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Committee on the Peaceful Uses of Outer Space

Unedited transcript

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Vienna

Chairman: Mr. Dumitru Dorin PRUNARIU *(Romania)*

The meeting was called to order at 10.04 a.m.

The CHAIRMAN Good morning distinguished delegates. I now declare open the 632nd meeting of the Committee on the Peaceful Uses of Outer Space.

This morning we will continue our consideration of agenda item 4, general exchange of views. We will begin our consideration of agenda item 5, ways and means of maintaining outer space for peaceful purposes and agenda item 8, report of the Legal Subcommittee on its fiftieth session.

There will be two technical presentations this morning. The first one by a representative of the United States entitled 'Space and education'. The second one by a representative of Mexico entitled 'Mexican Space Agency'.

Immediately after the plenary, in this conference room M1, the Secretariat will inform about the draft contribution of COPUOS to the Rio+20 conference contained in CRP.9. This information will be limited to about 5-10 minutes. Thereafter, all delegations are invited to a Malaysian space food tasting in the VIC Rotunda with the guest presence of the Malaysian astronaut, Sheikh Muszaphar Shukor.

At 2-3 p.m. in this conference room M1, there will be a special anniversary panel discussion on 50 years of COPUOS and the sixtieth anniversary of IAF. The panel will be moderated by Mr. Gérard Brachet and comprise the following prominent speakers. Mr. Rao, Mr. Karl Deutsch, Mr. Vladimir Kopal, Mr. Johannes Ortner and Mr. Philippe Willekens. I look forward to an interesting and forward looking panel discussion on the long standing cooperation between our Committee and the IAF and future prospects.

General exchange of views (agenda item 4)

Distinguished delegates I would now like to continue our consideration of agenda item 4, general exchange of views.

The first speaker on my list is the distinguished representative of Korea.

Mr. H. CHO (Republic of Korea) Thank you Mr. Chairman and good morning to everyone. My delegation is pleased to see you chairing the fifty-fourth session of this Committee. I am confident that, with the same leadership and efficiency we showed last year, we will make this session a success. I assure you of my delegation's full support for your conduct of this session.

Mr. Chairman, this week we are now commemorating two significant milestones in history, the fiftieth anniversary of both the first human space flight and COPUOS. This accomplishment expanded the range of human action out to space and opened a new frontier of science that has greatly contributed to our wellbeing. Space-based technology has improved weather forecasting, disaster management and telecommunications. The benefits of space technology not only protect lives and the environment but also ensures sustainable development for all countries. The

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Committee has been instrumental in promoting international cooperation since the earliest days of the space age. Since its first meeting on 27 November 1961 the Committee, through its work in scientific, technical and legal fields, has played a fundamental role in ensuring that outer space is maintained for peaceful purposes. Indeed, the Committee has served as the primary forum for discussion and negotiation relating to the sustainable use of outer space. My delegation appreciates all the contributions of the Committee in this regard over the last five decades.

Mr. Chairman. On the occasion of this commemoration and reflection, the future of humanity in outer space also deserves our serious consideration. Space-based technology provides viable solutions to the global challenges of the twenty-first century. However, a rapidly changing space environment characterized by new actors, increasing space debris and diversified space activities is a rising challenge to long term human activities in outer space. It also leads to a greater need for international coordination. Against this backdrop, now is the time to discuss the long term sustainability of space activities and ensure that the benefits derived from space systems and services will be shared by the international community. My delegation shares the view that exploration and peaceful uses of outer space is not over a competitive nature between space faring and other nations rather it should be a cooperative endeavour the outcome of which benefit the international community as a whole. Finding an appropriate balance between the Committee's regulatory and promotional roles would further our cooperation in the peaceful uses of outer space.

In this session of the Committee we have a future oriented agenda on the table, such as the future role of the Committee and maintaining outer space for peaceful purposes. My delegation is pleased with these items and is confident that through the in-depth discussions this session will serve as a good opportunity to chart a way forward in the unfolding space era.

Mr. Chairman. I would like to take this opportunity to share with you my government's recent efforts at the national, regional and international levels relevant to the work of COPUOS which has allowed us to gain valuable space-related experience, share the benefits of space technology and enhance scientific cooperation.

Last June, Korea's first geosynchronous satellite, the communication, ocean and meteorological satellite was successfully launched from the Guiana Space Centre in June 2010 and has been providing meteorological services since April 2011. The launch of COMS has special significance as it is the first satellite to carry both an ocean colour imager and meteorological imager in geostationary orbit. Later this year we are planning to launch the Korea Multi-purpose Satellite 5 which will carry synthetic aperture radar capable of executing all weather and day observations. Regrettably however the Korea space launch vehicle mission, which was announced at last year's session, failed to meet its objectives with an explosion taking place 137 seconds after the launch from the Naro Space Center on the southern coast of Korea. At present the Korean Government, in cooperation with our Russian partner, is analysing the details to determine the cause of the explosion. Despite its failure, the lessons learned and know-how gained from this mission will further help our objective to explore and use outer space for the interest of all humankind.

In our efforts to join global cooperation, Korea has been providing satellite imagery of the regions damaged by natural disasters. In the wake of the earthquake and tsunami in Japan, the satellite images of the areas taken by KOMPSAT2 were provided to the International Charter on Space and Major Disasters.

In support of technical cooperation in space applications, the Korean Government held a cost-free international space training programme with 22 participants from 11 countries in August 2010. The second programme is scheduled for June this year with about 30 participants from 15 countries. The programme includes courses in satellite systems and hands-on training in ground systems operations.

Bearing in mind that cooperation at the regional level has a substantial effect in promoting the peaceful uses of outer space, Korea plans to continue its participation in the Sentinel Asia programme and a satellite technology for the Asia/Pacific region programme. In addition, the first general meeting of the International Astronautical Federation regional group for Asia/Pacific will be held this December in Daejeon, Korea. We hope that this regional group will foster cooperation between the space-related academic societies in the Asia/Pacific region.

Mr. Chairman. My delegation firmly believes that the peaceful uses of space will make an essential contribution to a brighter future for all humankind. I would like to conclude my intervention by reiterating my delegation's support for the work of the Committee to facilitate international cooperation and further our

common objective for the peaceful exploration and uses of outer space. Thank you.

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

Distinguished representative of Greece I see you want to take the floor but allow me please to give you the floor after we conclude the list of speakers on general exchange of views. Please allow me to do this.

Mr. V. CASSAPOGLOU (Greece) If they are only States and not observers. The problem is about the observers.

The CHAIRMAN We already had this discussion yesterday.

The next speaker on my list is the distinguished representative of Thailand.

Ms. N. PHETCHARATANA (Thailand) On behalf of the Thai delegation I would like to congratulate you on the fiftieth anniversary of human space flight and the fiftieth anniversary of COPUOS, I am confident that under your chairmanship the meeting will achieve the successful results with mutually agreed directions into the future. I would also like to take this opportunity to express my appreciation to the Secretariat, under the leadership of Dr. Mazlan Othman, for their hard work and excellent arrangement for this meeting.

Last year Thailand co-organized a United Nations/Thailand workshop on space law entitled 'Activities of States in outer space in light of new developments: meeting international responsibilities and establishing national, legal and policy frameworks'. The workshop was hosted by the GEO Informatics and Space Development Agency of the Ministry of Science and Technology of Thailand with support from the UN Office for Outer Space Affairs, the European Space Agency and APSCO. There were well over 300 participants who attended the workshop which has provided vital recommendations and observations.

As a member of APSCO, Thailand appreciates the effort of the Government of China in offering the masters programme on space technology applications at Beihang University, _____(?) University and the Institute of Remote Sensing Applications of China. To strengthen her capacity in this area, Thailand also regularly sends students to study at the UN Centre for Space Science and Technology Education in the Asia/Pacific at Dehradun in India.

In the area of information and communication technology, under the auspices of the Ministry of Information and Communication Technology, Thailand held the acceptance ceremony of SMMS ground station in Bangkok. This project is a collaboration between Kasetsart University, China Center for Resources Satellite Data and Applications and China Great Wall Industry Corporation can receive and process data from HJ-1A/B satellites and it is a part of the space data sharing platform project under APSCO. This satellite will benefit all the Asia/Pacific countries participating in the programme and make major contributions to disaster mitigation and environment protection. We have confidence that the SMMS and THEOS will benefit the regional economy and facilitate the peaceful uses of outer space.

Moreover Thailand and APSCO have jointly convened the fourth meeting of the Council of Asia/Pacific Space Corporation Organization during 26-27 January this year in Chonburi Province. We will continue our cooperation with APSCO particularly on high resolution satellites.

Apart from APSCO, Thailand has been actively involved with activities in various organizations including COPUOS, GEO, CEOS, APRSAF, and we seek collaboration with many partners. The data obtained from Earth observation satellites have been applied with a view to enhancing our sustainability in every dimension namely, economics, social and environment. Satellite data has benefited people in various fields including agriculture, forestry, environment monitoring and disaster management. The Thai Government has put the THEOS satellite into a prior application not only to monitor, assess and map out flood stricken areas but also to predict and prevent flood-prone areas as well.

Furthermore, during the sixth informal ASEAN Ministerial Meeting on Science and Technology in December last year, Thailand proposed a cooperative project on the establishing of ASEAN's Earth observation satellite by the year 2015 aiming to support the early warning system for disaster risk reduction and respond to climate change in south-east Asia. The success indicators of the mentioned proposal are provision of information systems among ASEAN countries in support of the risk management cycle associated with hazards. Provision of effective and sustained operation of the climate observing system and reliable delivery of climate information of a quality needed for predicting _____(?) and adapting to climate variability and change.

Including for better understanding of the carbon cycle, the success measures would include the establishment of ASEAN satellites services centres to provide satellite data on an operational basis to be used for joint research, such as the flood alert system, the forest fire information system or disaster alert and coordination system. _____(?) can serve as provider of near real-time Earth observation satellite data and can guarantee delivery of timely, high quality and high frequency data.

Mr. Chairman, it is true that Thailand is fortunate to have the THEOS satellite at our disposal but this is still not enough. We have been using RADARSAT, MODIS, and MTSAT, together with THEOS with full endeavour to assess flood maps in geospatial and time. And we have already made further requests to a number of other satellite cooperative bodies. Thailand, with our THEOS, stands ready for any assistance that may be needed.

