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Committee on the Peaceful Uses of Outer Space

Unedited transcript

587th Meeting
Friday, 13 June 2008, 3 p.m.
Vienna

Chairman: Mr. Ciro Arévalo-Yepes (Colombia)

The meeting was called to order at 3.14 p.m.

The CHAIRMAN *(interpretation from Spanish)*: Good afternoon … *Interpretation inaudible)* … purposes, and 5 as well because we have got States' requests to take the floor. And then we will go into UNISPACE under agenda item 7, which will be considered this morning.

That will be followed by item 8 which is the Report of the Scientific and Technical Subcommittee on its Forty-Fifth Session. If we have time, we will broach item 9, the Report of the Legal Subcommittee on its Forty-Seventh Session, and 10, Spin-Off Benefits of Space Technology: Review of Current Status.

And this afternoon, there will be a technical presentation on space debris. That will be given courtesy of the Russian Federation.

Ladies and gentlemen, I would now like to give the floor to the representative of Mexico, Mr. Rubén Fuentes-Sánchez. You have the floor.

Mr. R. FUENTES-SÁNCHEZ (Mexico) *(interpretation from Spanish)*: Thank you Chairman. Since this is the first time that we are taking the floor, the delegation of Mexico would like to congratulate you upon your election to the Chair of this Committee. We would also like to congratulate the representatives of Thailand and Portugal to their posts of First Vice-Chairman and Second Vice-Chairman and Rapporteur respectively for 2008-2009.

Your great experience and knowledge of the topics before us have indeed convinced us that our work under your guidance will be crowned with success.

We would also like to congratulate Dr. Mazlan Othman and the entire Office for Outer Space Affairs staff for their excellent support work of the various responsibilities assigned to them by this Commission.

And before we go on, we would also like to express our sympathy to the Peoples Republic of China and Myanmar, given the death toll and which has unfortunately been the result of the recent natural disasters there.

I would like to give support the statement made by Argentina on behalf of GRULAC.

Mexico believes indeed that outer space should be used for peaceful purposes and that the participation of all concerned should be ensured for a harmonious development of science and space technology. We, indeed, are persuaded that, if necessary, to consolidate an international legal regime to guarantee the peaceful use of outer space, ensuring the quality of all States, including and especially that of the developing countries.

We note with satisfaction that the United Nations General Assembly has indeed approved of the Guidelines for the Mitigation of Space Debris, which have been approved by COPUOS. These are very important Guidelines. All countries which are building or buying communications satellites, satellites to

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observe the Earth and to conduct medical and other scientific observations in outer space.

We note with satisfaction that the Scientific and Technical Subcommittee has added the topic of recent developments in the Global Systems of Satellite Navigation to its agenda. The use of such global navigation satellite systems can be of great benefit to countries, especially developing countries in the field of research, basic sciences, as well as for application in public programmes and industrial sector programmes in particular. This is why the activities of the Office for Outer Space Affairs are of particular importance in promoting theoretical and practical education and training for developing countries.

We note with satisfaction that the Scientific and Technical Subcommittee has expanded its multi-year programme to near-Earth objects. These are very important, we believe. It is necessary, indeed, also to expand our knowledge on asteroids and even though there is a very low probability that an asteroid would impact on Earth, and nonetheless, this would be a true disaster if it were to happen.

We are very interested to note the near-Earth object document which has been presented. It is necessary to see how one can manage to deflect such an asteroid.

Now, we are very satisfied to note the information about the activities of international, intergovernmental and governmental organizations on space law. This is an item that has been added to the Subcommittee and the Legal Subcommittee for next year's session. This would make it possible to expand the use made of information acquired in outer space. This is absolutely essential for the proper development of space activities, especially for countries which are indeed setting up national institutions to properly coordinate their national space efforts and promote international cooperation thereof.

We support the initiative of the Office for Outer Space Affairs, with the support of academic experts, to indeed develop a space law course, programme of training that would be included in the Regional Centres for Education on Outer Space Science and Technology.

And we would like to take this opportunity to welcome Bolivia and Switzerland as full-fledged members of our Committee. Thank you very much for your attention.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much representative of Mexico, Mr. Fuentes. I thank you for the kind words that you have transmitted to the Chair and the members of the Bureau.

Ways and means of maintaining outer space for peaceful purposes (agenda item 6)

Ladies and gentlemen, we are going to be now taking up agenda item 6, which we hope to finalize this session, that is Ways and Means of Maintaining Outer Space for Peaceful Purposes.

I have before me a request from the representative of the United States of America who wishes to speak on this agenda item. You have the floor Sir.

Mr. K. HODGKINS (United States of America): Thank you Mr. Chairman. My delegation, once again, welcomes the opportunity to address specific measures for maintaining outer space for peaceful purposes. This agenda item was first taken up by the Committee at its twenty-eighth session in 1985. Since that time we have seen highly positive developments in the work of the Committee and in the world's peaceful exploration and use of outer space.

Today there is an unprecedented level of international cooperation. The United States has a long and successful history of civil space cooperation with other partners. Over the past five decades, the United States has concluded over 4,000 agreements with over 100 nations and international organizations and the level of new cooperation is rising each year. During the past year alone, NASA signed 67 new international agreements with other government and non-governmental entities in North America, South America, Europe, Asia, Africa and Australia.

The number of nations investing in space activities has steadily grown and we now have a significant private sector presence in outer space.

Looking to the future, international space cooperation will continue to be fundamentally important to the United States. In this regard, I would like to note that we have made available for all delegations copies of a recent NASA publication entitled "Global Reach", an up-to-date review of NASA's international cooperation.

Since our last meeting, the United States has entered into several bilateral ventures that will produce significant benefits in the use of outer space for

peaceful purposes. We signed a Framework Agreement with Ukraine on 31 March 2008 and the United States/France Framework Space Agreement entered into force on 2 April 2008.

In April, the United States and Russia continued the government-level consultations on establishing radiofrequency compatibility and inter-operability between GPS and GLONASS.

Similar talks were held with the European Commission on GPS Galileo inter-operability the same month, and with India on GPS-IRNSS inter-operability in January.

The third meeting of the United States/European Commission Civil Space Policy Dialogue was held on 28 May in Brussels.

The United States is reaching out to other nations to consider international cooperation in conjunction with the Vision for United States Space Exploration. Our objective is to promote common space exploration objectives and cooperative and complementary space exploration missions, along with the development of new technology that will open up many opportunities for exploration and discovery.

The United States works with GEO with the other 69 member countries, the European Commission and the 46 participating organizations to establish a Global Earth Observation System of Systems. The GEO vision is to realize that a future where decisions and actions for the benefit of humankind are informed via coordinated, comprehensive and sustained Earth observations and information.

The United States supports the work of the Committee on Earth Observation Satellites, whose membership includes NASA, NOAA and the United States Geological Survey. CEOS has been recognized as the principle space segment coordination mechanism for GEO and its coordinating space agency support to the GEOSS.

NOAA is now Chair of the CEOS Strategic Implementation Team which is facilitating member agencies space-based support to the GEO Work Plan. That Team _____(?) in Massachusetts in April of this year.

In light of these developments and the accomplishments of COPUOS, my delegation remains unconvinced of the need for action to be taken by this Committee regarding matters relating to militarization of outer space. There is no scarcity of appropriate multilateral mechanisms where disarmament matters can be discussed. COPUOS is not, and should not become one of them.

Over four decades ago, the United States and 19 other States submitted resolution 1348 which established the Ad Hoc Committee on the Peaceful Uses of Outer Space. The resolution marked a significant step forward for the world community in that it established COPUOS as the only standing body of the General Assembly to consider international cooperation in the peaceful uses of outer space. At the time, the concept, still valid today, is to establish COPUOS as the body of the General Assembly concerned exclusively with promoting international cooperation in space. It was clear that there would be entirely different efforts to deal with disarmament issues and those would include fora such as the First Committee of the General Assembly and the Conference on Disarmament in Geneva.

The Committee has played a notable role in advancing space cooperation and provides a unique forum for the exchange of information from developed and developing countries and the latest developments in the use and exploration of space.

In our view, there are tangible opportunities to enhance international cooperation in keeping with the Committee's mandate. Our consideration of the ways and means of maintaining outer space for peaceful purposes has produced measurable results and the revitalization of the Committee.

Under this item, member States concluded that reinforcing international cooperation in space implies the need for the Committee to improve the form of its work and this has been reflected, for example, in the restructured agendas of the Scientific and Technical Subcommittee and the Legal Subcommittee, the unique organizational aspects of UNISPACE III, and the addition of highly useful items to the agendas of COPUOS and its Subcommittees.

Another indication of the success of our efforts is the growing relevance of our Committee's work to the international community more generally, as shown in part by the steady increase in the number of other intergovernmental organizations, member States of the United Nations, as well as NGOs and private entities that seek participation in the Committee's work.

The presence of non-governmental entities and the willingness of experts who make special presentations have enriched the Committee and its

Subcommittees in the ultimate success in implementing the recommendations of UNISPACE III will depend heavily on their continued involvement.

Mr. Chairman, reviewing ways and means of maintaining outer space for peaceful purposes is a priority for my delegation. We would suggest several candidates for consideration. Paragraph 22 of resolution 62/217, adopted by the General Assembly last year, notes that the Government of Ecuador hosted the Fifth Space Conference of the Americas in July 2006, and that the Government of Guatemala will host the Sixth Conference in 2009. We are pleased to have participated in the Quito Conference, the results of that meeting were highly encouraging and the United States looks forward to the next Conference.

In this regard, we could use this agenda item to explore ways to promote regional and interregional cooperation based on the experience of the Space Conferences of the Americas.

Another area that could yield positive results would be the Committee's consideration of the use of space technology by the United Nations and its specialized agencies as a means of fulfilling their respective mandates and an agenda item addressing this issue would be a perfect opportunity for the specialized agencies of the United Nations to report on their activities in the Inter-Agency Meeting to report to the Committee as well. Thank you Mr. Chairman.

The CHAIRMAN *(interpretation from Spanish)*: Thank you and let me thank the United States representative for that statement.

Are there any other delegations that wish to speak on this agenda item for this afternoon?

I see none.

We have, therefore, concluded agenda item 6, Ways and Means of Maintaining Outer Space for Peaceful Purposes.

Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, UNISPACE III (agenda item 7)

Distinguished delegates, I would now like to continue and conclude our consideration of agenda item 7, Implementation of the Recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, UNISPACE III.

