United Nations COPUOS/T.616

Committee on the Peaceful Uses of Outer Space

Unedited transcript

616th Meeting
Thursday, 10 June 2010, 3 p.m.
Vienna

Chairman: Mr. Dumitru Dorin Prunariu (Romania)

The meeting was called to order at 3.16 p.m.

The CHAIRMAN: Good afternoon distinguished delegates. I now declare open the 616th meeting of the United Nations Committee on the Peaceful Uses of Outer Space.

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

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

At this point, I would urge delegations to inscribe their names on the list of speakers as soon as possible.

The advanced information of the statements to be made by delegations will greatly facilitate organizational aspects of the meetings.

Following the plenary, there will be four technical presentation by the representatives of the United States, CSIC, entitled "Space Initiatives at the Centre for Strategic and International Studies, by the representative of Italy entitled "Italian Masters in Space Policy and Institutions", by the International Academy of Astronautics entitled "Proposing a New Radio-Quiet Zone on the Far Side of the Moon", and by the observer of Tunisia entitled "Space Activities of the National Mapping and Remote Detection Centre".

I kindly urge delegates who intend to make technical presentations to submit them to our Conference Officers at least one day in advance so that they can test them and upload them onto a Conference computer.

General exchange of views (agenda item 5)

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

(Continued in French) It gives me great pleasure to call on the Ambassador of France, Ms. Florence Mangin.

Ms. F. MANGIN (France) *(interpretation from French)*: Thank you Mr. Chairperson. May I first and foremost congratulate you on your election to preside over this Committee. France is sincerely pleased to see you place your vast experience and direct knowledge of the space area as a former cosmonaut and Director of the Romanian Space Agency at the service of this Committee during two years. Please remain assured of the fullest cooperation of my delegation to make a contribution to the work of the Committee in a spirit that should always be constructive and open-minded.

I would furthermore wish to salute the activities of the outgoing Chairperson, Mr. Arévalo Yepes, and particularly his ambitious proposals in terms of the activities of this Committee that will be before the present session of the Committee.

V.10-54525 (E)

Finally, France welcomes the candidature of Tunisia to this Committee and fully supports this.

Mr. Chairperson, ladies and gentlemen, France welcomes the outcome of the forty-seventh Scientific and Technical Subcommittee and the forty-ninth Subcommittee. Our Committee will have made a contribution yet again this year to ensure progress in international cooperation and space law.

I would like to mention most particularly the deliberations of the Group on National Legislations and the adoption of a five-year programme of work on the use of nuclear power sources in space as this will enable the Committee to promote the implementation of the Safety Framework that was adopted in 2009 and to measure it up against most recent technological evolutions.

We, of course, welcome these success stories but should not forget that there are major challenges lying before us.

The first of these challenges is that of ensuring long-term viability of space activities, failing which all activities of this Committee will no have reason of being.

The continuing increase of the number of objects launched into space which, of course, is a sign of a very positive development in terms of space activities and the arrival of newcomers, be they public or private, goes hand-in-hand today with the secondary impact thereof such as proliferation of space debris and a growing risk of collision or interference. Unless we take action in the years to come, space may eventually no longer be used while human activities are, in fact, ever more heavily reliant on space applications. This is, therefore, a truly overwhelming set of stakes in terms of economic growth and development. We must prevent a degradation of the conditions that apply to the use of space if we wish to extend to as many as possible space applications and their benefit, in particular in developing countries and preserve access for future generations to space, thereby developing our understanding of that environment. To do this, our response must be joint.

In that regard, France welcomes the creation of a Working Group that will give its attention to the viability of space activities from the long-term view and the election of Mr. Peter Martinez to head this. France hopes that many States will actively participate, along with France, on the occasion of the first meeting of the Group.

There are many other challenges. How can we ensure better access for developing countries to space technology in order to avoid that we create a new division along the lines of the digital divide. I would here welcome the action of the United Nations via the Programme on Space Applications or activities and initiatives such as UN SPIDER.

And also I point to Mr. Arévalo Yepes suggestions as to the importance of the United Nations support for regional approaches.

Thirdly, how can we prevent the weaponization of space or attacks from the ground against space objects? France believes that a first useful step might come via measures to enhance transparency and confidence among space actors. We resolutely support the European Union project of an International Code of Conduct that would govern security of space activities.

How can we put space applications at the service of the major challenges on this Earth, such as climate change?

Mr. Chairperson, ladies and gentlemen, because of these many issues, France believes in the virtue of international cooperation which is indeed indispensable in the space environment. We are ready to play a major part within the European Union in favour of sustainable development and France and Germany will build together in 2013-1024 a methane detection satellite as this is one of the main greenhouse-effect gases. My delegation will revert to this subject later on. It is known as Merlin.

Another example to illustrate cooperation at the service of climate change is the Concordia ASI(?) Programme bringing together United States, Italian, Australian and French teams of researchers and the European Centre of Meteorological Prediction, medium term. This is co-financed by the CNES, our National Centre for Space Studies and the National Science Foundation of the United States and the Programme is intended to study the atmosphere of the Antarctic and in particular the ozone layer using balloons that would be launched from the McMurdo Base. All data from these balloons will be compared with those using the IASI instrument, this is an infra-red spectrometer device that is onboard the European METROP-A satellite. A better understanding of solar activity which is the main purpose of PICA(?) Programme in France will let us better understand the climate of the Earth to benefit all.

This project will gain momentum with the launching of the new satellite on 15 June to measure, with precision, the diameter of our Sun in relationship with the solar spots. And among the six members of the crew of the International Experimental Programme, MARS-500, which started up just one week ago in Moscow, is intended to study the psychological and medical impact of a long-term space trip, 520 days in a confined environment.

Mr. Chairperson, ladies and gentlemen, dear colleagues, I could not complete my intervention without mentioning the various forms of cooperation that have brought about the SOYUZ Launch Programme in Guyana. SOYUZ are the Guyana Space Centre is the result of an Intergovernmental Agreement with France and Russia. The implementation of this Programme is ensured by the European Space Agency, ESA, ROKOSMOS, and the CNES, as well as Ariane-Espace. The Programme will make us have a broader range of European launchers in addition to Ariane-5 in order to respond to the worldwide demand of access to space. The first launch is scheduled for December 2010 and this will give an outstanding symbol to finish up at the year under the sign of cooperation.

Thank you for your attention Sir.

The CHAIRMAN *(interpretation from French)*: I would likewise wish to thank Her Excellency for her statement.

(Continued in English) The next speaker on my list is the distinguished representative of Canada, Mr. Phillip Baines.

Mr. P. BAINES (Canada): Mr. Chairman, let me extend the compliments of the Canadian delegation to Romania and to you especially on your election as Chair of the COPUOS Committee. We are confident that, once again, you will apply your extensive experience to guide this session to achieve positive results. We look forward to many beneficial decisions over this year under your leadership. As we move forward together, Canada gives you the assurance of our desire to provide constructive input to the discussions throughout this session.

Canada also expresses its thanks to your predecessor, Ambassador Arévalo Yepes, for his active, effective and visionary leadership over the last two years. He has been an influential COPUOS participant in various capacities and has made a notable contribution to COPUOS with the submission of a Working Paper entitled "Towards United Nations Space Policy". We look forward to productive discussions over recommendations contained in that paper.

Canada believes that continued active liaison between the Scientific and Technical Subcommittee and the Legal Subcommittee will help ensure greater effectiveness of their work. We also believe that many milestones were achieved during the respective Subcommittee meetings this year.

In particular, Canada welcomes the establishment of a Working Group under the Scientific and Technical Subcommittee on the Long-Term Sustainability of Outer Space Activities. In Canada, we like to talk about the three S's in space, security, safety and sustainability. While discussions surrounding security are rightly held within the Conference on Disarmament, the other two S's, safety and sustainability, need to be discussed in this forum. We will be speaking on this issue later in this session.

We also welcome the work of the Legal Subcommittee on the review and sharing of information among member States on the various national space legislation that occurred during the Subcommittee's last session, especially with regard to the implementation of the Space Debris Mitigation Guidelines.

Canada is also pleased that the Legal Subcommittee continues to monitor the progress made on the drafting by UNIDROIT of the draft Protocol on Matters Specific to Space Assets to the Convention on International Interests in Mobile Equipment. Canada praises the Legal Subcommittee for its continuing focus on practical matters that are of direct relevance to activities in outer space and believes that such focus on practical matter and pragmatic solutions is the best approach for handling the issues that had surfaced and that are likely to surface in the near future in outer space law.

These achievements by both Subcommittees, realized after broad and comprehensive discussions, need to be supported with rigour throughout this session.

The second part of my statement, Mr. Chairman, aims to provide a summary of national activities in space since the last session of the Committee. I will then conclude with the forecast of interventions delegates can expect from Canada during this session.

The year 2009 marked the beginning of a new era for the Canadian Space Programme. With

increased support for the development of advanced robotics, the Canadian Space Agency prepared itself to realize new directions, initiatives and milestones, both nationally and with our international partners.

This coincided with the commemoration of a number of historic events. In 2009, Canada celebrated the Canadian Space Agency's twentieth anniversary as well as the twenty-fifth anniversary of Canada's first manned space flight and 30 years of cooperation with the European Space Agency.

Throughout the year, Canada pursued its efforts to complete the construction of the International Space Station by making good use of its space technologies. Works performed by Canadian astronauts have been instrumental in the success in some endeavours. The STS-127 mission has also been successful with the participation of Canadian astronaut, Julie Payette, in the final assembly of the KIBO module.

In September 2009, CANADARM-2 successfully captured an unpiloted, free flying, Japanese vehicle, a first Canadian cosmic catch for the robotic arm on the International Space Station.

The first Canadian long-duration mission with Canadian astronaut, Bob Thirsk, concluded with similar success. Canada participated also to STS-131 and STS-132. CANADARM-2, as well a DEXTER, accomplished new milestones. STS-132 marks CANADARM-2's twenty-sixth Shuttle assembly mission since its installation on the International Space Station in 2001.

Under Canada's long-standing spirit of collaboration, we will continue to welcome innovative approaches to developing and advancing common space initiatives.

As noted, we celebrated the success of the launch of the HERSCHEL and Planck satellites with Canadian contributions on board. We also applaud the launch of CRYOSAT-2 as Canadian scientists and researchers from three universities and two institutes will contribute to this mission by analyzing and validating data. We will be closely following the launch of the Indian Space Agency ASTROSAT Space Astronomy Satellite with a Canadian contribution to the UVIT instrument. We will continue to fully support our contribution to the NASA, ESA, CSA, James Webb Space Telescope.

International cooperation activities have also been significant areas of achievement for Canada in 2009. Canada strengthened its collaboration with the United States by signing an overarching Framework Agreement on Space Cooperation. The new Treaty will formalize our collaboration with United States agencies, such as NASA, NOAA and the USGC, and open doors to further collaboration at bilateral levels.

Canada also established a Space Cooperation Forum with the United States in which both Defence Departments will explore collaborative opportunities on space-related activities in areas such as Earth observation, satellite communications and space situational awareness, among others.

In Europe, Canada is currently moving towards a renewal of its partnership with the European Space Agency through the Canada-ESA Agreement. As a Cooperating Member of the European Space Agency for more than 30 years, Canada has been an active participant in a number of collaborative projects.

Throughout the year, Canada has also pursued its collaboration in science and technology, transfer of technology and exchange of information with a number of other countries, including Argentina, China, Japan, Finland, Germany, Russia, Senegal, to name only a few.

Among multilateral organizations, Canada reassures all member States of its positive support and desire to advance the work of the Group on Earth Observation, know as GEO, the Committee on Earth Observation Satellites and the World Meteorological Organization. This is especially so in the context of the GEO Sixth Plenary Meeting held in November 2009 where Canada endorsed data-sharing principles that were internationally agreed.

