United Nations COPUOS/T.615

Committee on the Peaceful Uses of Outer Space

Unedited transcript

615th Meeting
Thursday, 10 June 2010, 10 a.m.
Vienna

Chairman: Mr. Dumitru Dorin Prunariu (Romania)

The meeting was called to order at 10.21 a.m.

The CHAIRMAN: Good morning distinguished delegates. I now declare open the 615th meeting of the United Nations Committee on the Peaceful Uses of Outer Space.

This morning we will continue our consideration of agenda item 5, General Exchange of Views, agenda item 6, Ways and Means of Maintaining Outer Space for Peaceful Purposes, and agenda item 7, Implementation of the Recommendations of UNISPACE III.

Time permitting, we will begin our consideration of agenda item 8, Report of the Scientific and Technical Subcommittee on its Forty-Seventh Session, and agenda item 9, Report of the Legal Subcommittee on its Forty-Ninth Session.

There will be three technical presentations this morning by Canada entitled "Space Security Index 2010", by the observer of Tunisia entitled "Activities of Tunisia in the Area of Satellites Relating to Telecommunication Networks", and the United States entitled "The US Shared Space Situational Awareness Programme".

I would like to inform delegates that at 2.40 p.m. in this room, there will be a video screening by Japan entitled "Beyond the Sky and into Space: JAXA 2010", which presents an introduction of JAXA's annual space activities.

All delegates are cordially invited to attend this video presentation.

General exchange of views (agenda item 5)

Distinguished delegates, I would now like to continue our consideration of agenda item 5, General Exchange of Views.

The first speaker on my list is the distinguished representative of Ecuador, His Excellency Mr. Diego Stacey-Moreno.

Mr. D. STACEY-MORENO (Ecuador) *(interpretation from Spanish)*: Thank you Mr. Chairman. I am particularly pleased to convey to you, Mr. Dumitru Dorin Prunariu, how pleased we are to see you chair the Committee on the Peaceful Uses of Outer Space. My delegation conveys our decided support to accompany you in your difficult task.

Furthermore, we would like to thank the former Chairperson, Ambassador Ciro Arévalo from Colombia. He conducted the business in a very effective and successful manner.

We convey our words of congratulations to other members of the Bureau and to the Director of the United Nations Office for Outer Space Affairs, Ms. Mazlan Othman, and the Secretariat for having prepared the present session and for the unstinting cooperation that they have provided the Pro Tempore Secretariat of the Fifth Space Conference of the Americas.

The delegation of Ecuador supports the statement made yesterday by the delegation of Costa Rica, acting as Coordinator of GRULAC.

And we would like to make the following statement.

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The fifty-third session is the right time to highlight the fruitful work of COPUOS and the United Nations Office for Outer Space Affairs for space activities, particularly inasfar as the interest of developing countries are concerned. Along these lines, we would give in-depth consideration to the achievements of this major body which, without any doubt, is the conceptual framework for international space law, one of which has as an essential feature international cooperation to achieve, the use of space for peaceful purposes in order to reap the benefits for all.

In this context, the Ecuadorian delegation believes it is very important to support the initiative entitled "Towards a United Nations Space Policy", as contained in document A/AC.105/L.278, which seek to reinforce coordination between the countries and the United Nations system in order to apply science and space technology to sustainable development.

Mr. Chairman, for my country, international cooperation is an element of the greatest significance which is why industrialized countries should pool their resources to make it easier for developing countries to implement programmes for space applications that would have an impact on progress, especially at this point in time when we simply cannot defer a global approach to solidarity in keeping with what my delegation has said on repeated occasions in this forum.

Ecuador is in the area which is often called the Fire Belt. Eighty per cent of our volcanoes are active and that is why the Republic of Chile suffered tragic consequences but, of course, Ecuador incurs a similar risk because we are on the continental platform of the so-called Nazca Platform and, therefore, the El Niño phenomenon and other spin-offs of climate change caused loss of human life and enormous economic loss as well. That is why we continued to support the implementation of the SPIDER system, the activities of which will provide for mitigation, rescue and prevention in cases of natural disaster and will also provide early attention for such cases.

The geostationary orbit is a priority issue for my country and that is why my country again reaffirms that this restricted natural resource should be accessible and this should be done on a priority basis for all countries, especially the developing countries with a determined geographical position that require the use of outer space in keeping with Article 44 of the ITU Constitution which was revised in Minneapolis in 1998. We think that COPUOS is responsible for the legal and political aspects that govern this topic.

It should be pointed out that Ecuador has made a significant contribution to the evolution of space law and on this topic in particular.

Sir, my country, because of the commitment that we owe international cooperation within this forum, assume the responsibility of the Pro Tempore Secretariat for the Fifth Space Conference of the Americas since July 2006. That is why our mandate comes to an end this year and Dr. Fernando Suárez is here with us. He is the Pro Tempore Secretary of the Fifth Conference to personally present to this forum the achievements during his time in office and the progress such that a major number of our countries can benefit from the use of outer space for peaceful purposes. We would like to take this occasion to recall that tomorrow this statement will be delivered.

The Ecuadorian would like to particular mention the fact that the Pro Tempore Secretariat of the Fifth Conference has also received the decided support of the Office for Outer Space Affairs. And in this regard, we would like to yet again thank Dr. Othman and her efficient team for the support provided in the context of the recent Workshop on Policy and Space Legislation on an international level that was particularly on climate change and food security also.

The achievements of the Pro Tempore Secretariat led to an internal assessment on the state of application of science and space technology and their benefits. And this regional forum was the ideal opportunity for scattered initiatives to be gathered into national projects with a regional dimension, with a high social content in favour of sustainable development of the nation.

May I give you some specific examples of this.

In the area of education, we have established, at the national level, the Space Education Committee and we have reformed the curriculum for schools to include areas of study that have to do with space science and technology. We have established a National Tele-Medicine Programme based on the implementation of information technology and satellite communication to establish diagnostic care and treatment of patients in remote areas. There is a Research Dissemination and Diagnostic Centre Network in all provinces of Ecuador.

We have implemented a monitoring system to process geostationary information for various purposes based on aerospatial platforms and this will enable sustainable development of Ecuador, preservation of resources and improvement of safety for air and land, as well as maritime operations.

We have a National Risk Committee coordinating all the activities for risk management and international initiatives such as SPIDER. We have supported initiatives on behalf of the Ecuadorian Civil Agency preparing the first astronaut of Ecuador, having UV radiation research done, micro-gravity as well as satellite information on the Internet. We have the Galapagos Islands and there are several projects to preserve the natural areas there.

And we have also considered energy in this context. We are making headway to set up an Ecuadorian Outer Space Commission to prepare a National Space Plan.

Finally, Ecuador supports what was said already by the representative of GRULAC and also we think that the Regional Group's views should be reflected as such in the reports of COPUOS and the Subcommittees.

Thank you.

The CHAIRMAN: I thank the distinguished representative of Ecuador for his statement.

The next speaker on my list is the distinguished representative of Turkey, Mr. Cem Ulusoy.

Mr. C. ULUSOY: Thank you Mr. Chairman. I would like to join other delegates in congratulating you on your election as Chairman of the Committee.

Our congratulations also go to the members of the Bureau. We are confident that your vast experience and able guidance will bring this session to a successful conclusion.

We would also like to pay tribute to the previous Chairman, Mr. Ciro Arévalo Yepes, for his valuable contributions to the work of the Committee.

Furthermore, we commend the Director of the Office for Outer Space Affairs, Ms. Mazlan Othman, and the Secretariat for the excellent preparatory work for this session.

Mr. Chairman, we are becoming increasingly reliant on space-based activities for developing sustainable social and economic development of our societies. Communication, navigation, agriculture, education, climate change, environmental protection, health and disaster management are just a few areas where space-based systems play an indispensable role.

Moreover, we witnessed that the space environment is changing rapidly with the inclusion of new State and non-State actors.

These facts reveal the need for advancing international cooperation to ensure sustainability of space activities in all these aspects. COPUOS, we believe, has a pivotal role in this process. As a unique forum for the exchange of information among States and for setting up relevant forums and guidelines. We are hopeful that in addition to the various other initiatives, the Working Group on the Long-Term Sustainability of Outer Space Activities, which will begin its considerations at this session, will be instrumental towards achieving this target.

Mr. Chairman, Turkey is developing its national legislation and regulatory framework on the basis of related international legal instruments. The in-shield(?) target in this context is the establishment of the Turkish Space Agency and adoption of the nation's Space Policy. Necessary work is under way for its purpose.

Turkey also attaches particular importance to promoting international cooperation in space technology development and its applications. In this context, in cooperation with the United Nations Office for Outer Space Affairs, and the European Space Agency, the Science and Technology Research Council of Turkey, TUBITAK, will organize an International Workshop on Space Technology Applications for Socio-Economic Benefits, in Istanbul, Turkey, 14-17 September 2010.

The Workshop aims at, among others, addressing principles for national, regional and international cooperation in space technology development and its applications, exploring socio-economic benefits of using satellite remote sensing, including INSAR, satellite communications, and GNSS, and initiating pilot projects for joint work at the regional and international levels.

I am pleased to inform you that a detailed presentation will be made by our delegation on Friday, 11 June, at the afternoon session, concerning the recent

developments in the field of space in Turkey and in particular the above-mentioned Workshop.

Mr. Chairman, ensuring wide spirit use of space-based information for disaster management purposes is another area that we attach importance. We are pleased to note the progress made within the framework of UN SPIDER in the implementation(?) *(not clear).*

As an in-kind contribution, Turkey is supporting the UN SPIDER Bonn Office with two senior experts employed on a non-reimbursable loan basis. We also encourage all member States to extend their support to the UN SPIDER.

Mr. Chairman, before concluding, we would like to extend our support to Tunisia's candidature for the membership of COPUOS. Our delegation is of the view that, given its space-related activities and clear interest in contributing to the work of the Committee, Tunisia's application deserves a positive response.

Thank you Mr. Chairman.

The CHAIRMAN: I thank the distinguished representative of Turkey for his statement.

Now the first speaker on my list is the distinguished representative of Austria, His Excellency Mr. Helmut Boeck.

Mr. H. BOECK (Austria): Thank you Mr. Chairman. Let me first congratulate you on your chairmanship of the fifty-third Committee on the Peaceful Uses of Outer Space. We are, not surprisingly, confident that our work during this session of the Committee will substantially benefit from your skill and profound experience.

I would also like to express my great appreciation and warm thanks to the Director of the Office for Outer Space Affairs, Dr. Mazlan Othman, and her able committed team for their invaluable assistance including in the preparation of this session.

Mr. Chairman, this year was, unfortunately again, a year of major devastating natural disasters. After Haiti, also Chile has been struck by a violent earthquake that caused enormous damage. We are once again reminded that we must step up our efforts to improve our overall capacities to tackle the negative effectives of natural disasters, climate change and extreme weather events around the world. These tragic events are a rude reminder to strengthen the resilience of developing countries by building capacities for disaster prevention, risk reduction and mitigation of the effects of climate change.

In this respect, the use of space-based technology cannot be priced enough for its early warning as well as effective relief and rehabilitation efforts.

Austria is one of the main contributors to the United Nations Platform for Space-Based Information for Disaster Management and Emergency Response, in short UN SPIDER. We are convinced that this Programme of the Office for Outer Space Affairs in Vienna provides tangible added value to communities at risk by linking the disaster management community with the space community.

Austria has helped to jump start UN SPIDER, together with other partners, and has provided considerable financial and human resources ever since. In this respect, Austria is also pleased to continue its support for UN SPIDER in 2010.