I have a received a request by the distinguished representative of Canada to speak under this item. So I give the floor to Anne-Marie Lan Phan to speak on this item.

Ms. A.-M.L. PHAN (Canada) *(interpretation from French)*: Thank you very much for giving me the floor to speak on item 7.

Chairman, Canada wishes to reiterate its commitment to move forward the recommendations of the UNISPACE III and the peaceful uses of outer space. UNISPACE III, and more specifically, the work taking place under Working Group 6 on the Improvement of Public Health Services.

More and more, we believe that space represents a great potential to help all countries to meet challenges in the field of public health. The converging(?) between technologies and space applications and public health represent a multidisciplinary and technical interface which is unique and which will surely develop over the coming decades.

Now the main objective of Working Group 6 aims at promoting the implementation of different space technology in the fields of remote tele-medicine and tele-epidemiology in order to improve public health services that are part of monitoring and early warning, the processes for infectious disease.

In order to carry out this mission, Canada is currently the co-Chair with the OMS. We wish to point out that since 2007, Working Group 6 and its members have benefited from today's organized by the Office for Outer Space Affairs, working with other organizations such as ESA, the Economic and Social Council for Asia and the Pacific, WHO, just to name a few, and this in order to find interested partners in this field.

We have realized that there are great new initiatives which all converge towards the needs such as availability and accessibility of Earth observation data, distance telecommunications, capacity, for example, connectivity, satellite navigation, financing and training.

As co-Chair, a member company of the Working Group, Canada has participated in two activities of the Space Applications Programme which should be highlighted.

In August 2007, the Canadian Public Health Agency and the Canadian Space Agency participated

in the Regional Meeting of Experts in Bangkok. Because of the serious impact on public health and animal health of bird flu in that region, we were able to work specifically in the organization of space technologies for the monitoring and early detection of bird flu in Asia.

This activity led to the setting up a Regional Working Group for Asia-Pacific, chaired by China and the Philippines, as well as implementation(?) of some recommendations for action, namely aimed at drawing up mechanisms for cooperative development of technical tools to help prevent and control this danger. And it also presented techniques for monitoring Mowl(?) Virus as well as Lime Disease.

More recently, in May 2008, two Canadian ministries, the Communications Research Centre in Canada, and the Canadian Space Agency represented Canada and the Working Group in participating in a Workshop on Utilization of Space Technology for Tele-Health for the Benefit of Africa. This was held in Mogadouro and was organized jointly by the Bureau of Space Affairs, WHO, ESA and the CNES. This Workshop allowed us to publicize initiatives in Africa and to better identify needs in terms of remote detection and telecommunication to better control epidemics.

Two presentations were made by the Canadian delegation, the first reported on lessons learned in the use of remote detection and communications technologies for human health. And the second one was a presentation by the co-Chair, Christopher Ayles(?), on future and present activities.

Other important activity had to do with the communications between the members of Working Group 6. The CRC, that is the Communications Research Centre in Canada, set up an Internet Portal for the exchange of information on national initiatives in this field and also to ensure follow through of the works(?) (Working) Group.

Chairman, we would like to say that certain progress is being made in Canada on the utilization of space technology to meet needs in public health, for example, long-distance ecography, or simography(?), has been deployed, test and shown to be successful using the Ka-Band of satellite telecommunications. In that connection, establishment of a small community, situated in the North of Canada, a hospital in the South. And the success of this demonstration will certainly allow us to meet the needs of those people living in the most remote regions in such a vast country as Canada.

Chairman, the Canadian delegation wishes to highlight the fact that the consensual and voluntary support of members of the Working Group is indispensable for the continuity of our work. We wish to invite member States of the Committee to participate in a Workshop in India in October 2008 on the Utilization of Space Technologies for Tele-Epidemiology for the Benefit of Asia and the Pacific. That activity is organized as a part of the Programme of Space Applications of the Office for Outer Space Affairs. Thank you very much.

The CHAIRMAN *(interpretation from French/Spanish)*: Thank you very much Anne-Marie Lan Phan. Your clear evidence of Canadian bilingualism. Thank you.

(Continued in Spanish) Now, after that statement, let me turn to the house and ask whether there any other delegations that wish to take the floor on this item of the agenda?

I see none.

We have, therefore, concluded our consideration of agenda item 7, Implementation of the Recommendations of UNISPACE III.

Report of the Scientific and Technical Subcommittee on its forty-fifth session (agenda item 8)

Distinguished delegates, I would now like to continue our consideration of agenda item 8, Report of the Scientific and Technical Subcommittee on its Forty-Fifth Session.

With your permission, I would like to give the floor to Dr. Alice Lee, the Expert on Space Applications, who will brief the Committee on the activities of the United Nations Programme on Space Applications.

You have the floor |Madam.

Ms. A. LEE (Expert on Space Applications, Office for Outer Space Affairs): Mr. Chairman, thank you very much for this opportunity to address the distinguished delegates of the Committee on the activities of the United Nations Programme on Space Applications.

Congratulations to you and the other members of the Bureau on your being elected as the Chair of this Committee. Together with my colleagues in the Space Applications Section, we look forward to assisting you

in implementing the mandate activities of the United Nations Programme on Space Applications.

I would like to express my heartfelt condolences for the recent loss of lives due to the cyclone disaster in Myanmar and the earthquake in China. I wish the Programme can do more in contributing to the relief efforts and the preparedness for the future.

I would like to congratulate you on the successful work of the International Committee on Global Navigation Satellite Systems, ICG. The Space Applications Section provided substantial support to activities in promoting the applications of space technologies.

I would like to thank the Action Teams that are continuing their efforts in defining concrete steps and the plans for implementing the UNISPACE III recommendations.

I would also congratulate NASA for her 50 years accomplishment. NASA has brought real benefits to our society in inspiration and innovation and in saving lives and the protecting the environment. The recent successful soft landing on Mars signals a promise to more success in the future.

Mr. Chairman and distinguished delegates, the United Nations Space Application Programme is successfully conducting the diverse range of activities set forth in 2008 and it is laying the foundation for activities planned for 2009. The Programme has also been supporting the implementation of the agreement reached at the forty-fifth session of the Scientific and Technical Subcommittee. Our efforts focused on the priority thematic areas with specific topics addressing sustainable development for developing countries. Our objectives are achieved through activities that produced tangible results in developing countries.

The priority themes of the Programme on Space Applications are the use of space technologies for monitoring and the protecting of the environment and natural resource management, disaster management, tele-health and tele-education, as well as basic space science education in capacity-building.

The space technologies currently employed within these themes are global navigation satellite systems, satellite communications, remote sensing applications and Earth observation and meteorological satellites. The Programme is open to investigating new applications and the use of new space technologies, such as micro- and the nano-technologies applications to satellites to support the priority thematic areas whenever possible.

Within the priority themes we introduced space technologies to educators and decision-makers to stimulate discussions to identify regional needs and explore the possibilities for creating solutions using space technology and assist regions in launching pilot projects that utilize space technology applications and meets the regional needs identified.

This is achieved by conducting workshops, seminars, symposia, training courses and expert consultations.

Past efforts of the Programme have focused on building capacity in developing countries. We are continuously searching for effective and innovative ways to fulfil our goals. Our primary interest is in implementing practical projects that effectively utilize space technologies to meet critical needs in developing countries.

Activities in 2008. The status of the year 2007 activities under the Programme on Space Applications and those planned for 2008, can be found in my report to the forty-fifth session of the Scientific and Technical Subcommittee, A/AC.105/900. That report was supplemented by the proposals contained in my statement to the Subcommittee which are reflected in its report A/AC.105/911.

My statement today deals with the more recent work of the Programme on Space Applications and the next proposal for 2009.

In 2008, the Programme has successfully three activities as follows. The United Nations/UNESCO Saudi Arabia International Conference on the Use of Space Technology for Water Management was held in Riyadh in April. The Conference established three working groups and discussed follow-up actions.

The United Nations/WHO/Burkina Faso/ESA Workshop in Using Space Technologies for Space Health to Benefit Africa was held in Ouagadougou in May. Participants of the Workshop initiated 11 actions for future collaborations in the region.

United Nations/ESA/NASA/JAXA Workshop on the International Heliophysical Year and the Basic Space Science was held in Bulgaria in June. This Workshop is the fourth of the series of five that are delegated to IHY 2007 and the International Year of Astronomy 2009.

Activities in the work of 2008. There are seven other workshops and symposia in the training courses to be held during the remainder of 2008. They are:

The United Nations/Colombia/USA Workshop on Applications of GNSS, will be held between 23-27 June in Madellin, Colombia.

The United Nations/Indonesia Regional Workshop on Integrated Space Technology Applications to Water Resources Management, Environmental Protection and Disaster Vulnerability Mitigation, will be held between 7-11 July in Jakarta.

The United Nations/Austria/ESA Symposium on Space Applications to Support the Plan of Implementation of the World Summit on Sustainable Development will be held between 9-12 September in Graz, Austria.

The United Nations/International Astronomical Federation Workshop on Integrated Space Technology Applications: Support to Managing Potential Hazardous Environmental Events will be held between 26-27 September in Glasgow, Scotland.

The United Nations/India/ESA Regional Workshop on Using Space Technologies for Tele-Epidemiology to Benefit Asia and the Pacific Region will be held from 21-24 October in Maknaw(?), India.

The United Nations/Thailand/ESA Workshop on Space Law will be held from 24-27 November in Thailand.

The United Nations/Kenya/ESA Regional Workshop on Integrated Space Technology Applications for Monitoring Climate Change: Impact on Agricultural Development and the Food Security, will be held between 1-5 December in Nairobi.

For the objectives and more details on the afore-mentioned activities, I would refer the distinguished representatives to paragraph 41 of the report of the forty-fifth session of the Scientific and Technical Subcommittee, A/AC.105/911, and Annex II of the report of the Expert on Space Application, A/AC.105/900. Paragraphs 43-51 of the Scientific and Technical Subcommittee and Annex III of the Experts Report reflects the activities of the Regional Centres for Science and Technology Education, affiliated to the United Nations and supported by the Programme in 2008 and 2009. All Regional Centres continue to offer post-graduate level courses in space science and technology.

