On 13 October 2004, Chile became a member of GEO. The Chilean representative is Raimundo González Aninat, Ambassador of Chile to Austria, and the focal point for Chile is Héctor Gutiérrez Méndez, General Coordinator of the Chilean Space Agency;
- (t) The Chilean Space Agency acted as judging panel at the 35th National Youth Science Fair, which was held at the National Museum of Natural History from 20 to 23 October 2004;
- (u) Participation in the 11th Latin American Symposium on Remote Sensing and Spatial Information Systems, held in Santiago from 22 to 26 November 2004. Discussions focused on space agencies and international cooperation, Earth observation missions, satellite navigation systems, natural resources, environment, natural and man-made disasters, risk assessment and management, land planning and geographical information systems (GIS), applications in security and defence, education and dissemination of information on remote sensing and GIS;
- (v) Participation in the Pan Ocean Remote Sensing Conference (PORSEC 2004), entitled “Remote Sensing of Oceans, Coasts and the Atmosphere: Developments and Applications”, held in Concepción, Chile, from 29 November to 3 December 2004.

#### **Projects and project ideas**

- 9. Following is a list of projects and project ideas by the Chilean Space Agency:
  - (a) Chilean Astronaut Project;

- (b) Feasibility study on a possible contribution by Chile to a microsatellite-based disaster monitoring constellation, either using a ground station or through implementation of a full-scale project comprising space and Earth components;
- (c) Feasibility of establishing a Chilean national centre for receiving, processing, storing and distributing satellite images for public, private, academic or strategic purposes;
- (d) To draw up a pre-feasibility report on the use of the two geostationary orbit positions assigned to Chile by the International Telecommunication Union (ITU) for telecommunications, which would facilitate decision-making;
- (e) To lend institutional support to the implementation of a project, whereby the Chilean candidate astronaut would conduct scientific experiments on the ISS, under an initiative by the Astrochile Corporation;
- (f) Study of the situation with regard to the German Antarctic Receiving Station (GARS) of the Antarctic Institute of Chile in Antarctica and of the Transportable Integrated Geodetic Observatory (TIGO) at the University of Concepción;
- (g) Implementation of educational activities through space camps;
- (h) Radio Amateur Satellite Corporation-Chile (AMSAT-CE) or Central European Satellite for Advanced Research (CESAR) project, involving the design, construction, launch and operation of up to five very small satellites (7-9 kg) for communications and educational experiments;
- (i) Launch of an Earth observation satellite into low polar orbit;
- (j) Application of satellite technology for the VI Region through Chile regional GIS and the Centre for the Study of Remote Sensing and Geographical Information Systems (CPRSIG). This project is funded by CSA.

#### **Strategic objectives 2005**

10. The Chilean Space Agency's strategic objectives for 2005 can be summarized as follows:

- (a) To sign a memorandum of understanding with the space agencies of Argentina, India, Italy, the Republic of Korea, the Russian Federation and Spain, and also with ISU;
- (b) To continue to consolidate the Agency, optimizing available resources through a new supreme decree, without prejudice to the parallel but lengthier process of adoption of a draft law;
- (c) To conduct a feasibility study of renting new offices for the Agency, in order to facilitate its development and activities in the longer term;
- (d) To strengthen the structure of the Agency's Technical Advisory Committee, creating working groups to focus on specific thematic areas;
- (e) To promote and participate in the creation of a permanent space exhibition at the National Aeronautics and Space Museum of DGAC;

(f) To sign a memorandum of understanding with the Regional Centre for Space Science and Technology Education in Latin America and the Caribbean (CRECTEALC), affiliated to the United Nations, based in São José dos Campos, Brazil;

(g) To arrange for the Agency's participation in FIDAE 2006 with an exhibition stand, an international conference on space as well as arrangements for setting up a "space pavilion";

(h) To participate actively in the Committee on the Peaceful Uses of Outer Space, the International Charter "Space and Major Disasters" and GEO.