Austria is particularly pleased with the endorsement of the Work Plan of the UN SPIDER Programme for the biennium 2010-2011 by the United Nations General Assembly. In line with its resolution 64/86 entitled "International Cooperation in the Peaceful Uses of Outer Space", we encourage member States that have not made any commitment so far to provide all support necessary on a voluntary basis including financial support to enable UN SPIDER to carry out its ambitious work plan.

We feel that UN SPIDER has to ensure that access to space-based information is available throughout the disaster cycle.

In 2009, UN SPIDER established its Space Aid Framework to enable fast and efficient access to space-based information to support emergency response and early recovery. The immediate provision of high-quality imagery after a disaster is crucial to facilitate damage assessment, map the situation and to coordinate first response efforts. The effective coordination effort provided by Space Aid from the first hours after the earthquake in Haiti is a novel and highly appreciative mechanism to facilitate the efficient delivery of rapid mapping information.

We are pleased to note that the UN SPIDER Space Aid Framework has recently been triggered to support monitoring and emergency response activities for disasters in Pakistan, Tajikistan, Kenya and Guatemala.

We support the establishment of the Space Aid Fund to cover the cost of accessing the required type of information. Such a fund would enable the Programme to ensure access, acquisition and availability of satellite data to support specific emergency response actions in developing countries.

The progress UN SPIDER has made in its mission was also recognized by the General Assembly in its resolution entitled "International Cooperation and Humanitarian Assistance in the Field of Natural Disasters from Relief to Development". Moreover, the further use of space-based and ground-based remote sensing technology including as provided by UN SPIDER was encouraged. Contributions to member States to UN SPIDER and the Space Aid Fund would truly be highly appreciated.

With regard to activities of UN SPIDER's financially supported by Austria, let me outline our continued support to Small Island Developing States and capacity-building.

As a follow-up to the Workshops held in 2008 in Fiji and Barbados, focusing on Small Island Developing States, UN SPIDER, with the financial support of Austria, conducted a successful international workshop that took place back-to-back with the last session of COPUOS in Vienna.

With the financial support of Austria in later 2009 and early 2010, four technical advisory missions to Fiji, Samoa, Jamaica and the Dominican Republic have been carried out by UN SPIDER.

Several additional capacity-building activities were supported by taking advantage of the Austrian financial contribution to UN SPIDER.

In line with the commitment of providing direct support to developing countries that are most vulnerable to disasters, Austria financially supports the UN SPIDER Regional Workshop "Building Upon Regional Space-Based Solution for Disaster Management and Emergency Response for Africa", which will be held from 6-9 July in Addis Ababa, Ethiopia.

In support of the strong commitment of Austria to strengthen the resilience of developing countries by building capacities for disaster prevention, risk reduction and mitigation of the effects of climate change, the Centre for Geo-Informatics at the University of Salzburg, ZGIS, contributes to the European Commission-funded project "GMES and Africa" entitled "Regional Network for Information Exchange and Training in Emergencies", with the aim to facilitate the access to space-based information for emergency response in Africa.

Building on the experience in providing rapid damage assessments after the Haiti earthquake, the Centre is further improving methodologies for automated information extraction from satellite imagery.

Being also involved in the G-MOSAIC Rapid Geo-Spatial Reporting Service, which has been triggered by the United Nations Department for Field Support after the Chile earthquake, and as a member of the Haiti Geo-Spatial Cooperation Task Group, coordinated by UN SPIDER, this Centre is also investigating the possibility of a trans-institutional ad hoc network for Earth observation-based disaster response in Austria which shall be designed with a strong user training mechanism via the UN SPIDER network.

The Centre in Salzburg also collaborates with the Centre for Geo-Information, CGIS, at the National University of Rwanda for the coming three years to develop remote sensing-based methodologies for mapping, examining and anticipating future risks of water-related vector(?)-borne diseases in Eastern Africa.

Likewise, the Centre is strengthening the resilience against natural hazards in South Asia by organizing a series of training workshops. Together with the Hindu Kush Himalayan Regional Organization, ICIMOD, and the University of Southampton.

During its annual GI Forum Conference in Salzburg, the Centre will organize the Workshop on Spatial Assessment and Analysis of Vulnerability from 6-7 July to share experience on the contribution of GI science applied in the interdisciplinary domain of hazards and climate change research.

Mr. Chairman, in the frame of the Austrian Space Application Programme, ASAP, which is an initiative of the Austrian Federal Ministry for Transport, Innovation and Technology, and is managed by the Aeronautics and Space Agency of the Austrian Research Promotion Agency, the project "E-SPIDER: Conceptualization of a Global Virtual Academy for Space-Based Information for Disaster Management and Emergency Response" has been funded.

E-SPIDER will directly support the initialization of an e-learning environment for UN SPIDER by providing a conceptual framework.

The results have already been discussed with the UN SPIDER team and external experts at the Workshop in April 2010 and will lead to a final report in the months ahead.

Further projects that address disaster management in a broader context are also funded within the framework ESAP.

Major projects focus on the implementation of a Regional Earth Observation-Based Centre for Crisis Data, on global monitoring of soil moisture for water hazards assessment, and on a data model for land-use, land-cover data acquisition at the national scale.

Mr. Chairman, the traditional United Nations/ESA/Austria Symposia in Graz had proven to be an excellent platform for exchange between developing and developed countries. In 2009, a new three-year series on space technologies and applications has started. This time, the Symposium is dedicated to small satellite programmes for sustainable development. Small satellites prove to be highly valuable for educational purposes.

In allowing the capacity-building in areas such as space hardware, software and applications, small satellite programmes are seen as useful tools in transforming developing countries gradually from passive consumers of space technologies into active partners.

Additionally, small satellites are becoming increasingly interesting for performing simple remote sensing and communication tasks at low cost.

In 2009, participants from 32 countries took part in the Symposium in Graz in lectures on electrical, mechanical, thermal and communications design aspects for nano- and micro-satellites.

Special training courses on orbit simulation and ground station operations as part of the Symposium were very successful and well-received by the participants.

The second Symposium of this series on "Small Satellite Programmes for Sustainable Development: Payloads for Small Satellite Programmes" will take place in Graz from 21-24 September 2010.

Mr. Chairman, in the area of micro-gravity research, Duranium Research in Graz and QinetiQ Space in Belgium are in the process of completing the "Miller Euraid Experiment in Space" under contract by the European Space Agency. The aim of this experiment is to demonstrate the formation of amino acids out of elementary gases and water in comets and circum-stellar accretion disks. The experiment will be carried out in a micro-gravity environment onboard of the International Space Station, ISS, in 2013, at the earliest.

The first Austrian nano-satellite, BRITE-Austria/TUGSAT-1, is currently in the assembly and testing phase at the Graz University of Technology. This project, as has been pointed out before, has the aim to investigate the photometric variations of massive luminous stars by using two nano-satellites observing in two different wavelengths. The development and manufacture of TUGSAT is undertaken in collaboration with the Space Flight Laboratory of the University of Toronto, the Institute for Aerospace Studies in Canada.

Other nano-satellites from Canada and other countries that may join the project are currently under discussion.

BRITE-Austria is funded by the Austrian Space Applications Programme.

In October 2009, a Memorandum of Understanding for the launch of the satellite was signed between the Graz University of Technology and the Space Flight Laboratory of the University of Toronto acting as a launch broker. The spacecraft is foreseen to be launched from the Satish Dhawan Space Centre in Shriharikota, India by the polar satellite launch vehicle launcher of ISRO-Antrix in the first or second quarter of 2011.

The scientific data will be collected by the control ground station at Graz University of Technology which has been completed recently.

As an immediate consequence of the launch of its first satellite, Austria is in the process of developing national space legislation which is regarded as a prerequisite for sustainable outer space activities. As a first step, space law experts from Austrian universities prepared a draft on the Austrian Space Act for further consideration by the competent Ministry. The law-making process is intended to be finalized in the course of this year.

Mr. Chairman, in order to promote widespread access to basic sciences, Austria also

attaches great importance to space education. Especially young people should be encouraged to develop interest in the Universe. To this end, 60 young European science and engineer students converge annually for a stimulating 10 days of works in the Austrian Alps. The Summer School in Alpach enjoys the 30 years of tradition in providing in-depth teaching and working sessions on different topics of space science and technology.

This Summer School is organized by the Austrian Research Promotion Agency and co-sponsored by ESA, ISSI and the National Space Authorities of its member and cooperating States.

The Alpach objectives of this Summer School are to motivate participants to see space as an exciting and challenging endeavour, to work in international multidisciplinary teams and to teach different aspects of the complex interplay between scientific objectives and requirements, mission and spacecraft design, as well as mission costing.

The results of the respective projects are delivered as short mission studies and presented to an expert review panel.

This year's Summer School will be held from 27 July to 5 August and will focus on "New Space Missions for Understanding Climate Change", addressing innovative mission concepts with the objective to increase our knowledge of key processes of the global climate system. Experts will present existing climate change missions and teach about the role of Earth observation satellites in climate monitoring and research. Four student groups will then compete to design a space mission which will subsequently be evaluated by a jury.

Mr. Chairman, in conclusion, let me reaffirm Austria's deep commitment to the United Nations space activities and to our joint endeavour to enhance dialogue and cooperation in space.

Throughout decades, we have actively supported consensus-building among partners within the COPUOS communities and we will continue our support.

Thank you for your attention.

The CHAIRMAN: I thank Ambassador Boeck for his statement on behalf of Austria. At the same time, I want to thank Austria as the host country of COPUOS for its permanent support of our activities.

The next speaker on my list is the distinguished representative of Pakistan, Mr. Arshad Siraj.

Mr. A. H. SIRAJ (Pakistan): Thank you Mr. Chairman. Mr. Chairman and distinguished delegates, it is my privilege to make a statement on behalf of the Pakistan delegation at this fifty-third session of the United Nations Committee on the Peaceful Uses of Outer Space.

My delegation extends to you, Mr. Chairman, and the First and Second Vice-Chairmen, our heartiest congratulations on your election to the Bureau. We are confident that under your guidance and other members of the Bureau, the Committee will successfully accomplish the task before it in further promotion of the peaceful uses of outer space and international cooperation.

I would also take this opportunity to thank and congratulate the ex-Chairman, Ambassador Ciro Arévalo Yepes, and the other members of the Bureau for having so ably conducted the affairs of the Committee in the last two years.

My delegation is greatly appreciative of the efforts and contributions so far made by COPUOS in promoting the peaceful uses of outer space and in ensuring that the benefits of space technology also reach the developing countries.

For this to happen more effectively, the developed countries need to involve the developing countries in the fields of space science, technology and applications. This involvement needs to encompass sharing of experiences, know-how, technology, as well as affordable and timely access to the relevant data, and information on a non-discriminatory basis.

My delegation believes that there is a need to enhance international cooperation for realizing the shared goals of socio-economic development as well as mitigation of natural disasters.

Mr. Chairman, the past few months have seen a number of major natural disasters. The people and the Government of Pakistan are deeply saddened by the recent earthquakes in China and Haiti and the volcanic eruption in Iceland which led to widespread disruption of air space in Europe and affected the travel plans of millions of people worldwide.

My delegation offers up heartfelt condolences to the people and governments of these countries.

Mr. Chairman, we, in Pakistan, have made steady progress towards promoting and encouraging the use of space technology and its peaceful applications in various fields. Several initiatives have been undertaken to establish an infrastructure for space-based research and development activities to improve the country's socio-economic situation. These include distance education, space education and awareness, agriculture productivity, monitoring of crops, natural and water resource management, snow cover estimation, environmental surveying, search and rescue, natural disaster management, etc.

Efforts are also under way to gain expertise in building satellites for communication and remote sensing.

PAKSAT-1 communications satellite continues to operate at 38 degrees east to cater to the growing needs of communications. Services like television channels, data networks and Internet are being provided to a large number of users.