Of note is Canada's commitment to work of the International Telecommunication Union and, in particular, the work of the ITU Radio Communications Section, for which Canada is a candidate, Dr. Veena Rawat, for election to the leadership post of Director of the Radiocommunication Bureau.

To conclude on 2009 highlights, let me briefly mention a success story for the Canadian space sector.

The TERRASTAR-1 satellite was launched into orbit on 1 July 2009. Combining the power of 3G, cellular, wireless connectivity with the next generation All Internet Protocol Satellite Network, the TERRASTAR satellite will be able to offer users the ability to access a voice and data coverage anywhere in Canada, the United States, Puerto Rico, the Virgin Islands and offshore coastal waters.

Mr. Chairman, the Canadian Space Agency expects to commit to further projects and programmes that provide strengthened global security, improving our ability to monitor our environment and mitigate changes to our climate, especially in relation to the Arctic, working together with other nations to cooperate in the exploration of our solar system and advancing knowledge for the benefit of humanity.

Our objectives heading into the next decade relate to: one, increased use of data information and services provided by space technologies in the areas of Earth observation, satellite communications and navigation; two, space exploration; and, three, academic and industrial capacity-building.

Canada is currently using and will use future missions to help it meet its needs more effectively. RADARSAT-1, launched in 1995, is still operational and contributing data in its sixteenth year of operation. The satellite is a vibrant demonstration of Canadian excellence in space technologies.

The RADARSAT-2 satellite is also working perfectly. One example is its effectiveness at detecting illegal fishing in Canadian waters and pollution off our coasts.

Canada plans to increase its maritime and coastal surveillance capabilities with the RADARSAT Constellation Mission and is considering installing automatic identification systems on the satellites to enhance ship detection capabilities.

Planning also continues for the Polar Communications and Weather Satellite Mission which is intended to support Arctic efforts. The PCW Mission involves putting two satellites into a highly elliptical Moon orbit in 2016 in order to provide communication and weather observation services in northern regions.

Of note is Canada's continuing support to international initiatives in the area of disaster management. Through the International Charter Space and Major Disasters, Canada joined many space agencies in offering satellite images for one for several phases of disasters. RADARSAT-1 and our RADARSAT-2 imagery has been delivered to national authorities or relief organizations for disasters that occurred in Haiti, Chile, Bolivia, Pakistan, Kenya, Iceland and the Gulf of Mexico. We only hope that these modest contributions can have a tangible effect on the scale of global relief efforts.

As for space exploration, Canada and other partners in the International Space Station, continue to work towards finalizing its construction and promoting its use for scientific purposes.

In March 2010, the Heads of the ISS agencies reaffirmed the importance of full exploitation of the Station's scientific, engineering utilization and education potential. They agreed that there are no identified technical constraints to continuing ISS operations beyond the current planning horizon of 2015 to at least 2020 and that the partnership is currently working to certify on-orbit elements through to 2028. The CSA, along with other agencies, expressed its strong mutual interest in continuing operations and utilization for as long as the benefits of ISS exploitation are demonstrated. Agencies emphasized their common intent to undertake the necessary procedures within their respective governments to reach consensus later this year on the continuation of the ISS into the next decade.

Mr. Chairman, for this fifty-third session of COPUOS, in addition to the important discussions that will be held on the work of the Legal Subcommittee and the Scientific and Technical Subcommittee, Canada is particularly interested in the deliberations that will take place on the following agenda items.

Agenda item 6 on the ways and means of maintaining outer space for peaceful purposes. Canada is active on this file and has collaborated on a Project Ploughshares/Secure World Foundation initiative called the Space Security Index and we heard from them this morning.

Agenda item 11 on space and society, where Canada will update the plenary on national space activities, including outreach to Canadian students.

We look forward to actively participating in the deliberations on all of the agenda items and confirm to the Chairman and to other delegations, the intention of the Canadian delegation to participate actively and constructively throughout the session.

Thank you Mr. Chairman.

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

The next speaker on my list is the distinguished representative of the Bolivarian Republic of Venezuela, His Excellency Mr. Ali Uzcategui-Duque.

Mr. A. UZCATEGUI-DUQUE (Bolivarian Republic of Venezuela) *(interpretation from Spanish)*: Thank you Mr. Chairperson. On behalf of the delegation of the Bolivarian Republic of Venezuela, may I congratulate you and your fellow officers on the Bureau presiding over the deliberations of this Committee. I wish you every success during the working day.

Mr. Chairperson, ever since 1999, the Government of the Bolivarian Republic of Venezuela has taken upon itself a deep-seated responsibility the task of designing and implementing public policy and the peaceful use of outer space. There is an institutional process under way that includes the creation of commissions, a specialized centre and the Bolivarian Agency for Space Activities, known as ABAE. This became operational on 1 January 2008. ABAE is an autonomous institute. It reports to the Peoples Ministry for Science Technology and Intermediary Industries. And among its responsibilities it must, of course, following guidelines of the umbrella authority, devise public policy applied to space-related matters to promote social inclusion, technological independence via the creation of capacities that are scientific and technological in nature and to attend to governmental requirements in the areas of communication and Earth observation.

As part of the achievements, we would point to the implementation of the VENESAT-1 Programme, the Simón Bolivar Satellite. The VENESAT-1 Programme developed in cooperation with the People's Republic of China is intended to make a contribution to the promotion of cultural, educational, public health, related values via the provision of rural telephony services, Internet and tele-medicine programmes and educational programmes and the broadcasting of radio and TV signals throughout the national territory. It's trail over the Caribbean and South America will strengthen Latin American integration as well as Caribbean integration and international cooperation throughout the region.

When it was launched on 29 October 2008 in Sichuan, China, the Simón Bolivar Satellite now finds itself in an orbital position 78 degrees west operating at a 100 per cent of nominal capacity. There are 30 national experts operating this satellite. They are members of ABAE. They do so 24 hours a day and 365 days a year. In addition to which we have 30 Venezuelan operators responsible for the management of Telepuerto which is part of the national telephony shareholders company, CANTV.

By way of a conclusion, let me say that last November we installed the MANGA Land Station located in Montevideo, Uruguay, and this is a CSNB Satellite Monitoring System. This will be used to monitor the southern cluster of the Simón Bolivar Satellite Ku-Band ensuring the effective administration of satellite capacity intended to provide communication services to Uruguay, Bolivia and Paraguay.

Mr. Chairman, may I now give you some information on education and training plans, which in the space-related matters and the peaceful use of outer space is led by ABAE. Starting in 2007, there was participation in the Applied Geomatic Course taught by the Remote Training Institute of the Republic of India, and starting in 2009, remote sensor systems and geographic information systems taught by the Pesquisas Espatiales Institute of Brazil. We were able to train 34 Venezuelan nationals to manage satellite imagery. And likewise, there was a training programme for teachers of the National Educational System. This started up in 2007 intended to use satellite imagery to analyze the social environmental aspects and its trade in excess of 400 teachers at the national level.

ABAE, furthermore, jointly organizes with the Astrim European Space Institution for September this year, a scientific and technological exchange programme intended to train Venezuelan professionals in satellite platform design. These are also in the field operations, satellite control and space programme management. Furthermore, ABAE, in coordination with the Post-Graduate Study Commission and Global International Relations of UCV, teaches courses on Venezuela and international cooperation scenarios on the use of outer space for peaceful purposes. This gives basic information on international cooperation options associated with the peaceful use of outer space and the origin, purposes, functions and characteristics of Venezuelan activities in this area.

Completing my summary of talent promotion, I would like to say that during 2011, 29 professionals will return to Venezuela. They are at present being trained in the People's Republic of China in various areas of satellite-related technology so we will have a total of 90 trained engineers in the context of the VENESAT-1 Programme.

Now to the scientific and technological project managed by ABAE in the area of Earth observation. I would say that they provide support to the Venezuelan Remote Monitoring Centre and the acquisition and processing of satellite imagery from SPOT-4 AND -5, 4, distribution free of charge to State

authorities. From 2007 to the present date, 45,000 catalogued images were provided, 13,500 have been handed down to bodies, to State authorities and to academic environments. ABAE is in the design phase to build an Earth observation satellite to be launched approximately in late 2013.

In connection with the satellite technology applications in the context of social programmes, ABAE, in coordination with the Ministries of Education and Public Health of the country, has implemented a tele-medicine project and a tele-education programme in the indigenous communities of Antonio Diaz area in the State of Amacuro.

Towards the end of 2009, we had inter-connection to schools and also clinics access to Internet for educational and medical purposes. We have now operation of 32 centres for IT and telematic technology. We have solar panels in the communities and we have beefed up the voltovotaic systems in schools in addition to the training of medical staff and the inhabitants of the area.

Finally, ABAE is developing a Research and Development Centre to generate its own space technology. This will bolster scientific networks that bring on board the space sector. There will be cross-cutting areas of research such as research into materials, electronics, chemistry, telecommunications, education, IT, geomatics, geo-physics, among others.

Mr. Chairman, now turning to other topics and part of the authority of ABAE. That Organization coordinates with various national organizations to make sure that space technology becomes a tool to support public management.

Among the achievements, we need to note the strengthening of the National Earthquake Network in coordination with the Research Foundation, Funvisis(?), to efficiently manage the satellite imagery together with the National Observatory for Science and Technology and Innovation and the Engineering Institute where the use of space technology for disaster management for civil protection and the support thereof are planned activities as well as the observation of the Simón Bolivar Satellite, together with the Astronomy Centre, CIDA.

Furthermore, we have participated in international initiatives intended to promote academic and scientific activities in the space environment, i.e., a Symposium Programme for Small Satellites and Sustainable Development in Graz, Austria. In September 2009, a Workshop for Space Applications in the context of management of risk reduction and a proper response to disasters. In 2009, a Quito, Ecuador, Workshop on Space Policy in Latin America and the Caribbean: Looking Towards the Future. This was done in Mexico City in November 2009. And the third one is the International Conference on Space Technology, in Beijing, China.

Furthermore, we are satisfied to note that during the first half year of 2010, ABAE published five articles in scientific journals, focusing on space management, telecommunications and also satellite data and measurement in Venezuela.

So in the area of international cooperation, Sir, ABAE has created a Working Group with representatives of the Peoples Ministry for Foreign Relations intended to review, enter into and ratify future international treaties and analyze future cooperation strategies. In 2009-2010, we drafted and discussed bilateral instruments with Russia, France, Argentina and Bolivia, and we made headway in terms of implementing cooperation programmes with China, India, Brazil and Uruguay. At the same time, we had technical cooperation with Nigeria and Bolivia.

Finally, I reiterate on behalf of my Government our readiness to cooperate thus making a contribution to a productive debate and I wish it that this session may come to a successful conclusion.

Thank you Sir.

The CHAIRMAN: I thank the distinguished representative of the Bolivarian Republic of Venezuela for his statement.

The next speaker on my list is the distinguished representative of South Africa, His Excellency Mr. Mabhongo.

Mr. X. MABHONGO (South Africa): Thank you Chairperson. Allow me to begin by congratulating you, along with the new members of the Bureau on your election. We are of the confidence that under your experienced leadership, we will make substantial progress during this session.

Permit me also to record our appreciation to the outgoing officers and especially to your predecessor, Ambassador Ciro Arévalo Yepes, for the excellent manner in which he led our work during the past two years.

We would also like to express our appreciation for the work carried out by the Office for

Outer Space Affairs, in particular its Director, Dr. Mazlan Othman, and the Secretariat for their dedicated work in their preparations for this session.

Mr. Chairman, first and foremost, we wish to emphasize the importance that we attach to the use of outer space for peaceful purposes as a contribution to the sustainable development of humankind. The diverse interest and capabilities of member States greatly enrich COPUOS and its work. In this regard, we would like to extend our full support to Tunisia for their application to join the Committee. Tunisia has demonstrated strong capabilities in the application of space science and technology for development and would make valuable contributions to the deliberations of this Committee.

