
Committee on the Peaceful Uses of Outer Space

Fifty-sixth session

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663rd Meeting
Wednesday, 13 June 2013, 3 p.m.
Vienna

Chairman: Mr. Yasushi Horikawa (Japan)

The meeting was called to order at 3.00 p.m.

The Chairman Good afternoon distinguished delegates,

I now declare open the 663rd meeting of the Committee on the Peaceful Uses of Outer Space.

Distinguished delegates, I would first like to inform you of our programme of work for this afternoon. We will continue our consideration of agenda item 4, General exchange of views, agenda item 5, Ways and means of maintaining outer space for peaceful purposes, and agenda item 7, Report of the Legal Subcommittee on its fifty-second session.

There will be three technical presentations this afternoon: by a representative of Canada entitled "Space Security Index 2013", by representatives of Japan and Malaysia entitled "20 years of history and future of the Asia-Pacific Regional Space Agency Forum (APRSAF)", and by a representative of China entitled "The latest developments of Beidou Global Navigation Satellite System".

This evening, starting at 7.00 pm, the Office for Outer Space Affairs and the Association of Space Explorers are organizing the Women Astronauts and Cosmonauts Panel entitled "Women in Space: The Next 50 Years" at the Vienna Natural History Museum. The museum is located at Maria-Theresien-Platz in the 1st district. The event, which is open to the public, will feature the following panellists: Ms. Roberta Bondar of Canada, Ms. Janet L. Kavandi of the United States of America, Ms. Chiaki Mukai of Japan, and Ms. Liu Yang of the People's Republic of China. The Director of the Office for Outer Space Affairs, Ms. Mazlan Othman, will deliver a welcome address, and the panel will be moderated by Mr. Dumitru-Dorin Prunariu, President of the Executive Board of the Association of Space Explorers.

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

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

The first speaker on my list is the distinguished delegate of Thailand. You have the floor.

Mr. A. Snidvongs (Thailand) Thank you, Mr. Chairman.

Mr. Chairman, first of all, on behalf of the Thai Delegation, I would like to congratulate COSPAR and OOSA for the positive achievements during the past year 2012.

For Thailand, the year 2012 was a year of opportunities in initiating new activities and continuing of ongoing programs for the peaceful uses of space for the benefits of Thai people and international communities. The major activities are in the area of Earth observation system and infrastructure development, applications and solutions, space-related business, capacity-building and international cooperation. Faced with the flood in 2011, we have learned a lot and gained valuable experience from the disaster management. Right now, Thailand is in the stage of improving for readiness for the disaster in the future. Space technology and its applications were one of the most vital tools in coping with the issues.

We have continuously maintained and upgraded our current space-based systems. In the year 2012, Thailand continued ongoing operations of our satellite, Thaichote, or formerly known as THEOS, and receiving data from many other satellites including TERRA, AQUA, NOAA, RADARSAT-1 and 2, SMMS and COSMO-Skymed.

Moreover, Thailand has issued new strategy for reconstruction and future development aiming to create confidence, competitiveness and sustainable future of the country. This strategy covered water resource management, restructuring production and service sectors, spatial development for new economics areas and infrastructure development. Space technology and geo-informatics are viewed as important components for this national strategy. Currently, Thailand envisioned the second phase of Thailand Earth

Observation System or THEOS-2, which is not just a satellite, but it is a programme encompassing development of space infrastructure, ability to utilize data from multi-sensors, all-weather data acquisition, geospatial solutions to Thailand and international community and capacity-building. THEOS-2 will be conceptualized with the solutions needed in priority areas as a starting point and working backward to find technology that is most appropriate for Thailand. These required solutions include disaster management, water resource management, land and marine natural resource management, agriculture, land use planning and national security. THEOS-2 is in the process of feasibility study and request for conceptual models. International collaboration is expected for this programme.

Mr. Chairman, in terms of space data applications, Thailand continued applying data from space-based Earth observation in various fields including agriculture, fisheries, food security, urban planning, tourism, forestry, environmental monitoring, national security and many sustainable development issues. With our experience in application development, we have learned that the most important part is to develop solutions to meet the requirements of users. We will continue to work toward developing solutions to meet with public sectors.

To highlight the activities of the year 2012, I hereby provide several examples in disaster management, water resource management and agriculture.

For disaster management, we continued collecting, analysing and using satellite to cope with major national disaster events, for example, floods, storms, landslides, forest fire, haze and drought. The satellite data were integrated and analysed with other relevant geospatial data, along with modelling and tools to establish decision support system for disaster management. Most satellite-derived information for disaster monitoring is available to the public on the Thailand Monitoring System's website.

Satellite imageries play important role in sustainable water resource management. They have been applied to help the planning process for the Integrated Water and Flood Management of the Thai Government in various modules such as monitoring of reforestation, assigning of water retention areas, drainage channel planning and planning for communities' flood preparedness. A project to develop water resource database for local community based on satellite imageries has also been established to ensure that important information for local water management.

Space technology is also applied for the benefit of farmers; the project "Precision farming by space technology and GIS" was initiated. Various kinds of data from space and ground are managed into layers of information appropriate for agricultural management. The information such as weather prediction, weed and pest infestations, suitable land use, map of economic crops was distributed to individual farmers via the website and other communication means. This project would lead to effective crop management to ensure an appropriate supply of cash crops, minimize the pricing problem and enhance productivity of Thailand's agricultural sector.