PAKSAT-1 is planned to be replaced by PAKSAT-1R which will not only augment the existing telecommunications infrastructure in the country but also help greatly in promoting the use of satellite communications.

Mr. Chairman, I would now like to share with you and the distinguished delegates from other member States our national efforts in the last one year in developing innovative solutions and directed databases for rights addressing, environmentally sensitive management issues in the country.

In the context of water scarcity and food security, NDVI-MODIS(?) onboard Aqua-Interra, KVHRR onboard NOAA, _____CN-2D and METEOSAT satellites are being used for crop yield and snow cover estimation, sea surface temperature, fog and aerosol characterization.

Realizing the importance of remote sensing and GIS technologies in space science and applications for national development, Pakistan's Space and Upper Atmosphere Research Commission is to actively engage in providing training under the ambit of the National Centre for Remote Sensing and Geo-Informatics.

In the last one year, 17 courses on different themes related to space and ground-based environmental monitoring, water resource applications, space weather research and image processing were organized.

SUPARCO is participating in international COSPAS-SARSAT programmes since 1990. The ground segment of the Pakistan Mission Control Centre and the Pakistan Local User Terminal has recently been upgraded for providing real-time alert and location data to national agencies tasked for undertaking search and rescue operations. Two rescue coordination centres have been established for search and rescue operations.

Pakistan remains committed to the goals outlined in the Vienna Declaration on Space and Human Development, adopted by UNISPACE III. Our support to the United Nations Programme for Space-Based Information for Disaster Management and Emergency Response, the UN SPIDER Programme, is in line with the United Nations Office for Outer Space Affairs mission to ensure equal access to all countries of space-based information regarding disaster management.

An Agreement between the United Nations Office for Outer Space Affairs and SUPARCO was signed on 10 February this year for the establishment of a Regional Support Office for coordination and exchanging timely support to disaster management preparedness and relief agencies in case of major disasters in Pakistan and the region.

Pakistan's RSO has plans to organize a Regional Training Workshop and expert meetings on natural disaster management and mitigation.

Mr. Chairman, in pursuance of the decision of the General Assembly resolution 54/68 of 1999, to celebrate the World Space Week, Pakistan celebrated this Week this past year. Various week-long activities and events included panel discussions, space awareness-raising, sky simulation shows, various competitions, like posters, painting and model-making, water rocket demonstrations and a family fair for students and the general public.

Pakistan also participated in the Fifth APRSAF Rocket Event held in Thailand on 23 and 24 January this year as part of joint educational activities related to space education and awareness for primary and secondary school students and teachers.

Before I conclude, I would like to extend our support for Tunisia's application for the membership of COPUOS.

I thank you very much.

The CHAIRMAN: I thank the distinguished representative of Pakistan for his statement.

The next speaker on my list is the distinguished representative of Indonesia, His Excellency Mr. I. Gusti Agung Wesaka Puja.

Mr. I.G.A.W. PUJA (Indonesia): Thank you Mr. Chairman. Mr. Chairman, on behalf of the Indonesian delegation, I would like to express our sincere congratulations to you for your election as the Chairman of the COPUOS for the period 2010-2011.

My delegation also congratulates all new members of the Bureau who pledge our fullest cooperation and support for the successful work of your chairmanship and ensuring the decisions will make for your contribution to international space cooperation.

I would also like to convey my appreciation to the former Chairman and members of the Bureau of COPUOS for their dedication and hard work.

Mr. Chairman, my delegation would also like to associate itself with the statement made by the Permanent Representative of Algeria on behalf of the G77 and China. We welcome the application of Tunisia to join the Committee on Outer Space. My delegation believes that Tunisia's membership in the Committee will contribute to the Committee's fruitful discussions.

Mr. Chairman, for this general statement, my delegation would like to state the following.

First, on the issue of ways and means of maintaining outer space for peaceful purposes, my delegation wishes to reiterate Indonesia's position that in accordance with the principles expressed in the Space Treaties, outer space should be used entirely for peaceful purposes and for the benefit of all humankind.

My delegation is of the view that this agenda item is of great importance and essential to the works of this Committee. The Committee should focus its efforts to ensure the peaceful nature of all outer space activities, including the prevention of any attempt to militarize or weaponize outer space.

To this consideration, as the main Committee under the aegis of the United Nations dealing particularly with this issue, it is highly crucial for this Committee to advance its cooperation and coordination with other bodies and mechanisms within the United Nations system, such as the First Committee of the United Nations General Assembly and the Conference on Disarmament in order to maintain the peaceful nature of outer space activities.

Second, on the issue of the peaceful uses of outer space, I had the privilege to inform the Committee that the Government of Indonesia, through the Presidential Regulations No. 1 of 2010, has defined an Agreement with the Government of the Republic of Indonesia and the Government of the Russian Federation on cooperation in the field of the exploration and use of outer space for peaceful purposes and this is in the process of recurring the ratification of the same Agreement with the Government of Ukraine.

With regard to the development of national legislation in the field of space activities, my delegation is pleased to inform the Committee that this is currently in the process of establishing an integral national regulation by composing a draft Act on Outer Space. The National Space Act will serve as the legal basis for all national space activities as well as the implementation of international treaties and conventions that have been ratified by Indonesia. This National Space Act covers the scope of applications, provisions on the authorization of activities of non-governmental entities, the mechanisms for the supervision of activities of non-governmental activities, the provisions of registration, liability and insurance, safety aspects of space activities and the provisions of the transfer of ownership. It is expected that this draft Act will be finalized and considered by the Parliament by the end of 2010.

We believe that once the National Space Act enters into force it will further enhance Indonesia's national space activities as well as its space cooperation with other countries.

Third, regarding the report of the Scientific and Technical Subcommittee, my delegation notes with satisfaction that the Subcommittee made progress in the deliberations of issues in line with its mandate.

With regard to the report of the Scientific and Technical Subcommittee on its forty-second(?) session, my delegations takes note with appreciation of the considerable progress that has been made by UN SPIDER during the year since its establishment in 2006.

Indonesia puts particular attention on international space cooperation in disaster management and emergency response. My delegation is of the view that the action-oriented activities of this kind will make a positive contribution to the works of this Committee.

Furthermore, this, as a prone country, Indonesia will continue to contribute to the future works of this UN space-based disaster management. We believe that international cooperation in the field of disaster management would contribute greatly to helping deal with natural disasters and help post-disaster relief programmes.

In this regard, my delegation is pleased to announce that the Government of the Republic of Indonesia has decided to host one of the UN SPIDER Regional Support Offices. We are looking forward to further discussing this issue with the UN SPIDER Secretariat in due course.

Regarding the issue of space debris, my delegation follows with great attention all the progress achieved by various countries in implementing the Space Debris Mitigation Guidelines. As an equatorial country, Indonesia is very vulnerable to trebled space debris. Last month a meteor damaged a house in Jakarta.

Since we have currently lack of information in that on space debris provided by the countries, we expect more transparency in this area which would enhance our awareness and capability in space debris monitoring. The availability of such information would enable Indonesia to take the necessary actions to safeguard our environment from any damage caused by space debris.

Furthermore, in pursuit of effectively implementing the Space Debris Mitigation Guidelines, we are of the view that it is necessary to have best practice _____ and training from States who possess expertise and capabilities and to transfer the knowledge and capacity to the developing countries.

Fourth, on the report of the Legal Subcommittee, with that importance of making progress towards solving the issue of definition and delimitation of outer space in the context of finding a boundary of air and outer space in order to contribute to legal certainty in the implementation of space law and air law. Recognizing the different priorities and perspectives under this issue, my delegation reiterates its position that the discussions on this issue should focus on achieving the minimum consensus to which all member States can be committed in the consistent implementation of space law and air law regimes.

My delegation is of the view that the discussion of the geostationary orbit, taking into consideration of its nature as a limited natural resource, should be focused on how to ensure the rational use of the GSO that is available to all States irrespective of their current technical capacities. In addition, States should be provided with the possibility of having access to the orbit under equitable conditions, bearing in mind in particular the needs and interests of developing countries as well as the geographical position of certain countries.

Fifth, on the issue of space and climate change, my delegation notes that the development of knowledge and technological capacity has led to an increase in the number of satellites launched with the capability of collecting data related to climate and the space environment. In this regard, and as part of our efforts to reduce greenhouse gas emissions, as mandated in the Kyoto Protocol, Indonesian cooperation with Australia has conducted the Indonesian National Carbon Accounting System using remote sensing satellite data and LANDSAT data from 1999-2008 to map carbon emissions throughout Indonesia. Additionally, Indonesia in partnership with Australia has conducted the Indo-Fire Programme to identify and organize emergency response to such cases in that satellite data provided by MODIS. The same progression will continue to perform this year and at the end of the Fire-2 programme.

Finally, Mr. Chairman, I would like to reiterate Indonesia's firm commitment in support to the efforts of this Committee for the benefit of mankind.

I thank you Mr. Chairman.

The CHAIRMAN: I thank the distinguished representative of Indonesia for his statement.

The next speaker on my list is the distinguished representative of the United States of America, Mr. Kenneth Hodgkins.

Mr. K. HODGKINS (United States of America): Thank you Mr. Chairman. On behalf of the United States delegation, I would like to start by congratulating you and the rest of the Bureau on your election. We look forward to working with you to ensure a successful outcome for this session.

I would also like to express our deep appreciation to the staff of the Office for Outer Space Affairs for their superb work over the past year and for their diligent efforts to prepare for our meetings over the coming days.

And, of course, my delegation wishes to congratulate Ambassador Arévalo and the other members of the outgoing Bureau for their outstanding work over the past two years.

Since last year's session, the Committee and its Subcommittees have recorded a number of significant achievements in promoting international space cooperation and I will address those under the appropriate agenda items.

Additionally, the United States delegation will have a number of special presentations, including one today by Major General Susan Helms of the United States Strategic Command on the United States Shared Space Situational Awareness Programme and one on 14 June by NASA Deputy Administrator Lori Garver on an update of NASA's activities.

At this point, I would like to note activities in the United States Space Programme over the past year.

NASA completed six Space Shuttle missions since our last session all to the International Space Station. The ISS reached an important international milestone in July 2009 as Expedition 20 inaugurated the Station's first six-person crew and also marked the first time a mission's crew represented all five international Space Station partners.

During this session, NASA will present to the Office for Outer Space Affairs a contribution to the Permanent Space Exhibit here at the Vienna International Centre that commemorates this achievement.

Mr. Chairman, President Obama' fiscal year 2011 budget for NASA, announced in February, marks a bold and innovative step forward for the United States Space Programme. It proposes increased funding for NASA by $6 billion over the next five years. As this budget is debated in the United States Congress, NASA is working on a detailed strategic for executing this new plan. Highlights of the plan at this time include working with international partners to extend the life of the Space Station and to utilize more fully its capabilities for research and technology demonstration.

Cancelling the Constellation Programme and instead investing in critical and transformative technologies, such as heavy lift and propulsion, in-orbit fuel depots and inflatable habitats, all with a goal of increasing technological capabilities, decreasing costs and expanding opportunities for human exploration of the solar system while working collaboratively with nations around the world.

Partnering with industry in a fundamentally new way for commercially providing astronaut transportation to the Space Station, initiating a stream of new robotic exploration missions to scout locations for future human missions, increasing NASA's funding for aeronautics and Earth and space science activities, and finally working to inspire more young people to engage in science and technology.

International cooperation will be a key element in all of this new direction.

NASA hopes to work with international partners as team members in the new flagship technology demonstration programmes, robotic precursor missions and, of course, and continuing the successful International Space Station partnership.