Since the fifty-second session of this Committee, South Africa has made progress on a number of plans in space science and technology. Allow me to briefly highlight the most significant ones.

South Africa's first national satellite, SUMBANDILASAT, was launched as a payload on a Russian Soyuz rocket from Baikonaur Cosmodrome in Kazakhstan on 17 September 2009. The satellite is being operated from the ground station in the CSIR Satellite Applications Centre, near Pretoria in South Africa.

In order to support the beat(?) for the Square Kilometre Array, South Africa is building the Meerkat Radio Telescope Array in the Northern Cape Province. A major milestone in this regard was achieved in April 2010 when the first four 12 metre diameter telescopes in the Meerkat Picasa(?) Array were linked together as an integrated system to produce the Meerkat's first interferometric image of an astronomical object. Therefore, the Meerkat Array is expected to be completed by late 2013 or early 2014.

Mr. Chairman, we believe that no satellites or telescope facility is of value unless they have people to utilize it purposefully. In this regard, South Africa has launched a number of human capital development initiatives in the space arena. The SKA Human Capital Development Programme is one example. As of January 2010, 216 students have been through the Programme. Over 40 of these students are from other African countries.

Another Human Capital Development Programme is the Earth Study(?) Programme aimed at building capacity in both the academia and the industry. This Programme is offered by the Cape Peninsular University of Technology in South Africa in collaboration with Ecole Superior Engineers and Electrotecnique in France. Two industry seminars were offered under this Programme in March and May 2010 for the benefit of industry, the Government and the academia.

South Africa also participated in the Third African Leadership Conference on Space Science and Technology for Sustainable Development, held in Algiers, in December 2009. On the occasion of that Conference, Algeria, Nigeria, Kenya and South Africa developed a Cooperation Agreement on the African Resource Management Satellite Constellation, bringing this inter-African project one step closer to realization. We congratulate Algeria on hosting this very successful and productive Third African Leadership Meeting and look forward to the fourth meeting in the series in Kenya in September 2011. South Africa regards the African Leadership Conference as an important forum to promote interregional cooperation.

Mr. Chairman, from 17 to 19 May 2010, South Africa hosted the Group on Earth Observation's Work Plan Symposium in Pretoria. The main objectives of the Symposium were to foster the Work Plan implementation across and within the GEOSS areas; to develop practical recommendations for the 2011 Work Plan Update; to identify achievements that could be presented at the Beijing Ministerial Summit Exhibition; and to initiate reflections and discussions in preparation for the GEO 2012-2015 Work Plan.

South Africa will host the African Aerospace and Defence Show, in Cape Town, from 21 to 25 September 2010. This is a premier event on the international aerospace calendar and is the largest exhibition of its kind in Africa.

South Africa also looks forward to hosting the Sixty-Second International Astronautical Congress that will be held in Cape Town from 3 to 7 October 2011. This will be the first time that this Congress is held on the African continent. We are, therefore, working with other African countries and the rest of the international space community to ensure that the hosting of this Congress provides much more benefit for all.

Mr. Chairman, South Africa views international, regional and interregional cooperation as one of the strongest mechanisms for maintaining outer space for peaceful purposes. As more and more States enter the space arena, it is natural to reflect on the role of COPUOS in such an evolving space landscape. In this regard, we believe that the Working Paper A/AC.105/L.278 entitled "Towards a United Nations Space Policy", developed by your predecessor,

Ambassador Ciro Arévalo Yepes, contains many valuable ideas that merit further examination and discussion. We look forward to the exchange of views on this paper under the appropriate agenda item.

Space technology plays a critical role in supporting sustainable development. South Africa, therefore, believes that the sustainability of space activities is a matter of concern to all nations, whether space-faring or not. In this regard, we look forward to working with member States of the Committee to develop the Terms of Reference, the methods of work and the working plan of the Working Group on the Long-Term Sustainability of Outer Space Activities established at the last session of the Scientific and Technical Subcommittee and which is going to be ably led by Dr. Martinez of South Africa.

In conclusion, Mr. Chairman, a number of delegations have suggested that consideration be given to improving the efficiency with which we organize our work in the Committee and the Subcommittees. We recall that at its fifty-second session, the Committee requested the Group of 15 to consider how to rationalize and optimize the use of time in COPUOS and its subsidiary bodies. We look forward to further discussion on this matter under agenda item 16.

Let me reiterate that you will have our delegation's full cooperation to ensure a successful and productive outcome to this session.

I thank you.

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

(Continued in Russian) I would now like to call upon Mr. Sergey Shestakov of the Russian Federation for his statement.

Mr. S. SHESTAKOV (Russian Federation) *(interpretation from Russian)*: Thank you very much Chairman. Of course, to start off with, I would quite naturally like to congratulate you with your election to this prestigious post of Chairman of this prestigious Committee. This is, of course, not just marking your personal distinctions in the service of the exploration of outer space, but also your personal contribution to the work of this Committee on Outer Space.

We are certainly also very appreciative of the work done by your predecessor. He has done extremely significant work heading this Committee. We would certainly like to thank him for that work and we wish him the best in his future activities.

Chairman, the dynamics and the trends of the development of research on the use made of outer space and the appearance of new forms of such activity including commercial forms, as well as technological, obviously require the progressive development of international space law. This would enable a maximally effective use of the results of outer space activity for the benefit of all States, enabling the sustainable socio-economic development, maintaining international peace and security, etc. And a very leading role in this process, as we understand it, should be played by COPUOS and its Subcommittees indeed because they are an empowered and prestigious fora for discussing and resolving outer space law issues.

However, we believe that the process of working to refine and review the key provisions of international outer space law must be comprehensive and gradual and this could be done within the framework of the Russian initiative regarding the development of a comprehensive convention on international outer space law.

In the context of considering the issues of the ways and means of maintaining outer space for peaceful purposes, we think it would be advisable to recall that the implementation of the joint Russian-Chinese initiative on developing the draft Agreement on Preventing the Deployment of Weapons in Outer Space, the use of force or threat of the use of force in regard to outer space objects, would be very important in forestalling an arms race in outer space.

Further, more practical comments on the result of the work of the Scientific and Technical Subcommittee and the Legal Subcommittee would be, of course, presented subsequently. We believe that all of this work is very important indeed.

Thank you very much for your attention.

The CHAIRMAN *(interpretation from Russian)*: Thank you very much distinguished representative of the Russian Federation.

(Continued in English) The next speaker on my list is the distinguished representative of the Libyan Arab Jamahiriya, Mr. Jamal Gledan.

Mr. J. A. GLEDAN (Libyan Arab Jamahiriya) *(interpretation from Arabic)*: Thank you very much Chairman. Chairman, the Libyan delegation would like to express its pleasure at seeing you in the Chair of our Committee and we would also like to congratulate you, as well as all the members of

your Bureau upon you election to those positions. We are sure that your competence, your wisdom, as well as your broad-ranging knowledge, are the best guaranteed indeed of success in the work of our session. On behalf of my delegation, I would also like to assure you of our complete cooperation in the work of this session.

The Libyan delegation would also like to express its appreciation to the Director of the Office for Outer Space Affairs, Ms. Mazlan Othman, for all the efforts and excellent work that she is ensuring in discharging the mandate of the Office for Outer Space Affairs.

We would now like to make some general comments under item 7 of the agenda.

This item is indeed standing on the Committee's agenda as well as on the agenda of the two Subcommittees of our Committee in order to sound out various views coming from the delegations represented. We would like to stress the importance of international cooperation and the need to make common efforts in order to ensure peaceful uses of outer space and this for the benefit of sustainable development and this pursuant to international law and the United Nations Charter. And in this regard, we would like to stress that it is important to take all necessary measures and to make all necessary arrangements to step up national as well as international efforts to implement and apply all the United Nations instruments in outer space relating to outer space and this as extensively as possible and this according to United Nations resolutions in this regard.

Chairman, our delegation would also like to stress the importance of activating the initiatives advanced by His Excellency Mr. Arévalo with regard to a joint approach of the entire United Nations on space policy and this in order to especially focus issues which relate to water resources. Here we have the most risky tasks indeed which affect especially nations which are least well equipped to cope with these issues. In order to achieve any success in these efforts, on the basis of international means, we should apply the principles of equality as regards sovereignty and allow all States, including developing States, to gain access and thereby be afforded to the benefits of access to satellite and outer space data and technologies. These countries should be allowed to have access to ways and means of enhancing their national capabilities in this regard.

Chairman, given the importance of the United Nations in seeking to reinforce international cooperation in the peaceful uses of outer space, this would be important because this would serve the interests of all countries, joint interests, allowing all peoples on this Earth to improve their access to prosperity, irrespective of their capabilities at present. It is important for us to recall the crucial played by our Committee within the United Nations in this regard. And in this context, we must indeed pay tribute to the role of this Committee in spite of the difficulty experienced internationally over the last decade. Our Committee has been able, despite this, to contribute significantly to establishing the basis of international cooperation, ensuring in the peaceful uses of outer space and this, thanks to the rules that it has established in the field of outer space law as well as regarding the regulation of inter-State relations in this field on the basis of United Nations General Assembly resolutions in this regard, especially the resolution governing the activities of State in outer space of 1963.

There have been other resolutions as well of the United Nations General Assembly which are directly relevant to our concerns. There are also United Nations conferences on outer space and the results achieved in them.

Given present challenges and future challenges, all efforts should be made to reinforce the role played by the United Nations in responding much more effectively to these challenges and risks which are ever rising in order to consolidate international cooperation in this regard as well. In this context, we would reiterate the need to furnish all necessary information and data on the part of all States which are necessary for all States so that all States would commit themselves to observing the rules relating to outer space activities to make sure that these activities remain purely peaceful thereby forestalling any arms race in outer space. This is an absolute prerequisite for the strengthening of international cooperation in outer space activities.

Chairman, in Libya we are perfectly well aware of the need to afford assistance to developing countries including in the field of stepping up the capacities in priority areas of concern in each country, for example, emergency situation control, water resource issues, desertification control …

(interpreter): There is a technical problem. There is no relay from French.

The CHAIRMAN: The interpreters should now continue from Arabic into French. Could the speaker please repeat the last sentence?

Mr. J. A. GLEDAN (Libyan Arab Jamahiriya) *(interpretation from Arabic)*: In Libya, we are perfectly well aware of the fact that the international community including the developed countries should indeed step up the assistance given to developing countries according to the needs and priorities of the latter. For example, they should be enabled to manage their natural resources, be given better ways and means of fighting drought and stepping up hydraulic resources in general. We believe that it is important to intensify and strengthen international cooperation using outer space technologies focusing on the needs and requirements of these developing nations and cooperation should also be ensured in the implementation of the Vienna agreements on sustainable development.

My delegation, Chairman, strongly supports the application of our brother country, Tunisia, to the membership in the Organization, in the Committee, and indeed we would like to endorse that application wholeheartedly.

I would like also to thank the members of the Secretariat as well as our colleague interpreters for their efforts and I would like to indeed wish the best to all of us in the work before us.

Thank you.

The CHAIRMAN: I thank the distinguished representative of the Libyan Arab Jamahiriya.

The next speaker on my list is the distinguished representative of the European Space Policy Institute, Mr. Erich Klock.

Mr. E. KLOCK (European Space Policy Institute): Mr. Chairman, distinguished delegates, it is my great privilege to inform you about recent activities of the European Space Policy Institute, ESPI, which might be of relevance for the work of this Committee.

ESPI is the Central European thinktank for space policy issues. Its mission is to carry out studies and research to provide decision-makers with an independent view on mid- to long-term issues relevant to the use of space.

Through its activities, ESPI contributes to facilitate the decision-making process in Europe. It also organizes an International Research and Academic Network, ESPLAN, and cooperates closely with other related governmental and non-government institutions.