Within our Fellowship Programme, the Programme on Space Applications continues its cooperation with the ISMB and the Politico di Terraino(?) of Italy providing scientists and specialists from developing countries with long-term fellowship opportunities in GNSS and the related applicants. Five participants joined the fourth class of this Programme in October 2007 and the five participants will be selected to join the fifth class that will come in October 2008.

The Argentina Space Agency, CONAE, continues to provide a fellowship of advanced school for training in landscape epidemiology, through the Institute for Advanced Space Studio Mario Gulich in Cordoba, Argentina. It is a six-week training course for the Latin American and Caribbean region. The first class successfully completed last year. The second class is scheduled for 6-31 October 2008. The Programme includes theories and the practices in the use of satellite images, geographical information systems, and the statistical technologies most commonly used in landscape epidemiology. Teams of the participants will also work on developing projects that are relevant to their countries. The Fellowship also aims to support the training aspects of the goals of the Action Team 6 on Tele-Health.

The activities planned for 2009. Mr. Chairman and distinguished delegates, in 2009 the Programme has received commitments from member States to conduct the following nine activities.

Three Workshops on the Integrated Applications of Space Technology for Sustainable Development on Disaster Mitigation, Environmental Monitoring and Natural Resources Management-Related Issues and to address various issues related to the United Nations Global Agenda for Development.

One Expert Meeting on the Discussion of Curricula of Regional Centres for Space Science and Technology Education.

One training course on the Use of GNSS for Integrated Applications.

One training course on the Satellite-Aided Search and Rescue System.

One United Nations/IAF Workshop on Climate Change.

One Workshop on Space Law.

One Workshop on Basic Space Science.

The Programme continues to support the Regional Centres for Space Science and Technology Education, affiliated to the United Nations, with its nine-point interactive coordination procedures with the Regional Centres. The Programme assists the Regional Centres in strengthening their Governing Board with the aims of increasing financial and technical support to the Centres from the regions.

The Programme continues to assist the Action Team 6 on Improving Public Health Services in developing its Work Plan. The Action Team 6 has decided to approach three regions separately, per regional priority, in their interests under the same goals of improving public health services.

I have the pleasure to report to you that we are on the final stage of preparation to launch a new Fellowship Programme to be entitled "United Nations/Africa Fellowship on Tele-Health", in cooperation with the Department of Tele-Health in Nelson Mandela School of Medicine, University of Kwazulamata(?), South Africa and the International Society of Tele-Medicine and E-Health. This Fellowship will provide short-term basic tele-medicine training to 40 to 80 physicians in Africa each year and the plans to cover two to four countries annually. Follow-up implementations would be monitored. The target begin date is November 2008 and the first training course will be provided to Rwanda. This Fellowship also aims to support the training aspects of the goals of the 86 on tele-health.

Since the session of COPUOS last year, the Programme has continued to initiate and monitor the progress of several pilot projects that support the sustainable development in developing countries.

Our data-sharing project entitled "Distribution and Use of Available Global Landsat Datasat for Sustainable Development in Africa" continues to distribute the global Landsat Datasat that were donated by the United States of America to African institutes building upon the work being carried out by UNDP.

Up to now, this project has provided Landsat imagery to 15 institutions for education, training and the project development in Africa. These institutions are spread throughout the African region.

With its very limited budget, the Programme implements pilot projects with voluntary efforts from participants institutes in various topics, such as, developing approach to establish national data-sharing policy, mapping and analysis data assessing and data-sharing, capacity-building training and education, environmental assessment relevant to the land cover and the classification systems, using space technology in disaster management, feasibility study on tele-health, studies on tele-epidemiology, using space technologies for infectious disease monitoring and early warning including Avian Flu, establishing forest fire-based map using remote sensing techniques.

For detailed information on these projects, I refer the distinguished delegates to the report of the Expert on Space Applications, A/AC.105/900, paragraphs 43-54.

On educational outreach to youth. The Programme continues to support activities of the World Space Week. We are also working with the Space Generation Advisory Council in defining the activities that involve young professionals and students in space technology applications. Currently, SGAC is working on studies concerning the applications of global navigation satellite systems. The Programme will sponsor the presentation of the study results at our incoming Workshop on GNSS in Colombia.

Future developments of the Programme. The priority thematic areas of the Programme on Natural Resources Management, Environmental Monitoring, Disaster Management, Tele-Education and Tele-Health, and the Basic Space Science. In the future, the Programme will continue taking the approach of integrated space technology applications in which all the above-mentioned priority thematic areas are integrated when appropriate. This approach is reflected in paragraph 31(?) of the report of the Scientific and Technical Subcommittee, A/AC.105/911. The Subcommittee noted that it was necessary for the Programme to continue to include all the above-mentioned priority thematic areas in order to ensure the integrity of the Programme's overall efforts. Therefore, the future development of the Programme will be geared towards the integrated space technology applications.

We are fully aware of the world trend of needs that can be met by the applications of space technologies. In addition to the topic of water management, we integrated space technology applications for monitoring, climate change and the impact. We have scheduled a Workshop to be held in Kenya in December 2008 on Climate Change with the focus on agricultural development and food security in Africa. We plan to continue addressing the use of space technologies in combating and predicting the

potential impact caused by global warming in our future activities.

In the area of new technologies, we are fully aware of the increasing use of micro- and nano-technologies in the space industry. The micro- and the nano-technologies have the benefit of increasing reliability, reduce power consumption, reduce _____(?) requirements, therefore, they have the benefit of reducing maintenance effort and the lowering cost.

We initiated a Workshop in Russia last year on the Use of Micro-Satellite Technologies for Monitoring the Environment. We will continue exploring the applications of micro- and nano-technologies to space activities.

Beginning 2004, the Programme has expanded its efforts in providing greater support for pilot projects of national or regional significance in developing countries. The Programme will continue these efforts with the approach of utilizing lower or zero-cost voluntary efforts from each participating institute and the know(?) a transfer of funds among any parties involved in the project. The Programme has demonstrated some initial success using this approach.

Since 2004, the Programme has initiated 41 pilot projects in the developing countries. Most of those projects were generated through the group discussion sessions in the Workshop. Among the 41 pilot projects, 10 are open-ended recurrent efforts, 17 are completed, four are inactive and cancelled, and 10 are currently in progress. In the future, the Programme will continue to place emphasis on the follow-up actions or pilot projects for sustainable development after giving capacity-building activities, such as a workshop or symposium.

So the ultimate goals are to apply space technologies to contribute to the economic growth and the social betterment of humans.

Mr. Chairman and distinguished delegates, I have presented to you a brief review of the major activities carried out under the Programme on Space Applications. We have achieved significant success but many challenges remain. International cooperation in mustering the human resources, technical capability and the financial resources is essential. Our success in overcoming these challenges depends upon support from multiple partners. We rely on the financial and the technical resources contributed by many member States in developing programmes and activities that encourages local support for the sustainable, operational use of space technology.

I thank the member States for your contributions of human resources, financial and technological resources and appeal once again to the member States and the relevant organizations to contribute generously to the Volunteer Trust Fund of the Programme on Space Applications.

In conclusion, the Programme on Space Applications seeks to continue to identify ways to use space science and technology to build capacity in developing countries for promoting their sustainable development.

We will continue to focus on activities that prevent or reduce the loss of human lives and the poverty and on activities that improve economical and social conditions. We have seen the constraints of the limited financial and human resources available. The Programme seeks to establish near- and intermediate-term activities in the projects that yield a tangible result and that will help to propagate sustainable, economic and cultural development.

In this endeavour, we look forward to a fruitful cooperation with all member States and their institutions. Thank you very much for your attention.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much. I would like to thank Ms. Alice Lee. You have heard this very impressive list of activities conducted around the world and these are very dynamic activities. We, the countries, are proud of this process of technical cooperation and this with so little money available. It is a proof that we can accomplish much even with little resources obtained by the Secretariat on the basis of the regular budget and voluntary contributions has made the most of. Of course, voluntary contributions are more than welcome given the increasing rising number of such projects. Thank you very much for your statement Ms. Lee.

We are now going to be continuing with our list of speakers under agenda item 8, the report of the Scientific and Technical Subcommittee.

Our first speaker is Mr. Petr Lála of the Czech Republic. You have the floor.

Mr. P. LÁLA (Czech Republic): Thank you Mr. Chairman. Mr. Chairman, distinguished delegates, our delegation would like to make some comments on deliberations during the latest session of the Scientific and Technical Subcommittee.

In our opinion, the most important outcome of the last year was the endorsed of the UNSPIDER Work Plan for 2007 by the General Assembly and it is addressed to the Secretary-General to implement platform activities contained in the Work Plan for the period 2008-2009. It was a difficult decision requiring even voting during the General Assembly session. During the Scientific and Technical Subcommittee session, our delegation was satisfied with the detailed information from the Secretariat on the activities carried out by UNSPIDER in 2007 and on its future plans.

It considered the new platform as an important and concrete contribution of the Committee to practical applications of space technology for the benefit of humankind. That is why the Czech Republic is prepared to make a financial contribution of 200,000 Czech Koruna(?) which around more than 8,000 Euro, to support this activity.

Regarding the issue of space debris, our delegation has been actively involved in the deliberations of the Working Group on Space Debris from the very beginning. Therefore, we are happy that the Space Debris Mitigation Guidelines, as adopted by the Subcommittee and subsequently by COPUOS, endorsed by the General Assembly in its resolution 62/217, and their implementations through relevant national mechanisms recommended.

We consider this as the first important step on the long way towards a comprehensive solution of the safety of space traffic in the future.

Finally, Mr. Chairman, I would like to mention the Memorandum on the Future Role and Activities of our Committee, submitted by the previous Chairman of COPUOS, Gérard Brachet. This material, prepared in consultation with many delegations, should lead to further improvements of the outcome of our deliberations. In particular, our delegation is a long-standing support of the involvement of the Scientific and Technical Subcommittee in the questions of safety of space traffic, or as it is recently been called, the long-term sustainability of space activities. Therefore, our delegation supports fully the inclusion of this new item into the agenda of COPUOS as soon as possible. Thank you Mr. Chairman.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much Mr. Lála for your statement. You have spoken on behalf of the Czech Republic.

I would now give the floor to Mr. James Higgins of the United States.

Mr. J. HIGGINS (United States of America): Mr. Chairman, on behalf of my delegation, I would like to express our appreciation for the excellent work of Mr. Aboubekr-Seddik Kedjar of Algeria, as Chair of the Scientific and Technical Subcommittee this year. Under his able guidance, the forty-fifth session of the Subcommittee made significant progress and addressed a wide variety of topics.