### **Meeting future challenges**

11. The following would help the Chilean Space Agency meet the challenges faced by it in the future:

(a) A budget increase, as requested by the Presidential Advisory Committee;

(b) Solidarity and strengthening of the national space community through the Technical Advisory Committee;

(c) Studies of national supply and demand with regard to space products;

(d) Consensus with regard to the civilian character of a national space agency;

(e) Paramount importance of promoting the creation of space agencies region-wide and strengthening cooperation;

(f) Political support at the highest level;

(g) Effective and optimal incorporation of the private sector in the development of space-related projects.

### **Czech Republic**

[Original: English]

1. The year 2003 was quite significant in the field of space science and technology applications in the Czech Republic. The most important event was the signature of the European Cooperating State agreement with the European Space Agency (ESA) in Prague on 24 November 2003. As a result of that agreement, the Czech Republic will be eligible to participate in both ESA research projects and ESA programmes, through industrial projects that satisfy specific conditions agreed under the Plan for European Cooperating States (PECS). The agreement is a logical continuation of the cooperation with ESA, initiated in 1998 within the limited framework of the ESA Programme for the Development of Scientific Experiments (PRODEX). This will now be transformed into closer collaboration under the PECS agreement, which should increase funding as well as opportunities for applied research and private companies to develop space technologies in the Czech Republic.

2. The Czech MicroMeasurements of Satellite Acceleration (Mimosa) satellite was launched on 30 June 2003 from the Russian Cosmodrome Plesetsk. The launch was procured by the Eurockot Launch Services GmbH as part of the Multiple Orbit Mission (MOM), using the Russian Rokot launch vehicle. The 52-kilogram Mimosa satellite was designed by the Astronomical Institute of the Czech Academy of Sciences and should provide data on the density of the upper atmosphere from an elliptical orbit ranging from 320 km to 840 km in altitude.
3. The registration data for the satellite Mimosa were transmitted to the United Nations Secretary-General in accordance with article IV of the Convention on Registration of Objects Launched into Outer Space,<sup>1</sup> on 21 August 2003, less than two months after the launch (ST/SG/SER.E/433). This was in line with the Czech Republic's long-term position that timely registration of objects and updating the information on their functional status is a prerequisite for legal discussion on the ways and means to mitigate space debris. Detailed information on the functional status of the five previously launched Magion geophysical satellites was submitted to the Office for Outer Space Affairs in November 2003 (ST/SG/SER.E/439).
4. The Czech contribution to ESA's International Gamma-Ray Astrophysical Laboratory (INTEGRAL), which was launched on 17 October 2002, has been the development of a ground-based testing facility for the Optical Monitoring Camera experiment as well as participation in software development for the science and data centre in Switzerland. The plasma probe, developed in cooperation with the Centre national d'études spatiales (CNES) of France, has been placed on board the French Demeter satellite launched on 29 June 2004.
5. The activities of the World Space Week in October are an important part of the space-related activities of the Czech Republic. There is a long tradition of public astronomical observatories and planetariums in the Czech Republic. This creates extremely favourable conditions for promoting public awareness not only on astronomy, but also on space science and technology applications. Celebrations of the World Space Week were first organized in the Czech Republic in 2002 by the Czech Space Office. Mostly young people from more than 25 entities around the country widely participated in the activities. In 2003 and 2004, the participation was more focused on media presentations, lectures and exhibits, as reflected in respective reports of the Spaceweek International Association.

## Germany

[Original: English]

*Goals and Strategies 2004*, the publication on the current research and development activities and programmes of the German Aerospace Center (DLR), will be distributed during the forty-second session of the Scientific and Technical Subcommittee, to be held from 21 February to 4 March 2005.

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<sup>1</sup> General Assembly resolution 3235 (XXIX), annex.