Since the last session of the Committee, ESPI undertook numerous initiatives of potential relevance to this Committee's work.

I would like to mention here in particular our activities relevant to agenda item 14, Long-Term Sustainability of Outer Space Activities of the Scientific and Technical Subcommittee.

Based on the Conference organized at ESPI, together with IAA and SWF, in November 2008, we have now published in our book series "Studies in Space Policy", the volume "The Fair and Responsible Use of Outer Space: An International Perspective". It contains a wealth of views, insights and ideas relevant to the Scientific and Technical Subcommittee agenda item.

Other work by ESPI related to the agenda item is, for example, data policy, for space situational awareness and space traffic management.

In the course of the past year, ESPI also has published numerous in-depth studies and policy papers covering areas like space applications, security and regulations. All of them can be downloaded from our website, www.espi.or.at. ESPI as well continues to edit the Year Book on Space Policy where the edition covering 2008-2009 has been published only a few days ago. The series "Studies in Space Policy" recently continued with a volume on "Putting the Í' in IHY". All these books are published with Springer Wien New York.

With particular pleasure, I can report about a Roundtable on Africa-European Cooperation in Space which ESPI organized on 10 February 2010 during the Scientific and Technical Subcommittee session at its premises here in Vienna. It was part of a two-year project of ESPI and EURISY which has numerous links to the work of the United Nations COPUOS. The Chairman of the Scientific and Technical Subcommittee, Mr. Ulrich Huth, opened his Roundtable Session which comprised of three participants from Africa and Europe, engaging in a constructive dialogue on interregional cooperation.

ESPI hopes that through its initiatives and the corresponding material which can also be accessed through our website, www.espi.or.at, we can support the work of this Committee. In this context, I am pleased to inform the Committee that ESPI has formally received a consultative status with the Economic and Social Council in late January which should further strengthen the relations of ESPI with the United Nations system.

Finally, I would like to extend a warm invitation addressed to all delegations to attend a reception ESPI will host in its premises on Thursday, 17 June 2010, at 7.00 p.m. The reception comprises the opening of an exhibition of artist, Gerald Martineo, entitled "From Heaven to Space" and we have the honour to see the Chairman of the United Nations COPUOS, Mr. Dumitru Dorin Prunariu, giving a welcome address.

Thank you Mr. Chairman.

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

The next speaker on my list is the distinguished representative of the International Astronautical Federation, Mr. Gérard Brachet.

Mr. G. BRACHET (International Astronautical Federation) *(interpretation from French)*: Thank you Mr. Chairman, ladies and gentlemen, distinguished observers. On behalf of the International Astronautical Federation and Berndt Feuerbacher, the President, who is kept in Berlin this week, I would like to congratulate you on your election to Chair this Committee. I know, of course, that your excellent contribution to the work of this Committee over so many years will make it possible for you to preside over this event with great authority and effectiveness.

Sir, I would like to thank you for this occasion to describe the recent activities of the International Astronautical Federation before the Committee and say just a few words on the coming events to be held in Prague, the Czech Republic, on 26 September to 1 October this year, and Cape Town, South Africa, in October 2011.

(Continued in English) The membership of the IAF comprises about 200 organizations from 48 countries around the world. The membership includes major space agencies worldwide and the number of membership applications from space agencies, emerging countries, is rapidly increasing.

In addition, we have industrial companies, research institutes and professional societies in our membership.

Let me briefly list the activities that the IAF has been developing in the last 12 months.

First of all, together with the Local Host Country Organization, the IAF, together with the IAA, the International Academy of Astronautics, and the IISL, the International Institute of Space Law, has organized the Sixtieth International Astronautical Congress in Daejeon, the Republic of Korea, from 12 to 16 October 2009. The Congress was extremely successful with more than 2,700 registered participants. The opening ceremony was honoured by the presence of the President of the Republic of Korea, Mr. Lee Myung-bak, and a statement sent from the United Nations Secretary-General, Mr. Ban Ki-moon.

Continuing to be the most important international forum for organization to keep the knowledge of the worldwide space sector up-to-date, to promote the products and projects and to develop and strengthen links with the rest of the space community, the IAF was also able to start two new initiatives at the IAC in Daejeon.

For the first time, we gathered members of parliaments from all continents to exchange about the use of space technology in the context of climate change. This successful event added a new political dimension to the level of participation in the IAC. Furthermore, with the objective to foster connection between small enterprise and global companies, we are pleased to initiate a forum on cluster and industry association in the context of the IAC Exhibition.

During the closing ceremony, the President of the IAF read the Daejeon Declaration, which was adopted by the IAF General Assembly that same morning. The text recognize the set-up of IAF regional groups aimed at promoting international cooperation and IAF activities in the African, Latin America and the Caribbean, as well as in the Asia-Pacific regions.

The concept of IAF regional groups also includes a dimension of interregional cooperation which can be developed during the Annual Congress.

Mr. President, much of this success was due to the dynamic and very efficient action of the Local Organizing Committee, chaired by Ambassador Choi, and the active support of KARI. The IAF would like to address its very sincere thanks to the Republic of Korea for its warm welcome and efficient organization of the Congress.

Mr. President, our Federation is also very much involved in a series of workshops for emerging space nation representatives, organized together with the Office for Outer Space Affairs. The Nineteenth United Nations/IAF Workshop on Integrated Space Technology and Space-Based Information for Analysis and Prediction of Climate Change was held form 9-11

October 2009 at the Korean Aerospace Research Institute, the week before the Sixtieth IAC. The co-sponsors of the Workshop, IAF and ESA, provided the financial support required for the participation of 23 individuals from 21 countries, mainly from developing nations. Overall, however, about 70 participants from 40 countries attended the Workshop. The funding provided to participants from developing countries has allowed them to attend the International Astronautical Congress and to benefit from the rich activities of the Congress.

Now, the Twentieth United Nations/IAF Workshop will be held in Prague from 24-25 September 2010, the week before the Sixty-First IAC and it will be dedicated to GNSS applications for human benefit and development.

Mr. President, the International Astronautical Federation and the Chinese Society of Astronautics have recently organized the Global Lunar Conference which took place from 31 May to 3 June in Beijing, China. The Conference gathered the China National Space Administration and its _____(?) Office, the Manned Space Engineering Programme, the China Aerospace and Technology Corporation, and the China Academy of Space Technology, together with international space actors, like the Canadian Space Agency, the European Space Agency, the Japan Aerospace Exploration Agency (JAXA), ROSKOSMOS and many other major players in the _____(?) province.

The Conference was led by three co-Chairs from Europe, the United States and China. The topics addressed included programming(?) aspects, exploration, human mission, life science, lunar habitats and future role aspects, economic, social, legal and cultural aspects.

The IAF would like to express its appreciation to the Chinese Society of Astronautics for the excellent organization and for the success of this Conference.

Now turning to the Sixty-First IAC. The Sixty-First International Astronautical Congress will take place in Prague, the capital of the Czech Republic, from 27 September to 1 October of this year, with a theme “Space for Human Benefit and Exploration”. The papers to be presented at the Congress have been selected by the International Programme Committee during its meeting in Paris last March. Our colleagues in Prague are busy preparing an exciting event with top-level plenary events and an integrated space exhibition in a vibrant city of cultural history.

We will also convene in Prague International Members of Parliament to discuss relevant matters using space for the benefit of mankind.

Now one word about the Sixty-Second IAC in 2011.

Mr. President, for the first time in a 62-years long history of the Astronautical Congresses, the IAC will come to the African continent in October 2011. Cape Town will be the host city for the Sixty-Second International Astronautical Congress.

In order to prepare for this event, IAF has taken part in the Third African Leadership Conference on Space Science and Technology for Sustainable Development, ALC III, which was hosted by Algeria in December 2009. A special session on interregional cooperation was organized with the United Nations Office for Outer Space Affairs, the Chairman of COPUOS and Heads of Agencies from Algeria, Nigeria, South Africa and Kenya. On that occasion, IAF presented the concept of IAF regional groups which was adopted at the General Assembly held in Daejeon, the Republic of Korea, last year.

A dedicated session was also organized for the preparation of IAC 2011 in Cape Town. It was agreed to coordinate all the efforts and events related to space which will be organized in the African continent, including the Fourth ALC, proposed to be held in Nairobi, Kenya. The intention is to develop inputs and recommendations into an African Space Summit that could be organized on the first day of the International Astronautical Congress, namely Monday, 3 October 2011 in Cape Town, South Africa.

The representative of the African States and the rest of the delegations are invited to attend the South Africa/IAF briefing on its plan for the Sixty-Second IAC in Cape Town. This briefing will take place tomorrow, Friday, 11 June,, at 11.00 a.m., in Room E0951, which is the meeting room of the Office for Outer Space Affairs.

Mr. President, one of the IAF’s priorities is the support of the future generation of space professionals. The IAF actively advances space education and encourages the participation of the next generation of space programme leaders in our activities. Since 1999, our Annual Congresses have been strongly supporting the participation of students. In 2006, the IAF initiated a programme to bring young space professionals into contact with senior experts during our Congresses and throughout the year. We pursued these activities in collaboration with the Space

Generation Advisory Council, SGAC, Students for the Exploration and Development of Space, SEDS, and several other groups.

In 2008, the member organizations of the IAF approved a new initiative to actively engage, inspire and support the next generation of students and young professionals to prepare them to be the official leaders of the international space community. This action is implemented through a Youth Grant Programme intended to support selected students from all over the world in attending the Annual Congresses.

As part of the Youth Grant initiative, the IAF has begun a new programme to provide support towards enabling students and young space professionals to participate in the IAF activities and in particular the Congress. The programme will support the participation of 10 students and young professionals in the Sixty-First Congress in Prague, Czech Republic, this coming September.

Finally, Mr. President, as in the previous years, the IAF has prepared an Annual Report on Global Space Activity Highlights by compiling the inputs from all nations with chapters on here today. A copy of the 2009 Report was distributed to interested delegations during the Scientific and Technical Subcommittee session in February and is available at the Office for Outer Space Affairs and on the IAF website.

(Continued in French) Mr. Chairperson, thank you for giving me this occasion to introduce and describe the projects and programmes of the International Astronautical Federation.

The CHAIRMAN *(interpretation from French)*: I likewise thank you, Mr. Brachet, for your statement.

(Continued in English) The next speaker on my list is Ms. Ariane Cornell of the Space Generation Advisory Council.

Ms. A. CORNELL (Space Generation Advisory Council): Thank you Mr. Chairman. The Space Generation Advisory Council is delighted to be working with you this year. We congratulate you on your election and look forward to your chairmanship of the Committee on the Peaceful Uses of Outer Space.

We appreciate having the opportunity to report on our activities as we have been very busy since last June.

The past 12 months for SGAC have been highlighted by growth for the Organization. We strive each year to serve our purpose of acting as the international enabler for the next generation of space sector leaders to contribute their opinions to the space policy debate.

In the past year, we have done this through directly supporting our members to attend various conferences internationally, building our SGAC project groups and output and continuing to strengthen the organizational roots.

First, SGAC is particular proud of the direct aid we have given to our international members to attend conferences to contribute their perspectives on space.

SGAC is a voluntary organization and it is our volunteers that in their space time work to create partnerships and raise funds that lead to SGAC's ability to give out the scholarships.

In September 2009, SGAC, in partnership with NASA, sponsored a Youth Global Navigation Satellite System Project Lead, Stephanie Wan, to attend the ICG-4 meeting in St. Petersburg, Russia.

In October, SGAC has supported a ground-breaking 21 members to attend the Space Generation Congress in Daejeon, Korea. The winners came from Austria, Australia, Croatia, Finland, France, Germany, Guatemala, Iran, Kenya, India, Mexico, Nigeria, Pakistan, Romania, Turkey, the United Kingdom, and the United States. One of these attendees, Jan Lauberer(?) of France, was given direct support from the United Nations Office for Outer Space Affairs for helping design their new website for World Space Week.