In addition, the United States delegation again commends the extensive work of the Office for Outer Space Affairs in supporting the Subcommittee meeting and its several working groups.

Mr. Chairman, my delegation has noted the positive developments in the Scientific and Technical Subcommittee in addressing how it will proceed in addressing the recommendations of UNISPACE III. We believe that flexible approach that uses multi-year work plans, action teams where appropriate and reports by other groups on their activities, is proving to be an effective means of implementing UNISPACE III recommendations and permitting us to address a wide range of relevant issues.

We fully endorse the report of the 2008 Scientific and Technical Subcommittee by the Working Group on Nuclear Power Sources in Outer Space under the direction of its Chairman, Mr. Sam Harbison of the United Kingdom.

The Working Group, following the Multi-Year Work Plan approved by this Committee in 2007, reached consensus on a draft Safety Framework for the Use of Nuclear Power Sources in Outer Space that was developed by the Scientific and Technical Subcommittee/IAEA Joint Experts Group.

Our experts participated in the Joint Experts Meetings that took place during the February Scientific and Technical Subcommittee session and we are pleased that the draft Safety Framework has been distributed to Scientific and Technical Subcommittee member States and the IAEA Safety Standards Committees for review and comment.

I would also mention that the United States was pleased with the successful completion of the Multi-Year Work Plan on the International Heliophysical Year, IHY 2007. The IHY campaign was officially opened here in Vienna in February 2007 in conjunction with the forty-fourth Scientific and Technical Subcommittee session.

It has been a truly international endeavour with countries from every region of the world hosting instrument arrays, providing scientific investigators, who were offering supporting space missions. The IHY focused worldwide attention on the importance of international cooperation in research activities in the field of solar terrestrial physics. The effects of solar activities and space weather phenomena on our daily lives, our environment and our space systems are becoming more apparent and we need to collaborate to reach a greater understanding of these consequences. We will look for ways to continue international cooperation in this important scientific area and we will also consider how the Scientific and Technical Subcommittee will continue to address related topics in the future.

Mr. Chairman, at the Scientific and Technical Subcommittee session, the United States joined many other member States in expressing satisfaction that the General Assembly, at its 2007 session, endorsed the Space Debris Mitigation Guidelines developed by the Scientific and Technical Subcommittee. We look forward to hearing in the future how member States are implementing these Guidelines through appropriate national mechanisms.

The United States was pleased to see the Scientific and Technical Subcommittee add the topic of global navigation satellite systems to its agenda starting this year. The International Committee on Global Navigation Satellite Systems, the ICG, which emerged from UNISPACE III and formerly was established in November 2006, was making significant progress towards the goals of encouraging compatibility and inter-operability among global and regional space-based positioning navigation and timing systems and promoting the use of GNSS in its integration into infrastructures, particularly in developing countries. The United States will continue to coordinate with COPUOS member States in support of the ICG in the Providers Forum.

As General Assembly resolution 58/89 has provided, reports on activities of the International Satellite System for Search and Rescue are to be considered under this agenda item. Accordingly, I would like to briefly address United States participation in the International COSPAS-SARSAT Satellite Search and Rescue Programme.

The total number of member nation to COSPAS-SARSAT now stands at 38. The United States continues to provide instruments in both its geostationary and polar orbiting operational environment satellite programmes. And, together with our international partners, the COSPAS-SARSAT Programme has seven polar orbiting and five geostationary satellites that provide worldwide coverage for the search and rescue beacons.

In 2007, COSPAS-SARSAT helped save more than 1,700 lives in over 400 different events. Since COSPAS-SARSAT became operational in 1982, the system has helped save more than 20,000 lives.

We would like to continue to remind member States that of the two main types of beacons in the COSPAS-SARSAT Programme, 406 MHz and 121.5 MHz , the 121.5 MHz beacon is being phased out and will not be usable as of 1 February 2009.

Given the large number of these beacons still in service, outreach efforts are currently underway to provide information on this programme change.

The United States has also assisted in an effort to building an International Beacon Registration Database for COSPAS-SARSAT. This capability enables beacon owners who live in countries that do not register beacons to have a place to do so. It also enables nations who maintain a beacon registration service but do not have it available online to record their beacons within the International Database.

Accurate and beacon registration is vital to the success of a SAR response to beacon activation as it gives the SAR forces appropriate information about the beacon owner.

Additionally, the United States and its partners are exploring the use of satellites in mid-Earth orbit to improve international satellite-aided search and rescue operations. The United States is currently conducting proof of concept testing using its global positioning system satellites. It envisions that this new neo-system will improve location accuracy while reducing the inherent delay associated with satellites in low-Earth orbit.

For additional information about COSPAS-SARSAT, please refer to the website www.cospas-sarsat.org or www.sarsat.noaa.gov.

Mr. Chairman, with regards to the United Nations Space-Based Information for Disaster Management and Emergency Response, or the SPIDER Programme, my delegation wishes to recall that in its resolution 61/110, the General Assembly agreed that UNSPIDER would be supported through voluntary contributions and through a rearrangement of

priorities within the framework of the United Nations reform process and, if necessary, a rearrangement of priorities of the Office for Outer Space Affairs.

In addition, the additional activities associated with SPIDER would not, as far as possible, have a negative impact on the current programme activities of the Office and should not result in an increase in the total regular budget of the United Nations. This was the basis on which my delegation and others joined consensus on resolution 61/110.

Mr. Chairman, in paragraph 156 of the 2007 COPUOS report, the Committee agreed that in the event SPIDER did not receive all the United Nations regular budget resources requested for 2008 and 2009, the Office for Outer Space Affairs would prepare and present to the 2008 session of the Scientific and Technical Subcommittee, a reduced Work Plan based on the Work Plan for the period 2008-2009 that had been endorsed by the Committee. This was the basis on which my delegation and others joined consensus on the proposed Work Plan for SPIDER for that period 2009-2009.

Unfortunately, the above-mentioned understanding for how to proceed was not followed. We were advised that the Office for Outer Space Affairs, through the regular budget process last summer, had received some but not all of the resources sought for the 2008-2009 support for SPIDER.

In that event, as provided for in paragraph 156 of our 2007 report, the Office for Outer Space Affairs should have prepared a reduced Work Plan for our consideration at the Scientific and Technical Subcommittee this year. Instead, a draft resolution on International Cooperation on the Peaceful Uses of Outer Space, presented to the General Assembly's Fourth Committee, contained language regarding the SPIDER Work Plan that created a Programme Budget Implication, or PBI.

Mr. Chairman, my delegation had stated previously that it will support SPIDER to the provision of data products and experts for specific activities associated with SPIDER. We work closely with other delegations to reach consensus on the way forward for the Programme. However, the United States was unable to join consensus on the United Nations General Assembly resolution last fall because several delegations sought to undermine the agreements made here in Vienna by pushing for additional funding on the United Nations regular budget.

In planning the future work of SPIDER, we encourage the Office to take into account the fiscal realities facing the United Nations and to work to find ways to increase efficiency and cost-savings.

Finally, Mr. Chairman, I would like to reiterate that my delegation welcomes the special presentations made before the Scientific and Technical Subcommittee on a wide variety of topics. We continue to believe that these presentations serve to provide complementary technical content for our deliberations and provide timely information that is useful on keeping our delegations informed about new programmes and developments in the space community as well as illustrative examples of the application of space technology. Thank you Mr. Chairman.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much Mr. Higgins for your statement on behalf of the United States delegation.

And now I would like to give the floor to Mr. Ayo Otepola of Nigeria.

Mr. A. OTEPOLA (Nigeria): Thank you Mr. Chairman. My delegation wishes to commend the Chairman of the Scientific and Technical Subcommittee for the manner in which he presided over the affairs of the Subcommittee at its forty-fifth session.

We also want to thank the Secretariat for the report as presented.

While commending the report for adoption, we also want to thank the Expert on Space Applications for her comprehensive report on the activities of the Office.

The United Nations Programme on Space Applications is one priority activity area within the mandate of this Committee and, as such, we would like the Office to remain actively engaged, more than ever before, in the identified priority thematic areas of the Programme on Space Applications, including in particular, natural resources management and environmental monitoring, disaster management, tele-education, tele-health and capacity-building.

This Committee's continued activities in these areas will further strengthen the capacity and competences of developing member States in accessing space-based information and utilizing space application techniques for service delivery, planning and development purposes. I thank you.

The CHAIRMAN *(interpretation from Spanish)*: I thank you very much delegation of Nigeria.

I would now give the floor to the representative of Venezuela.

Mr. R. BECERRA (Bolivarian Republic of Venezuela) *(interpretation from Spanish)*: Thank you very much Chairman. My name is Roberto Becerra. I am very happy to see you in the Chair of this session. I would like to get back to an error in the report. It is under item 8 on nuclear energy sources in paragraph 143. The wording that was adopted was actually changed so what we see there is not what we adopted in February by way of example. We said that we would talk about terrestrial orbit and here it is near-Earth orbit. So terrestrial orbit is what we want to see.

Another sentence is that this use should be restricted to maximally and this is not what we see in the paragraph, even though this was agreed in February. So if we make these changes, then I can read my statement and approve of the Scientific and Technical Subcommittee's report. Thank you very much.

The CHAIRMAN *(interpretation from Spanish)*: Thank you Roberto. Yes, I also was somewhat astonished. We take due note of what you have said and I am sure that the Secretariat is going to be checking up on the report and once we get that revised corrected text, we will re-submit it to you as to reach consensus. With your agreement, this is what we will be doing.

Now I will be assuming that that correction will be made and I will be reading the statement.

A point of order on the part of the United States?

Mr. K. HODGKINS (United States of America): Yes, Mr. Chairman, I cannot at this point say we agree or do not agree with that, with the change, but what we would prefer is if we could have that in writing so that we can just check with our notes and what we understood to be the language that was agreed and then we can certainly come back to it, if you do not mind, Mr. Chairman.

The CHAIRMAN *(interpretation from Spanish)*: Yes, thank you United States. That was in the spirit of what I was saying. The Secretariat would compare the original text with the remarks made by the distinguished delegate from Venezuela and once this was clear, we would proceed as I said with the approval of the report.

If you are agreed then we could continue with the declaration?