I would now like to call to the attention of delegates the recently released United States National Security Strategy. The Strategy states that our space capabilities underpin global commerce and scientific advancements. These space capabilities power our daily lives but must operate in an increasingly congested and inter-dependent environment. As a result, in order to promote security and stability in space, the United States will pursue activities consistent with international law with the aim of deepening cooperation and working with all nations towards the responsible and peaceful use of outer space.

Mr. Chairman, the latest Geostationary Operational Environmental Satellite, GOES-14, operated by the United States Oceanic and Atmospheric Administration, was launched on 27 June 2009, and after completing the post-launch check-out, was put in an on-orbit storage to join GOES-13 as back-up for NOAA's two operational GOES satellites.

Additionally, this past November, continuing its support to South America, NOAA decided to replace the recently de-commissioned GOES-10 with GOES-12 to allow South American users to continue to receive crucial satellite detection of severe storms, floods, droughts, landslides and wild fires.

The last of NOOA's Polar Orbiting Environmental Satellite, NOAA-19, was launched on 6 February 2009, and placed in the afternoon orbital position. NOAA-19 was declared operational on 2 June 2009. At that time, NOAA became the primary afternoon satellite in the NOAA-EUMETSAT Initial Joint Polar System, IJPS Constellation.

The United States Geological Survey of the United States Department of Interior continue to operate the LANDSAT-5 and -7 satellites and make

their data available to users worldwide. LANDSAT provides essential information for land surface monitoring, eco-systems management, disaster mitigation and climate change research. In 2009, LANDSAT-5 marked its twenty-fifth year of successful operations.

Since 2008, when the full LANDSAT image archive was made available to users, free of charge, over the Internet, we have witnessed phenomenal growth in the delivery of LANDSAT scenes to users worldwide. From an average of just over 50 scenes per day in USGS's best sales year, to more than 3,000 scenes per day in 2009.

Since 2008, the United States has provided more than two million LANDSAT scenes to users in 180 countries. The free availability of these GIS-ready land imaging data is having a tremendous global impact on Earth system science and land surface monitoring.

NASA and the United States Geological Survey are working in partnership to develop the Space and Ground Systems for the LANDSAT Data Continuity Mission which will be renamed LANDSAT-8 after its 2012 launch in on-orbit check-out. This satellite will continue the collection of moderate resolution land imagery that was begun in 1972.

The USGS will make LANDSAT-8 data freely available to users worldwide through an easy-to-use web interface.

I would like to add that the White House Office of Science and Technology Policy, NASA and the USGS are currently studying mission continuity options for the post-LANDSAT-8 era.

Once again, Mr. Chairman, we look forward to a very productive session under your leadership.

Thank you.

The CHAIRMAN: I thank the distinguished representative of the United States for his statement.

The next speaker on my list is the distinguished representative of Ukraine, Mr. Kucherenko.

Mr. S. KUCHERENKO (Ukraine) *(interpretation from Russian)*: Thank you very much Chairman. The Ukrainian delegation would like to congratulate you upon your election to the Chair and express our assurance that this session will indeed be very successful under your guidance.

We would like to thank the outgoing Chairman for his good work as well as the Head of the Office for Outer Space Affairs and her staff for a very well prepared discharge of mandated activity.

Chairman, allow me to inform you on what Ukraine has done in outer space activities in 2009-2010.

In order to establish proper legal conditions for more productive international cooperation, in 2009, we signed three Agreements, *inter alia*, with the Russian Federation on ways and means to protect technology used in research and peaceful uses of outer space, with the Republic of Belarus on cooperation and research in peaceful uses to be made of outer space, as well as with the Azerbaijan Republic on the same topic.

We have also indeed been able to conclude very important agreements on initiating and developing our cooperation in outer space activities with the European Space Agency, Canada and Germany on ways to use land-based infrastructures and operational exchange of data on emergency situations.

On 10 February this year in Ukraine, a Regional Support Office for SPIDER has been established and in May 2010, we signed an Agreement with the Russian Federation on cooperation in using and developing Russian Sat Nav systems, the GLONASS System. This document makes it possible for the companies in both our countries to conclude external economic agreements on satellite navigation project work and it also facilitates our promoting these companies on international markets.

In 2009, six launches of Ukrainian-produced launch vehicles took place, launching 11 spacecraft into outer space and our export-import balance tilted favourably towards the export side.

On 8 April 2010, the DNIPRO launch vehicle was launched and this launched a circular near-Earth orbit for the CRYOSAT-2 spacecraft, which had been developed with the ESA Living Planet Programme. CRYOSAT-2 is going to be used to measure the depth and area of the ice cover, the Antarctic, Greenland, Iceland, the northern oceans, mountain glaciers, in order to analyze the impact of global warming on all of these above-mentioned. This launch indeed is very important. It is also ensures long-term prospects of Ukrainian and ESA cooperation.

We have also worked with the United States company, Orbital Science Corporation, and this in designing, developing and testing various modules and aggregates of the TAURUS-II first stage launch system.

We are continuing our work on the joint Ukrainian-Brazilian project, CYCLONE-4 as well. The Alcantara Cyclone Space Joint Enterprise received its initial environmental authorization for work on the building of the launch platform for CYCLONE-4 launch vehicles and this will enable the proper work to take place on this.

We are also, by the end of this year, going to be ensuring the launching of the SICH-2 Sputnik which ensures remote Earth sensing. And in the framework of establishing a temporal coordinate and map support systems, the Ukraine is also setting up work on 12 control and adjustment stations as well as the reserve satellite control centre.

Chairman, on 15 March 2010, the official close of the European Union Twinning Space Project with Ukraine took place. This was a very important programme of cooperation between our countries and this project started in April 2008 in order to bring the industries of Ukraine and the EC in outer space closer together and ensure a proper legal basis for development work here as well as proper scientific and technical and industrial potential exploitation.

Indeed, there was very close project work with the CNES of France, with the DLR of Germany, as well as work with the German Federal Ministry of Economics and Technology and this with the European Commission financial support.

Over the span of time, the Ukraine, France and Germany, 60 activities took place, 1, 600 staff were employed in this major interface between the European Union and Ukrainian outer space industries. And the project concentrated on the following areas, international and national outer space legislation, the Seventh Framework Programme of the European Union on Research and Technological Development, industrial policy and standards and norms in outer space technology and applications, human resources and staff management, the Galileo applications, especially the commercial enterprise applications thereof, and the participation in the Programme of the Global Monitoring and Security of the Environment System. All of this will be presented to the Second Ukrainian Conference on Earth Observation for Sustainable Development Security, which is going to be opening very soon in Ukraine, next Monday actually.

We would like to support you for your work and strengthen and assure you that we are ready to engage in bilateral and international cooperation.

Thank you very much.

The CHAIRMAN *(interpretation from Russian)*: Thank you very much.

I would now like to give the floor to the next speaker.

Ms. N. ARCHINARD (Switzerland) *(interpretation from French)*: Thank you Mr. Chairman. May I, at the outset, welcome you on the assumption of your new duties. The Swiss delegation is confident that the Committee will accomplish major progress under your wise guidance. The Swiss delegation conveys its wishes for success and gratification in the conduct of your responsibilities.

In the same direction, the delegation would like to thank the outgoing Chairperson, Ambassador Ciro Arévalo Yepes, for his good offices and active stewardship. On this subject, we welcome his initiative to evolve a United Nations Space Policy. This suggestion contains interesting ideas that deserve in-depth consideration. Among them, there is improved coordination in the space area and better cooperation within the United Nations and we think that this is of special significance.

I would like to address the Director of the United Nations Office for Outer Space Affairs. It is a pleasure indeed to renew our thanks for the excellent work accomplished by the Office during the past year. We are indebted to the whole of the staff of the Office for the careful preparation of this session and its unstinting support during the intersessional period.

The Republic of Tunisia has applied as a candidate to join the Committee. Switzerland, which was itself a candidate three years ago, supports this candidature and wishes the Tunisian Republic full success in terms of its participation in the deliberations of the Committee as a member.

Mr. Chairman, esteemed delegations, the repeated natural disasters always bring to mind the fact that space technology is very useful to facilitate rescue operations in the wake of such disasters. For the twenty-first time this year, the Space and Major Disaster Charter was triggered off at the very outset of

this week. This will provide satellite tools used to support the humanitarian response of the United Nations Office of the Coordinator for Humanitarian Affairs, OCHA, in the wake of tropic cyclone Phet in Pakistan.

The UNOSAT Programme of UNITAR and the European GMES Safer Programme are working together to activate the system and furnish satellite maps that can be used for rescue operations in the field.

Switzerland would take this opportunity to welcome the work accomplished in the context of the Charter over the past 10 years. This anniversary deserves to be celebrated and commemorated duly since the Charter is a unique mechanism to bring about cooperation and to benefit countries that fall victim to natural disasters or technological disasters created in the year 2000 by ESA, the European Space Agency, Switzerland being a founding member, and also the French National Space Study Centre, CNES. The Charter now has 10 members.

The signatory agencies are committed to re-programme their satellites and provide satellite data, free-of-charge, for authorized users. They, in turn, the users provide satellite maps for rescue operations in the field in the wake of disasters.

Under the agenda item on long-term viability of space activities, the Swiss delegation welcomes the decision taken by the Scientific and Technical Subcommittee to set up a Working Group on this particular subject and to appoint Mr. Peter Martinez from South Africa to chair the Group. We are very pleased to note that a half day slot in plenary with interpretation in six languages was scheduled for next Monday so that this Working Group can hold its first meeting. The delegation is looking forward to acquainting itself with the document that will be tabled by Mr. Martinez and wishes him every success in the demanding and significant task that awaits him.

To conclude its statement, the Swiss delegation is pleased to announce to the Committee its intention to participate in the commemorative exhibition that will be shown in a year's time in the entrance hall of the VIC. That exhibit will commemorate the fiftieth anniversary of the Committee and the fiftieth anniversary of the first manned space flight. On this occasion, Switzerland will be showing, *inter alia*, the aluminium foil that was spread by the Apollo 11 crew on the Moon. This innovative experiment had been developed at the University of Berne to enable the measurement of the isotope make-up of solar winds.

Mr. Chairman, esteemed delegates, thank you for your attention.

The CHAIRMAN *(interpretation from French*): I would like to thank Ms. Archinard for the statement made on behalf of Switzerland.

(Continued in English) The next speaker on my list is the distinguished representative of Algeria, Mr. Kedjar.

Mr. A.-S. KEDJAR (Algeria) *(interpretation from French)*: Thank you very much Chair. The Algerian delegation would like to very warmly congratulate you upon your election to the Chair of COPUOS as well as the other members of the Bureau. We would like to assure you of our cooperation and wish you the best in the discharge of your mandate.

We also would like to thank Ms. Mazlan Othman, as well as the other members of the Office for Outer Space Affairs for the sound preparation of the documentation and the good organization at the present meeting and we would also like to thank the experts who participated and contributed to the encouraging progress in the various activities of outer space, especially in the developing countries.

I would also like to pay tribute to your predecessor, His Excellency Ambassador Arévalo Yepes, for his wise chairmanship of the Committee's work during the 2008-2009 biennium as well as for his very promising initiative entitled "Towards a United Nations Space Policy" and we hope that he will continue to make his experience available for this Committee.

Chairman, Algeria indeed would like to express our interest in presenting our firm endorsement of Tunisia's application for full membership of COPUOS. We hope that this will be approved at this session.

We, in Algeria, participated regularly in the work of Committee and of its two Subcommittees and contribute constructively to promoting outer space activity for socio-economic development with the wellbeing of our peoples. We would like to take this opportunity to share with you information on the activities implemented since 2006 by our Algerian Space Agency within our National Space Programme.

I would like to inform the Committee as to the state of advancement of projects resulting from the first triennial period of the National Space Programme 2007 through 2009. Three main fields of activities, space applications training, research and cooperation.