In December 2009, SGAC partnered with UN SPIDER to send an SGAC member, Carline Boudou(?), from the West Indies, to the Fourth Annual Caribbean Conference on Comprehensive Disaster Management.

This upward trend of supporting our members to attend conferences has continued in 2010.

In April, SGAC partnered with the Space Foundation to provide a significant discount on registration rates for SGAC members to attend the National Space Symposium in Colorado Springs, Colorado.

SGAC also partnered with the International Association for the Advancement of Space Safety, or the IAASS, to hold a Technical Paper Competition and provide scholarships for four people from Nigeria, Iran and France to present their winning entries at the IAASS Annual Conference, held just last month in Huntsville, Alabama, United States.

More of these scholarships will be available as we charge towards our Annual Conference, the Space Generation Congress, which is held annually in conjunction with the International Astronautical Congress in Prague, Czech Republic.

In addition to helping our members to attend these conferences to contribute their opinions, SGAC acts as the forum to collect and develop these opinions throughout the year with our Organization's project groups.

SGAC's Near-Earth Object Working Group in the fall of 2009, produced a 25-minute film on near-Earth objects which has been widely presented, including at the Scientific and Technical Subcommittee meeting here in February.

The Near-Earth Object Working Group also recently released news of their Third Annual Moving Asteroid Technical Paper Competition. Participants are asked this year to design an asteroid warning system which would take into consideration not only the technical issues but also political and practical challenges. The winner will receive a full scholarship to attend both the Space Generation Congress and the IAC in Prague, Czech Republic.

Another SGAC project group, the SGAC Disaster Management Working Group, has grown significantly in its first year of existence. This Group was established after last year's COPUOS meeting to conduct outreach on space applications for disaster management. The new Group has more than a dozen members in countries including Canada, India, Scotland and the United States. In only its first year, this Group has worked with UN SPIDER to run a Poster Competition where the prize was a scholarship to the Fourth Annual Caribbean Conference on Comprehensive Disaster Management. They also produced a brief White Paper on the response to January's Haiti earthquake and are in the process of completing one on the response to February's Chilean earthquake.

Finally, SGAC's YGNSS, or Youth for Global Navigation Satellite Systems Group, has continued its international GNSS outreach efforts. In the past 12 months, YGNSS has worked with the Working Group C of the International Committee on GNSS and YGNSS has presented at international conferences including those in Thailand, Belgium, Russia and Korea. This year the Group looks forward to producing a public outreach brochure highlighting the daily benefits we all reap from GNSS technology.

Mr. Chairman, this growing number of scholarships and activities are possible only because SGAC continues to solidify its organizational base. We are proud to announce that just this week, SGAC has reached an organizational milestone with the announcement and meeting of its first Advisory Board. SGAC's Advisory Board members are influential members in the international space community who have been strong supporters of the goals of SGAC and of the Organization itself. The inaugural class includes Adigun Ade Abiodun, Founder of the African Space Foundation, Ambassador Ciro Arévalo, former Chairman of the United Nations Committee on the Peaceful Uses of Outer Space, Ben Baseley-Walker, Legal and Policy Analysis for the Secure World Foundation and former SGAC Chair, Yolanda Berenguer, Space Education Programme Coordinator for the United Nations Educational, Scientific and Cultural Organization, or UNESCO, Lance Bush, Chief Strategy Officer for Paragon Space Development Corporation, Sergio Camacho, Secretary-General of the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean, Chris de Cooker, Head of International Relations for the European Space Agency, and Clay Mowry, President of Arianespace Incorporated.

SGAC's Advisory Board is designed to give strategic direction and advice to SGAC in order to help guide the Organization in its fulfilment of its goals and objectives. It provides comments on the work of the Organization and suggests ways in which to improve its functions and its engagement.

SGAC is proud that over half of the Board members are contributors to COPUOS and we know that they are well complemented by other members who represent industry and agencies.

SGAC is on a fantastic trajectory as we head into our second decade of fulfilling our mandate, as was laid out at our establishment at UNISPACE III of acting as the international forum for the next generation of space sector leaders to contribute to the space policy debate.

Our continued growth, though, would be impossible without the many organizations that support

our work. We would like to thank our various international supporters who contributed significantly into SGAC in the past 12 months, DLR, ESA, the European Space Policy Institute, the International Astronautical Federation, the Korean Advanced Institute of Science and Technology, the Korean Advanced Research Institute, Lockheed-Martin, NASA, the Paragon Space Development Corporate, the Secure World Foundation, the Space Foundation, Space News, the United Nations Office for Outer Space Affairs, and the United Nations Platform for Space-Based Information for Disaster Management and Emergency Response, or UN SPIDER.

SGAC is proud of what we have produced in the past 12 months and we look forward to making the next 12 months as productive as the last. The Organization and its 4,000 members in over 90 countries is looking forward to continuing this upward trajectory for SGAC in 2010 and invites all member States to become involved.

Thank you Mr. Chairman.

The CHAIRMAN: I thank the distinguished representative of the Space Generation Advisory Council for her statement.

Is there any other delegation wishing to speak under the general exchange of views, agenda item 5?

I see none.

We have, therefore, concluded our consideration of agenda item 5, General Exchange of Views.

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

Distinguished delegates, I would like now to continue and hopefully conclude our consideration of agenda item 6, Ways and Means of Maintaining Outer Space for Peaceful Purposes.

The first speaker on my list, and the only one until now, is the distinguished representative of the United States, Mr. Kenneth Hodgkins.

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

Today there is an unprecedented level of international cooperation. The United States has a long and successful history of civil space cooperation with other partners. Over the past five decades, the United States has concluded more than 3,000 agreements with more than 118 nations and international organizations and the level of new cooperation is rising each year. Presently, NASA has 450 active international agreements. The number of nations investing in space activities has also steadily grown and we now have a significant private sector presence in space.

Looking to the future, international space cooperation will continue to be fundamentally important to the United States.

Since our last meeting, we have engaged in a variety of international ventures that will produce significant benefits in the use of outer space for peaceful purposes. For example, the United States has undertaken significant activities in the area of satellite navigation.

We congratulate Russia on its successful hosting of the Fourth Meeting of the International Committee on Global Navigation Satellite Systems, ICG, and the meeting of the related Providers Forum in St. Petersburg in September of 2009.

We commend the Office for Outer Space Affairs for its outstanding performance in assisting with the planning and organization of this meeting and for its continued support as the Executive Secretariat for the ICG and Providers Forum.

The United States was pleased with the progress made on the ICG Work Plan and in particular with the adoption of a new principle on transparency for open services. That principle is that every provider should publish documentation that describes signal and system information, policies of provision and minimum levels of performance for its open services.

The United States continues to provide financial support to the Office for Outer Space Affairs in support of GNSS-related activities, including regional workshops and support to the ICG and Providers Forum.

In addition to our activities through the ICG, the United States has many productive bilateral relationships on satellite navigation issues. United States-Japanese cooperation on GPS has included

regular policy and technical consultations since 1996. Our last such meeting was in January of this year.

In 2008, the United States and Japan signed agreements to set up QUASI-ZENITH satellite system, QZSS Monitoring Stations in Hawaii and Guam. The Guam site opened in August 2009 and the Hawaii site is scheduled to open later this year.

The United States and the European Community and its member States signed a GPS-Galileo Cooperation Agreement in 2004. Of particular note in 2009 were meetings of Working Group C devoted, among other things, to describing the characteristics of joint GPS-Galileo receiver performance, putting into practice the desire of both parties to promote interoperability among systems.

Russia and the United States continued to work together to ensure compatibility and interoperability between GPS and Russia's system known as GLONASS.

From a broader perspective, the United States is reaching out to other nations to consider international cooperation. Our objective is to promote common space exploration objectives and cooperative or complementary space exploration missions along with the development of new technologies that will open up many opportunities for exploration and discovery.

The United States works through the Group on Earth Observations, known as GEO, with the other 79 member countries, the European Commission and 46 participating organizations to establish a Global Earth Observation System of Systems, known as GEOS. The GEO vision for GEOS is to realize a future where indecisions and actions for the benefit of humankind are informed via coordinated, comprehensive and sustained Earth observations and information.

So in light of these developments and the accomplishments of COPUOS, my delegation remains unconvinced of the need for action to be taken by this Committee relating to concern regarding the weaponization of outer space. There is no scarcity of appropriate multilateral mechanisms where disarmament matters can be discussed. COPUOS was not created to deal with disarmament. Over five decades ago, the General Assembly adopted resolution 1348 which established the Ad Hoc Committee on the Peaceful Uses of Outer Space. The resolution marked a significant step forward for the world community in that it established COPUOS as the only standing body of the General Assembly to consider international cooperation in the peaceful uses of outer space. At the time, the concept, which is still valid today, was to establish COPUOS as the body of the General Assembly concerned exclusively with promoting international cooperation in the peaceful uses of outer space. It was clear that there would be entirely independent efforts to deal with disarmament issues. These would include fora such as the First Committee of the General Assembly and the Conference on Disarmament in Geneva.

This Committee has played a notable role in advancing space cooperation and provides a unique forum for the exchange of information among developed and developing countries on the latest developments in the use and exploration of space. In our view, there are tangible opportunities to enhance international cooperation in keeping with Committee's mandate. Our consideration of the ways and means of maintaining outer space for peaceful purposes has produced measurable results in the revitalization of this Committee. Under this item, member States concluded that reinforcing international cooperation in space implies a need to the Committee to improve the form of its work and this has been reflected in the restructured agendas of the Scientific and Technical Subcommittee and the Legal Subcommittee, the unique organizational aspects of UNISPACE III, the addition of new items to the agenda of COPUOS such as spin-off benefits of space, space and society, space and climate change, and the consideration of developments in the international satellite-aided search and rescue programme, known as COSPAS-SARSAT.

An indication of the success of our efforts to revitalize this Committee is the growing relevance of our work to the international community more generally, as shown in part by the steady increase in the number of other international organizations, as well as NGOs and private firms that seek participation in the Committee's work. This is an extremely positive development. The presence of non-governmental entities and the willingness of experts to make special presentations have enriched the Committee and its Subcommittees and the ultimate success in implementing the recommendations of UNISPACE III will depend heavily on their continued involvement.

Now in this regard, I am pleased to note that my delegation includes representatives from the Space Foundation and the Centre for Strategic and International Studies. Today and tomorrow they will be making special presentations on their international activities.

Thank you Mr. Chairman.

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

Is there any other delegation wishing to speak under this agenda item, agenda item 6, Ways and Means of Maintaining Outer Space for Peaceful Purposes?

I see none.

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

Technical presentations

Distinguished delegates, now we will proceed with the technical presentations. I would now like to invite Ms. Ashley Bander of the United States, CSIC, to make a presentation entitled "Space Initiatives at the Centre for Strategic International Studies".

Ms. A. BANDER (United States of America): Good afternoon, I am honoured to give a presentation on space initiatives at the Centre for Strategic International Studies.

First I would like to give some background on CSIS. CSIS is a bi-partisan, non-profit thinktank in Washington DC. It was founded in 1962 and today has more than 220 full-time staff in addition to a large network of affiliated scholars. These scholars work in over 30 programmes and initiatives grouped in three broad research areas, defence and security policy, global challenges such as energy and health, and regional transformation.

And what CSIS has found was that space was key to many of the issue that it covers. So in 2004, the Space Initiatives Project was created to address global space policy issues and opportunities. This falls under the global challenges research area that I mentioned above and focuses on international cooperation in space activities from the actors involved to how cooperation comes about to the benefits that come from that cooperation.

Space initiatives at CSIS breaks down much of its work into three categories, governance, finance and public support.

In our work on governance, we examine the possibilities for international governance structure and examine how key issues like interoperability, redundancy and standardization get addressed.