Mr. Chairman. On the promotion of space education and awareness, Thailand has actively organized various training, seminars, workshops, and conferences, to build awareness of the people. We have also used satellite communication for various proposals. One example is a project on distance learning through satellites based at Wang Klaikangwon School in Prachuap Khiri Khan province under the patronage of His Majesty the King of Thailand. It is an ongoing project providing fundamental education for over 3,000 schools in Thailand and also providing high-level education and foreign language courses for vocational colleges, universities and interested people.

In conclusion, I would like to reaffirm Thailand's commitments to further cooperate in the activities of COPUOS to strengthen its work for the peaceful uses of outer space. Thank you.

The CHAIRMAN I thank the distinguished representative of Thailand for her statement.

Now I would like to continue our consideration on this agenda item with the statement made by Ambassador Boeck of Austria.

Mr. H. BOECK (Austria) Thank you Mr. Chairman, it is a pleasure to see you in the Chair again and I am sure the Committee will substantially benefit from your skills and profound experience. I would also like to express my appreciation and warm thanks to the Office for Outer Space Affairs and Dr. Mazlan Othman and her committed team for the preparation of this particular meeting.

Let me also point out that we are very appreciative and welcomed very much the efforts and the preparation which went into our commemorative session and also in particular the exciting and exhilarating panel discussion we had yesterday was a fair amount of a small elite group of space explorers and astronauts we had at the Vienna Rathaus and City Hall yesterday.

This year again, unfortunately, is a year of major devastating natural disasters. We are still struck by the earthquake and subsequent tsunami that hit Japan several weeks ago and I would also like to take this opportunity to express our condolences to the people of Japan.

Several other major natural disasters severely affected different world regions. Just to name a few like the major earthquake in New Zealand, as well as the severe flooding events in the United States, in southern Africa, as well as in Latin America. These tragic events continue to be strong reminders that we must step up our efforts to improve our overall capabilities to tackle the negative effects of climate change, natural disasters and extreme weather events all around the world. In particular we must strengthen the resilience of developing countries by building capacities for disaster prevention, risk reduction and mitigation of the effects of climate change which endanger the very existence of some countries.

Austria has repeatedly stated her conviction that space-based technology has a great potential for early warning and response as well as for effective relief and rehabilitation efforts. It is thus only consistent that Austria has developed into one of the main contributors to the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN SPIDER). This programme of the Office for Outer Space Affairs in Vienna provides a tangible and concrete added value to communities at risk. Austria provided considerable financial and human resources from its inception and is continuing to support UN SPIDER under the workplan for the biennium 2010/11. For the implementation of UN SPIDER activities according to this workplan, Austria supported the programme in the year 2011 with an amount of over 200,000 Euro. Among others, these funds are being used for outreach and capacity building activities for technical advisory support as well as for emergency response activities. With Austrian support, UN SPIDER is currently working on a project on aspects of crowdsource mapping for preparedness and emergency response. An international meeting on this topic is going to be held in Vienna from 5-6 July of this year.

Let me also stress Austria's long standing _____(?) which are particularly vulnerable to natural disasters and the effects of climate change by supporting UN SPIDER projects targeting SITS in 2011. In this context, Austria is funding several UN SPIDER follow-up activities for SITS and other countries which have previously benefited from UN SPIDER's technical support. Regional training events and workshops are being planned for the Asia/Pacific region, the Caribbean, as well as the western African region in 2011. Technical advisory missions to Nigeria and Sri Lanka will be conducted _____(?) UN SPIDER _____(?) end of this year with _____(?) support from Austria. For the last four years _____(?) also been providing the services of an associate expert to the UN SPIDER programme and _____(?) plan to continue to our support to the programme in the future.

The progress UN SPIDER has made in the implementation of its workplan was also recognized with satisfaction by UN General Assembly resolution 65/97 and reiterated by UN General Assembly resolution 65/264. In line with these resolutions, Austria encourages member States that have not made any commitment so far to provide all necessary support to UN SPIDER including financial support to enable UN SPIDER to carry out its ambitious workplan. We very much welcome the support given by member States for SPIDER so far. For the current discussions of the UN SPIDER workplan for the years 2012/2013 Austria would like to see an increasing role of the network of UN SPIDER regional support offices in the implementation of the programme activities. Recognizing these valuable assets, UN SPIDER should assume a strong coordinating role in order to be able to benefit from existing resources and expertise of the already established network.

The Austrian engagement with UN SPIDER is a continuation of Austria's tradition of actively supporting forums of exchange and dialogue between developed and developing countries in the area of space activities. Let me therefore express our appreciation again for the work of the whole team of UN SPIDER in particular to the Director of OOSA, Dr. Mazlan Othman, and the programme coordinator of UN SPIDER, Mr. David Stevens, for their tireless efforts in implementing this programme.

Mr. Chairman. The Austrian Space Applications Programme (ASAP), as an initiative of the Austrian Federal Ministry for Transport Innovation and Technology, is managed by the Aeronautics and Space Agency of the Austrian Research Promotion Agency. A call for proposals has just been opened in May of this year. In the area of space application, projects related to disaster prediction and management and also to UN SPIDER will again be most welcome.

In the framework of ASAP, several projects with relevance to development aid and UN SPIDER have been funded in recent years. In this context I would particularly like to attract your attention to an ASAP programme called Global Monitoring of Soil. The goal of this project is to utilize novel satellite-based soil moisture data at global scale for water hazards assessment. The project has started its second phase at the end of 2010. Until mid-2012 the main focus of this project is to develop a variety of applications and services, for example on flood or drought forecasts, based on the data processing chain and the algorithm elaborated in the first project phase.

A particular case study has already been developed focused on the major flood events in Pakistan in 2010. The project is funded within the thematic priority GMES in Austria. This programme line promotes research and development activities and community building in Austria in response to the recent development of the European Earth Observation programme entitled Global Monitoring for Environment and Security. With the EU regulation covering the first operational activities of GMES, the way is now paved to bring the first elements of GMES in an operational status until 2014 with land use monitoring and rapid mapping for emergency response as thematic priorities.

Mr. Chairman. BRITE-Austria/TUGSAT-1, the first Austrian nano-satellite, is currently in the final testing stage including environmental and vibration tests at the Graz University of Technology. This project aims at investigating the brightness variations of massive luminous stars by using two Austrian nano-satellites, BRITE-Austria and UNIBRITE, observing in two different wavelengths. The development and manufacture of TUGSAT-1 is undertaken in collaboration with the space flight laboratory of the University of Toronto, Institute for Aerospace Studies, in Canada.

The spacecraft will be launched by the Polar Satellite Launch Vehicle launcher of ISRO from the Satish Dhawan Space in India in the third quarter of this year. In 2012 and 2013 two Polish and two Canadian BRITE satellites will follow, constituting a unique constellation of six spacecraft dedicated to research in astronomy. Using the scientific data from the BRITE constellation, astronomers expect significant improvements of the theories of those massive bright stars.

In the area of micro-gravity research, Joanneum Research Graz, Graz University of Technology and _____(?) Space Belgium are integrating and testing the flight model of the Miller-Urey experiment in space under contract of ESA. The aim of this experiment is to demonstrate the formation of amino-acids, which are the basic building blocks of life, out of elementary gases and water in comets and circumstellar accretion disks. The experiment will be carried out in a micro-gravity environment on board the International Space Station (ISS) in 2012.

Mr. Chairman. The European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) is co-founded by Austria at an average of 5.5 million Euros per year. Preparations for the third generation of MeteoSat are going on. The improved capabilities of new satellites will allow EUMETSAT to meet the increasing requirements by EUMETSAT member States. Additionally, the new satellites will make a major contribution to climate monitoring activities in providing high quality radiances and essential climate variables.

Mr. Chairman. The traditional satellite frequency bands become more and more occupied due to new band width intensive applications, therefore a move to higher frequencies is inevitable. The AlphaSat spacecraft, to be launched in 2012 by ESA, will carry several tests and demonstration payloads. One of them has the aim to study and demonstrate the capabilities of the 50 and 40 GHz frequency bands for future commercial exploitation.

Invited by the Italian Space Agency and supported by Austria, Joanneum Research is developing a ground station for communication experiments under an ESA contract. The aim is to develop efficient _____(?) mitigation techniques to overcome the impairment by weather effects which are more severe at higher frequencies. In parallel, a special measurement system for the signal strength is developed which is planned to be reproduced for the European AlphaSat wave propagation community.

Mr. Chairman. From 13-16 September of this year, the 18th United Nations/ESA Austria Symposium will be held in Graz with the topic of ‘Implementing small satellite programmes: technical, managerial, regulatory and legal issues’. This is the third symposium in a series focusing on capacity building in space technology development with a clear focus on nano and small satellites in space technology education. At this year’s symposium the latest status of worldwide small satellites will be reviewed and financing, programming and programme management issues will be discussed. Important aspects are frequency allocation and registration as well as space debris mitigation. Likewise, the way forward for the Space Technology Initiative (BSTI) in particular the organization of regional conferences and the development of an education curriculum for aerospace engineers will be mapped out. About 80 participants most of them from developing countries are expected to participate in this year’s symposium in Graz.

Mr. Chairman as is well known, we attached great importance to space education. The Austrian Aeronautic and Space Agency serves as a driving force to stimulate interest in space especially in educational institutions. It assists graduate scientists as well as undergraduate students to take advantage of educational and advanced training opportunities and to secure work placements at key space research centres in Austria and abroad. The opportunities range from courses offered by ISU, training available from ESA, grants for students and pupils to participate in space camps to the traditional annual summer school, Alpbach, where about 60 young, highly qualified European science and engineering students converge annually for a stimulating ten days of work in the Austrian Alps.

The summer school Alpbach is organized by the Austrian promotion agency and co-sponsored by ESA, ISSI, and the national space authorities of the member incorporating States. The last summer school 2010 was held in July and August last year and focused on ‘New space missions for understanding climate change: addressing innovative mission concepts with the objective to increase our knowledge of key processes of the global climate system’. The summer school Alpbach 2011, from 19-28 July, will address innovative mission concepts aiming to increase our knowledge of key processes of star formation.