Space applications to start off with. These are based on the use of remote sensing, GPS and geographic information systems in the following sectors.

Firstly, land use planning. Here our Space Agency has indeed produced space mapping using satellite imagery of one to 200,000 and one to 10,000 covering a pilot reliah(?) which will be extended to all of the areas of study, more than 20 million square kilometres worth spreading over 20 reliah(?) in all.

A geographic information system using a high-resolution satellite imagery was developed in 12 reliah(?). Assisted decision-making in the following up and evaluation urbanism tools and habitat programmes. This also has been the basis of training dispensed by our Agency.

Next, national disasters. Here prevention and management activities done by our Space Agency used ALSAT-1 imagery downloaded from the Reception Control Station to be found in our Arzev Space Technology Centre.

Forest fires. ALSAT-1 imagery played an important role in monitoring this phenomena since 2003 and image processing during the summer of 2009 allowed us to estimate the surface areas hit by forest fires. This system of forest fire prevention and management has been validated by our Forestry Directorate and run in the west of the country. This will be generalized to all of the areas concerned.

Flooding next. In collaboration with the Ministry of the Interior and Water Resources, our Space Agency has set up an early alert and prevention system.

The next point is locust control. Here Algeria cooperated South-South together with other countries of the Sahel, Burkina Faso, Gambia, Guinea Bissau, Mali, Mauritania, Niger, Senegal, Chad and with the commission to control the desert locusts in the west. This cooperation is preventive and identified with the satellite imagery used, high chlorophyll activity used during periods of remission followed with periodic follow-up in areas of locust congregation. We also developed a system to assist in decision-making in periods of locust invasion.

Desertification. Here, a desertification map of one to 200,000 was conducted with remote sensing and this over the Algerian Step Area of 12 reliahs(?) and this is being presently validated.

Training and research. The initial Masters theses were registered in 2009 in the Doctoral School of Space Technologies and Applications which was set up in 2007. We also in 2009 had two students which were trained at Masters level in the Regional African French-Speaking Centre for Space Science and Technologies. This is a Centre of which Algeria is a founding member.

South-South cooperation was strengthened with India in the Masters training area for remote sensing.

Regional cooperation. This was marked by the Third Conference of the African Leadership Conference 2009 on Sciences and Space Technologies for Sustainable Development. This took place in Algiers, 7-9 December 2009, organized by our Space Agency with the support of the Office for Outer Space Affairs. This was held under the high sponsorship of the President of our Republic, Mr. Bouteflika, and 142 experts coming from 10 countries, six of them African was ensured as well as representation from international and regional organizations. The next Conference is going to be held in Kenya in 2011.

The ALC indeed produced important recommendations having to do firstly the reinforcement of national and regional potential on priorities for Africa. Secondly, the launching of a regional cooperation programme on the basis of pilot projects on joint activities with the support of international institutions in Africa on space. Thirdly, the development of work on disaster management and food security, climate change and its impact on development. Agreements for Cooperation were also signed during this ALC Conference, the first of them between our National Space Agency and the Office for Outer Space Affairs for the establishment of the Regional SPIDER Support Office. The second Agreement was signed between the South African, Algerian, Kenyan and Nigerian Space Agencies on the project, ARMC, African Resources Management, for a constellation of African Earth observation satellites to improve the data made available for the management of natural resources in the environment. The working meeting was held in Abuja in Nigeria.

Earth observation. Here, the Algerian delegation note that the satellite high-resolution data are presently being made available to the public at large without any restriction or regulation and these can be used in an abusive fashion and this can have a negative impact on the security of peoples and States. We believe that this matter has to do with security and

should be on the agenda of the Committee as well as its Legal Subcommittee in order to have an in-depth debate and producing proposals to regulate the sale, distribution and the dissemination on the Net of high-resolution and very high-resolution satellite data.

Definition and delimitation of outer space and the use of the geostationary orbit. Here we believe that the principle of the "first come, first served" for the attribution of orbital positions penalizes the countries which might wish to take advantage of space technologies but which still do not have the capability of doing that.

The application of the five space treaties. Here we have ratified three instruments as follows: the Treaty on Outer Space of 1967, the Convention on Liability for Damage Caused by Space Objects, as well as the Convention on Registration, and here the creation of a national registry for satellites is being currently approved.

As for the Rescue and Return of Astronauts, we are considering possible accession of Algeria here.

As for the general exchange of information on national legislation, here efforts are being undertaken at national level to introduce and disseminate the space tool and its regulatory aspects for all of the activity sectors concerned.

And finally on the draft Protocol on Space Assets in the Convention on International Liability for Mobile Equipment, here Algeria participated in the UNIDROIT work which took place in Rome December 2009. In May 2010, we have reiterated our request to perceive the public service general interest of satellite systems for developing countries and we believe that this should be recognized and consecrated in the Protocol.

Thank you very much.

The CHAIRMAN *(interpretation from French)*: Thank you very much Mr. Kedjar for your presentation of the state of work in Algeria.

(Continued in English) The other presentations on the agenda item 5 will be postponed for this afternoon.

Distinguished delegates, I would like to inform you that I have received a request from the Director of the Office for Outer Space Affairs for the opportunity to address the Committee at this morning's meeting.

Therefore, following past practice, and provided that there are no objections, I would like now to invite the Director of the Office for Outer Space Affairs, Ms. Mazlan Othman, to address the Committee.

Madam Othman, you have the floor.

Ms. M. OTHMAN (Director, Office for Outer Space Affairs): Thank you Mr. Chairman. Mr. Chairman, I warmly welcome you all to the fifty-third session of this Committee and thank you for the opportunity to address this session of the Committee on the work of the Office for Outer Space Affairs over the past year.

Before doing so, I would like to welcome Dumitru Dorin Prunariu of Romania as Chair of the next two sessions of the Committee and welcome you and I am extremely pleased to see an old friend chairing the session of the Committee. I am certain that the Committee will continue to achieve major accomplishments under your guidance.

I would also like to welcome Nomfuneko Majaja of South Africa and Ambassador Raimundo González Aninat of Chile and congratulate them on their election as First Vice-Chair and Second Vice-Chair Rapporteur of the Committee respectively.

I would like to assure you all of the support of the Secretariat in facilitating your work to our utmost ability.

I would also like to thank Ciro Arévalo Yepes of Colombia, Suvit Vibulsresth of Thailand and Filipe Duarte Santos of Portugal for their outstanding work as Chair, First Vice-Chair and Second Vice-Chair Rapporteur respectively of the Committee for the period 2008-2009.

Mr. Chairman, distinguished delegate, I am now pleased to briefly highlight key aspects of the work of the Office is carrying out in the context of its operational priorities and expected accomplishments for 2010-2011.

The responsibilities of the Office towards the Committee and its subsidiary office kept the Office, and in particularly the Committee Services and Research Section, fully engaged in the past year. As customary, the Office provided a full range of services needed for facilitating the work of the Committee and, when requested, provided assistance in matters of substance and guidance on organizational queries.

Time and documentation management continued to present the Secretariat with unique challenges but I am confident that with your assistance the Office will continue to respond to the changing needs of the Committee.

Mr. Chairman, distinguished delegates, in the past year, the Office continued to support a number of actions aimed at discharging the Secretary-General's responsibilities under and promoting greater understanding of the United Nations treaties and principles on outer space and related resolutions.

I am pleased to report that member States continued to furnish information for the United Nations Registry on Objects Launched into Outer Space, either in accordance with the Registration Convention or under resolution 1721(B) of 1961. All information received by the Office under the Registration Convention is published and disseminated under the document series STSG/SER.E and under resolution 1721(B) in the series A/AC.105/INF. Currently there are over 1,000 documents containing information on objects launched into outer space. The registration documents and an online index of objects launched into outer space can be found on the Office's website.

As in the past, the Office will continue to work proactively with member States and intergovernmental organizations to support the registration of space objects and enhance registration practices. To this end, the Office has prepared a model registration form for States to use when submitting information under the Treaty in resolution 1721(B). The form, which is based on common registration practices, as well as recommendations made in resolution 62/101, is now accessible via the Internet.

Other actions undertaken by the Office under the treaties include the monitoring of launches and decays of space objects. The maintenance of a 25/7 Hotline to respond to queries on re-entry of space objects and serving as the United Nations focal point on re-entry of nuclear powered space objects for the Joint Radiation Emergency Management Plan of the International Organizations.

Mr. Chairman, distinguished delegates, the Office conducts activities that specifically aim at promoting greater understanding, acceptance and implementation of the international legal regime on outer space. The two main activities being undertaken currently is the Annual Workshop on Space Law and the preparation of a basic course on space law.

The Office is preparing for the holding of this year's Workshop on Space Law with the Government of Thailand and the Geo-Informatics and Space Technology Development Agency, GISTDA. The Workshop is planned to be held in Bangkok from 16-19 November 2010. We would like to acknowledge with gratitude the generous offer of the European Space Agency to support the Workshop by providing additional funds. The Workshop will aim to build up on the success of this series, including the most recent held in the Islamic Republic of Iran in November 2009. The proceedings of that Workshop will be made available on the Office's website.

The development of the curriculum on space law has progressed well. Taking advantage of the Space Law Workshop, the Group of Experts met in Tehran in November 2009 to revise the draft curriculum, taking into account the comments and observations received from the Committee and member States. The structure and the contents of the first draft of the curriculum on space law was harmonized and elaborated. Work will be continuing this summer to enhance the reference resources of some of the modules and finalize other aspects of the curriculum. The Office expects to share the draft of the curriculum with member States at the fiftieth session of the Legal Subcommittee in 2011.

Mr. Chairman, distinguished delegate, enhancing use of space science and technology and their applications is, of course, one of the priorities of the Office Programme on Space Applications. Currently, the main thematic areas of the Programme include natural resource management and environmental monitoring, development of space technologies in space science, climate change and space weather.

In response to emerging needs, the Programme is launching two new initiatives. The first is the Basic Space Technology Initiative, known as BSTI. This Initiative aims at supporting member States, build their capacity in basic space technology. The second is the Human Space Technology Initiative, known as HSTI. HSTI aims at enhancing the participation of developing countries in scientific activities at the International Space Station.

More details on these new areas of work and other activities planned by the Programme will be provided to you by the Expert on Space Applications in his statement to the Committee.

With regard to regional coordination mechanisms, I am pleased to inform on the support the

Office has provided to the efforts being undertaken by member States in Africa and in Latin America and the Caribbean in the preparatory work for the Sixth Space Conference of the Americas by providing financial support for the convening of the meetings organized by the Pro Tempore Secretariat.

The Office also supported a Workshop on Space Law held in Ecuador in May 2010.

The Office also actively supported the Third African Leadership Conference on Space Science and Technology which was held in December 2009 in Algeria.

In Asia and the Pacific, the Office has established a closer relationship with APSCO and APSAR, both of which are important cooperation mechanisms in that region.

Mr. Chairman, distinguished delegates, the International Committee on GNSS and UN SPIDER are good examples of the work the Office undertakes to advocate space science and technology and the applications as one of the mechanisms available for securing global public good.

In the past year, the Office continued to fulfil its responsibilities as Executive Secretariat of ICG. To build upon the success of the previous meetings of ICG, including the fourth meeting held in St. Petersburg in September 2009, the Office is preparing to service the fifth meeting of the ICG which will be jointly hosted by the European Union and Italy in Turino, Italy, from 18-22 October 2010.

The Office is also pursuing a Programme on GNSS Applications aimed at introducing GNSS technologies and applications to developing countries. The Programme includes the organization of training courses on GNSS applications, assisting the Regional Centres for Space Science and Technology Education affiliated to the United Nations in fulfilling their obligations as ICG Information Centres. And we are also actively working with GNSS education experts to develop an education curriculum on GNSS that would be offered at the Regional Centres in the near future.