## Morocco

[Original: French]

### 1. Introduction

1. Since the 1970s, Morocco has gradually incorporated outer space into its development programmes. The firm commitment of the Government of Morocco has enabled the country to make significant progress in space telecommunications, space meteorology and remote sensing. Today, Morocco has the necessary human and material resources, it has established a national network of services and users and is pursuing efforts to strengthen and expand the scope of its activities both nationally and at the level of Africa and the Middle East. In that connection, and within the framework of training in remote sensing and geographical information systems (GIS), the Royal Centre for Remote Sensing (CRTS) has trained almost 900 persons in various areas of priority for the country and for the region (agriculture, water, forestry, town planning, land management, desertification and natural hazards), of whom 184 were trained in 2004. Morocco has adopted a dynamic, realistic and sustainable approach to its increasingly important and diverse space activities.

### 2. Access to satellite data

2. With regard to Earth observation data, Morocco has three stations for receiving satellite data from the National Oceanic and Atmospheric Administration of the United States of America: one at the National Department of Meteorology, for meteorological research; and two at CRTS, for receiving advanced very high resolution radiometer data. CRTS is currently examining the possibility of acquiring a Meteosat Second Generation station and of establishing procedures for direct and rapid access to moderate-resolution imaging spectroradiometer and environment satellite (Envisat) data.

3. CRTS is responsible for the distribution of satellite images in Morocco and has set up contracts with several image providers and distributors. It is also responsible for centralizing national archives of satellite data as well as data generated by remote sensing projects. CRTS has an integrated system that enables it to obtain, process and reconstruct satellite data and to set up databases that are accessible to users online.

4. An archive management system has been developed whereby all geographical data generated at CRTS may be archived, consulted and retrieved. A catalogue, which provides a description and the physical location of archived data, is available.

### 3. Natural resource management and remote sensing projects

5. Morocco's many projects on remote sensing and GIS are implemented by various national institutions in response to needs for natural resource monitoring and management, environmental protection and land management. These projects fall within the scope of national and regional development programmes.

6. In June 2004, the “APPUIT” project on support for the promotion and development of remote sensing in Morocco was completed. Two key issues were examined under this project:

(a) The management of forest resources in Morocco, particularly forest inventory and monitoring as well as forest fire surveillance, conducted in collaboration with the High Commission for Water, Forestry and Desertification Control (HCEFLCD);

(b) The management of marine resources, particularly upwellings and aquaculture, in collaboration with the National Fishery Research Institute (INRH).

7. These two activities fell within the broader context of efforts to comprehensively monitor oceans and vegetation and were accompanied by two measures to support the project and strengthen institutional capacity:

(a) Training of Moroccan personnel (almost 300 Moroccan nationals trained in Morocco and Europe);

(b) The “System” project, including the development of an archive management system for archiving, consulting and retrieving data generated at CRTS.

8. The project also facilitated the strengthening of infrastructure for receiving and processing CRTS space data and upgrading of the expertise of participating departments through special training programmes in Morocco and Europe. The project culminated in a national seminar held in Rabat on 28 and 29 June 2004, and with approximately 100 participants from institutes with an interest in the issues addressed.

9. In September 2004, the regional project on local initiatives for urban environment programmes (LIFE) was also completed. That project was implemented by the Sahara and Sahel Observatory of Tunisia (OSS), in collaboration with Moroccan and Tunisian partners (CRTS and HCEFLCD, and the National Center of Remote Sensing and Ministry of Environment, respectively), and co-financed by the European Union. It addressed the use of remote sensing and GIS for monitoring desertification in the southern Mediterranean region (Algeria, Morocco and Tunisia) and culminated in a regional workshop involving Algeria, Morocco and Tunisia, which was held in Tunisia on 30 and 31 August 2004. A second phase is under development for the implementation of an early warning system for monitoring drought in the three countries participating in the project.

#### **4. Training—research and development**

10. Seminars, exhibitions and information days are organized regularly in order to raise awareness among policy makers, officials, scientists and young people as to the benefits and potential of remote sensing and space science and technologies. CRTS publishes an information bulletin on space activities, and the science magazine *Geo Observer*, published twice a year, contains articles on the application of satellite data and GIS in activities and on research carried out in developing countries.