Mr. R. BECERRA (Bolivarian Republic of Venezuela) *(interpretation from Spanish)*: I think if they have put the original text here, there will not be any problem because this is the original text as was approved in February, what we agreed on in February. There is no change. Just to put the original text that was approved in February in the text.

OK, we will ask the Secretariat then to make the appropriate check and then we will proceed.

Chairman, we are very pleased to see the progress made in the Scientific and Technical Subcommittee's report on its forty-fifth session and express its wish to continue constructively discussing the points mentioned in this as well as including new ones for the benefit of scientific and technical work to promote the peaceful use of outer space and so on.

We would like to make our opinion clear on items 5 and 8, space debris and the use of nuclear energy as fuel sources in outer space. In general, we believe it is indispensable to approve binding international norms that deal with these subjects because of the impact and the association they have with life on the planet as well as being one of the main responsibilities of the United Nations in the legal sphere, that is to promote the progressive development of international law and its regulations in order to defend the environment and outer space.

We are very pleased to see the adoption of the directives on space debris by the General Assembly still is the priority theme and should pay more attention to debris coming from platforms of nuclear fuel, as well as questions with objects in space with space debris and other aspects, increase the commitment of States and disseminate information relevant to space debris, particularly those countries responsible for existing pollution who have traditionally used these technology resources of an end control restriction, all this under resolution 62/217 of the General Assembly. I think that it is inadmissible, this use here of this kind of energy into astral orbit since any kind of activity in outer space should follow the principles of the protection of life and maintenance of peace cannot allow the proliferation of nuclear energy in outer space before measuring its effects on man and the environment. It should not allow for the use of nuclear reactors and other source of nuclear energy in orbit.

I understand that nuclear energy should be used for certain inter-planetary missions. Nevertheless, it should go into further research to optimize the utilization of other options considering different and more safe energy sources.

The Venezuelan delegation, following international norms, believes that the regulatory efforts here are incumbent to all States whatever social, economic, scientific and technical level. The task of all mankind, also responsibility of governments to monitor the use of nuclear energy in space, whether governmental or non-governmental organizations.

Finally, our delegation hopes that we can approve a safety framework relative to nuclear energy sources in space on a consensus basis in conformity with international law in the use of peace and security and for the development of cooperation and protection of life on the planet. Thank you very much.

The CHAIRMAN *(interpretation from Spanish)*: Let me say to the delegation of Venezuela we appreciate your remarks.

Are there any other delegations that wish to take the floor on this topic?

I see none.

So we will continue. And I would just like to remind you, suggestions that came out of the Inter-Agency Meeting. One of them is that suggestions from delegations for the upcoming informal meeting, something was mentioned this morning, as well as on Monday, whether a point is that our Committee directly receive a report on the results of the Inter-Agency Meeting. This is something that we have to, I think, be concerned about here. I just wanted to alert delegates to these points.

And I now would like to draw your attention to the non-paper that has just been distributed regarding proposed guidelines for the selecting and setting up of UNSPIDER Regional Support Offices.

Now, with your permission, I would like to give the floor the Director of the Office for Outer Space Affairs, Madam Mazlan Othman, to present this non-paper. You have the floor.

I will just make sure that all delegates have received the non-paper because we do want you to read this closely before the presentation.

Well I think it would be a good idea for her to begin her presentation at this time.

Ms. M. OTHMAN (Director, Office for Outer Space Affairs): Thank you Mr. Chairman for giving the Secretariat the opportunity to present the non-paper on the proposed guidelines for selecting and setting up UNSPIDER Regional Support Offices.

Mr. Chairman, distinguished delegates, in paragraph 11 of the United Nations General Assembly resolution that established the United Nations Platform for Space-Based Information for Disaster Management and Emergency Response, UNSPIDER, document A/RES/61/110, member States agreed that the Programme should work closely with regional and national centres of experts in the use of space technology in disaster management to form a network of Regional Support Offices for implementing the activities of the Programme in their respective regions in a coordinated manner and to take advantage of the important experience and capabilities being offered, and to be offered by member States, particularly by developing countries.

Last year, during the fiftieth session of the Committee on the Peaceful Uses of Outer Space, the Committee recognized the central role that the network of Regional Support Offices would have in promoting and carrying out the work of UNSPIDER at the regional level and requested that the Office work on the definition and implementation of the network with the interested member States.

During the forty-fifth session of the Scientific and Technical Subcommittee which met last February, the Subcommittee noted the commitments made by Algeria and Nigeria and indications of commitment received from Argentina, the Islamic Republic of Iran, Morocco, Saudi Arabia, South Africa, and the Syrian Arab Republic, as well as the African Regional Centre for Space Science and Technology in French language, located in Morocco, and the Regional Centre for Mapping of Resources for Development, located in Kenya in the establishment of the network of Regional Support Offices.

The Office has now received formal offers from both Nigeria and Algeria, which also include the level of resources to be made available to the proposed Regional Support Office.

The Office believes that there should be clear guidelines and criteria for selecting the Regional Support Offices. Among other criteria, we believe

every Regional Support Office should be endorsed by the relevant regional group.

So the Office is circulating this non-paper setting out proposed guidelines and criteria and would welcome the Committee's direction for establishing these guidelines. Thank you Mr. Chairman.

The CHAIRMAN *(interpretation from Spanish)*: Let me thank Madam Director for the presentation of this non-paper. What we really expect from you now is just that you read this thoroughly. If there are any immediate reactions, of course, you are welcome to take the floor, otherwise there will be sufficient time to return to this. I think this is a very laudable initiative because it sets forth some clear criteria for the organization of these initiatives aimed at setting up Regional Support Offices and these are very welcome because this will allow us to have a clearer system and we are expecting your input on this.

I see the first reaction from Pakistan. You have the floor.

Mr. I. IQBAL (Pakistan): Thank you Mr. Chairman. Pakistan would be interested in the setting of the UNSPIDER Regional Support Officer. However, presently we can only convey our intention of the setting up of this office. We would revert back to the United Nations Office for Outer Space Affairs on this issue within a month. SPARCO, the National Space Agency, has a rich experience in providing support to our National Disaster Management Agency, when we had disasters like earthquakes, floods and cyclones. Thank you.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much. I do not see anyone else.

Yes, Chile has asked for the floor.

Mr. R. GONZÁLEZ ANINAT (Chile) *(interpretation from Spanish)*: Thank you very much Chair. We are totally satisfied with the ideas presented by our distinguished friend and colleague and she has our full support.

Sir, you have said that also the Republic of Argentina would be interested in participating as a Regional Support Office. My delegation would be fully willing to support that proposal. We have no problems or even needing more readings here in this respect.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much. Also we have to remember that we had few proposed initiatives at the outset but now we have quite a few which shows that interest has grown in SPIDER. It is a successful programme judging by the number of proposals and obviously we have got to establish some rules for the game in establishing these Regional Support Offices.

The United States has asked for the floor. You have it.

Mr. K. HODGKINS (United States of America): Thank you Mr. Chairman. Well, Mr. Chairman, I would appreciate perhaps a clarification on the process. My reading of the non-paper is that if a country wants to create a Regional Support Office, that country would be, or an entity within that country, would basically be funding their activity and providing the office space and those sorts of things, and in order to be able to do that, that country would then have to get agreement from a group of other countries in their region.

I guess my question is, why do we have that sort of a process in place for the Regional Support Offices but for the Offices in Bonn, Beijing and Geneva, they did not have to coordinate that with any regional group. They just said we want to set it up, we are going to set it up and end of story. But here for the Regional Support Offices, they have to go through a process of regional coordination. Now this sounds very much like what we had with the Regional Centres for Space Science and Education, which are fine, but as many of us remember, this extra step with the regional coordination could take a considerable amount of time or you could reach a stalemate if you have competing countries wanting to host one of these Office.

So I think it would be useful to have a better understanding of why they would be going through that process. I mean, obviously if others agree that this is the approach we should take on that, that is fine, but I think we should at least have some clarity on why we treat one set of offices different from another set of offices. Thank you.

The CHAIRMAN *(interpretation from Spanish)*: Thank you. Well since this is a proposal that comes from the Secretariat, let me give the floor to Dr. Othman again so she can explain the reasons for which the proposal was made at this time. You have the floor.

Ms. M. OTHMAN (Director, Office for Outer Space Affairs): Mr. Chairman, we will provide a complete answer next week on Monday.

The CHAIRMAN *(interpretation from Spanish)*: Well, if you are satisfied with that response, the United States delegate, then we will wait for the reply from the Office next Monday. Thank you.

OK, we continue with item 8, the Report of the Scientific and Technical Subcommittee, that will be on Monday morning.

We now return, no, we do not return, we begin agenda item 9, the Report of the Legal Subcommittee at its Forty-Seventh Session, and it is my honour to give Vladimir Kopal from the Czech Republic the floor.

Mr. V. KOPAL (Czech Republic): Thank you Mr. Chairman. Mr. Chairman, on behalf of the delegation of the Czech Republic, I would like to make some observations on the work of the Committee on the Peaceful Uses of Outer Space and its Legal Subcommittee in the legal field and to offer comments on the essential results of the work of the Subcommittee during its forty-seventh session this spring.

But prior to doing so, let me congratulate you on your election to the Chair of the COPUOS for the biennium 2008-2009. Your experience, diplomatic skill and moderate approach to issues under consideration that you have demonstrated as representative of your country for many years, will certainly be instrumental for leading us to positive outcomes of our deliberations.

Mr. Chairman, as already emphasized in our earlier statement, the delegation of the Czech Republic fully shares the endeavours of the COPUOS and its Legal Subcommittee to strengthen the present legal basis for space activities by increasing the number of States and international organizations adhering to the United Nations space treaties. Therefore, our delegation welcomes the input to this end by the Office for Outer Space Affairs by regularly publishing a revised and completed edition of the texts of the United Nations Space Treaties and Principles and related resolutions adopted by the General Assembly, including an Addendum on the Status of the International Space Agreement.

My delegation also finds it very useful that under the item, Status and Application of the Five United Nations Space Treaties, the Legal Subcommittee and its Working Group headed by Dr. Vassilios Cassapoglou of Greece, helped to pave the way to the general aim of widening and strengthening the present legal regime governing peaceful space activities.

This year the Working Group dedicated a great deal of its interest to the fifth United Nations space treaty, the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies. Our delegation studied with a great attention, the joint statement on the benefits of adherence to the 1979 Moon Agreement presented by seven States Parties to the Agreement. In our opinion, its co-sponsors succeeded in analyzing the main features of the Moon Agreement in order to demonstrate the benefits and guarantees offered by the participation in the Moon Agreement within the whole system of the United Nations space treaties.