This week alone, the Office supported the meeting of the Working Group A of ICG, held on 7 June. The fifth meeting of the Providers Forum on 8 June and the Planning and Organizational Meeting for the fifth meeting of ICG on 9 June.

The Office would like to take this opportunity to express its deep appreciation to the United States of America for the generous financial contributions that have enabled the implementation of a broad range of activities relating to ICG.

With respect to the Global Platform on Disaster Management, I am pleased to report that the implementation of the UN SPIDER Programme is also progressing well and on track. In the first five months of this year, we have already played out several activities. We held technical advisory missions to the Maldives, to the Dominican Republic, Chile and Haiti. We enhanced the information contained on the UN SPIDER Knowledge Portal. We carried out a number of outreach activities and we provided support to 17 emergency events, four more than those we supported in all of 2009. This support was carried out within the Space Aid Framework which is being implemented by the Programme aimed at ensuring timely, efficient and universal access to space-based information and technologies to support early warning, emergency response and early recovery activities.

Also to ensure we are able to provide effective support to all emergency events, and in response to the request we received at the last Scientific and Technical Subcommittee meeting, I would like to inform that we are setting up the Space Aid Fund within the existing Trust Fund. This will enable quick and direct acquisition of space-based information and technologies to support emergency and humanitarian response in cases where existing mechanisms and opportunities are not able to provide what is needed.

The UN SPIDER Programme, as you know, is being fondly mainly from extra-budgetary resources, both financial and in-kind, and we are particularly grateful to Austria and Germany for the dedicated support and extensive financial commitment demonstrated to the Programme.

I am also pleased to note that Croatia, Ecuador, the Republic of Korea, Spain and Turkey have contributed towards the activities being carried out by UN SPIDER.

We invite and we urge all member States to consider contributing to the Programme.

Mr. Chairman, distinguished delegates, the Office continues to coordinate and enhance inter-agency cooperation in space-related activities within the United Nations system by organizing and serving as a Secretariat of the United Nations Inter-Agency Meeting on Outer Space Activities, which is the primary coordination mechanism of the United Nations system to achieve better cooperation in space-related activities.

The Inter-Agency Meeting on Outer Space Activities held its thirtieth session in Geneva from 10-12 March which was hosted by the ITU. In this context, I am happy to inform that the meeting has agreed to focus more strongly on space-related coordination efforts by the United Nations entities in addressing the Commission for Sustainable Development thematic clusters of work. The Secretary-General's report will from next year be a tool for this.

Another achievement of this year's meeting is the relationship established between the Office, the World Meteorological Office, and the United Nations Framework Convention on Climate Change in addressing the role of space to meet climate change challenges.

The report of the Inter-Agency Meeting and the report of the Secretary-General on the coordination of space-related activities within the United Nations system for 2010-2011 period have been made available to delegations at this session of the Committee.

In addition, the Office is serving, together with the United Nations Economic Commission for Africa, as co-Chair of the United Nations Geographic Information Working Group, or UNGIWG, for the period 2010-2011. UNGIWG is an United Nations inter-agency coordination body established in year 2000 to build the United Nations' spatial data infrastructure needed to achieve sustainable development. Presently, 450 geo-spatial expert staff members from about 35 United Nations departments, programmes and specialized agencies contribute to UNGIWG.

In 2009, the Office hosted the tenth UNGIWG plenary meeting in Bonn which discussed the implementation of the United Nations Spatial Data Infrastructure Initiative.

With respect to increasing public awareness of the benefits of space, the Office continues to conduct activities for the general public and young people. Highlights from last year include the celebration of the tenth anniversary of the General Assembly's Declaration of World Space Week. Special events involving astronauts were organized in the Rotunda of the Vienna International Centre and the Planetarium of Vienna. The Office is grateful to all the organizations and contributors that supported these events.

Next year, 2011, will mark the fiftieth anniversary of this Committee, the fiftieth session of the Legal Subcommittee and the fiftieth anniversary of human space flight. A number of activities are currently being planned by the Office to celebrate these significant milestones.

The central event will be a large exhibition to be held in the VIC Rotunda during June 2011. Many States have already expressed their interest in exhibiting and coordination of this event is well advanced. Other activities include, among others, the organization of a high-level panel on the first day of the Committee, the launching of a unique collection of messages from past and current space explorers to the next generation, the issuance of a special series of United Nations stamps and the opportunity to taste special foods that have been brought to space.

The Office is organizing two lunch meetings with delegations interested in participating in these and other activities. The first on Friday, 11 June, and the next on Monday, 14 June. Further details will be provided to delegations by the Chairman and in the back of the room.

Mr. Chairman, distinguished delegates, in executing the implementation of its priorities, the Office relies on the direction provided by you, the member States, the availability of adequate financial and human resources and the active engagement and cooperation of all stakeholders.

One of the instruments that the Office uses to draw its priorities from is the Strategic Framework for the Programme on Peaceful Uses of Outer Space. This Framework requires the Office, as the entity responsible for implementing the Programme, to commit to specific objectives and expected accomplishments and these are measured by indicators of achievements. The Programme's proposed expected accomplishments and indicators of the achievements for the next biennium 2012-2013, as contained in document A/65/6/Programme 5, will be reviewed by the United Nations Committee on Programme and Coordination, CPC, with the Office actually this afternoon and informally next week. To that end, the Office would like to invite the Committee to review the document and provide any comments, as appropriate, that the Office might communicate to the CPC.

On the matter of resources, as you all know, our Programme is funded from the Regular Budget and voluntary contributions, both in cash and in-kind. In 2009, Austria, Croatia, Germany, Japan, the United States of America, and the European Space Agency provided in-cash contributions to the value of about $1 million.

Austria, Italy, Germany, the Republic of Korea, and Turkey are providing the services of Associate Experts and Senior Experts.

The Office has also benefited greatly from in-kind contributions received from governments and other partners that host and/or co-organize activities with the Office. The approximate value of such in-kind contributions in the period 2008-2009 has been assessed as approximately US$1.5 million.

I would, therefore, like to express our deepest appreciation to all our donors for their support and contributions.

As is evident, voluntary, cash and in-kind contributions remain a vital component for the successful implementation of the Office's Programme of Work. I trust, and I plead and I urge, that the Office can continue to rely on your generous contributions and support.

I would now like to turn to our human resources. Clearly, the Office's ability to deliver on its goals depends on the expertise and experience of its staff and I am, therefore, pleased to review the Office's staff movements in the past year.

The newest member of our team is Ms. Aygul Duysenhanova of Uzbekistan. She joined the Committee Services and Research Section and brings with her several years of experience with UNESCAP in Bangkok.

Other staff movements in the Office on which I reported previously during the Scientific and Technical Subcommittee and the Legal Subcommittee include the appointments of Mr. Takao Doi of Japan, as Expert on Space Applications, and Chief of the Space Applications Section. The lateral reassignment of Mr. Werner Balogh of Austria and Ms Antonella Bini of Italy to the Space Applications Section and the appointments of Mr. Shirshavan(?) of India, Mr. Michael Leitgap(?) of Austria and Ms. Natalie Apler of Germany, Mr. Yusuf Hasichek(?) of Turkey, and Mr. Ahmed Othman(?) of Austria to UN SPIDER.

The Office is also expecting to receive the services of a second Senior Expert from Turkey.

Mr. Chairman, distinguished delegates, let me conclude by assuring the Committee of the commitment of my Office to increasing the awareness of the relevance and importance of space exploration and applications to the betterment of the human condition and particularly to strengthening the capacity of developing countries to partake in those benefits.

Thank you Mr. Chairman and thank you distinguished delegates.

The CHAIRMAN: I thank Ms. Mazlan Othman for her informative statement.

I inform the distinguished delegates they will continue and hopefully conclude our consideration of agenda item 5, General Exchange of Views, this afternoon.

Technical presentations

Now technical presentation.

On behalf of the United States of America, we have the first presentation and have the pleasure to introduce you to Major General Susan Helms, who is an astronaut as well, and will make a presentation entitled "The US Shared Space Situational Awareness Programme".

You have the floor Susan.

Ms. S. HELMS (United States of America): Thank you. Good morning Mr. Chairman and distinguished delegates. I am Major General Susan Helms, the Director of Plans, Policy and Strategy at the United States Strategic Command. I am delighted to return this year to this important forum as a representative of the United States. The United States Strategic Command is honoured to have the opportunity to participate in these discussions as the Command is directed by our National Leadership to monitor and track space objects and to provide space situational awareness information to the United States Government, civil agencies and, as appropriate, commercial and international entities.

Last year I presented the United States perspectives on the 2009 collision between a commercial communications satellite and a non-operational Russian satellite. Today, I will present an update on the situation and also provide some of the measures we have taken to improve transparency in our efforts to help preserve the space domain for use by all space-faring nations. Specifically, I will highlight improves in the sharing of space situational awareness information in order to promote safe and responsible space operations.

The United States remains committed to the long-standing principles including those in the 1967 Outer Space Treaty which provide the fundamental guidelines for the free access to and use of space by all nations for peaceful purposes. We believe that any

collision in space threatens every nations ability to explore and use space for such purposes.

Because of these beliefs, the United States has increased its capacity to share awareness of the space environment in such a way as to support the long-term sustainability of safe space operations for all space-faring nations. Furthermore, we are emphasizing the important role of international cooperation to enhance safe space operations and shared security interests.

Next slide. In the conduct of space operations, it is imperative that we understand the space environment and the persistent changes occurring in that environment. When I spoke to you last year, the United States Strategic Command's Joint Space Operation Centre was tracking over 19,000 objects daily. Today, we are tracking over 21,000 objects, an increase of 2,000 objects in just one year. Of those 21,000 trackable objects, only about 1,000 of them are active satellites. In addition, there is still an indeterminate amount of small debris for which we cannot generate reliable consistent orbit estimates. Despite their small size, however, these pieces of debris can also harm satellites and degrade their operations.

Over the past year, space-faring nations have launched 70 times placing over 100 satellites into orbit. Such frequent changes in the space environment requires persistent and dedicated space situational awareness capabilities and operations.

Maintaining a timely picture of the space domain becomes more difficult as space becomes increasingly congested. We face many challenges as we strive to improve our knowledge and predictability to determine what is occurring in space. The United States may have an extensive network of space surveillance sensors but no one nation has the necessary resources or geography to precisely track every single object. Therefore, we understand that improved space situational awareness will ultimately come from international cooperation and information sharing. Effective information sharing requires finding common ground on a common lexicon and standard types of data formats. That is a significant challenge by itself. As we work with both government and commercial operators, we are discovering that each operator has unique procedures, timelines and formats.

Security continues to be a significant consideration. Our space capabilities underpin domestic and global interest such as commerce and we must ensure we protect those equities.

Procedures for sharing space situational awareness information on any basis must include measures to ensure the integrity of information among partners. We must continue to make improvements in common approaches to standards and data-sharing protocols.

As I said in last year's forum, the United States Strategic Command took a hard look at its internal collision avoidance in prediction processes following the satellite collision that occurred in February 2009. The United States has been and will continue to be a leader in identifying potential hazards in space and so we have implemented new transparency and confidence-building measures. In addition to internal process improvements, we have expanded our computational capability and have added additional personnel. These changes have improved our capacity to analyze the orbits of objects in space as well as our ability to predict potential hazards to spacecraft.

Just seven months ago, the United States Strategic Command assumed the responsibility of a new programme to provide space situational awareness services to commercial entities in international governments. This new programme allows us to collaborate more effectively on space situation awareness. Our goals with this programme are to provide transparency into satellite positional information and to promote overall space flight safety through new cooperative partnerships.