11. A number of activities are organized to raise awareness among young people of the ways in which space activities can help to improve people’s daily lives, such

as through telecommunications and environmental monitoring. Each year, as part of World Space Week, CRTS and the Ministry of Education jointly organize seminars and exhibitions in schools and colleges to provide young people with an insight into the uses of outer space.

12. Since 1993, CRTS has adapted its training activities to meet national and regional needs and to cater for a range of users, such as policy makers, planners, personnel and technicians. Each year, it offers a training programme comprising an introduction to the basic principles of remote sensing, GIS and their applications in areas of priority for Morocco and for the region as a whole. In 2004, CRTS organized 11 training modules in various subject areas such as GIS, very high resolution data, land management and the Global Positioning System for 184 participants.

13. In addition to those training programmes, CRTS organizes targeted training activities at the request of regional and international organizations or users. In collaboration with the Committee on Space Research (COSPAR) and with the support of the Intergovernmental Oceanographic Commission, the International Council for Science and the European Space Agency (ESA), CRTS is also organizing a two-week capacity-building workshop on space oceanography for the African region, to be held from 19 to 30 September 2005.

14. Several universities and schools of engineering in Morocco, such as the Mohammed V University, the Mohammadia Engineering School, the Hassan II Veterinary and Agronomic Institute and the Hassania School of Public Works, have introduced courses and programmes on remote sensing and GIS.

15. At the regional level, the Mohammadia Engineering School is home to the African Regional Centre for Space Science and Technology Education in French language, affiliated to the United Nations (CRASTE-LF), which offers Master's degree courses to French-speaking Africans in four subject areas: remote sensing and GIS; satellite meteorology and global climate; satellite communications; and space and atmospheric science. CRTS contributes significantly to such training by providing trainers, offering work experience placements and supervising research.

16. By 30 September 2004, CRASTE-LF had trained 73 Africans from 15 countries (Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, the Central African Republic, the Congo, Gabon, Madagascar, Mauritania, Morocco, the Niger, Senegal, Tunisia and Togo). Forty-one graduates are currently enrolled in three remote sensing and GIS courses; 25 in two telecommunications courses; and seven graduates in a space meteorology course. A postgraduate course in space meteorology and global climate was to begin in November 2004.

## **5. International cooperation**

17. Within the framework of its national foreign policy, Morocco is making active efforts to step up international cooperation in space science and technology, and is engaged in various activities aimed at strengthening and extending the scope of its cooperation.

18. Morocco, through CRTS, is a member of several regional and international committees and associations involved in space activities. These include, inter alia,



the International Astronautical Federation, COSPAR, the European Association for the International Space Year (EURISY) and the International Space University.

19. Morocco is actively participating in the “TIGER Initiative”, launched by ESA, on the use of space technology for water resource management in Africa. Morocco hosted the first workshop from 6 to 8 October 2003 and is a member of the programme committee for a second workshop to be held in Pretoria, South Africa, from 8 to 10 November 2004. Within the framework of the TIGER Initiative, CRTS is implementing a project on integrated water resource management in the Souss-Massa basin (region of Agadir), with the support of ESA and the Canadian Space Agency.

20. Morocco frequently organizes activities with its foreign partners to strengthen the use and expand the scope of application of space technology at the national level. In 2004, through CRTS and the Rabat-Salé University Hospital, and in cooperation with EURISY, the Centre national d'études spatiales (CNES) of France, ESA and the Office for Outer Space Affairs, Morocco organized a conference on remote health and satellites in Rabat on 7 and 8 July. The conference was attended by 150 participants, including 120 potential users in the field of medicine (policy makers, doctors, nurses and researchers), who were provided with an insight into the application of space technologies in the epidemiology of communicable diseases, health-care access in isolated regions, telerobotics and remote surgery.

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