In finance, we examine how things like public private partnerships and increased industry to industry cooperation affects space activities.

Our work in public support is largely through space education, for instance, working with the International Astronautical Federation and with UNESCO to build a web portal for space education resources that have been created around the world.

In recent years, CSIS has also focused its attention on Earth observations. In our first report in 2008, we reached out to experts in many areas, both from United States and other Governments, non-governmental organizations, the science community, as well as the private sector. That report organized its findings along recommendations for the United States Government, the international community and the private sector. It has been widely distributed and was most recently referenced in a United States Government Accountability Office Report regarding environmental satellites.

A second report being released just this week focuses specifically on challenges and opportunities for the United States Government regarding Earth observations.

As part of our work on governance, we hosted in April 2008 the First Global Space Development Summit, co-organized with the Chinese Society for Astronautics. This brought together participants from 15 countries, academia, non-profit and international organizations to discuss space development. The Summit resulted in the Beijing Declaration which recognizes the important role that space plays in foreign policy, international security and the global economy and recommended two areas for further international cooperation: Earth observations to the form of the Group on Earth Observations, and international cooperation through lunar exploration.

The Second Global Space Development Summit took place this past fall in Washington D.C. It was co-organized by the American Institute for Aeronautics and Astronautics, the Chinese Society for Astronautics, CSIS, and the Space Foundation, and co-sponsored by the American Astronomical Society, the International Academy of Astronauts and the International Astronautical Federation.

The first day of the Summit examined questions of space exploration governance, looking

beyond the ISS to what future exploration cooperation might entail with a particular focus on lunar activities.

On the second day, the Symposium on Earth Observations examined the importance of Earth observations to a variety of national and international issues and discussed the current state of cooperation. A report on the Summit is forthcoming and many of the presentations are already posted on our website which you see at the bottom of the screen.

Here, I wanted to show you some of our calendar over the past year. We host a wide variety of events at CSIS from the big public addresses to smaller invitation-only conferences. In addition, some of our experts and staff have participated in a number of congresses elsewhere in the community.

One of the things you might notice on this slide is two events called the Global Space Agenda. This is an ongoing speaker series that feature leaders in the international space community. In the past year we had two of these, with the President of the French Space Agency, CNES, as well as with the Deputy Administrator of NASA, pictured here. Audio and video from this and many other CSIS events is freely available on our website as well as on I-tunes University, should you want to listen to this while you are working to work.

These are some of our publications over the past year. We produce both larger and long-term research projects as well as shorter commentaries on current events.

In addition, space initiatives have contributed to a series published by CSIS called "Critical Questions" which provides background on current events to non-experts.

Thank you for your kind attention. If you are interested in any of the projects I have mentioned here today, please contact us at spacecsis.org and all of the reports I have mentioned are available on our website, www.csis.org/space. Thank you.

The CHAIRMAN: I thank Ms. Bander for the presentation.

Are there any questions or comments?

I see none.

I would now like to invite Ms. Nunzia Maria Paradiso and Mr. Iacopo Tani of Italy to make a presentation entitled "Italian Master in Space Policy and Institutions".

Mr I. TANI (Italy): Thank you Mr. Chairman. Mr. Chairman, distinguished delegates. At the outset, let us present ourselves. My colleague and I are going to speak on behalf of the students of the Second Edition of the Italian Master Programme on Space Institutions and Policies. Then let us thank the Italian delegation, the Italian Ambassador, the Permanent Mission of Italy and the international organizations and, in particular, our Professors for having given us this unique opportunity to present our experience at the Master Programme to this distinguished plenary assembly of the fifty-third COPUOS session under the item "Space and Society".

Considering the Third United Nations Conference on the Exploration and Peaceful Use of Outer Space, and the Vienna Declaration, which underlined the desire to enhance the opportunities for education and training in space activities, the Italian Space Agency, in cooperation with the Italian Society for International Organizations and the Institute for International Law Studies of the National Council for Research, established in the heart of Rome, a post-graduate Masters Programme on Space Institutions and Policies, under the patronage of the European Parliament, the European Space Agency, the European Space Policy Institute and the Mechanical Group.

Our wish is to shortly present the purpose of the Master, its environment and users, together with the approach and methodology adopted. We will then introduce the structure and contents of the didactic offer, consisting of five modules, exercised activities, workshops, conferences and different additional events.

Space activities deal with increasing challenges and require the knowledge of different scientific fields. The demand of funds and technical know-how highlight an necessity for joint international efforts, especially in the medium and long term. This need for international collaboration increases the complexity of the space system as a whole. Such complexity can be dealt with only through a synergy of multiple competences. Therefore, the purpose of the Master Programmes on Space Institutions and Policies is to train professionals able to satisfy this need at international level.

A poignant point of this Master Programme is the diversity of its participants, different status, ages and educational backgrounds, mainly in law, science and international relations and a rich analysis of traded

subjects and had the interdisciplinary environments to exchange of experiences and knowledge among the same students.

The different backgrounds of the students are then stimulated by the multidisciplinary approach which characterizes this Master Programme. Lectures are held and coordinated by national experts of the Italian space system, coming from the Italian Space Agency, space industries and universities. Their efforts are supported by the contribution of several international actors and decision-makers of the global space scenario.

As previously stated, the intent of the Master Programme on Space Institutions and Policies is to train professionals able to deal with the present and future challenges presented by space activities which require a broad spectrum of competences.

In order to achieve this objective, five thematic modules have been defined, each one characteristic of a major discipline involved in the space mission. These modules, namely the space policies and international relations, the socio-economic, space law, the techno-scientific and the industrial one, interact complementarily to increase our knowledge of the space system.

Mr. Chairman, distinguished delegates, allow us now to briefly introduce the modules, highlighting the key concepts and underlining the cross-relations of this multidisciplinary approach.

The policy and international relation module provides a comprehensive overview of the main concepts of the political approach to space, like strategy, cooperation, coordination, negotiation and governance. In particular, the national strategy is analyzed through the study of activities and missions of the Italian Space Agency. Moreover, the other national space agencies are studied with particular attention to their organization structures, current activities and strategies, visions and budgets. Special consideration is then given to international and regional and governmental and non-governmental organizations. From the lecturers and items treated, we have come to understand how international cooperation has been, is and will be a key factor for the maintenance and the sustainable development of future space activities for peaceful purposes.

We have observed the many different government new advances in the space scenario and we have come to appreciate the commonly shared beliefs emerging from the discussions comparing national differences.

The space law module deals with the issues related to the international space rule deriving from the five treaties on outer space. These treaties are studied in detail and compared to other international treaties in order to emphasize their characteristics and implementation.

In addition to the treaties, law practice, international, bilateral and multilateral conventions and national laws are considered.

Finally, the interpretations and the case studies are deeply investigated in order to have a holistic picture of international space law. There are several lectures and meetings we attended with national and international jurists. Some law operators provided us with a balanced perspective between theory and practice.

The industrial module highlights two main points of interest, space programme management and the chain of value. The former’s work breakdown structure includes technical research, technical management, post-management, risk management and marketing and finance. The latter shows the fundamental relation among the three main actors, institutions, industry, large, small and medium enterprises, and the scientific community. The meetings with programme and project managers, industrial and private actors, have enriched our knowledge of the private space commercial sector.

Ms. N. M. PARADISO (Italy): The techo-scientific module supports and substances of merit the procedures and the structures of the previous four modules that characterize the Master Programme in Space Institutions and Policies. It offers a wide overview on space history and the evolution of space-borne scientific activities and their applications like Earth observation and Universe observation. It then focuses on the main elements of a space mission, space, ground and launching segments. Italian, international most-significant missions are presented.

Moreover, an overview is given on space debris, medical problems, regarding long-stays in micro-gravity conditions, those regarding long-term exposure to cosmic rays, together with analogue biological issues.

The socio-economic module focuses on the relationship between the social dimension and

economic growth, analyzing the debate on the Earth and how much space activities affect the growth.

The social dimension involving people and their ideas is studied. Aspects like new technologies derived from knowledge and developed by industries through financial support are traded and discussed. In this context, an overview of the main space budget, civil and military, along with their trends and geographical distribution, are analyzed. Overall, really we had gained a general perspective on world space economy.

The Master Programme also provides a number of exercise activities that have the intent to enrich our knowledge and to increase our analytical skills towards space reality. We believe these experiences aim at fulfilling the intent to enhance the opportunities for education and training in space activities expressed by the Third United Nations Conference on the Exploration and Peaceful Use of Outer Space.

In this addition, we attended several events held by distinguished figures of the International Space Panorama. These events have contributed to show us the importance of the space culture diffusion with the ambition of filling the gap between space and society.

Moreover, in order to gain direct experience, we visited the main national industrial sites as well as the institutional locations in Italy. We had the chance to attend a launch of the CRYOSAT-2 in the _____(?) Facility in Frascati, in direct link with the launching site and visit the Telespazio Space Centre in Fujino which deals with the handling of several missions and services, Thales-Alenia Space Italy in Turin, where the Italian pressurized modules of the International Space Station have been built and now today managed in collaboration with NASA, and Avio Company in Colleferro, the industrial side, important for the development of propulsive and launching systems, in particular the VEGA vehicle.

Finally, a few words of thanks and appreciation for this visit to the Vienna International Centre which is given us the chance to experience this COPUOS session.

The Master Programme will end with a final work focuses on space and sustainable development in all of its aspects and destinations. We are in the process of elaborating our papers in the hope of contributing to the equitable access and use of outer space for peaceful purposes for the benefit of all countries in future space activities for the purpose and evolution of humankind.

At the end of the classes, the Master Programme will provide the opportunity for a stage experience to be made in space governmental institutions, industries or international organizations. It is a concrete chance for us to experience the daily life activities of a highly professional space-related context.

We would, of course, be definitely interested in spreading our stage in other international entities. So, Mr. Chairman, and distinguished delegates, feel free to forward us any proposal in order to give us a special opportunity.

In conclusion, we have come to see and feel the crucial importance of international cooperation and coordination and how they are and will increasingly be necessary for the future of mankind. We are convinced that a new class of specialized professionals is necessary, technicians with social, economic and political sensibility as well as politicians sensible towards scientific, technical and industrial issues.

We are here to testify that the Italian Master Programme in Space Institutions and Policies can satisfy the State.

Mr. Chairman, distinguished delegates, thank you very much for your kind attention.

The CHAIRMAN: I thank Ms. Paradiso and Mr. Tani for this interesting presentation.

Are there any questions or comments?

Mr. Second Vice-Chairman, the distinguished Ambassador Raimundo González, wants to address you. It is all yours.

Mr. R. GONZÁLEZ ANINAT (Chile) *(interpretation from Spanish)*: Thank you so much Sir. With your permission, and I think from this very neutral position, if I may say, I think I can interpret what other delegates say, I think I can draw the conclusion that we have had very interesting presentations indeed today. I was particularly attracted by the recent presentation made by Italy. I must say that they are very close to our views and have the right approach. But also the ESPI proposal, very interesting, and then the Secure World Foundation. The Centre for Strategic Studies, I think was the proper name of that institution. I do not know whether they are in the room right now.

But on ESPI and on the Italian statement, I have a very specific question.

Bearing in mind the scope of the programme, the quality and the holistic and comprehensive approach to international modern relations and contemporary policy-related issues, what do you think most countries making up this Committee, the developing countries, can do to have access to these activities so that they are not restricted to very few developed countries.

And I would like to put my question to Kai-Uwe Schrogl, the representative of ESPI or the person making the presentation and I would, of course, welcome a reply.

It was a very good presentation. I would like to thank you. Thank you Sir.

The CHAIRMAN: Thank you my dear friend Raimundo. If somebody wants to give an answer to the questions put by Ambassador Raimundo González.