Our new programme consists of three space situational awareness services. A basic service consisting of information posted to an Internet website, advanced services available to entities under a negotiated agreement, and emergency notifications alerting satellite operators to hazardous situations.

Last year I presented information about a website where registered users could find satellite data. This year I am happy to tell you that the United States Strategic Command now has oversight over that website which you see here on this slide as www.space-track.org. The website's purpose is to make widely available satellite positional and orbital information. We maintain this and other databases so that we can conduct analysis to predict close approaches between objects and, if required, provide a notification to appropriate satellite operators. The database contains a listing of historical and current two-line element sets, as well as satellite decay and re-entry data, free of charge. The procedures to request our advanced services are also on this website.

Advanced services make up the second service level of the Space Situational Awareness Sharing Programme. Advanced Services are designed to support safe space flight operations during launch and on-orbit operations. In order to permit advanced data exchanges, we must seek the establishment of international cooperative partnerships through written formal Agreements with satellite owners and operators, launch providers and other partners. With an Agreement in place, entities may request specific support elements to their operations and we will provide that support as long as we have the resources available and the provision of those services are consistent with national security interest. This two-way exchange of information is a new aspect of our Programme which should further the goal of a cooperative approach to the management of space debris.

Through the Agreement process, we hope to advance the dialogue on terminology and data formats. The Agreements also provide mutual contact information for one another's operation centres. When an Agreement is in place, the owner or operator can work closely with our Operation Centre, which we call the JSPOC, to mitigate collision risks for their spacecraft. For example, an owner or operator might provide more accurate ephemeris data so that the JSPOC can use this in a focused screening calculation or to assess a planned manoeuvre for a resulting close approach.

Since the Space Situational Awareness Sharing Programme has just begun, we only have a handful of agreements in place right now with commercial companies and we have not yet signed an international government-to-government agreement. As this Programme moves forward in the coming months, we look forward to the opportunity to engage with your governments.

Because we are committed to supporting safe space-flight operations, we have developed our third level of service, the emergency notifications process. There are occasions when two objects may approach each other at an uncomfortably close distance, and to mitigate a possible collision risk, we recently began to provide notifications of potentially dangerous situations to satellite owners and operators, within established legal and policy guidelines.

When the JSPOC predicts a close approach between two objects, one of which is an active satellite, we now attempt to promptly notify the affected satellite operator of the potential hazard and to provide the predicted time of closest approach, and the projected miss distance parameters. We now analyze the orbits of all active satellites, and this daily catalogue analysis results in 20 to 30 close approach notifications per day. We have increased our capacity to provide this information in a timely manner to owners and operators around the world. As an example, when operators provide their own positional data or manoeuvre plans for their satellites, the JSPOC can re-evaluate the prediction using that information and provide an updated result. The United States also hopes that these efforts ensure that collisions and other unforeseen incidents involving space activities do not lead to misinterpretation or miscalculation.

Ideally, we will have agreements with many space-faring entities to establish two-way information exchanges, to facilitate rapid notifications of space hazards, and to provide other services that will promote safe space flight operations.

While we have made significant improvements in our space situational awareness and related sharing efforts, we know these are only small steps down a longer road. The menu of services we now offer has room for expansion and improvement as we learn more about the way operators are using our data on the website and our emergency notifications. In related efforts, and in conjunction with other United States Government agencies, Strategic Command is engaged in technical exchanges with experts from Europe and space-faring nations around the world to explore opportunities for expanded cooperation on space situational awareness.

As we move forward with the Space Situational Awareness Sharing Programme, we will need your assistance. To ensure timely notifications, the United States Department of State intends to reach out in the coming weeks to all space-faring nations to ensure that the JSPOC has current contact information for both government and private sector satellite operations centres. Over the next year or two, our team will begin reaching out to international and commercial partners to seek a dialogue and agreement for information exchange.

These partnerships will ultimately benefit all of us and improve our collective ability to promote space flight safety and safe space operations for all.

The United States recognized the 2009 collision and other debris-causing events as a wake-up call, serious warnings that indicate that we all must consider our behaviour with regard to space operations. As we move forward, we must promote responsible space operations of all space-faring entities. Actions of one operator in space may affect each and every space

user, and any one of us could be a victim of an unavoidable collision with debris.

The United States supports the development of voluntary and pragmatic information-sharing and confidence-building mechanisms. We are greatly encouraged with the direction of the Scientific and Technical Subcommittee's multi-year study on the long-term sustainability of outer space activities. This forum will provide a valuable opportunity for cooperation with established and emerging members of the space-faring community and with the private sector to establish a set of best practice guidelines that will enhance space flight safety and help preserve the space environment for future generations.

One of the crucial elements of any set of best practices should be the responsibility of nations to take the necessary steps to minimize debris caused by routine launch and satellite operations. These best practices could expand on the excellent precedent established in the Orbital Debris Mitigation Guidelines. Best practices could also address common lexicon and standards for data, the publishing of satellite positional information, and the establishment of best practices for emergency situations whereby satellite operators and governments provide notification and compare information for emerging situations that could pose a hazard to the space domain. The United States has been and will continue to be involved in fruitful exchanges with other governments and international organizations on proposals for increased transparency and confidence-building measures for the development of widely-accepted best practices for space operations.

As a resident of the International Space Station for 210 days, I well understand the importance of common courtesies, information-sharing, and international cooperation.

Fortunately, we have collectively advanced the discussion on increased cooperation and transparency, and the United States looks forward to all future discussions that promote the long-term sustainability of space activities.

I'd like to close by expressing my sincere gratitude for the opportunity to speak here again. I'm excited to be here today and present you some of the major improvements we've made in the last year. Still, these are simply incremental steps, and we know there is much more work to do.

We in the United States Strategic Command look forward to taking part in further dialogue and collaborative opportunities with all member nations for the betterment of all peaceful uses of space.

Thank you.

The CHAIRMAN: Thank you Major Helms for your presentation.

Are there any questions or comments?

I see one question. Please, the representative of Saudi Arabia.

Mr. M. A. TARABZOUNI (Saudi Arabia): First of all, I really would like to thank you for giving me the opportunity to speak today and thank you for the Major General for the presentation. I think it is a very good presentation. But I really would like to ask, what is the size of the object when we are talking about 21,000 objects in 2001, what is the size? Is it a small size or a big size? There is absolutely 1,000 we know, it is a big satellite, but the others, what are the size?

Thank you very much.

Ms. S. HELMS (United States of America): I want to make sure I understand the question.

The CHAIRMAN: I think the minimum size of the debris you track or satellites.

Ms. S. HELMS (United States of America): If an object is larger than 10 centimetres we can track it.

The CHAIRMAN: Thank you.

Are there any other questions or comments?

No?

We will start our second presentation. Our second presentation is by the representative of Canada, Mr. Cesar Jaramillo, who will make a presentation entitled "Space Security Index 2010".

Mr. C. JARAMILLO (Canada): Thank you Mr. Chairman, distinguished delegates and observers. My name is Cesar Jaramillo and I am the Project Manager for the Space Security Index Project. I am based at Project Plough Shares in Canada and I am part of a wider consortium which I will explain in greater detail in a little bit.

Before I give a brief overview of the Space Security Index Project, I would like to acknowledge

and express my gratitude to the Government of Canada and to the Canadian delegation for their support to this project and for facilitating this presentation.

I would also like to highlight the extraordinary work that is being done by Secure World Foundation to advance the agenda of space sustainability. It is their steady commitment to this project that allows year after year the continued development of the Space Security Index Project, so thanks to them as well.

So what is the Space Security Index? The Space Security Index is a international consortium that seeks to facilitate dialogue and promote transparency through judicious, fact-based, unbiased research on space activities and of the impact that all space activity has on the security of outer space.

There are some underlying premises that form the operation of this Space Security Index Research Consortium.

The first underlying premise is that the international regime that normally we deal to regulate space activities is outdated and insufficient to address current challenges and intricacies of space activities. Not only is it outdated and insufficient now but it has been outdated and insufficient for a number of years. Now, given the fact that space developments and space activities are advancing at an increasing rate every year, the gap between space activities and the regulatory framework that is supposed to regulate them is becoming wider and wider every year.

A second underlying premise that forms our project is that the diversity of actors that have a direct interest in space has changed over the years. Unlike the Cold War when the space domain was considered to be the exclusive prerogative of State actors, now we have a much wider range of stakeholders that include multilateral organizations, NGOs, industry, of course, governments, both civil and military programmes, but the range of actors have certainly created new challenges that have to be addressed in a way that encourages dialogue between all these actors.

And finally, and perhaps more importantly, is the fact that security in outer space is an essential and necessary pre-condition that allows all other space activities to actually take place. There may be developments in area as diverse as planetary exploration, provision of commercial services or monitoring natural disasters. However, they will all be put jeopardy if there is not first a secure environment in which to operate.

The primary outcome of the Space Security Index Project, or at least the most tangible one, is in the annual publication that tracks developments that have an impact on space security. We are proud to have this finished and just released the 2010 edition of the publication and there are copies on the table outside for everybody to please take one.

Our hope is that by providing a snapshot of space security-related events in a given year, we are providing a common ground for stakeholders to come to the table with different views of what space security may be or what space sustainability may be to at least have a common starting point with this publication.

Each year we track the developments in the calendar year immediately preceding it. Thus, the 2010 edition that you have before you tracks developments from January to December 2009.

The definition that the Space Security Index Project has embraced for its publication has been taken basically from the 1967 Outer Space Treaty and it refers to secure and sustainable access for all and freedom from space-based threats. Now this definition views space as a truly global commons and therefore we believe that access to space should not be constrained for any actor and should not be based on a first come, first served basis.

The research process is a rigorous year-long endeavour that starts with primary research on developments that have taken place in a given calendar year by graduate students mainly at the Institute of Air and Space Law at McGill University in Montreal, Canada. This is followed by an online consultation in which literally hundreds of international experts are invited to take part in an electronic survey and review of the draft research and sent comments to be incorporated.

And finally there is a Working Group that takes place every year prior to publication in which there is dozens of space experts from all over the world that convene in a single place. This year it was held in Montreal and they give feedback on the revised drafts in order to ensure and enhance the accuracy and credibility of the project.

Specifically we follow nine indicators or nine chapters and they are related to any activity that a space-based or Earth-based that has an impact on the space environment, be it legal or the physical environment.

We also track the impact that these developments have with space security. To be sure we

are not only tracking negative developments or developments that have a negative impact on space security, we also are glad to recognize developments that have a positive impact on space security such as more transparency, openness, information-sharing and the like. In fact, there are some developments that have both a potential negative and a potential positive impact on space security. I will give you some samples as I continue my presentation.

Finally, we are also able to detect long-term trends despite focusing the research on a calendar year since this is already our seventh volume of the Space Security Index publication. We can identify certain trends that seem to carry over from year to year and these are followed as well. I will also give some examples of these trends.

These nine chapters or indicators can be grouped thematically into three major areas of concern.

First of all, we have the condition of the operating environment. When we speak of the operating environment, we mean both the physical environment of outer space activities as well as the legal environment which is much more grounded but it is also highly relevant to the development of space activities for different actors.

The second area of concern is the number and diversity of actors. As I said a couple of minutes ago, there are now governments, industry, academia, NGOs and multilateral organizations all having a stake in the security of space. The fact that I am speaking to you here today is a true testament to the wider range of actors that now try to have mechanisms in place to contribute to the debate on how to better achieve space sustainability.

And the third area of concern is the militarization and potential weaponization of outer space and this relates not only to space support for terrestrial military operation but also for the development and testing of technologies that could potentially interfere in a hostile manner with space assets of other countries.