Mission X: Train Like an Astronaut, is a worldwide initiative initiated by NASA and supported by ESA with the aim of promoting physical activity and healthier diets among young people. From January to March of this year, ten school classes from Austria participated in the contest. The teams with children between 8 and 12 performed a number of physical exercises and classroom lessons to become as fit as an astronaut and to learn the importance of an active lifestyle and healthy nutrition. Scores were awarded after each exercise and the winning class for each country was announced. The winning Austrian classes were awarded prizes during a Mission X closing ceremony at the Planetarium, Vienna, in early April and at the Technical Museum on 12 April of this year.

Mr. Chairman. Austria is proud to host the twenty-fourth space studies programme of the International Space University (ISU) at the Graz University of Technology from 11 July to 9 September 2011. Approximately 120 students from all over the world will participate in the space studies programme of ISU. An international _____(?) of distinguished professors will teach the classes. The curriculum covers the major space related fields both technical and non-technical and ranges from engineering, physical sciences and satellite application to life sciences, policy, management and humanities.

Mr. Chairman, turning to the end let me stress that, as the only Committee of the United Nations dealing with international cooperation in the peaceful uses of outer space, COPUOS and its subcommittees obviously deserve our full attention and support. We deem it important that it is our common interest to allocate adequate time for substantive consideration of the issues before the Committee and its subsidiary bodies and to provide the Office for Outer Space Affairs and its programme with the resources needed.

On a lighter and more culinary note let me finish by inviting all delegates of COPUOS to an Austrian heurigen, the traditional one, which the general secretary of the Foreign Ministry and myself will gladly invite heads of delegations and delegates. It will take place on Wednesday, 8 June next week at 7.30 p.m. at the Heurigen Müller-Schmidt for those of you who have been present this is the same heurigen which was very popular last year, we definitely hope to see you all there. We would request all delegations who are interested to participate to register either with the Austrian delegation to COPUOS or with the Austrian permanent mission. Thank you very much.

The CHAIRMAN I thank His Excellency Ambassador Helmut Boeck for his statement on behalf of Austria.

The next speaker on my list is the distinguished representative of Iraq.

Mr. S. NAJIB (Iraq) (*interpretation from Arabic*) Thank you Mr. Chairman. Mr. Chairman, distinguished members of the bureau, allow me first to give you a brief overview of space activities in my country during the past year.

Within the activities of our national committee of the peaceful uses of outer space. Considering the challenges faced by Iraq regarding climate change and the dearth of water resources which reflected itself upon the deterioration of arable lands and the increase in dust storms, we have started cooperating with competent ministries to organize a workshop related to the role of space applications in facing desertification. That workshop has focused on gathering information and data related to desertification as well as coordination at the level of institutions in various fields in addition to using new techniques in monitoring desertification through space.

Regarding desertification and facing drought in Iraq, we are currently establishing maps for desertification in addition to changes in time using satellite imagery. Regarding the location of the area which will be studied, it is in the centre of Iraq and we have prepared archived images and maps related to that area of Sadi. We have specified the appropriate images which will be used to establish desertification maps.

There is also a project to monitor dust and sandstorms which have increased tremendously during the past few years. The aim is to identify areas which create dust and here we cooperate with Arkansas University in Little Rock by using space data as well as radar data that are archived there in addition to mathematical models used in this regard. The plan aims also to measure the trajectory of those dust storms and studying their chemistry to understand their source and their nature. Since it is very important to build capacities in using space through the workshops available internationally and regionally, many of our young professionals have participated in the Islamic network _____(?) in applying GIS as well as water assessment. In addition, we participate also in establishing a database for those working in space technology and applications. This covers all member States in that network. We also tap into the expertise available in member States to support their projects.

Regarding development of capacities in using satellites. We have resumed our activities started in 1980 when we have built a satellite and we have tapped into the scientific knowledge available in this field to improve. We have participated last year in the workshop organized in Austria with the coordination of OOSA on nano and micro-satellites. His Excellency the Ambassador of Austria has already stated what happened in that workshop. We also hope that UNOOSA will continue to support Iraq so that it can participate in the next workshop which will take place in Graz this year.

A ground station has also been established to capture satellite images and data in Iraq. We thus process the images that come from satellites at that ground station that come from various satellites. There is an automatic processing of those data in addition to

the archived ones. The data is then transferred to the relevant authorities.

Regarding GPS and GIS. We are studying a national system to be able to use it in cell phones and other telecommunication means. We also take advantage of the CORS through six stations spread across the country and this is very important in studying the coordinates. We also have high resolution images that we receive which help us also establish maps regarding irrigation and arable lands, in addition to using geodesic tools by using the technique of GMSS we are thus able to delimit our borders with Iran, the neighbouring country.

Considering the importance of the area of _____(?) we are studying the history of that area from 1973 until 2004. We are using here various images and studying the area regarding its water resources and population. There are also some engineering projects in this regard and regarding water resources we are studying the flow of water through stations which are also spread across various points along the water resources of Iraq. The data is then transmitted through satellite.

The surface of both the Tigris and Euphrates is also studied through satellite imagery. Regarding the need to build the infrastructure in every country to reduce disasters and manage them, we have created a centre that would collect and analyse the data related to weather forecasts which are connected with climate change. We are also able to analyse data related to earthquakes in Iraq and in neighbouring areas. That centre also monitors changes in the environment as well as the dust storms and uses GIS. That centre also identifies the sources of satellite data which are available within our peaceful uses of outer space. All this can be checked through the Internet and we cooperate with UNDP for instance in participating in all training courses to manage disasters and there is also an authority that has started its work and which is entrusted with managing disasters.

Mr. Chairman. I would like to thank the UNOOSA for all of its support of Iraq in building its capacities and achieving the goals of OOSA. We also look forward to more cooperation and support from that Office, internationally and regionally, so that space data could be used in managing disasters and preparing for them. This will contribute definitely to giving us an efficient and promising tool to face challenges especially the diminishing water resources in our region and the bad state of our agricultural lands.

In conclusion Mr. Chairman, allow me to welcome the new membership of Tunisia as well as the acceptance of UAE, the Sultan of Oman, Palestine and Jordan as observers in COPUOS. Thank you.

The CHAIRMAN I thank the distinguished Ambassador of Iraq for your statement.

The next speaker on my list is the distinguished Ambassador Marsán of Cuba.

Mr. J. MARSÁN AGUILERA (Cuba) (*interpretation from Spanish*) Thank you very much Mr. Chairman. My delegation is happy to see you again in the Chair of this important committee. We wish you every success in your work and we would like to make sure that we contribute fully to this meeting. I would like to take this opportunity to thank the Office for Outer Space Affairs particularly its Director, Dr. Othman, for the excellent management of work during the past year, the preparation of sessions and the organization of this forum. We also express our full support for the statements made by the ambassadors of Iran and Colombia on behalf of the Group of 77 and GRULAC respectively.

Mr. Chairman. Looking back at the work carried out in the past 50 years we can state the growing impact of space technologies on human development and the important role played by COPUOS and OOSA in that regard. In 2010 we commemorated the thirtieth anniversary of the giant space flight of Soviet cosmonaut Romanenko and Cuban astronaut Arnaldo Tamayo-Mendez, the first Ibero-American cosmonaut. We also join celebrations of the fiftieth anniversary of COPUOS and the fiftieth anniversary of the first manned space flight.

My delegation would like to highlight the growing value of space technologies in terms of managing natural disasters within the programme UN SPIDER, among others. We express our gratitude to OOSA and other countries that have established UN SPIDER offices. Cuba works for strengthening at regional and interregional cooperation in outer space. In this context, we would like to join those delegations that have commended Mexico for the successful organization of the sixth Space Conference of the Americas held 15-19 November 2010 in the city of Pachuca and we fully support the final declaration of that forum. At the same time we recognize the work of Ecuador as the Pro Tempore Secretariat from 2006-2010.

Mr. Chairman. Cuba continues systematically and progressively benefiting from the space

technologies and their advancement for economic and social development. In particular we would like to note the importance of meteorological satellites and environmental monitoring which has been successfully used to track tropical cyclones during recent storms bringing decisive elements towards diagnosis and prognosis making sure that we have been able to avoid the loss of human lives. Furthermore, we have continued using space technologies for the detection and management of forest fires, control of epidemics, soil management, tracking various manifestations of climate change and factors that contribute to it among various other applications associated with space science.

Mr. Chairman, regrettably in this area full of opportunities for the use of space technologies we also see an emerging threat of a possible arms race in space. We insist on the need to review international space law to get a binding legal instrument that would prohibit the use of all types of weapons in outer space. With this objective, COPUOS must play an important role in coordination with the Conference on Disarmament and other UN bodies. We agree with the need to have a space policy of the United Nations based on these guiding principles. Activities in outer space must be carried out with peaceful purposes for the benefit of all humankind. Space environment must be used in a way that is fair and responsible. We need an international and interregional approach, an integrated approach to space activities in order to guarantee the access of all States to the benefit of the exploration and use of outer space for peaceful purposes.

We reiterate the need to review the legal framework governing space activities with a view to filling the existing lacunae such as the definition of outer space, regulations with regard to space debris and the use of nuclear power sources in outer space and to establish clearly the responsibilities of governments and other actors in space activities at present and in the future.

In this context, my delegation joins those who condemn manoeuvres designed to reduce to just one week the duration of our Legal Subcommittee sessions. Cuba opposes the use of procedural elements to try and distract attention from the real problem which is the lack of political interest on behalf of the main western powers in terms of completing space legislation.

Mr. Chairman, my delegation once again condemns the dense network of spy satellites in space. They are there with the objective of obtaining information that harms other nations and does not benefit humanity and largely contributes to the generation of space debris. Cuba reiterates its conviction that we should maintain outer space for exclusively peaceful uses, this is a paramount objective to guarantee peace and the very survival of humankind. The efforts of this Committee are essential in this regard. Thank you very much.

The CHAIRMAN I thank you the distinguished representative of Cuba for your statement.

The next speaker on my list is the distinguished representative of Algeria.

Mr. A. KEDJAR (Algeria) (*interpretation from French*) Thank you Mr. Chairman. Mr. Chairman, the Algerian delegation is pleased to see you in the Chair of this session of the Committee, we wish you every success in the Chair. We would like to express our gratitude to UNOOSA and to all of its staff for the efforts that they have made in preparing this session.

The delegation of Algeria would like to extend his condolences to the delegation of Japan, we assure Japan of our steadfast solidarity, we stand alongside you following the horrible earthquake that has struck you with such a high number of lives lost. On this sad occasion, Japan has activated the International Charter which triggered a large operation of cooperation between space agencies and space system operators in order to respond to the crises. It was in this spirit of mutual assistance and cooperation that Algeria was part of that.