A thorough consideration of this meaningful document during the next session of the Working Group may help us to reach a real progress in finding a new truly acceptable approach to legal issues relating to the Moon and other celestial bodies of our planetary system, with regard to new projects and missions aimed at their exploration and use of their resources.

In this connection, our delegation welcomes the announcement by the delegation of Austria, supported by other delegations, that an interdisciplinary seminar would be organized on issues related to the Moon Agreement before the next session of the Subcommittee in 2009.

As far as the item, Definition and Delimitation of Outer Space and the Character of Utilization of the Geostationary Orbit is concerned, we appreciate the efforts of the Chairman of the Working Group of Delimitation, Professor José Monserrat Filho of Brazil, to reach a really stiff(?) progress in discussing that long-standing issue. We share the agreement within the Working Group to suspend the consideration of the problem of aerospace objects until new events would warrant its continuation.

May it be mentioned in this connection that the delegation of the Czech Republic held this view for several years.

On the other hand, we confer the view that the definition and delimitation of outer space in general remains an important problem and should continue to be considered by the Working Group. In our opinion, it is to regret that a suggestion of the Chairman to organize in the framework of the Working Group, a

scientific meeting at which presentations by interested member States on their existing positions regarding this issue could be explained in greater detail but the suggestion did not reach a consensus. But we believe that more attention still could be attached to that idea during the next session of the Working Group.

Mr. Chairman, at its forty-seventh session the Legal Subcommittee considered a new item, Capacity-Building in Space Law. After a meaningful discussion, the Subcommittee recorded that while specific activities that are listed in paragraph 128 of its 2008 report, it might strengthen the capacity in space law, particularly in favour of developing countries. In our opinion, those measures deserve our support.

Moreover, the delegation of the Czech Republic believes that a full support should be given to two endeavours of the Office for Outer Space Affairs which are closely connected with the item, Capacity-Building Measures, namely (a) the development of a draft curriculum for a basic course on space law which was started by a successful meeting of experts and representatives of the Regional Centres on Space Science and Technology Education in Vienna, December 2007, and is now continuing by electronic means and sideline meetings; and (b) the Workshop on Space Law organized by the Office for Outer Space Affairs, in cooperation with the host country, to disseminate the knowledge and experience related to both the international and national space law.

It is the firm conviction of our delegation that such workshops should continue to be organized during the years to come. Therefore, we welcome the announcement that the next United Nations Workshop on Space Law, co-sponsored by the Government of Thailand and the European Space Agency, will be held in Thailand in November this year.

Moreover, the efforts developed in this field might be strengthened by holding two such workshops each year. One of them could continue bringing a general introduction to space law and would involve the whole scale of regulations of space activities. The other might concentrate on more specific topics such as telecommunication, navigation, tele-education, tele-medicine, remote sensing, etc.

The special modules worked out by the Expert Groups established in the framework of elaborating the curriculum for a basic course of space law might be used for drafting the programmes of such specialized workshops. The Legal Subcommittee at its next session might consider this suggestion in some greater detail.

Mr. Chairman, the Legal Subcommittee successfully fulfilled its task relating to the evaluation of practice of States and international organizations in registering space objects which led to the adoption of a special resolution 52/101 by the United Nations General Assembly.

The Subcommittee turns now its attention to the item, General Exchange of Information on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space and started its consideration under a Work Plan for the period of 2008 and 2011. The first year of this consideration brought a number of valuable papers which may serve as a basis for further discussions. In particular, our delegation appreciated the submission of a report by the delegation of the United States which had initiated the inclusion of the topic in the agenda of the Legal Subcommittee.

During the session of the Legal Subcommittee of this year, the United States delegation brought a useful overview of the United States law governing space activities, in document A/AC.105/C.2/2008/CRP.9 of 3 April 2008. This document, together with the Conference Room Paper containing information on the national legislation governing space activities of four other countries, CRP.14, and further relevant documents already available, all expected to be submitted, may create the basis for a meaningful examination of the item in a working group to be established under the guidance of the distinguished delegate of Austria, Professor Irmgard Marboe, who was elected to Chair the Group.

Mr. Chairman, at its last session, the Legal Subcommittee also considered, as usual, its proposals to the Committee on the Peaceful Uses of Outer Space for the agenda of the forty-eighth session of the Subcommittee. The draft agenda, as it was worked out, mostly include items which have been discussed for at least one year or more. However, a new accent has been given to some standing topics, particularly to the status and application of the five United Nations treaties on outer space, capacity-building in space law, and general exchange of information on national legislation relevant to the peaceful exploration and use of outer space.

Nevertheless, a fresh single issue, a fresh item for discussion, also appears in the draft agenda for the next Subcommittee session, namely general exchange of information on national mechanisms relating to space debris mitigation measures. However modest, this has been a significant step because the subject of space debris has thus been brought in the agenda of the

Legal Subcommittee for the first time. After the successful accomplishment of the Space Debris Mitigation Guidelines of the COPUOS, endorsed by the United Nations General Assembly, as well as the IAEA Space Debris Mitigation Guidelines, this Subcommittee will have the opportunity to be informed in greater detail on national mechanisms which have to implement the measures provided in those Guidelines.

The delegation of the Czech Republic, which was among the first delegations proposing a discussion on the topic of space debris, also in the Legal Subcommittee, will certainly listen with great interest to the exchange of information and related views on this new item.

Finally, Mr. Chairman, let me mention that our delegation has paid full attention to the deliberations on the future role and activities of the Committee on the Peaceful Uses of Outer Space in all stages of its development. At the last session of the COPUOS in 2007, our delegation had the opportunity to present its comments on the Working Paper on the subject submitted by the Chairman of COPUOS in document L.268. Our comments mostly related to the role of the Legal Subcommittee in these endeavours.

In agreement with the Secretariat of the Committee, the delegation of the Czech Republic inserted its views on the topic in a Working Paper that has been submitted to this session of the Committee on the Peaceful Uses of Outer Space, as document A/AC.105/L.272 of 28 April 2008. Thank you Mr. Chairman and delegations for your attention.

The CHAIRMAN *(interpretation from Spanish)*: Let me thank Professor Kopal from the Czech Republic for a very complete presentation, it means that by the Czech delegation on the Legal Subcommittee's activities and for his kind words in my regard. Thank you.

We have one technical presentation but before this two parties have requested the floor, now a third, with which I think we are on the same theme, the Legal Subcommittee. So let me give the floor to the delegate from Brazil.

Mr. A. TENÓRIO MOURÃO (Brazil): Thank you Mr. Chairman. This is just a quick intervention. The Brazilian delegation would like to associate itself with the intervention just made by the representative of the Czech Republic in what regards the role of this Committee and of its Legal Subcommittee in the developments of the legal principles that guide space activities.

In this context, we would like to express our full support and thank the delegation of the Czech Republic for the elaboration of comments to the Working Paper submitted by the Chairman on the future role and activities of the Committee on the Peaceful Uses of Outer Space. We believe that this document refers to many important issues and that it should be taken very much into account in discussions regarding the future of this Committee. Thank you Mr. Chairman.

The CHAIRMAN *(interpretation from Spanish)*: Thank you for speaking out on the Legal Subcommittee's report and thank you for your kind words.

I do not think we have any speakers under item 10, an item which will be considered on Monday.

Two speakers have requested the floor before the presentation slated for this afternoon. Under item 6, the delegate from Venezuela, Rodolfo Navarro, has asked for the floor I understand. That is correct. I give you the floor Mr. Navarro.

Mr. R. NAVARRO (Bolivarian Republic of Venezuela) *(interpretation from Spanish)*: Chairman, I just wanted to make a clarification on behalf of Venezuela.

The delegation of the Bolivarian Republic of Venezuela believes that COPUOS should spend as much time as possible considering the theme of ways and means of maintaining outer space for peaceful purposes. We will have to adopt a direct or transitional approach to critical topics such as the arms race in outer space, equitable use of geostationary orbits, measures to mitigate space debris, and proliferation of nuclear energy sources in space. All of these are topics which are as many disturbances to the delicate international balance we have struck in trying to ensure peaceful purposes of outer space.

My delegation believes that we have to revamp international legislation so that it is clear that there is a total and unequivocal prohibition of the utilization of any type of arms in outer space. As is well known, the applicable legal regime to outer space does not, in itself, guarantee a protection against an arms race for outer space. So it is very imperative now to adopt the appropriate and adequate measures as to prevent an arms race in that area. Although there may be other international fora to deal with this topic such as the Disarmament Conference, COPUOS has the duty of joining the reflection on this topic and working

on behalf of disarmament and to make a speedy contribution to creating the preventive international norms in this respect. The existing lack of definitions and lack of regulations means that it will not be possible in the future to maintain the peaceful nature of outer space that has been _____(?) to achieve and we would like to express our support for the statement made by the distinguished delegates of Chile and Cuba. Thank you very much.

The CHAIRMAN *(interpretation from Spanish)*: I thank the representative of Venezuela for that statement.

I give the floor now to Michel Simpson from the International Institute of Space (International Space University?), talking on item 7.

Mr. M. K. SIMPSON (International Space University): Mr. Chairman, please allow me to present the good wishes and congratulations of the International Space University to you and your staff on the occasion of your election to lead this critically important Committee. We have every expectation that your leadership will enable this Committee to advance its work effectively and in these first days of your mandate, I note that we already have evidence of your epercascious(?) and personable style.

Mr. Chairman, distinguished delegates and representatives, the International Space University is pleased to share with you elements of the accomplishments in the context of the UNISPACE III Nuclear Strategy elaborated in the Vienna Declaration. The following represents a sampling of these accomplishments likely to be of interest to the Committee in its deliberations.

In pursuit of the strategic element protecting Earth's environment and managing its resources, ISU has undertaken the following activities.

In cooperation with the Chinese hosts of our nine-week Space Studies Programme held last summer in Beijing, our students completed a comprehensive team project on earthquake prediction and mitigation using space assets and technology. In the light of the recent devastating earthquake impacting China's Sichuan Province, this project was both timely and useful in the worldwide effort to improve humanity's capacity to confront the threat to human life and society represented by seismic events.

I note that this study follows in a tradition of work aimed at expanding awareness of the value of space assets and mitigating natural disasters.