So in terms of the operating environment, we have the physical environment and one of the trends that has carried over the years is the fact that the single most gravest threat to space security on the physical realm continues to be the presence of orbital debris. As it was mentioned in the previous presentation, even small pieces of debris can be highly destructive and they can destroy or severely damage spacecraft. Moreover, what makes space debris such a great threat is its indiscriminate nature. In other words, the actor, State or entity that causes space debris to be generated is not immune from the adverse effects that space debris may have on its own spacecraft. So this is really an area that has continued to be a problem and for which no apparent solution seems to be on the horizon.

True, there are Debris Mitigation Guidelines. However, even if they were fully implemented, they are not retroactive and there is currently no viable mechanism for removing existing debris which is in the hundreds of thousands of pieces from outer space.

Another trend related to the physical environment has to do with the increased impetus for shared information and sharing information such as space situational awareness. This has long been controversial because of the sensitive nature and military applications of some of this information. However, we are beginning to see a greater push from other State actors as well as commercial entities for greater openness and transparency from those entities that have the greatest capabilities for tracking space objects in space situational awareness.

When we speak about the operating environment, we are also speaking about the legal environment. The major trend we have witnessed over the past few years with the Space Security Index has been the lack of consensus on an over-arching multilateral instrument or mechanism to regulated space activities. Rather what we have seen is State regulating at the national level on space activities. However, one can only hope that there is enough harmony between different national legislations in order to allow a multilateral instrument to be developed down the line. This said, there are indeed some proposals on the table currently for consideration that would be international in scope. The ones that we are currently tracking are the PPWT Draft Treaty, or the Treaty on the Prevention and the Placement of Weapons in Outer Space, that has co-sponsored by China and Russia. It was introduced in 2008. However, it has failed to gain the necessary consensus and has received some resistant from other States Parties and have, at the Conference on Disarmament, and thus has not materialized as a natural treaty.

We also have last year's Canada's proposal at the Conference on Disarmament for guarantees on space activities. Rather than a draft treaty, Canada's proposal consisted of three principles on which to build upon an eventual instrument, be it a treaty or a Code of Conduct but there were three principles. They were to ban the placement of weapons in outer space, to ban the use of weapons against space assets and to ban the

use of satellites themselves as weapons. And the third one is the European Union's Code of Conduct. A preliminary draft has already been released but it is expected that later in this year it will be out for adhesion from other State Parties.

Usually when there is talk of the European Union's Code of Conduct, the word "voluntary" is already mentioned and it is always said that it is open to voluntary adhesion from member States. It is a valid argument. However, one would think that even a legally binding treaty is, in essence, a voluntary, at least at the moment when it comes to the moment of adhesion, even if there are different implications for non-compliance.

It remains to be seen whether any of these three proposals are going to gather the necessary support from States to become universal. However, one concern that has been voiced is that this could potentially to deadlock inasmuch as each country tries to galvanize support for their own treaty and thus neglecting the others, their own treaty proposal and thus neglect the others.

Again, the number and diversity of actors is growing every year and this is a trend that is very unlikely that will be reversed. On the contrary, the number of space actors is going to continue to grow at an exponential rate. Right now there are 10 States with independent launch capabilities and over 60 nations or consortia that have space assets and the number is going to continue to grow in the near future further straining an already stressed environment. Now this may have positive as well as negative implications for space security. It is positive in the sense that there are more actors in space, there are more stakeholders that have a direct interest in preserving it for peaceful uses. However, it is also negative because space is already a congested and crowded environment and the resources on low-Earth orbit and geosynchronous orbit are, in fact, limited. Moreover, there are States that have already voiced concerns about the inherent fairness, or lack thereof, of a system that has *de facto* been first come, first served system of, for instance, orbital slot allocations whereby those that come late into the game have virtually no chance to be relevant players.

And it is not only State actors that are crowding space. The commercial sector is a vibrant sector. Just last week a private company, Space SAX(?), launched Falcon-9 launch vehicle. This is truly revolutionary because this opens the door for the commercial sector to provide services, for instance, to the American Government to launch supplies for astronauts to the International Space Station. This is neither negative nor positive *per se*. However, the inclusion of the commercial sector is going to raise further legal questions or pose related questions that will have to be addressed.

The third thematic area of concern that we track is the militarization and weaponization of space. I should make a distinction between these terms that are often used inter-changeably although they are not. We have seen the militarization of space for several years. However, space remains non-weaponized and this is a very delicate threshold that we would like to maintain.

Again there are specific developments, some of which I will mention in a minute, related to these trends.

This is just a sample of the type of developments that we cover in the Space Security Index. For instance, during 2009, we have the collision of the Cosmos-2251 and Uranium-33 satellites. We have the review process for US space policy and there is some cautious optimism that there may be more openness to multilateral approaches to the security regime. Again the draft Code of Conduct tabled by the European Union and the call for guarantees by Canada, the major satellite operators form the Space Data Association to share that amongst themselves and in essence not have to rely on governments to provide it.

There was a test by Boeing of an Air Base Laser(?) Weapons for the United States Air Force. This is significant for two basic reasons. One, this shows a greater emergency for public/private partnerships in the space domain. And second, although this is not a space-based weapon, similar technology could potentially down the line be developed. As well, Iran launched a commercial satellite.

And, of course, there are other developments that we are going to continue to follow in the subsequent editions of the Space Security Index.

To finalize, I would like to invite you to go spacesecurity.org where you can find all the volumes that have been released to date. The 2010 volume of which you have or will get the Executive Summary today, will shortly be available but now you can access up to 2009 the full volume. Our project partners again the Secure World Foundation, the Simons Foundation, Project Plough Shares, the Institute of Air and Space Law and McGill University and we have the support of the Canadian Government through the Department of Foreign Affairs.

To conclude, the space domain and the mechanisms we use to ensure its sustainability lie at the very heart of the definition of global governance. The reality is that global dependence on space applications is only going to increase year after year and, therefore, the challenge is for us to devise mechanisms to make sure that we can derive the many benefits from space but not put them in jeopardy by through an insecure environment.

To this end, we the project partners of the Space Security Index, hope to make a contribution to the debate with this publication.

Thank you very much.

The CHAIRMAN: Thank you very much Mr. Jaramillo for your presentation.

All questions and comments of the delegates we will put to Mr. Jaramillo during the break please because we have time restraints.

I want to remind the delegates that this afternoon we will have four technical presentations. Also we will continue our schedule under agenda items 5, 6 and 7, and if time permitting, we will continue our consideration, open and continue our consideration of agenda items 8 and 9, reports of the Scientific and Technical Subcommittee and the Legal Subcommittee.

Also I would like to remind delegates that at the end of this afternoon's session at 6.15 p.m. there will be a presentation made by the Italian Space Agency entitled "Italy in Space Observation", followed by a buffet reception in the Mozart Room at the VIC Restaurant. All delegates are cordially invited to attend this event and an invitation has been placed in your pigeon holes. The event will be attended by the President of the Italian Space Agency, Mr. Enrico Saggese, and by the Italian astronaut, Mr. Mauricio Kelu(?).

Also I would like to remind the delegates about the Japanese video that will be presented at 2.40 p.m.

Now, before adjourning the morning session, I want to give the floor to the representative of Tunisia for third technical presentation. It is made by Mr. Tarek Kuchida and the presentation is entitled "Activities of Tunisia in the Area of Satellites as they apply to Telecommunications".

Mr. T. KUCHIDA (Tunisia) *(interpretation from French)*: Thank you Mr. Chairman. First and foremost, I would like to congratulate you. You have been elected to chair this meeting.

I congratulate the Vice-Chairpersons also.

Mr. Chairman, the telecommunications network of Tunisia has multi-carrier high-speed switches. They transmit telephone, Internet and multi-media signals. The mobile telephony segment ensures full coverage of the country and is subject to great evolution starting with introduction of competition and by way of the second operator of mobile telephone in 2002 and we have clearly achieved better results through this.

In the context of improving the telecommunications infrastructure, a new licence was granted opening up the network to all available technologies. They are broadband basically, 3G, landline, radio services, among others.

The salient features of our infrastructure are as follows. There is ongoing evolution in order to enable high speed service. To do this, we upped the number of registered number of users for ADSL by 73 per cent between 2008 and 2009.

And then we need an appropriate legal framework and a step-by-step liberalization of this sector and this has brought on diversification of access service and reduction of costs to benefit citizens and businesses.

On these slides, you can see that the global system for mobile communications has achieved very good results between 2004 and 2009. Many new clients have come on line. There is considerable increased for high-speed services. It is with great pleasure that I am giving you the ranking of Tunisia in keeping with the Ninth Report on IT of the Economic Forum 2009-2010. Tunisia is first in Africa and 39th out of 133 countries throughout the world.

You will see that there is a relationship between space and technology for information and communication and, of course, electro-magnetics waves propagate in space and thus bear information and are useful for communication purposes because of the frequencies.

On 15 January 2001, we set up a National Frequency Agency, particularly responsible for notifying the Radio Communication Bureau of the International Telecommunication Union of the frequency allocation that are likely to have an impact at the international level. It is also conducts the

coordination exercise for bilateral and multilateral frequencies and furthermore sets aside the roster for Tunisia in terms of radio frequencies.

IT and communication technology and what we do in Tunisia. Here I would like to say that Tunisia is a member of the Arab Organization for Satellite Communication. It was set up in 1976 by the member States of the Arab League.

There is a land station in Tunisia. It helps us supervise and control the geostationary orbit for launch satellites. It also ensures management and utilization of radio broadcast services in 340 TV channels in 160 radio broadcast stations as well as broadband telecommunication services, voice data and IT.

Tunisia is also a member of RASCOM out of 45 African member countries. RASCOM is a commercial intergovernmental satellite communication organization, the purpose of which is to equip the African continent with a telecommunications infrastructure capable of responding to the requirements identified by African countries.

Tunisia is also a member of the International Telecommunications Satellite Organization, ITSO. This was set up in 1970 and brings together 150 countries. It is headquartered in Washington and overseas technology, voice data and video services via INTELSAT. Tunisia benefits from international services and link-ups.

But we should add that the conventions entered into with EUTELSAT, Atlantic Bird, furthermore, are very useful for broadcasting services throughout Tunisia and they also provide services for North America and Europe.

Thus, we have an orbital position that is set aside for Tunisia as determined by the ITU. Tunisia is a member of the ITU and the features of the orbital positioning set by the ITU are reflected on the slide I am showing now.

With your permission, Sir, I would like to give you some of the results that have to do with climate change in the wake of work done in close cooperation with the ITU.

The ITU works in close cooperation with its members to induce a climate neutral, ICT. ICT makes a two to two point five per cent contribution to greenhouse-type gas emissions and the percentages would increase when ICT becomes widely accessible. At the same time, ICT may considerably assist to reduce climate change by using data from active and passive remote sensing satellite systems to monitor climate change, to predict disasters and to mitigate the negative impact of climate change. The centre-based systems are based on radio frequency identification and telemetry and the promotion of telecommunications networks of due generations can cut up to 40 per cent of energy.

Then we have distance cooperation and we also have Smart transport systems.

By way of a conclusion, let me say that we can see that Tunisia responds to the Information Society World Summit Initiative. This was held in Geneva in 2003 and Tunis 2005. This relates to a satellite infrastructure based on broadband that highlights the role of satellites in terms of provision of information technology and communication technology.

It should be noted, Sir, that the National Mapping Centre will be making a presentation this afternoon. Madam Vasel(?) will be charged of that.

Thank you for your attention Sir.

The CHAIRMAN *(interpretation from French)*: I would like to thank the representative of Tunisia for that presentation.

(Continued in English) This meeting of the Committee will reconvene promptly at 3.00 p.m.

The meeting adjourned at 1.05 p.m.