Chairman. Algeria has been listening very closely to all of the different discussions we have had within COPUOS and its two subcommittees in order to make our contribution to the promotion of space activities that would be at the service of sustainable development and the wellbeing of people around the world. For our delegation we believe that it is high time for us to define and delimit outer space and in particular airspace. We believe that this is something that is very important, States have a direct responsibility here especially because the number of space activities is on the rise. If there is no way of legally delimiting outer space then this could give rise to fertile ground for conflicts between States.

I would now like to address the issue of the use of the geostationary orbit. Clearly the principle of first come first served is not acceptable because it penalizes the developing countries. This is why we need a fair legal framework that will provide fair access to orbit positions based on the principles of the peaceful use and non-ownership of outer space.

In 2010, the Algerian Space Agency continued with its national space programme working in a variety of areas, space systems, space applications, training and research and cooperation.

I will address space systems first. The phases related to completing our Earth observation satellite, Terra-AlSat-2A were a crowning success. This satellite was launched in July 2010. This AlSat-2A space system provides us with a 2.5 meter panchromatic resolution and 10 meter multispectral resolution.

For the application projects for space that are using satellite imagery, localization, satellite navigation, geographic information systems, and many other projects are also in the pipeline to protect the environment, to survey and prevent forest fires, locust control, the fight against desertification and land surveys for both the steppe and the Sahara. Transportation, habitat, city planning, land use, all of these different policy areas will be drawn on data from the Algerian Space Agency.

The Algerian Space Agency also has established its Centre for Space Applications in order to refine projects that are part of the national space programme and that require further _____(?) so that we can develop applications that can avail themselves of space technology and in particular the satellite images coming from AlSat-2A satellite.

Training and research. Here we are making progress as well. We have done a lot to develop human resources in space technologies and space applications, we have also continued to build national capacity. For post-graduate training, we have a Ph.D. programme and space technologies and applications which we established in 2007 and by 2010, 44 dissertations have been presented on space instrumentation, space telecommunications, precision optics and mechanics, image processing, geographic data systems, information and space telecommunications.

Chairman. The delegation of Algeria believes that it is very important that we step up international cooperation in the area of space to benefit in particular the developing countries. Here Algeria will continue to strengthen its ties with several different countries, regional entities and international organizations to which we are tied through a host of different agreements and MOUs. For example, our space agency is implementing the UN SPIDER provisions, thanks to an agreement that we have signed with the USA. This agreement stipulates that in Algeria we will be setting up a regional support office which will come on-stream during the second half of 2011. This regional support office will be in our civil protection division and the civil protection unit and the space agency will be working together to provide technical assistance, sharing expertise for the use of satellite images and geographic data systems.

On the regional level, we are going to continue with our development of a constellation of satellites for Africa, ARMC, working together with South Africa, Kenya, Nigeria and Algeria. Thank you.

The CHAIRMAN I thank the distinguished representative of Algeria for your statement.

The next speaker on my list is the distinguished representative of Argentina.

Mr. E. CURIA (Argentina) (*interpretation from Spanish*) Thank you very much Chairman. Chairman, my delegation is very pleased to see you once again in the Chair of the session. Dr. Prunariu, your vast experience and knowledge in the field of space is something that will be instrumental in the success of this meeting and you can certainly count on our full support throughout the duration. I would also like to say a special word of greeting to the Director of the Office for Outer Space Affairs, Dr. Mazlan Othman, and to her staff as well, we would like to thank you all for an excellent job that you have been doing in preparing the documentation and making all the other arrangements for this conference.

We would like to express our heartfelt condolences and solidarity to a long list of countries this year unfortunately, Japan, Australia, New Zealand, Brazil, Colombia, Venezuela, and other countries around the world because these are countries where people have lost their lives, these countries have been hit hard by natural disasters in the recent past.

The delegation of Argentina would also like to extend, through you, a warm congratulations to all of those who organized the wonderful ceremony that we saw to commemorate the 50 years of COPUOS and the first human space flight. As part of that celebration, Argentina would like to associate itself with the statements made by the G77 and GRULAC, declarations made by the ambassadors of Iran and Colombia respectively.

Mr. Chairman. The Argentine Republic has its own national space agency, CONAE. It is pushing forward with our 2014-2015 national space plan. As part of this process I have the pleasure of announcing to you that, next week in fact on 9 June, we shall see the launch from the Vandenberg Air Force Base in the

United States of our SAC-D/Aquarius satellite mission. This satellite mission is something that is organized jointly with NASA and the Jet Propulsion Laboratories of the United States. It is dedicated to the study of the flow of ocean waters, the measurement of surface seawater salinity, soil humidity, using instruments that come from a variety of different space agencies from Canada and France. It has already done its initial environmental test at the National Space Research Institute in Brazil, INPE. Information coming from SAC-D/Aquarius will be made available to the entire international scientific community and it shall be making a useful contribution to our understanding of climate change.

I would now like to refer to some more specific items. First, the SAOCOM-1A and 1B satellite mission. Our National Space Agency is currently involved in two L-band radar satellite projects (SAOCOM) which, working together with the four Cosmo-SkyMed X-band radar satellites, make up the SIASGE which is the Italo-Argentine satellite system for emergency response and disaster management. In the last quarter of 2010 we made a critical design review for this satellite mission and we are now hoping that the international community can come forward with projects using the services provided by SAOCOM. The projects selected will be announced over the coming weeks.

Second point. The Argentine/Brazilian satellite for ocean observation. The presidents of both of our countries in following that the CONAE and the Brazilian Space Agency (INPE) has started working on technical meetings in order to develop a joint Sabia-Mar satellite mission which would be looking at the colour of oceans, monitoring the coastlines of both countries in particular focusing on oil platforms and fisheries. The first meeting of users from both countries shall take place in Buenos Aires at the end of June this year.

Another example I would like to mention are the activities of the Institute for Advanced Space Studies Mario Gulich. This Institute has continued investing in human resources and developing them. Argentina and Italy are working hand-in-hand in order to develop an Italo-Argentina excellence centre for the countries in our region. Next June we will see the first graduates from the masters programme in space applications for early warning and response to emergencies. The second group of interns, including students from Chile and Paraguay, are in the process of completing their year abroad in Italy and, more recently, we have already selected those students that will make up the third group, they shall start their course next August and, in addition to providing opportunities to students from Argentina, we will also see students from Chile, Ecuador, Peru and Venezuela.

Chairman, as you have probably noticed, in all of the projects that I just referred to, international cooperation is one of the fundamental pillars of Argentina's space activities. This spirit of cooperation is _____(?) instrumental in trying to achieve greater integration in our own region. We were active participants in the sixth Space Conference of the Americas which is testimony to that. By the way we would like to warmly congratulate Mexico for the successful convening of that sixth conference and we would like to say to our Mexican friends that they can count on us to do everything we can to make sure that the objectives contained in the Declaration of Pachuca are carried out.

The creation of a special space technology advisory group comprising specialized space agencies and governmental agencies from all over the countries of the continent shall be providing support to this Space Conference of the Americas and to the respective Pro Tempore Secretariats. In fact we will like to take this opportunity to congratulate Ecuador which did an excellent job as the Pro Tempore Secretariat for the fifth Space Conference of the Americas.

In the past our region has identified a long list of shared projects and some of the ones I can refer to are the outstanding results from the workshops we have organized on the use of space technology for the sustainable development of the Andean countries. It was organized by the United Nations, the European Space Agency and Bolivia. It took place in Cochabamba in October 2010, Bolivia was an excellent host at this event. This event made it possible for national authorities to be more involved in a hands-on way in coming up with different solutions to shared problems. We would therefore like to thank OOSA and the European Space Agency for all of the support they have lent to our region and to channel the efforts of these workshops to the specific needs of the Andean countries.

Chairman, our national space agency is continuing to develop its capacity in managing information to deal with both natural and man-made disasters. As part of this we have developed our own training course to activate the International Space and Major Disasters map which was held in Caracas jointly with the Bolivarian Space Agency. We have also been involved in a technical mission to Guatemala organized by UN SPIDER. We also worked with the Brazil

campus of CRECTEALC and we had support from UN SPIDER thanks to which we were able to organize a training course in Rosario, Argentina, focusing on drought and desertification specifically tailored to Latin American experts.

When it comes to our capacity building policy for the region. Last April we organized a training course on space information applications in La Sedena in Chile working with the Universidad de La Sedena and the Chilean Space Research Institute. We have been using space information for monitoring the preservation of world heritage sites as well and for this we organized a training course in the Galapagos Islands working with the Ecuadorian Department of National Parks and the Ministry of Foreign Affairs.

Cooperation with other regions that face problems that are similar to ours we believe will help us solve our own problems more quickly and as a result of this we have intensified cooperation with South Africa. We provide SIASGE data output free of charge to that country but beyond that, in many areas in Argentina, we have been working with South African experts to calibrate the South African SumbandilaSat satellite.

To conclude, I would like to express my deep gratitude to the Office for Outer Space Affairs and the European Space Agency for having made it possible for us to organize an international conference when there was a presentation of the International Water Prize named after Prince Sultan Bin Abdulaziz of the Kingdom of Saudi Arabia. At that conference, where we focused on the use of technology for managing water resources, which was held in Buenos Aires from 14-18 March 2011 there were more than 80 experts representing more than 20 countries from Africa, Asia, Europe and Latin America.

As you can see, Mr. Chairman, international cooperation activities are doing very well in our space agency and we are going to continue working in this spirit. Thank you very much.

The CHAIRMAN I thank the distinguished Ambassador Curia for your statement on behalf of Argentina.

The next speaker on my list is the distinguished ambassador of Nigeria.

Mr. A. OLUKANNI (Nigeria) Thank you Sir. Mr. Chair, my delegation would also wish to join others to commend your efforts in chairing the meeting of the Committee in the most efficient manner. Please be rest assured of our support for a successful conclusion of this meeting.

We also want to the thank the Director of the UN Office for Outer Space Affairs, Professor Mazlan Othman, and her team of dedicated staff for the excellent preparation for the fifty-fourth session of the Committee. We want to also of course at this point express our total support and we commend G77 for the work that it has been doing and we support the statement as articulated by the Chair of G77.