In 1999, during our Space Studies Programme session in Thailand, ISU students completed a study on strategies for mitigating water-based disasters including tsunamis affecting the South-East Asia region. The recommendations of this study proved hauntingly crescent in the wake of the Indian Ocean tsunami of December 2004 and again this year by the devastation wrought by Cyclone Nargis(?).

With alumni in both China and Myanmar, ISU has felt an immediate involvement in the natural disasters of this year and extends once more its sympathies to the families of the victims and its best supporting wishes to those working so hard to mitigate the continuing suffering.

ISU will continue its work in this regard in the coming summer as one third of its SSP students address the challenges presented by volcanic activity and the ways in which space assets might be deployed to mitigate volcanic disasters.

In the same category of protecting Earth's environment, ISU has been pleased to continue its close collaboration with fellow COPUOS observer, the Association of Space Explorers, and the efforts to develop policy recommendations for decision-making procedures and processes in the event that a potentially hazardous asteroid or comet should be deflected on a collision course with Earth.

Working closely with Action Team 14, the results of our deliberations will be presented to COPUOS for initial consideration during 2009.

Under the UNISPACE III strategy, elements of space applications for human security development and welfare, ISU completed several important actions. Working closely with the Secure World Foundation, and its Director, Dr. Ray Williamson, ISU students completed a comprehensive team project on space traffic management, the results of which were presented at this year's session of the Subcommittee on Science and Technology in February.

In face of the growing problems presented by space debris and the general crowding of desirable orbits by the advance of technologies capable of exploiting them, space traffic management is rapidly becoming a critical issue in the area of human security, development and welfare, and human development and welfare. And we are pleased to have been able to make a contribution to the continuing evaluation of this question.

ISU students also conducted a study of the use of off-Earth archives to project (protect?) critical data, cultural material and even biological samples from the effect of large-scale regional or even global disasters.

Under the strategic objective of advancing scientific knowledge of space and protecting the Earth's environment, ISU has engaged in the following activities.

ISU research project that increasingly focused on policy issues related to act as liability resource management and public policy issues related to space.

Our annual Symposium this year addressed the ambitious theme of space solutions to Earth's global challenges and devoted substantial attention to the ways in which space technology could serve environmental protection and the numerous ways in which the ways in which we approach space activity can be improved in order to minimize adverse environmental effects.

Next year the Symposium will address the role of space assets, activities and technologies in advancing the broad issues of human security in which freedom from environmental risk is a central issue.

The requests for papers for this event will be issued shortly and can be accessed via the University's website.

Under the strategic element, enhancing education and training opportunities and ensuring public awareness of the importance of space activity, ISU continues to be extremely active.

In connection with the celebration of the twentieth anniversary of ISU's founding, that begin on 12 April 2007, we have conducted an extensive programme of public events, held at our central campus in Strasbourg and is part of our summer session programme held last year in Beijing.

We have been especially active in organizing events that introduced schoolchildren to the excitement and opportunities presented by the space sector and have moved to involve our students in this effort in order to instil in them the habit and inclination to advance the cause of space education across all grade levels.

During the past year, ISU was involved in presentations of this kind in North, South and Central America, the Middle East, Asia, Europe and Africa.

Through the judicious use of funds provided by the supporters and graduates of our young University, we have invested substantial scholarship assistance in the objective of attracting additional students from developing countries, both space-faring and non-, or not yet, space-faring, and have been pleased to receive students this year from every continent, except Antarctica.

We continue to play an active consultative role with States seeking to develop or update national space law or create government institutions to coordinate space activities and custom-designed courses have been offered in Turkey and Estonia during the past year.

ISU has also advanced education and training opportunities to three highly-regarded short courses. A one-week long executive space course addresses the need of the space sector for a course permitting people recently recruited into the field to quickly develop an understanding of basic principles and issues underlying the current challenges and emerging opportunities. A space English refresher course provides a one-week opportunity for participants in ISU's SSP session to develop their skills in the use of English as a tool of communication with fellow space professionals around the world.

Lastly, the Space Odyssey Institute provides an intensive 12-day opportunity to study in-depth a major strategic issue affecting the space sector. Last year, in Beijing, this Institute considered the impact of the increasing number of States emerging as providers of space assets and space services on the future of the space sector. This year in Barcelona, the Institute will address the issue of niche opportunities in space exploration, exploring ways in which participants from countries and enterprises of all sizes can participate effectively in the human adventure of space exploration. Some information sheets about this Programme are available on the back table.

Mr. Chairman, the Space Odyssey Institute was named in honour of Sir Arthur C. Clarke who served ISU as its first Chancellor from 1987 to 2004. Please allow me at this time to express the sorrow of the University community at the passing of this remarkable visionary, author, mentor and scientist.

Under the strategic element of promoting international cooperation, we have had several accomplishments during the past year. After only 20 years, our young University already has just under 2,600 graduates from 96 countries. Our philosophy highlights internationalism as one of the three eyes by

which we describe our vision. The other two eyes are interdisciplinarity and inter-culturalism.

Increasingly, we have also come to uphold inter-generational values as we build bridges between those who have built the Space Age and those who are already laying the foundations for its sequel.

We have held ISU educational programmes on every continent except Antarctica, and even as we prepare for our next Space Studies Programme in Barcelona this coming summer, we are advancing in our preparations for the 2009 SSP, to be held in the San Francisco Bay area, at NASA's Aimes(?) Research Centre.

Our SSP and Masters courses regularly attract student bodies, including participants from 25 to 30 countries each. Although ISU programmes are constantly to produce and carry high tuition fees, we have been able to provide generous scholarships to many students in the effort to ensure that financial barriers are minimized. Through the generosity of space agencies, space industries, foundations, alumni and supporters, we were able to award over two million Euro in scholarship grants during the past academic year.

Our international cooperation has included several joint activities with observer organizations participating in the work of this Committee.

In addition to cooperation with the Association of Space Explorers and the Secure World Foundation already mentioned, ISU has worked closely this year with the International Astronautical Federation, World Space Week, Space Generation, and the European Space Policy Institute. The depth of our cooperation with the European Space Agency merits very special mention and it has led to numerous joint initiatives including several directly benefiting emerging space States of Central Europe.

We are also pleased to have concluded Memoranda of Understanding during the past year with institutions in many countries, including China, Saudi Arabia, Canada, Germany, Japan, United States, Ireland, France, Spain, the Isle of Man, and Estonia.

Mr. Chairman, the ISU community continues to be inspired by the objectives of UNISPACE III and we are pleased to be a part of the efforts to put them into effect. We thank the Committee for the privilege it has accorded us to participate in its work and to be informed by the substance of its deliberations. We look forward to working with you and the Committee to continue the efforts to ensure that space remains a realm in which the peaceful aspirations of space and people are fully realized.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much for your interesting statement. Before giving the floor for discussion to hear various delegations comments on this, I would just like to say that I was very impressed by several concepts that you have mentioned that govern the activities of your University. The inter-cultural aspect is of key importance in your work. And I would also like to take note with satisfaction that you are working with various platforms involving ever so many of the organizations present, the Space Generation, the Secure World Foundation as well as others, so synergies are being developed here. And this also facilitates and promotes education of young people

But regional developments, are there any projects here, are there any structures being set up in Africa, Asia and Latin America? You did not mention this. It would be interesting to have the University present in these regions as well and if they could explain to us what is envisaged in these terms. Thank you.

Are there any comments?

The representative of Chile.

Mr. R. GONZÁLEZ ANINAT (Chile) *(interpretation from Spanish)*: Chairman, I quite agree with the comments that you have just made. Inter-cultural aspects are very important. This, in Latin America, is what allows us to reach for unity. And the other issue I wanted to refer to is the regional aspects issue. I think that it would be very interesting to have, to be able to count on the presence of the University in the Space Conference of the Americas. I am saying this as Chairman thereof(?).

There is another part that I did not really understand. You spoke about a Protocol of Understanding but I that this is something that one concludes with developed countries. I would like to know whether there is a specific policy for developing countries on issues of particular relevance for them because space exploration is not something which is high priority for these countries but what we are interested are applications of space technology, very practical matters, and we have to work towards the achievement of the Millennium Goals.

And also I would like to recall that in the last resolution of the United Nations General Assembly,

there is a paragraph which recommends that the International University should respect these goals. I believe that certainly they could work to that end and in that fashion we could include this in a specific resolution because that would dispel the doubts that I have just referred to here. If we do not have time to reply to these matters now, we can wait until next week. Thank you very much.

The CHAIRMAN *(interpretation from Spanish)*: Ambassador, I do not know, would you be able to answer straight away. I am not exercising any pressure here. We can perfectly well wait until later for a response from you.

Mr. M. K. SIMPSON (International Space University): Yes, I can at least provide some initial information. Obviously the Memoranda of Understanding that the University concludes are always specific to the needs of our partners and that has permitted us to sign Memoranda that may be focused on flood and far-reaching goals or on the interests of a partner in working for education in applications and in the very practical needs of their local situations.

I would also point out that one of the ways that we have worked very hard to stay in touch with the needs of developing countries is to include developing countries in the sites in we have held our Space Studies Programme, and most recently, and we go back only to 1999, I could mention that we have held a summer programme in Thailand and we have held a summer programme in Chile. And we continue to _____(?) applications from countries that are in the developing world not only so that we might work with them and help them better, but so that we might also make sure that our students understand the depth of their interest in space and the extent to which they can elaborate the ability of humankind to use technology to include the human condition. And we continue to solicit the input on that, specifically in the case of the South American region, we have had two representatives at the University in South or Central America this year, including a visit that took place in Chile and we will continue to look for opportunities to make our presence felt and known and could learn from the experience of the outside of the developed world in looking at its particular aspect on the use of space technology.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much. I have taken note of your interest in participating in the Space Conference of the Americas. This will be an excellent forum to promote your activities.

The representative of Pakistan, you have the floor.

Mr. _____(?) (Pakistan): Thank you Mr. Chairman. We have heard a great deal about ISU and the wonderful work they are carrying out but we would recommend more outreach events by the ISU on the proactive approach to research programmes with the under-development of developing countries. In this regard, there has been responses from the ISU but I think that there has to be a local _____(?). Thank you.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much for your comments.

The representative of Chile.