Mr. I. TANI (Italy): We truly believe that cooperation and collaboration are key elements and will be key elements for the future of space missions in particular but in general humankind. But what countries here seated in this distinguished plenary assembly can do is do their best to try to go over their peculiar national necessities and try to cooperate and see what are the long-term objectives without focusing too much on the now, on the present.

The CHAIRMAN: Thank you.

Are there any other comments or questions?

I see none.

I would now like to invite Mr. Claudio Maccone of the International Academy of Astronautics to make a presentation entitled "Proposing a New Radio-Quiet Zone on the Far Side of the Moon".

Mr. C. MACCONE (International Academy of Astronautics): Thank you. Mr. Chairman, distinguished delegates, ladies and gentlemen, let me please introduce to this audience a theme that as far as I know was not handed before by the COPUOS. This is a new issue because it is essentially a scientific issue coming from the needs of scientists doing research about the Universe and trying to pick up signals coming to the Earth from the Universe who are facing increasing difficulties in receiving very weak signals because of the growing radio-frequency interference, that is the development of humankind is fortunately is bringing us an awful lot of radio transmissions of all kinds. But this is actually hampering scientists from receiving very weak signals. So the problem on the surface of the Earth is really difficult to solve and scientists belonging to the International Academy of Astronautics, about 20 years ago, came to the conclusion that if things keep growing this way, in probably 20 years or 30 more years, all radio telescopes on the surface of the Earth will be basically blinded because of the production of other human-made radio-frequency interference.

So we were searching at the IAA about the possible solution for this problem and the conclusion was that we should not look for such a solution on the Earth but we should actually go to space. So space in this case is really a necessity not a luxury because it is the only place where we can hope to find a place especially on the far side of the Moon free from the radio-frequency interference coming from the Earth.

So let me please explain this first in scientific terms and then go over to the political issue which is, of course, what I would like to introduce this audience to in view of some kind of international solution of this problem.

In this slide you see essentially on the right a picture of the far side of the Moon. The two horizontal red lines are two parallels, at plus and minus 30 degrees above and below the Equator of the Moon and the circle that you see is a circle drawn with the centre at the antipode of the Earth, that is, the point at the centre of the far side which is exactly opposite to the direction of the Earth. And this circle, of course, extends in between the latitude plus 30 and minus 30 and in terms of longitude in between the meridians 150 degrees east and 150 degrees west. The convention is, of course, is that 180 degrees corresponds to the meridian crossing the centre of the far side.

Now the proposal of this presentation is to suggest that this circle that I was forced to give a name and the name I gave was PAC, Protected Antipode Circle. So the proposal is that this Protected Antipode Circle should be declared by the United Nations in the future by virtue of a kind of an international agreement, an area where future exploitation of the Moon will not produce hopefully radio-frequency interference because this is the only place on the Moon where we still have a radio-quiet zone.

So this is the basic goal of the presentation. And now please let me go over to more technical detail.

As you see, the proposal of PAC, Protected Antipode Circle, came out of an IAA cosmic study, that is a study made by a group of academicians and the title of that was "Lunar Far Side Radio Lab". Here is a short timeline of this study. I will not go through the details but essentially it started 20 years ago and basically on the initiative of the French radio-astronomer working at the _____(?) Observatory near Paris by the name of Jean Heidmann or Hedman. He was born in 1920 and he untimely passed away in the year 2000. Heidmann was a radio-astronomer and, of course, he was completely aware of the problems that radio-astronomers have to face in order to cope with radio-frequency interference. So he asked the International Academy of Astronautics to promote the cosmic study. The Academy did and actually in the year 1999, he appointed me as a Deputy, and I am sorry, this is a sad story, in the year 2000 he passed away with cancer, so when he passed away, I had to take over the study and I am still leading the IAA Group continuing this study today and this is why I am here giving this talk and presentation.

Let me please remind all of you some technical details. I am sorry to go over to some mathematical stories but I think this is indispensable in order to understand this circle on the far side of the Moon is selected in between the parallel plus 30 degrees and minus 30 degrees. I mean there are very precise scientific reasons for selecting this region. It is not just a line drawn on the map.

If you look at the Earth-Moon system, there is a wonderful mathematical theorem that was proven in 1782 by the famous Mathematician, Jean-Jacque Louis LeGrange, and this theorem states that when you have two big masses, in this case, the mass of the Earth and the mass of the Moon. Of course, the Moon, the lower mass is revolving around the larger masses. While in this plane of orbit, there are five points and only five points where the gravitational pull of the Earth, the gravitational pull of the Moon and the _____(?) force due to the rotation of the Moon around the Earth compensate exactly. In other words, if you sum all the forces on these five points, the resultant of the force is zero.

Now this was clear, mathematically-speaking, as early as 1782 but the application, of course, came along only with the space age and all of us know that the Lagrangian Points, as they are called, are extremely important for all space missions around the Earth because they provide suitable places in space where the gravity is manageable, meaning that if you can control the _____(?) level and the engine first, then you keep your space of staying at this point as long as you wish.

Now I just would like to mention one point in this story. Let me try to go back. You notice these two triangles, the two equilateral triangles. The apexes are called L5, the low one and L4 the upper one and basically they keep pointing the story, as far as we are concerned, is that the angles in these triangles are, of course, 60 degrees so if you stand on the Moon, you will find that the direction that is linking you to the L4 and to the L5 points are respectively 60 degrees away from the direction linking you to the Earth.

For a moment, forget about that, we will come to that point just in a minute and consider a completely different problem, that is, how to define scientifically the shaded zone of the Moon that should be somehow protected legally from too wide exploitation. Now I am glad to say that the International Telecommunication Union, ITU, already faced this problem in some sense and here is the definition. You have the Earth on the left and around the Earth you have the dot-dot line, the orbit of a satellite about 100 kilometres above the surface of the Earth. Now the ITU definition is that if you consider a cone that is stanted(?) to the orbit and is stanted(?) to the surface of the Moon. So, of course, this zone extending to space on the other side up to a certain point that we call the Apex, while these cones define on the surface of the Moon, you can see it in green right now, the region which the ITU decided to be the shielded zone of the Moon. That is according to the ITU Regulation, this part of the Moon should be particularly shielded and protected against production of radio-frequency interference. And here are the articles in the ITU Regulation where this is listed.

But this is not the only point I would like to make. Actually there is another possibility. If you place a satellite into orbit around the Moon, this satellite is crossing through the quiet cone, that is the silent part of space, because of the shape of the Moon, of course, and so you can imagine to put a radio-telescope onboard this satellite and measure what you need to measure, the radiation character of space, when this satellite is crossing the quiet cone. This is possible but unfortunately it can be proven mathematically that the time the satellite is there is very short and we want to have much more time.

So let me please go over to another topic and finally we will put all together these different topics.

Showing you a picture of Daedulus Crater on the Moon. Now this beautiful crater is a big crater. It is just near the centre of the far side and it is 80 kilometres large. This is important because in the future we can expect to put not just one radio-telescope but more radio-telescopes and so we would be able to interference and so we would be able to increase the angular resolution of the object that we explore by setting up establishments for science in that crater.

At last we can put different topics together and let me please show you this image. The circle that you see is the Moon as seen from above. On the left you have the Earth and from above you can see that the direction coming from the Lagrangian Point L4 is making an angle of 60 degrees and the same happens from the direction coming from the Lagrangian Point L5. So if we look in the future and consider the next 50 years or 100 years in space, we can imagine that in the future there will be space stations located at the two Lagrangian Points, L4 and L5. Actually, it can be proven mathematically that the gravity at those points is very good because it is essentially keeping the Space Station in the same location. We say that it is a gravity well.

So the conclusion is that if you look one century in the future, there will probably be a space station at L4 and L5. Incidentally, in the United States of America, there is a society called the L5 Society that is just claiming to achieve this in the future.

So the conclusion is that more radio waves will be emitted by those space stations and, of course, they will impinge on the surface of the Moon and the conclusion is that the only part of the Moon that will be safe from that in 100 years in the future, is the part included in between those heavy solid black lines. So our future establishment must be within that part because only there will be still silent places.

Now, unfortunately from the point of view of the proposal I am suggestion, just above the far side, on the right, there is one more Lagrangian Point, that is called the Lagrangian Point L2, and there have been proposals in the past also by space companies to put up there, a space establishment like the space stations, transmitting satellites, anything.

Now from our point of view, this is not a good idea because, of course, whatever is placed in the Lagrangian Point L2 will flood exactly the far side of the Moon.

But let me tell me how this problem can be solved. First of all, here I am just trying to give you some figures of the madness in the game. Scientists used to measure the noise production in terms of decibels and decibels are _____(?) scales. These two tables, this one and the next one here, show you the most important frequencies of interest for scientific research in terms of decibels and how much is the attenuation of the radio noise coming from the Earth in terms of decibels produced by the shading effect of the Moon. So this is just to convince you that there is no other place near-by the Earth as the far side of the Moon for being capable of doing good science without being bothered by the growing radio-frequency interference.

One more point. How quiet is the far side? I already mentioned these and the L5 Society and so the best solution is probably just one. Use the central part of the far side, as I mentioned, but also leave the L2 Lagrangian Points hovering above the far side alone. But please do not put anything there because this is just what would flood the far side of the Moon from new radio-frequency interference.

So it would appear that this is a difficult problem because space agencies, including NASA, for instance, already considered the possibility of placing there what they call the NASA Gateway, that is, a big space station. Now let me tell you how a confidential conversation between the IAA and the NASA establishment already solved this problem. The problem is solved in this way. When I mentioned the five Lagrangian Points of the Earth-Moon system, of course, I referred to the Lagrangian theorem, but actually you can apply the theorem to other masses. For instance, consider two more big masses, the mass of the Sun, which is the big bright circle in this picture, and the mass of the Earth. So if you apply again Lagrange's theorem to these couple of masses, you get five more Lagrangian Points and they are called by scientists the Lagrangian Points of the Earth-Sun or Sun-Earth system, completely different from the five Lagrangian Points of the Earth-Moon system.

Now, here is the solution to the problem because NASA finally agreed to set up the future Space Base, the planned NASA Gateway, at the L2 Points of the Sun-Earth system and not of the Earth-Moon system and this is the right solution because it gives NASA, the circle is showing you where this Lagrangian Point L2 of the Sun-Earth system is located. So this is the solution because that point gives NASA excellent capabilities of launching from that future Space Base, any space mission to the outer solar system including planets and especially the asteroids, main belt asteroids that orbit in between Mars and Jupiter. But at the same time, is not really spoiling too

much the far side of the Moon because the Moon orbits around the Earth so it is flooded by the radiation coming from data to point only part of the time but not all the time.

So this was the third compromise in between the two different problems that is using the L2 Point for gravity reasons and using the _____(?) Point not for producing radio waves.

Let me complete my presentation by just hinting more problems. As we all know, in recent years, there have been many space missions trying to detect water on the Moon. Now there are suggestions, if not re-approved, that there is water on the Moon, frozen from the time of bombardment about 3.8 billion years ago, and the question as far as we are concerned about the far side is, are these regions also located on the far side or only basically in the South Pole and in the North Pole? There is some kind of overlapping but in my opinion, this is not much. So honestly I do not regard this question as a hampering problem for our proposal to be submitted to the United Nations.

So the conclusion of the story I would like to make is the following. From the point of view of science, it is pretty obvious that the far side of the Moon is a very special reason. We have to save the far side of the Moon from wide exploitation by private entrepreneurs that would spoil this unique radio-quiet environment.

But then it is no longer a science problem, it become a legal problem so we debated this problem with the IISL, beside debating it at the IAA.

So let me please conclude my presentation by projecting some ideas that may be right, may be wrong, I do not know, I am not a politician, I am a scientist, but these are just ideas about what might come about this issue in the future.