Mr. Chairman. Yesterday we listened to various delegations expressing various ways the significance of the celebration of 50 years of human space flight and 50 years of the first session of COPUOS. The various statements reaffirmed the continued impact of space science technology on all countries, regions and indeed the world at large.

On this auspicious occasion, once again my delegation wishes to express our congratulations to all member States, the Secretariat of COPUOS and the world in general for the significant successes and progress made so far in harnessing the vast potential of outer space for the collective benefit of humanity.

Mr. Chairman. The Nigerian delegation appreciates the work of the Committee on the Peaceful Uses of Outer Space and also, in particular, the two subcommittees in furthering international cooperation in the peaceful uses of outer space. It is equally commendable that the two subcommittees have worked, and continues to work, assiduously to provide an international framework for space activities for the benefit of member States. Such cooperation is crucial in the international effort for mediation of the impact of near-Earth objects and space debris and the long-term sustainability of outer space activities.

The role of COPUOS in the implementation of activities recommended by UNISPACE III cannot of course be over-emphasized especially in the areas of manpower development and outreach programmes. These activities have created an unprecedented awareness particularly in developing countries on the use of space science technology for socio-economic development.

Mr. Chairman, Nigeria will continue to be in the forefront of the promotion of international cooperation and the peaceful uses of outer space in Africa. We will continue with our active participation at the African Leadership Congress and the Africa Resource Management Satellite Constellation borne with a spin-off of the UNISPACE III conference.

Nigeria will also continue to provide support for the African Regional Support Office for UN SPIDER and the African Regional Centre for Space Science and Technology Education for English speaking African countries _____(?) are located in Nigeria.

Mr. Chairman, we want to congratulate the sister State of Ghana for establishing the Ghana Space Science and Technology Centre and we welcome its contribution to attainment of Ghana's and, of course, Africa's space aspirations. In particular we look forward to working closely with Ghana _____(?) challenges and also we look forward to Ghana's membership of COPUOS soon. We would also like to use this opportunity to congratulate Kenya as it prepares for the fourth ALC conference in Mombasa in September this year. Through the programme which Kenya has put together on the basis of wide consultation, _____(?) of course offers the participating countries, including Nigeria, the opportunity to strengthen the ongoing collaboration and to collectively chart a future path on various space related activities for the benefits of their respective countries and the African continent as a whole.

Nigeria also wishes to commend South Africa which will be hosting the 62nd International Astronautical Congress in Cape Town in October this year. The Africa Space Day and the Congress certainly offers each participating African country, including Nigeria, an opportunity to display their programmes _____(?) of space and to also articulate through a high-level representation, its vision and contribution on how outer space can transform Africa and enhance the quality of life of the African people. Thank you.

The CHAIRMAN I thank Your Excellency distinguished Ambassador Olukanni for your statement on behalf of Nigeria.

Distinguished delegates, I will continue and hopefully conclude our consideration of agenda item 4, general exchange of views, this afternoon.

I would now like to inform you that I have received a request from the Director of the Office for Outer Space Affairs for the opportunity to briefly address the Committee in the time left for this morning's meeting. Therefore, if there are no objections, I would like to give the floor at this time to the Director of the Office for Outer Space Affairs and, on behalf of the Committee, invite her to deliver her statement.

I see no objections.

Informative statement

I give the floor to the Director, Ms. Mazlan Othman.

Ms. M. OTHMAN (Director, OOSA) Thank you Mr. Chairman.

Mr. Chairman, distinguished delegates, on behalf of the Office I warmly welcome you all to the fifty-fourth session of this Committee and thank you for the opportunity to address this session of the Committee on the work of the Office over the past year.

Mr. Chairman, I am pleased to see you once again chairing this session of the Committee and I am certain that the Committee will continue to achieve major accomplishments under your guidance. I would also like to welcome Nomfuneko Majaja of South Africa and Raimundo González Aninat of Chile and wish them success in accomplishing the tasks at this session of the Committee. I would also like to assure you of the support of the Secretariat in facilitating your work to our utmost ability.

On Wednesday, we witnessed the commemorative events marking the fiftieth anniversaries of the Committee and human space flight. Either one of the anniversaries is a momentous milestone and having both is a double bonus and truly remarkable. Congratulations, Mr. Chairman, on the successful convening of the commemorative session.

Mr. Chairman, distinguished delegates, I am now pleased to briefly highlight key aspects of the work the Office is carrying out in the context of its operational priorities and expected accomplishments for 2011 and 2012. The responsibilities of the Office towards the Committee and its subsidiary office kept the Office and, in particular, the Committee's Services and Research Section fully engaged in the past year. As customary the Office provided the full range of services needed for facilitating the work of the Committee and, when requested, provided assistance in matters of substance and guidance on organizational questions.

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

During the past year the Office continued to discharge the responsibilities of the Secretary-General

under the United Nations treaties on outer space. With regard to the United Nations Register on Objects Launched into Outer Space, maintained by the Office, in the past year Algeria, China, France, Germany, Italy, Japan, Sweden, Malaysia, Republic of Korea, the Russian Federation, the United Kingdom of Great Britain and Northern Ireland and the United States of America, furnished information on their space objects under the Registration Convention and the resolution 1721B. The Office would like to note that several documents are presently being processed through the UN editorial and translation system and will be made available through the Office website in all official languages soon. The Office will continue to proactively work with member States and intergovernmental organizations to support the registration of space objects.

With regard to implementing the other obligations of the Secretary-General, the Office is pleased to inform delegations that it has received and disseminated information provided by member States under article XI of the Outer Space Treaty as well as article V of the Rescue Agreement. This information relates to recovered space objects as well as information on space objects presently in orbit and has been disseminated to member States under the A/AC.105 series. To effectively fulfil these obligations the Office continuously monitors launches and decays of space objects and we maintain a 24/7 hotline to respond to queries on re-entry of space objects.

Other actions undertaken by the Office under the treaties, include the monitoring of launches and decays of space objects, the maintenance of a 24/7 hotline to respond to queries on re-entry of space objects and serving as the United Nations focal point on re-entry of nuclear powered space objects.

Mr. Chairman, the Office conducts activities that specifically aim at promoting greater understanding, acceptance and implementation of the international regime on outer space. The two main activities being undertaken currently is the annual workshop on space law and the preparation of a basic course on space law. Last year the Office organized, jointly with the Government of Thailand, the Geo-Informatics and Space Technology Development Agency, the European Space Agency and the Asia-Pacific Space Cooperation Organization (APSCO), the workshop on space entitled ‘Meeting international responsibilities and establishing national, legal and policy frameworks’. The workshop was held in Bangkok from 16-19 November. The proceedings of that workshop were distributed at the recent fiftieth session of the Legal Subcommittee and are made available on the website of the Office.

Mr. Chairman, distinguished delegates. Enhancing use of space science and technology and the applications is one of the priorities of the Office’s programme on space applications. Currently the main thematic areas of the programme include natural resource management and environmental monitoring, global health, basic space technology and space science, climate change and space weather. In response to emerging needs the programme launched two new initiatives. The Basic Space Technology Initiative, known as BSTI, is aimed at supporting member States build their capacity in basic space technology. The Human Space Technology Initiative, known as HSTI, aims at enhancing the participation of developing countries in scientific activities at the International Space Station and in micro-gravity conditions. More details on these new areas of work and related activities planned by the programme will be provided to you by the expert on space applications in his statement to the Committee.

With regard to regional coordination mechanisms, I am pleased to inform you on the support the Office has provided to the efforts being undertaken in the preparatory work for the sixth Space Conference of the Americas, we are providing financial support for the convening of the meetings organized by the Pro Tempore Secretariat from 2006 to 2010.

This year, the Office activity supports the fourth African Leadership Conference on Space Science and Technology for Sustainable Development which is going to be held in September this year in Kenya. In conjunction with the conference, the Office is organizing a side event focusing on basic space technology and another side event on space law and policy.

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

Mr. Chairman, distinguished delegates. I would now like to report on our priorities in securing global _____(?) through space science and technology and tell you about our activities in 2010 and our plans for 2011. With a focus on establishing interoperability among the global systems and enhancement of the performance of GNSS services as well as compatibility in terms of reference frames and timing, the International Committee of GNSS (ICG) met in Turin, Italy, from 18-22 October 2010 under the chairmanship

of Italy and the European Commission on behalf of the European Union. ICG has accepted the invitation of Japan to host its sixth meeting in Tokyo from 5-9 September 2011 and ICG noted the expression of interest by China to host the seventh meeting of ICG in 2012. The Office, as the Executive Secretariat of ICG and its Providers Forum, will assist in the preparation of these meetings, interim planning meetings and working group activities. The Office is also developing our own programme on GNSS applications focusing on deploying instruments for the International Space Weather Initiative and developing a GNSS curriculum to be integrated into the educational programmes of the Regional Centres for Space Science and Technology Education affiliated to the United Nations.

Also within the context of global public goods, the implementation of the UN SPIDER programme is progressing and on track. In the first five months of this year we have been busy with the activities included in the 2010-2011 plan of work which include building up the information contained in the UN SPIDER knowledge portal, the technical advisory support being provided to requesting countries including recent technical advisory missions to Guatemala and Sudan and the support provided to several emergency events.

Next Monday, we will be having a UN SPIDER donors meeting which I hope all member States committed to the programme will join. The UN SPIDER programme, as you know, is being funded mainly from extrabudgetary resources, both financial and in-kind, and we are particularly grateful to Austria, China, Germany and Turkey, for the commitment and financial support demonstrated to the programme up to now. We do need however to seek the extension of these commitments as well as contributions from additional member States as it is a concern that the specific request that the Office recently sent to all 192 member States for funding support for the implementation of the proposed 2012-2013 plan of work has so far not been answered favourably by any member State. Also, a similar request we sent last year for commitments to UN SPIDER did not bring in the expected resources. If indeed adequate financial support for the UN SPIDER programme does not materialize we will be forced to propose a reduced plan of work for 2012-2013 and also consider a re-prioritizing of the work of the existing UN SPIDER offices taking into consideration the extent of the funds actually made available to the programme and also the increasing role on the UN SPIDER regional support offices. This will be further discussed during our proposed donors meeting next Monday.

Finally, I am pleased to inform you about the successful inauguration in 2010 of the UN SPIDER office in Beijing which is now operational and actively involved in specific UN SPIDER activities including technical advisory support to requesting governments.