Mr. R. GONZÁLEZ ANINAT (Chile) *(interpretation from Spanish)*: Thank you Chair and I just wanted to say on behalf of the Government of Chile that we have had no official information as to the visit of the representative of the International Space University in our country. We would have liked to be informed, through official channels, especially since Chile is the Chairman of the International Experts Group for the Space Conference of the Americas. Well, I am sure that this should be done and say do this is to informally clarify this matter. Thank you very much.

The CHAIRMAN *(interpretation from Spanish)*: Now, ladies and gentlemen, I would like to give the floor to Dimitry Gorobets of the Federal Space Agency of Russia for his presentation, of a statement, a presentation on the activities of the Russian Federation on the space debris problem. You have the floor Mr. Gorobets.

Mr. D. V. GOROBETS (Russian Federation) *(interpretation from Russian)*: Thank you very much Chairman. Ladies and gentlemen, I would like to present this statement sharing with you the activities of the Russian Federation, ROSCOSMOS in particular, on the problem of space debris in 2007.

The Russian Federal Space Agency is doing continuous work on the space debris problem. This is to ensure the safety of spacecraft and the International Space Station, and ensuring the safety of the ISS is something which is given particular importance too.

Activity on the mitigation of the space debris is conducted within the framework of the existing Russian national legislation and this also on the whole

corresponds the practice of other major space-faring nations and international initiatives on mitigating space debris, especially the guiding United Nations principles on mitigation of space debris.

Over the last couple of years, the Russian Federation has been playing a leading role in launching spacecraft. In 2007, we launched about 40 per cent of all the launches having taken place throughout the world and our main efforts have been directed at increasing the number of satellites on each constellation and improving the technical characteristics of the spacecraft in question. All in all, 26 launches took place and the general characteristics of these launches are presented here on this slide. Thirty of these spacecraft launched were foreign, 18 Russian.

On the following slides, you have the measures conducted to satisfy the requirements of United Nations principles to mitigate space debris. In the illustration of the first principle to be implemented, that is the reduction of the generation of space debris during normal operations, this almost fully excludes the occurrence of any construction elements, details or fragments of the accelerating engines, MDM Third Stage of the rocket launchers Soyuz-2 and the exclusion of the appearance of operational elements which are part of the spacecraft.

By way of illustration, the implementation of the second guideline, that is reduction to a minimum of the possibility of destruction during flight operations, is the selection of sufficient reserve of resistance, the establishment of an anti-meteor shield on high-pressures, the prevention of rupture and break-up, the exchange of certain accumulator batteries which are silver-cadmium-based and their replacement by nickel-hydrogen batteries to prevent any break-up of the DM accelerating engine, etc.

By way of an example of the implementation of the third principle, that is limiting the possibility of accidental collision in Earth, we have the withdrawal of the orbital stages, the accelerating engine breeze(?), MDM, from the spacecraft so that there is an avoidance of a possible accidental collision. And for the ISS, we regularly run an evaluation of the probability of a collision with large fragments in order to lower the probability of any such collision taking place during manoeuvres of the Station to get away from such fragments.

By way of the implementation of the fourth principle, avoidance of intentional destruction and other harmful activities, we are trying to exclude any destruction of launchers and launch vehicles, apogee(?) motors and spacecraft.

By way of implementation of the fifth principle, reducing to a minimum the post-mission break-up possibility, here we are reducing the fuel tanks once they are on separation orbit. We are ensuring that there is discharge of onboard storage batteries. We turn off hand wheels, gyroscopes, other mechanical devices, remove any remaining high-pressure fuel.

By way of example for the implementation of the sixth principle, the limitation of the long-term presence of spacecraft in orbital and launch vehicle orbital stages in LEO regions, after the end of their flight mission, and here we take the accelerating engine frigates off of orbit and splash them down.

For monitor series spacecraft, the separation onto a different orbit is ensured which makes it possible for their to be breaking and burn up in the atmosphere. For the mini-satellites, the design of this allows a limitation of orbiting time with a change in the configuration of the solar array.

Now the implementation of the seventh guideline principle, limitation of the long-term presence of spacecraft in orbital stages of launches on geosynchronous orbit after the post-mission, here, for example, for the newly-designed geostationary space vehicles, we ensure a separation of the unnecessary stages onto a graveyard, disposal orbit, and this to satisfy requirements of IADC.

Now when one is working on space debris, it is very important to clarify the perameters of space debris within the Earth areas of outer space, especially within the geostationary orbits area. And in Russia, we have organized an International Cooperation of Observers who all help to ensure the proper registration of objects throughout the geostationary orbit.

Over 2007, we have roughly 150,000 measurements of large high-orbit space objects registered and we have detected more than 100 non-catalogued objects.

Furthermore, the telescope is being completed especially for non-shining fragments of space debris and in 2007, 57,000 measurements of small fragments of debris have been identified and 160 new fragments detected.

Russia is conducting work to prevent the possible of the ISS with large fragments of space debris as well.

Each and every correction of the ISS's orbit is controlled for security of future Station movements. Regular notification of possible dangerous proximity was issued on 20 October 2007 and this coincided with a change of crew which took place 10 hours before the danger point was reached. The Missions Control Centre, in the Moscow area, was very carefully monitoring the parameters of the relative movement and about three hours before the danger point was reached, it was found that the debris source was not actually a threat for the ISS and the fragments of debris passed, as predicted, four kilometres away from the Station.

Now within the framework of the Russian Federal Outer Space Programme, the Russian Missions Control Centre, in cooperation with other organizations, is conforming the movement of objects which are entering the dense layers of the atmosphere. Special attention is paid to so-called high-risk space objects.

In 2007, in to these dense layers of the atmosphere, more than 140 space objects and roughly 40 of these were recognized as being high-risk. All of these objects were accompanied and tracked by the Russian Missions Control Centre.

The IADC regularly conducts international test campaigns on accompanying so-called falling space objects. In 2007, two such campaigns were conducted with the test objects chosen were spacecraft COSMOS-1025 and the rocket launcher DELTA-2RB, with the international numbers 1978067A10973, and 2007, 023B31599 respectively.

Russia is also conducting work on shielding spacecraft from impact with high-velocity particles of space debris and meteorites. By way of illustration, we can refer to the experimental data on the interaction of aluminium models of particles of space debris on a roll with a breadth of 3.9 millimetres, as protected by two kinds of protective shields. The first type is similar to the protection shield used on the ISS and the second type is that developed by Russian experts. The flat surface screen is replaced by steel mesh with special weave. And you have the comparison of results here on this slide. In one instance, there was a rupture of the wool whereas on the Russian weave steel mesh weave there was just a slight dent resulting from the impact and the wool was not ruptured.

Now in Russia we are also doing work on the fruitful(?) development of standard setting basis for the mitigation of space debris in near-Earth outer space. In 2007, we have developed and presented for the approval of our legislation the National Standard of Progression Federation and this is called Space Technology: General Requirements to Effect Maximal Mitigation of Space Debris. The requirements of these standards were harmonized with the recommendations of the United Nations Space Debris Mitigation Guidelines, as adopted by the sixty-second session of the General Assembly. The Russian Federation is actively participating in the work of the International Standard Organization, ISO, on standardizing the international standards on mitigating space debris in near-Earth outer space.

In particular, during 2007, we participated in the work on the following standards of the ISO: the evaluation of fuel remnants in unmanned spacecraft for separation operations, mitigation of space debris, the disposal of spacecraft from geosynchronous orbit, orbital lifetime estimations, and unmanned spacecraft re-entry safety, as well as processes of exchange of orbital information.

The Russian Federation's activity within ISO, including space debris mitigation standards issues, is taking place in accordance with the Programme of the participation of ROSCOSMOS, this work on international standards, international standardization efforts of outer space rocket technology. These requirements have to, of course, correspond to the standards set by ISO and IADC and the actual technical requirements of the standards have to ensure the implementation of the principles of the above documents. And the standards which are technical, first and foremost, have to determine the ways and means in which its designers and operators of the space system-based countries interact.

On 19 February 2007, there was an explosion of a defective accelerating edge in the BREEZE-M(?) which remained on orbit after being launched on 28 February 2006. This was the satellite ARABSAT-4A launched by the Proton-M launcher. The general mass of the defective accelerating edge was 11 tons, eight tons of which were fuel. The fuel drainage was impossible onboard because of the failure of the onboard control system. One possible reason of this explosion was a collision with a fragment of space debris with a mass of over several grams. The Russian Post-Explosion Evaluation conducted showed that the contribution of the break-up fragments to the space debris population was not over several hundreds of one per cent because the destruction of this engine took

place at very high altitude and this, as it were diluted, the altitude, the _____(?) of the fragments over a broad range.

In summarizing, I would like to say that the Russian Federation is supporting international efforts on space debris resolution and is already implementing practical steps on space debris mitigation on a voluntary basis within its own national mechanisms, taking into account the United Nations Space Debris Mitigation Guidelines.

In 2007, we adopted the final version of the Russian National Standard entitled "General Requirements to Spacecraft in Orbital Stages on Space Debris Mitigation". And we are sure that the approval of the United Nations Space Debris Mitigation Guidelines will be increasing mutual interest and understanding on what constitutes acceptable activities of space and thus enhance stability in space-related matters and decrease the likelihood of conflict in outer space. Thank you.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much for that presentation which was so topical.

Does anyone have any questions for Mr. Gorobets and the Russian Federation? Any questions?

I see none. Let me thank him for that report on behalf of the Committee.

Distinguished delegates, we will soon be coming to the end of this session. First of all, let me just give you Monday morning's schedule.

We will meet at 10.00 a.m. and we will continue our consideration of items 8, Report of the Scientific and Technical Subcommittee at its Forty-Fifth Session, 9, Report of the Legal Subcommittee on its Forty-Seventh Session, and 10, Spin-Offs From Space Technology.

After that, we will have three technical reports. The first from the representative of Japan on Disaster Management. The second the representative of Germany on Rapid Mapping Techniques for Emergency Situations. And third, the representative of the Consultative Council Space Young People's Opinions and Capacity-Building in Disaster Management in the Context of Recent Natural Disasters in the Asia-Pacific Region. Of course, an extremely topical presentation.

Are there any questions or comments on this proposed schedule? Any suggestions for its improvement since things can always be improved?

I see none.

In that case, the meeting is now adjourned. Let me wish you a pleasant weekend for those of you who have not been able to see a football match yet please try this weekend. Please have a relaxing weekend so we come back full of energy on Monday morning. Thank you.

The meeting closed at 5.51 p.m.