So basically if I got right the procedure of the United Nations, there should be some request by one nation member of the United Nations to the COPUOS about more technical information about this, a sort of formal request for protecting of the PAC, Protected Antipode Circle, on the far side of the Moon. Then COPUOS, of course, would turn to the competent authorities, that is the IISL for legal matters and the IAA for scientific matters and then reports would be produced and finally if everything goes fine, this proposal would reach the United Nations General Assembly and, in my hope, something will be decided about protecting, in a short of legal fashion, the central part of the far side from too wide exploitation.

This is basically my proposal here and again I am grateful to COPUOS for giving me the opportunity to make this presentation probably for the first time in the history of space life.

Thank you very much.

The CHAIRMAN: I thank Mr. Maccone for this interesting presentation, maybe too technical for some delegations, but very interesting.

Are there any questions or comments?

Please, Professor Kopal, you have the floor.

Mr. V. KOPAL (Czech Republic): Thank you very much Mr. Chairman. Mr. Chairman, I would like first of all to join you in thanking our distinguished colleague from Italy, Dr. Claudio Maccone. He is a member of the SETI Committee and, therefore, because I am also active in this Committee, he is my distinguished colleague and friend, and indeed his presentation has been not only very interesting but I would say that it was also a little bit futuristic but at the same time bringing us a problem that we should bear in mind. And in this respect, I would like to recall here the fifth United Nations Treaty, namely the Moon Agreement of 1979 which, in Article 7, paragraph 3, provides for international preserves to be established on the Moon if there are indeed interests of the State Parties to this Agreement to establish such preserves. And I think that the Crate Daedulus probably is one of such possible preserves and, therefore, we should first of all appreciate the anticipation of the architects of the 1979 Moon Agreement which already included such a possibility in this legally binding treaty. And at the same time, indeed to bear in mind that the idea of such international preserves has been sound and that it might be indeed used for the benefit of all mankind.

Unfortunately, as you probably know, the Moon Agreement has had so far only a limited number of adherence. Only 13 nations have ratified this Treaty and made it legally binding for them and for other countries only signed this Treaty.

But if I may also remind you that the Legal Subcommittee of the COPUOS is discussing the five United Nations treaties on outer space and the Moon Agreement is one of these treaties and perhaps it might be also this question of international preserves and particularly in connection with this specific case that it might be also addressed to the Working Group that has been dealing with this issue in the Legal Subcommittee.

Thank you very much.

The CHAIRMAN: Thank you very much Professor Kopal.

Are there any other questions or comments?

I see none.

Now I would like to invite Ms. Sahli of Tunisia to make a presentation entitled "Outer Space Activities of the National Remote Sensing and Mapping Centre".

Ms. T. SAHLI CHAHED (Tunisia) *(interpretation from French)*: Thank you very much Chairman. Let us bring us back down to Earth after this wonderful far side of the Moon presentation. I would like to talk to you about the work done by our National Centre on Remote Sensing and Mapping.

If I might tell you a little bit about this Centre and the various public producers of geographical information in Tunisia. I will tell you a bit about the way this National Centre has mapped and done remote sensing in the past and what it is doing at present. And I will also be telling you about the establishment of alert and monitoring systems on the basis of remote sensing.

As a public producer of geographic information, it was set up by the Office of Topography and the Land Registry. In 1980, the Army Directorate for Geographical Sciences and Hydrography was set up covering geographical information, more or less. In 1980, the National Outer Space Commission was set up and 1988 the National Centre for Remote Sensing was set up and this became our Centre now.

In 1990, there was a presentation of a concept which corresponds to organizational awareness, of technological efforts. In 1997, the GEONAT, the National Geomatization Programme was launched. This was then subsequently reorganized. It expanded and there was a Cooperation Agreement between the National Centre and the Office of Topography and Land Registry was concluded. And in 2009, the National Centre of Mapping and Remote Sensing was also reorganized. It was empowered more broadly. It was also tasked with cartographic mapping missions.

I think I will not speak to you about the laws creating the Centre and the decrees stipulating its powers.

Here I am going to be speaking about the tasks of the Centre as regards geographical information and geo-localization techniques, remote sensing techniques. In Article 5, you see that it is tasked to collect data as regards remote sensing, for technical processing, dissemination and storage and it is also tasked to use outer space techniques and remote sensing techniques and implementing studies for the purposes of national defence and development of the socio-economic status of the country.

And thus we are specialized in precisely these tasks that I have referred to.

We have gone through various periods in our development. The key periods have indeed refined its mission. French cooperation has been very supportive in the development of our operations. The cooperation financed focused on marine pollution in the Gulf of Gabès. It also concentrated on the evaluation of 1990 flood damage. There was a project on the desertification dynamics in the region of Menzel Habib. There was also the use of our mandate to choose sites which are conducive to the siting of hill lakes and it was also used in working on urbanization projects in Tunis.

In 2002, we started working on the basis of national financing alone and in the initial period, we were able to enhance the awareness of potential users in various areas of special use so we, for example, protected coastal areas. We worked up studies on the dynamic of populations and the environment in the north-eastern part of Tunisia. We also used remote sensing to run forest inventory and we also focused on food security as well. The use of remote sensing for agricultural statistics, for example. This previously had been done on the basis of survey campaigns and topographic maps.

There was also international financing for the same period on projects spanning the Mediterranean and also comprising neighbouring countries, Morocco, Algeria, that whole area. All of the countries involved in desertification in the southern part of Tunisia. This fed into the pilot projects of the Menzel Habib area.

There was also the Cameleo Project which looked into the changes in the arid Mediterranean eco-systems.

Remote sensing was also made use of for the monitoring of shipping vessel movement in the Mediterranean and pollution movements in the Mediterranean. Italy, France, Spain, Tunisia, were all involved in this work. This brings me back to the

Cameleo Project which also spans several periods of our work.

Since 2003, we had a second forestry inventory run with also photos of a higher resolution. There was also the effects of the change of land use made on sedimentation and we also monitored desertification. This is subject of constant interest over the years for our countries in the south, around the Mediterranean. These desertification projects fed into a project focusing on the early warning of drought in our area. We also monitored desertification in the Rjim Maatoug region. There, there was significant socio-economic development and this is an area which is very sensitive to desertification.

We also focused on the sustainable management of salines in Tunisia and what we intend to retain is the establishment of a Tunisian system to prevent and control and counter forest fire risks.

Now, we have used very high-resolution imagery and here you can imagine the advantages to be derived over just aerial photography, aerial photography being very expensive, rather the THR processing is cheap as compared to the aerial photography which is expensive to process.

Here we see the different kinds of imagery which is requested, the high-resolution, medium- and low-resolution. We have worked with this imagery to start off with on the basis of the French cooperative financing and depending on the work to be done, we used different kinds of resolution depending on what is required. At present, our Centre very often is tilting towards the use of radar imagery because of the specific advantages to be derived for countries such as ours in cases of flooding or other natural disaster where there was a requirement for imagery of a lesser spectral broad range because of the cloud cover which allowed for restriction, unfortunately, of the normal sorts of imagery. It was useful to have radar input in these cases.

We also used this sort of cartography for archaeological sites, hydrographic networks and to measure salinity indexes in general.

Other projects which are ongoing have to do with hyper-spectral imagery. Right now we are planning on using aerial images to determine soil properties.

I would like to point out that all these projects are being run in partnership with the various Ministries and services involved in this sector. Our Centre is affording support by processing the spatial data, whatever source it comes from.

Now as concerns the global navigation satellite systems to review, update and refine the geodesics network, we use GPS input data. We also can use this to identify the land lots. This is useful in the context of our harvest monitoring project. Derivative date, of course, here we have digital maps. We are using this imagery for land use and management. Here you have a reference to the SPOT imagery.

This refers to the land use maps which have been developed for the national agricultural mapping. Then the second forestry inventory that was done on the basis of remote sensing data and land use cartography with the FAO-approved method.

Here you have the digital terrain model which was developed on the basis of topographical maps which are digital.

The CNTC intends to get integrated into the establishment of the implementation of early drought warning systems for the countries of the southern part of the Mediterranean. This is a system which is extremely useful to trigger early warnings for upcoming droughts. We are involved, of course, to responding to the issues of droughts and desertification. We really need to see exactly which data have to be monitored which can usefully give you early useful warning alerts.

We also have agricultural campaigns which have started in the early 1990s. These have resulted in an early warning of harvests, cereal harvests in particular. We were able to do remote sensing-based cereal harvest forecasts.

We have worked on a five-year plan to follow-up on the implementation of this system. The system involves the European Union, through its joint Research Centre and our Centre. The Parties have expressed their interest in cooperating in the fields of yield forecasting, soil(?) surface estimates, control and monitoring of agricultural production systems and agricultural practices, early warning and food security, and climate change and agriculture.

Now forest inventories. This has been conducted on the basis of remote sensed data. The other projects which are ongoing involve olive tree counting. We are using high-resolution imagery for this. We intend to supply various observatories with the processed spatial data. We are going to be

supplying this to environmental observatories, coastline observatories, urbanism observatories and we are also updating the regional agricultural maps which exists on the basis of remote sensing. We are also going to be nourishing the information systems, the agriculture system, the Land Registry system, etc.

And a Partnership Agreement established between ENIS, that is the National School of Engineering, and the Centre has been concluded to work and produce a micro-satellite. They have already indeed started their work in developing this micro-satellite.

Tunisia has been zoned on the basis of meteorological stations representing each particular zone and on the basis of this zoning approach, we have set up environmental observatories to ensure the proper environmental management which is sustainable on the basis of remote sensing data.

Thank you very much for your attention. I hope that I have been interesting in my presentation of this data. If you wish to get more information, please I would refer you to our website and that would give you more detail on the various projects that I have just skimmed through.

The CHAIRMAN *(interpretation from French)*: Thank you very much for your very interesting presentation Madam.

(Continued in English) Are there any questions or comments on the presentation made by Ms. Sahli?

I see none.

Distinguished delegates, I will shortly adjourn this meeting of the Committee. Before doing so, I would like to inform delegates of our schedule of work for tomorrow morning.

We will reconvene promptly at 10.00 a.m. At that time, we will continue our consideration of agenda item 7, Implementation of the Recommendations of UNISPACE III, agenda item 8, Report of the Scientific and Technical Subcommittee on its Forty-Seventh Session, agenda item 9, Report of the Legal Subcommittee on its Forty-Ninth Session, and agenda item 10, Spin-Off Benefits of Space Technology: Review of Current Status.

Following the plenary, there will be three technical presentations by the Pro Tempore Secretariat of the Fifth Space Conference of the Americas entitled "Fifth Space Conference of the Americas: Regional Agreement for Security and Human Development: Perspectives for the Future", by Japan on the "Japanese Contribution for Disaster Management", and by Kazakhstan.

At the end of the morning's session at 1.00 p.m., there will be a reception hosted by Japan at the premises of the Permanent Mission of Japan. Invitations for this event have been placed in the pigeonholes of all delegations.

I would like to make the following announcements.

Tomorrow at 11.00 a.m., in Room E0951, there will be a briefing by IAF for Heads of National Space Agencies and African Missions on the preparation of activities for the International Astronautical Congress 2011.

At 2.30 p.m. in Room M01, there will be a briefing on the planning for the UN/IAF Workshop in Prague. All delegations are invited to attend.

Are there any questions or comments on this proposed schedule?

I see none.

Now I would like to cordially invite all delegates to attend at 6.15 p.m. at the Mozart Room of the VIC Restaurant, the presentation by the Italian Space Agency entitled "Italy in Space Observation", followed by a buffet reception. The event will include remarks by Ms. Mazlan Othman, Director of the Office for Outer Space Affairs, the President of the Italian Space Agency, Mr. Enrico Saggese, and by the Italian astronaut, Mr. Mauricio Kelye(?). An invitation with the programme has been placed in the pigeonholes.

This meeting is adjourned until 10.00 a.m. tomorrow morning.

The meeting closed at 6.06 p.m.