Mr. Chairman, distinguished delegates. The Office continues to coordinate and enhance interagency cooperation in space related activities within the UN system by organizing and serving as a secretariat of the UN Interagency Meeting on Outer Space Activities which is the primary coordination mechanism of the UN system to achieve better cooperation in space related activities. The thirty-first session of the Interagency Meeting was held in Geneva from 16-19 March 2011 and was organized by the Office jointly with the United Nations High Commissioner for Refugees. The Committee will be briefed in detail later during the session.

With respect to increasing public awareness of the benefits of space the Office continues to conduct activities for the general public and young people. On the occasion of the fiftieth anniversary of the Committee and the fiftieth anniversary of the first human space flight, the Committee's Services and Research Section is taking the lead in organizing a number of events in accordance with a request made by the Committee in 2010. The Office has already communicated to member States the detailed outline of these events.

From 1 June to 1 July the Vienna International Centre, as you know, will host the Human Space Flight Exhibition. The Office, in cooperation with the Austrian Government and the city of Vienna, organized a panel with the participation of astronauts and cosmonauts yesterday evening which was open to the general public, students and the media, and I am pleased to report that the event was very well attended. Also, as you know, during the session of this Committee the Office is promoting space food in cooperation with the Vienna International Centre Catering Service. With the assistance of national space agencies, the Office has collected samples of space food, their packaging and space food menus. From 1-10 June the Catering Service is offering dishes based on the recipes found in these menus.

In keeping with the United Nations past practice the Office in collaboration with the United Nations Postal Administration has produced a special commemorative space stamp issue.

Mr. Chairman, distinguished delegates. As you are aware, the proposed strategic framework of the

programme on the peaceful uses of outer space for the period 2012-2013 has been approved by the fiftieth session of the Committee on Programme and Coordination held in June 2010 and this was endorsed by the General Assembly in its resolution in December 2010. A copy of the programme's proposed strategic framework has already been made available to member States of COPUOS.

The strategic framework constituted the basis for the Office proposed regular budget submission for 2012-2013 biennium. In this context, I would like to inform you that the Office was allowed to present a budget of just over $US 8 million to the ACABQ recently. Although this amount includes a marginal increase to cover basic operational overheads OOSA did not succeed, despite a concerted effort, in obtaining the resources required to increase our staff members which would have provided relief in respect to the workloads of our staff and enable the Office to more actively pursue a robust programme. The Office will nevertheless continue to work together with delegations to find a means to strengthen the programme to implement its full range of activities. The Office counts on the support of the Committee in efforts in the future to increase our regular budget resources.

Consequently, as the Office regular budget amount remains at the modest level of $US 8 million, the voluntary cash and in-kind contributions continue to be a critical component for the successful implementation of the Office programme of work as it represents two-thirds of the overall cost of our capacity building and development activities. Since the fifty-third session of the Committee, Austria, China, Germany, Italy, Japan, Turkey, and the United States of America, as well as the European Space Agency and the International Astronautical Federation, provided cash and in-kind contributions, including in the form of services of associate experts and senior experts. The Office also benefited from the in-kind contributions received from the governments and other partners that hosted and/or co-organized activities with the Office, including Argentina, Austria, Bolivia, Czech Republic, Egypt, Ethiopia, Germany, Thailand, Turkey, the United Arab Emirates, the Environmental Systems Research Institute (ESRI) and Secure World Foundation. I would like to take this opportunity to thank all the governments and institutions which provided support to OOSA's activities.

I would now like to turn to our human resources. Clearly the Office's ability to deliver on its goals depends on the expertise and experience of its staff and I am pleased to review the Office staff movements in the past year. The developments of the Committee's Services and Research Section are particularly notable in this regard. In November 2010, the Office welcomed back Ms. Romana Kofler from Slovenia who had been on maternity leave since the Autumn of 2008. In the meantime, Ms. Natercia Rodrigues of South Africa left the Section for maternity leave in late December 2010. Her daughter was born on 22 January 2011 and we wish them well. Further, Mr. Jamshid Gaziyev of Uzbekistan moved to the Office of the High Commissioner for Human Rights in Geneva in December 2010, we wish him all the best. Ms. Sama Payman of Australia is still seconded to the Office of the Director-General of UNOV. Mr. Shirish Ravan of India left Vienna in late January 2011 to head the UN-SPIDER Office in Beijing, China. Mr. Enes Koytak, a senior expert on non-reimbursable loan from Turkey, joined the UN SPIDER Bonn Office in October 2010. The Office would like to express its appreciation to the Government of Turkey for making him available.

Finally, the HTSI received two new staff members on the basis of non-reimbursable loans from the governments of China and Japan. Ms. Mika Ochiai of Japan joined OOSA on 2 May 2011 and Mr. Niu Aimin of China, joined OOSA on 23 May 2011.

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

The CHAIRMAN I thank the Director of the Office for Outer Space Affairs for her informative statement.

Ways and means of maintaining outer space for peaceful purposes (agenda item 5)

Distinguished delegates, I would now like to begin our consideration of agenda item 5, ways and means of maintaining outer space for peaceful purposes.

The first speaker on my list is the distinguished representative of Italy.

Ms. G. ARRIGO (Italy) Thank you Mr. Chairman. This year Italy celebrates the anniversary of 150 years of its unity. Yesterday, our national day, many heads of States and governments,

including the UN General Secretary, have been invited by the Italian President of the Republic to Italy to celebrate this special event. We have celebrated this anniversary also in outer space. In fact this year, one of the three multi-purpose pressured models, realized by Italy for the ISS, Leonardo, reached definitively the ISS to _____(?) for scientific and storage tasks. From last 19 to 23 May two Italian astronauts, Paulo Nespoli and Roberto Vittori, of the European Astronaut Corps, worked together on board the ISS and, during the in-flight call with the Italian President of the Republic, opened and showed the Italian flag to celebrate the Republic.

At the same time both commanders of the two crews on board the ISS, Mr. Dmitri Kondratyev of the TM-20 mission and Mr. Mark Kelly of the STS-134 mission, on behalf of all crew members and on behalf of the US and Russian space communities, addressed messages of congratulations and _____(?) partnership with Italy.

Mr. Chairman, maintaining outer space for peaceful purposes means for us to operate for expanding space knowledge and to cooperate with scientific and exploration activities through human presence, _____(?) technology and spin-off in the benefit of populations, countries and sustainable development.

In this framework, please allow me to mention the last Italian experiment carried out on board the ISS with the STS-134 mission _____(?) to our astronaut Roberto Vittori, the anti-matter spectrometer international project devoted to the high energy study of cosmic rays. On this project we will make a specific presentation next week. Another eight experiments operated in a micro-gravity environment dedicated to the impact of weightlessness on the human body. You can see all the details of the experiment on ASI and ESA websites.

Mr. Chairman. Italy, as an ESA member State, strongly promotes regional and interregional cooperation with national and international partners through scientific and application _____(?), integrated operation and services, educational programmes, studies and research on space related issues.

Finally, Mr. Chairman, to ensure ways and means for maintaining outer space for peaceful purposes, we are deeply engaged to develop and progress outer space concepts and principles for the long term sustainability of space activities for the benefit of future generations and all humankind. Thank you Mr. Chairman.

The CHAIRMAN I thank the distinguished representative of Italy for her statement.

Are there any other delegations wishing to speak under this agenda item at this morning's session?

We will therefore continue and hopefully conclude our consideration of agenda item 5, ways and means of maintaining outer space for peaceful purposes, this afternoon.

I urge delegates wishing to make a statement to sign their name with the Secretariat.

Report of the Legal Subcommittee on its fiftieth session (agenda item 8)

Distinguished delegates, I would now like to begin our consideration of agenda item 8, report of the Legal Subcommittee at its fiftieth session.

The first speaker on my list is the distinguished representative of GRULAC, Ambassador Padilla de León.

Mr. F. PADILLA DE LEÓN (Colombia, on behalf of GRULAC) (*interpretation from Spanish*) GRULAC would like to thank the Secretariat for preparing the Subcommittee report and would like to reaffirm our conviction that the United Nations treaties and principles pertaining to the use of outer space contribute to the creation of a legal framework for the development of space activities. Having said that, we believe that the swift and growing advancement of scientific knowledge and space activities call for creating an adequate legal framework that would guarantee peaceful uses of outer space. In this regard, GRULAC considers it necessary to review, update and modify existing United Nations treaties on outer space with a view to strengthening the guiding principles, establishing the responsibility of governmental organizations and non-governmental entities in this area and strengthening the security and safety of space environment.

Mr. Chairman, with regard to the issue of the nature and utilization of the geostationary orbit, GRULAC would like to reiterate its position in that this limited natural resource is at risk of saturation and therefore we believe that its use must be made rational and accessible to all States giving them the possibility of access to the geostationary orbit on the basis of equitable terms particularly taking into the account the needs and interests of developing countries and the specific geographic situation of some countries in conformity with the principles established in the

normative documents of ITU and the various other norms and decisions of the United Nations.

In view of this possibility and to ensure the sustainability of the geostationary orbit, GRULAC believes it is necessary to make sure that the review of this item be maintained on the agenda of the subcommittee and this Committee in the interState framework through creating working groups or intergovernmental panels as necessary.

In regard to the review and possible revision of the principles governing the use of nuclear power sources in outer space GRULAC, in the spirit of profound respect for international norms, believes that the regulatory work associated with the use of nuclear power sources in outer space is exclusively the province of States regardless of their level of their social, economic, scientific or technical development and it concerns all of humankind. We reiterate our conviction that governments bear international responsibility for national activities that might involve the use of nuclear power sources in outer space whether or not these activities are carried out by governments or non-governmental entities and the importance of making sure that all this work is done for the benefit of nations and not to harm them.

On this basis and in compliance with the safety framework regarding the use of nuclear power sources in outer space, approved by COPUOS in its fifty-second session, GRULAC calls on this Committee to carry out an appropriate legal analysis and to promote binding norms with a view to making sure that all activities performed in outer space be guided by the principle of the preservation of human life and peace. In particular it is necessary to give greater attention to legal issues pertaining to satellite platforms with nuclear power sources in the terrestrial orbit to make sure that their use in the Earth's orbit be prevented in view of the reported accidents, failures and the possibility of collisions that pose a grave risk to humanity.

Mr. Chairman. The swift progress in space activities and the increase in the number of actors involved could create unpredictable effects for the sustainability of space activities. Issues such as space debris mitigation or the use of nuclear power sources in outer space, among others, are already being tackled in their technical dimensions but this needs to go hand-in-hand with an adequate legal framework. In this context, the Group is of the opinion that coordination and synergies between the Scientific and Technical Subcommittee and the Legal Subcommittee must be further strengthened. This would make it possible to promote greater understanding, acceptance and real application of the existing legal instruments of the United Nations and the development of international norms and standards that would provide an effective legal mechanism to strengthen the responsibility of States in these areas. Member States of GRULAC are convinced of the potential and importance of space activities and therefore GRULAC is of the opinion that all fora which consider issues pertaining to space activities should be strengthened with a view to making sure that there are sufficient frameworks to consider the concerns and anxieties of all States and that these are considered on the basis of equality.

Furthermore, due to the growing possibility of access to outer space by various actors and the benefits that can be derived from such activities, it is of interest to GRULAC to continue developing a legal framework that would provide transparency, predictability and certainty in pursuing space activities. In this regard, GRULAC would like to express its interest in strengthening the work of the Legal Subcommittee of COPUOS with a view to providing an additional impulse to the progressive development of international outer space law and its codification.

In this regard and with reference to the discussion on the criteria for streamlining the work of the Legal Subcommittee, GRULAC believes that the current duration of two weeks should be maintained to make sure that adequate attention is given to future aspects of the legal framework for space activities and to include on the agenda of the Legal Subcommittee work on pending issues that require legal attention, such as the definition and delimitation of outer space, the status and application of the five United Nations treaties on outer space, the consideration of the legal aspects of the guidelines for space debris mitigation, and other important topics. Thank you very much Mr. Chairman.

The CHAIRMAN I thank His Excellency distinguished Ambassador Padilla de León of Colombia for your statement on behalf of GRULAC.

Now, on behalf of the Group of 77, the distinguished representative of Venezuela.

Mr. M. CASTILLO (Venezuela, on behalf of the Group of 77 and China) Thank you Mr. Chairman. I will deliver this statement on behalf of Ambassador Ali Soltanieh of the Islamic Republic of Iran due to his engagements in other multilateral meetings.

The Group of 77 and China would like to thank the Secretariat for the preparations of this agenda

item and would also like to share its views with the Committee.

Since the establishment of COPUOS 50 years ago, space activities and technology have developed tremendously and are becoming more complex. While many achievements have been reached many issues remain to be addressed in the legal framework of space activities. Despite lengthy debates, no consensus to date has been reached on the subject of the definition and delimitation of outer space. The Group of G77 and China is of the view that an agreement on this matter will help to address legal clarity in the implementation of outer space law and airspace law. The Group encourages the Committee to reinvigorate its efforts on this issue and stands ready to continue participating constructively in substantive discussions.

The Group of 77 and China would also like to convey its appreciation to the Chairman of the Working Group on Definition and Delimitation of Outer Space, Mr. José Monserrat Filho of Brazil, for the work that he has done in facilitating discussions in order to reach consensus among member States on this issue.

The Group of G77 and China considers that more effective and proactive efforts are needed in order to increase awareness on the importance of space law and the legal framework in carrying out space activities and programmes. Capacity building in space law, in particular in developing countries, needs to be enhanced through international cooperation. Therefore the Group of 77 and China calls for greater support by OOSA and member States to enhance cooperation of both North-South and South-South to facilitate the sharing of knowledge related to space law among nations.

The Group of 77 and China also calls upon OOSA and member States to make available more opportunities for greater academic linkages, long term fellowships and further collaboration with universities, UN centres of research and other national and international institutions on space law with institutions in developing countries.

The Group would like to highlight the activities organized by the Office for Outer Space Affairs in cooperation with host countries aimed at enhancing the capacity building in space law and regional and international cooperation in the peaceful uses of outer space. The work carried out by UNOOSA with space law educators and representatives of the regional centres for space science and technology education, affiliated to the United Nations, should further focus on the development of the curriculum on space law.

Mr. Chairman. The geostationary orbit is a limited resource which has great potential for the implementation of a wide array of programmes to benefit our countries. The Group of 77 and China is concerned by the risk of saturation that threatens the sustainability of space activities in this environment. The utilization of this orbit spectrum must be rationalized and extended to all States in conditions of equality taking into account the needs and interests of developing countries and the geographical location of certain countries in compliance with the established principles in the normative framework and the decisions made by both ITU and other relevant bodies of the UN system giving priority to the contributions of space activities to sustainable development and the achievement of the Millennium Development Goals.

The Group of 77 and China would like to refer to the use of nuclear power sources in outer space, specifically in the geostationary orbit and low-Earth atmosphere. More consideration should be given to this issue in order to address the problem of potential collisions of nuclear powered space objects in orbit and the incidents or emergencies that may be caused by an accidental reentry in the Earth's atmosphere and impact on its surface and their consequences on health and life of people and the ecosystem.

The Group considers that increased attention should be given to these issues through adequate strategies, long term planning and regulations, including the Safety Framework for Nuclear Power Sources Applications in Outer Space.

Regarding space debris, the Group is of the view that the future of space activities largely depends on its mitigation. This topic should continue to be treated as a priority with the view to further increase research in the areas of technology for space debris observation, space debris environmental modelling and technologies to protect space systems from space debris and to limit the creation of additional space debris.

The Group considers appropriate for the Legal Subcommittee to discuss matters related to space debris and to make a positive contribution for its effective mitigation. In this sense, the mitigation efforts should not lead to the adoption of overly high standards or thresholds harmful to the enhancement of capacity building of developing countries.

The Group is of the view that the Space Debris Mitigation Guidelines is of the utmost importance. Further studies and research should be carried out in order to improve them and also to keep the Guidelines up to date with new techniques and capabilities of detection and reduction of space debris, in accordance to the resolution 62/217 of the General Assembly. Thank you Mr. Chairman.

The CHAIRMAN I thank the distinguished representative of Venezuela on behalf of the Group of 77 and China for his statement.

The next speaker on my list is the distinguished Professor Kopal representing the Czech Republic.

Mr. V. KOPAL (Czech Republic) Mr. Chairman, on behalf of the delegation of the Czech Republic I would like to make some comments on agenda item 8, report of the Legal Subcommittee on its fiftieth session which was very ably chaired by the distinguished representative of Iran and the Director of the _____(?).

Prior to it, let me extend our full satisfaction at seeing you this year again in the Chair of this Committee, we wish you full success in guiding its dealings during its anniversary session. Our warm greetings are also addressed to the Director of OOSA, Dr. Mazlan Othman, the Secretary of the Committee, Dr. Niklas Hedman and the OOSA staff members who assist the session and all who participated in its preparation.

Mr. Chairman, we are aware that the United Nations General Assembly reaffirmed in its resolution 65/97 of 10 December 2010 ‘the importance of international cooperation in developing the rule of law including the relevant norms of space law and their important role in international cooperation for the exploration and use of outer space for peaceful purposes’. This idea has also sounded in the declaration that was unanimously adopted at the commemorative segment of this session of the Committee. For these reasons, the Czech Republic has for years supported the establishment and strengthening of the legal basis for space activities. Our delegation is ready to cooperate _____(?) for widening the rule of law in, and concerning, outer space. During the recent years we have particularly watched the discussions that developed in three working groups of the Legal Subcommittee.

Firstly, it has been the working group on the agenda item, status and application of the five United Nations treaties on outer space, which was successfully, originally, headed by the distinguished representative of Greece, Dr. Vasili Cassapoglou and, during the last two years in his absence, by the distinguished representative of Belgium, Dr. Jean Francois Mayence. We particularly appreciate the providing of a set of specific questions as a basis for continued discussion in the working group. This valuable document specifies a number of issues relating to the 1979 Moon Agreement which has been outlined in A/AC.105/C.2/L.272 jointly elaborated by seven States Parties to the Moon Agreement. The chairman’s questionnaire also outlines a number of other questions which deserve a thorough exchange of views and answers.

Secondly, the working group on the definition and delimitation of outer space, acting under the very able guidance of Professor José Monserrat Filho of Brazil, further development its consideration of an old problem with due regard to the present condition. In this respect the symposium, organized by the IISSL and ECSL at the beginning of the Subcommittee’s session, offered several thoughts to be considered in further discussions. The plan of the chairman to present to the Legal Subcommittee at its next session a proposal on possible ways of finding a solution to this issue should be welcomed and his efforts in this respect fully supported.

The third working group that on national legislation relevant to the peaceful exploration and use of outer space, which has acted under the very able guidance of Professor Irmgard Marboe of Austria, is about to harness the fruit of its discussions lasting several years. During the fiftieth session of the Legal Subcommittee, the working group conducted a review of the draft report prepared by its chairperson in consultation with the Secretariat and suggested a number of improvements to be implemented in the final text of the report. The schematic overview of a national regulatory framework for the space activities and a set of elements were considered at the working group too. This document, CRP.9, will certainly be useful particularly for those States which are enacting their national space legislation and intend to start such endeavour in the next future.

The delegation of the Czech Republic shares the recommendation of the working group that its mandate be extended for another year in order to fully accomplish its task. This extension would also enable it to discuss the development of recommendations to be derived from the multi-year efforts in this field and the framework thereof. In the opinion of our delegation, the elaboration of a draft resolution for the United

Nations General Assembly, along the lines of the 2004 resolution on application of the concept of the launching State and the 2007 resolution on enhancing the practice in registering space objects, would be the best solution.

Mr. Chairman, I would now like to mention one more issue that was discussed at the fiftieth session of the Legal Subcommittee. My country has been a long time supporter of the consideration of the item space debris, in COPUOS and both its subcommittees. Therefore our delegation actively participated in the development of the COPUOS Space Debris Mitigation Guidelines by the Scientific and Technical Subcommittee. However, though the Guidelines became an important step in the struggle for the mitigation of space debris, it is not possible to neglect that they remain only advisory technical standards to be implemented by States and international organizations on a voluntary basis through their own space debris mitigation practices and procedures. As explicitly stated in section 3 the Guidelines are not legally binding under international law thus they do not establish any legal duty to comply with them and their violation would not generate any legal responsibility and liability in the case of damage caused by such a misconduct.

For these reasons the delegation of the Czech Republic extended in 2011 a working paper on review of the legal aspects of the Space Debris Mitigation Guidelines of COPUOS with a view to transforming the Guidelines into a set of principles to be adopted not only by COPUOS but by the General Assembly. Thus the COPUOS Guidelines would be enacted in a special resolution of the United Nations General Assembly which would belong to the series of UN principles relating to outer space activities that were adopted during the 1980s and 1990s. In the light of the long time practice of the United Nations, a set of principles developed by the Legal Subcommittee in close cooperation with the Scientific and Technical Subcommittee, endorsed by the Committee and adopted by the United Nations General Assembly, would become a satisfactory form of an international instrument on space debris for the present time and the near future. The work of the set of UN principles relevant to space debris could become a new substantive item on the agenda of the Legal Subcommittee since it would be discussed during several years under a workplan its consideration might well be coordinated with the continuing efforts of the Scientific and Technical Subcommittee in this field.

Our delegation sincerely hopes that the discussion on the inclusion of this new item on the space debris in the agenda of the Legal Subcommittee will continue at its fifty-first session in 2012. Thank you Mr. Chairman and delegations for your kind attention.

The CHAIRMAN I thank the distinguished representative of the Czech Republic for his statement.

Distinguished delegates, we will continue and hopefully conclude our consideration of agenda item 8, report of the Legal Subcommittee at its fiftieth session, this afternoon. I urge delegates wishing to make a statement to sign their name with the Secretariat.

Distinguished delegates I would now like to proceed with the technical presentations. Presenters are kindly reminded that technical presentations should be limited to 20 minutes in length.

The first presentation on my list is by Mr. Leland Melvin of the United States entitled ‘Space and education’.

[Technical presentation]

The CHAIRMAN I thank you Mr. Melvin for your inspiring presentation.

Is there any delegate who has questions for the presenter?

Mr. J. MONTSERRAT FILHO (Brazil) (*interpretation from Spanish*) Thank you Chairman. I was greatly interested in the presentation from our colleague from NASA, Mr. Melvin, and a question as I was watching sprung to mind, it is an important issue, it is an issue that we have been grappling with for a long time in my country and I am sure in other Latin American countries as well. The question is this.

How can we try to get more children interested in studying mathematics? Many people still see mathematics as the great bogey man and yet it is one of the essential pass keys to get into the kinds of areas of study that we would need. For most children this is a huge obstacle. We have been told that we have a deficit of specialists in mathematics in Latin America because young people are no longer interested in studying the mysteries of mathematics. So every time we talk about space education we should not forget the importance of mathematics as a first step. So, I would like to know what the people in the education branch of NASA have been thinking about doing for this.

The CHAIRMAN I thank the distinguished representative of Brazil for your question. Mr. Melvin would you like to answer the question?

Mr. L. MELVIN (NASA) One of the things when we talk about science and technology in engineering we talk about STEM and the last letter of STEM is mathematics. Mathematics is looked at by children as being very abstract, it does not make sense to them because there is no connection to something tangible that you would need mathematics for. One of things that we are trying to do at NASA is to make the connection between the abstractness of mathematics and how it applies to space. So if you go to the NASA website, nasa.gov/education, we have books and curriculum that help kids make the connection for, what is algebra, what is calculus, what do these things mean to you working and flying in space?

One of the biggest problems that we have in all countries is that sometimes the grade school teachers do not truly understand how to give the applications of the mathematics. They may understand just one method for teaching it instead of maybe the two or three methods needed because a student does not always understand that one method. Using our subject matter, experts and our mathematicians and our scientists to help teachers have more tools to use to help explain or even skyping into a classroom when they are starting a subject of mathematics would allow them to see the connections that math has to space. One of my colleagues, Dr. Neil deGrasse Tyson, mentioned that you do not have to be a mathematician but if you know math it helps you unlock mysteries and helps you be creative and understand how to think. The most important thing that we need to do is to make that connection from the abstract to the application of math and that is one of the things we are doing with some of the resources on the NASA webpage.

The CHAIRMAN Thank you Mr. Melvin.

There is one more question from the distinguished representative of Greece. Distinguished representative of Greece you have three minutes to address specific questions to Mr. Melvin.

Mr. V. CASSAPOGLOU (Greece) First of all to congratulate and express my satisfaction in hearing from an educator from NASA, an astronaut, how we have not just to educate but to see .. what we say and that is a Greek term, the pedagogic approach of space activities. I am happy because it is the first time that we knew this aspect of NASA activities. I remember some 10 years, 15 years ago, CNES is the first who published in _____(?), a small booklet for the children of the elementary schools. Through this education it is possible to pass the message for the peaceful uses and I hope in the next year to add to the NASA slogan not only for exploration but also of the uses. I have to remember again the wise decision of Eisenhower to take from the military space activities and create NASA. Also I have to underline that Japan, some years ago, created within the Japanese space agency the educational branch to which belongs also our colleague from many years ago, _____(?). If this pedagogic message comes out as the outcome of space activity it is good for humanity and I would like, through your _____(?) to thank our colleague and the US but also humanity astronaut for his introduction and his very nice presentation. Thank you.

The CHAIRMAN Thank you distinguished representative of Greece for your very valuable comment.

Now we go to the second presentation, Mr. Fermín Romero Vázquez of Mexico will make a presentation on ‘Mexican Space Agency’.

[Technical presentation]

The CHAIRMAN Thank you Mr. Romero Vázquez for your presentation.

I would like now to inform delegates of our schedule of work for this afternoon. We will reconvene promptly at 3 p.m. At that time we will continue and hopefully conclude our consideration of agenda item 4, general exchange of views, agenda item 5, ways and means of maintaining outer space for peaceful purposes and item 8, report of the Legal Subcommittee at its fiftieth session.

Following the plenary there will be three technical presentations. The first by a representative of Switzerland; the second by a representative of the Russian Federation; and the third by observers of the World Space Week Association. In the evening there will be a reception hosted by Asia-Pacific Space Cooperation Organization (APSCO) at 6 p.m. at the VIC Restaurant. There will also be a reception hosted by the Russian Federation at 7 p.m. at the permanent mission of the Russian Federation.

Are there any questions or comments on this proposed schedule? I see none.

I would now like to adjourn this meeting and let the Secretariat briefly inform you about Conference Room Paper 9. Immediately thereafter, all delegates are cordially invited to the special Malaysian space

food tasting in the VIC Rotunda with the guest presence of Malaysian astronaut Sheikh Muszaphar Shukor.

At 2 p.m. in this conference room M1 we will have the special panel discussion on cooperation between COPUOS and the IAF, moderated by Mr. Gerard Brachet.

This meeting is adjourned until 3 p.m.

Mr. N. HEDMAN (Secretariat) This is not going to be interpreted and I know that we all want to go and join the Malaysian astronaut for space food tasting so I will be very brief.

There is no time to have informal consultations on this particular document, CRP.9. I will briefly introduce the document and then I hope delegations will consider the document during the weekend and provide me with concrete comments of any text that delegations may wish to have deleted or inserted or any amendments during Monday so that next week on Tuesday, hopefully Mr. Chairman, we can proceed by endorsing this document as a whole.

Distinguished delegates, the first version of this document was prepared for the Scientific and Technical Subcommittee earlier this year and we had a very fruitful discussion in the Working Group of the Whole of the Scientific and Technical Subcommittee and there were proposals by several member States to align this document closer with, what is COPUOS, the role of the Committee on the Peaceful Uses of Outer Space. That is why the Secretariat introduced a new section on governance of international cooperation in the peaceful uses of outer space.

The updated document was then prepared and presented for the Legal Subcommittee and delegations were asked to provide comments to the Secretariat. The Secretariat did not receive any comments from any delegation during that particular session of the Legal Subcommittee.

The Secretariat has been very careful in drafting the section 5, the last section on recommendations, and delegations will see that paragraph 49 of CRP.9 that I am referring to is identical with the recommendations in the report on international cooperation in promoting the use of space derived geospatial data for sustainable development contained in A/AC.105/973 which has been distributed to all delegations during this session and that document is the final outcome, the final report of the Committee after its conclusion of the particular agenda item that we concluded last year on space derived geospatial data for sustainable development.

Distinguished delegates, this document CRP.9 is an attempt by the Committee as a whole to demonstrate to the conference, a complete different body, a conference that is dealing with the global sustainable development agenda and in particular I am referring, as we all know, to the conference to be held in Rio de Janeiro in 2012, Rio+20, which is a 20-year review of the first sustainable development conference held in Rio in 2000.

So this is an account by the Committee to inform about what overall role does the Committee have. It also, as you can see, makes reference to the regulatory framework of outer space activities.

In section 3, there is a more conceptual explanation on the UNISPACE III conference in particular the review of the recommendations of UNISPACE III, the UNISPACE III+5 process as delegations remember. Also, what this particular Committee has done to contribute to the multi-year work of the Commission on Sustainable Development. Thereafter we have collected and combined the issues of particular harnessing the space derived geospatial data for sustainable development. Section 4A, more general on the benefits of space-based data and, under B, capturing the overall institutional framework. Then in the last section 5, we put forward the same recommendations as have been done through the working group on this particular topic of space derived geospatial data for sustainable development.

This document, if endorsed by the Committee next week, will be prepared in all six languages as edited and translated and it will be transmitted to the Secretariat of the United Nations Conference on Sustainable Development which is hosted by the Sustainable Development Division in New York and the document will be placed on the website of the UNCSD conference.

I would also like to inform delegations that, in parallel to this particular document that would be the contribution of the Committee, the Secretariat of OOSA is working closely with UNGIWG, the UN Geographic Information Working Group and that working group is explained in this document and we have also previously informed delegations of the existence of this working group. The working group is also referred to in the final report from the item of COPUOS last year.

We are working closely with other UN entities under this framework. A task group has been established for this particular aim to provide a secretariat account as an input to the Secretariat general document for the conference in 2012, the Rio+20 conference.

I thought that it was important to inform delegations that there are two accounts, it would be COPUOS contribution if endorsed and there will be in parallel a secretariat account through our interagency mechanism I explained.

Distinguished delegates I want to close here so we can go and have space food but I would like to encourage you all, if you have any concrete suggestions for this document, anything you would like to amend or change please provide that to the Secretariat, you can approach me during Monday. Thank you Mr. Chairman, that is all.

The CHAIRMAN Thank you. Bon appétit!

The meeting closed at 1.08 p.m.