Furthermore, along with the satellite data applications, Thailand National Spatial Data infrastructure or NSDI has been developed in a comprehensive and systematic way. NSDI includes development of basic geospatial database including satellite imageries as one of the Fundamental Geographic Data Set, development of NSDI portal/data clearinghouse, establishing of geospatial standards and capacity-building. For the year 2012, the major achievements of NSDI were on publishing new geospatial standards. For the near future, new base map layers of the nation with the scale of 1:4,000 will be created and managed by National Committee on Geospatial Information.

Mr. Chairman, collaborations with other government officials, private sector and educational institutes as well as developing the business sector and entrepreneurship are essential in creating innovation in the field of space technology. Therefore, Thailand has conceptualized the new space innovation park or Space Krenovation Park (SKP), operating based on the concept of Clustering, Co-creation and Connectivity. SKP is the open innovation platform aiming to increase the level of Thailand competitiveness in both domestic and international level through Space and Geo-informatics innovations. With a driving force of THEOS-1 and the new programme THEOS-2, the facility's capacity will be based on cluster approach — with industry, academia and other institutions. Joint venture with the leading R&D institution will also give pace to these facilities. We also aim to extend and deepen its research and development capabilities in key research areas to gain both social and economic benefits. At SKP, not only can we materialize innovation but also integrate industry and academic segments together and make the most of both their attributes.

Mr. Chairman, to emphasize the significance and recognition of the benefits of space technology in our country, we have regularly organized and conducted various kinds of activities such as trainings, seminars,

workshops and conferences to transfer knowledge on space and its application, as well as to create awareness of the people. The targets of these activities include personnel from public and private sectors as well as lecturers and students from academic institutes. In 2012, GISTA? successfully organized 24 basic and advanced courses in geo-informatics applications with more than 1,200 participants. To create space awareness, 25 activities were held with participation of more than 10,000 attendants. All these activities tremendously help to create and increase the capacity-building in space technologies and applications in Thailand and encouraged the people of the country to use it as primary tools in their missions.

Mr. Chairman, as we are well aware, close cooperation and coordination in both regional and international cooperation levels are indispensable and key mechanisms in promoting and using space technology and its relevant applications for our future. As for international cooperation, Thailand has been involved in several international initiatives. We played an important role in ASEAN, under Subcommittee on Space Technology and Applications (SCOSA) by organizing the workshop on ASEAN Earth Observation Satellite last year. Thailand and the Asian Association on Remote Sensing (AARS) jointly organized the 33rd Asian Conference on Remote Sensing (33rd ACRS) in Pattaya, Thailand. More than 1,000 participants from various countries and international organizations attended the conference. The conference was very successful and had fruitful outcomes. Thailand also supported many activities under international initiatives, for example, Asia-Pacific Space Cooperation Organization (APSCO), UN-ESCAP, International Astronautical Federation (IAF), Committee on Space Research (COSPAR) and the Asia-Pacific Regional Space Agency Forum (APRSAP), that we provided and shared data from Thaichote Satellite (THEOS) for disaster monitoring initiative under this forum called "Sentinel-Asia"; the data was utilized for many disasters throughout the region. Furthermore, we also have substantive collaborations with several countries such as Myanmar, Vietnam, Lao PDR, China, Republic of Korea, Japan, India, Kazakhstan, Italy, France and USA.

Mr. Chairman, I am pleased to inform you that during 11 to 15 November 2013, Thailand, jointly with the Committee on Space Research (COSPAR), will host the "1st COSPAR Symposium" in Bangkok and will organize a 4-day capacity-building workshop during 4-8 November 2013 back to back with the Symposium. The Symposium is the first of a new series of events initiated by COSPAR, which aims to promote space research at a regional level particularly in emerging countries. We would like to invite all

members to participate in important event and look forward to welcoming all of you to Thailand.

Mr. Chairman, Thailand, among other COPUOS members, affirms its commitments to further cooperate in the activities of COPUOS to strengthen its work for the peaceful uses of space.

Thank you very much.

The Chairman I thank the distinguished representative of Thailand for his statement.

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

Mr. E. Both (Hungary) Thank you, Mr. Chairman.

Mr. Chairman, Distinguished Delegates, my delegation pleased to see you again, Mr. Chairman, chairing this Committee. We congratulate you and wish you much success in your work. My delegation warmly welcomes Armenia, Costa Rica and Jordan as the newest member states of COPUOS. The increasing number of members clearly demonstrates the importance of the work of the Committee. We sincerely hope that the steadily growing Committee will keep the cooperative, peaceful and constructive spirit of the discussions.

I also take the opportunity to congratulate and thank Ms. Mazlan Othman, the Director of the UN Office for Outer Space Affairs, and her staff for the preparation of this session as well as the connecting celebration of the 50th anniversary of the first female space flight. Their work contributes significantly to the progress of the matters related to the agenda items of this session. At the same time my delegation expresses its warmest thanks and appreciation for Ms. Othman's several years of activity as the Director of OOSA.

Before commencing the second part of my statement, I take the opportunity to congratulate Poland on the occasion of the country's becoming the 20th member state of the European Space Agency at the end of the last year.

Distinguished Delegates, now I will give a brief review of space activities in Hungary. I am pleased to inform the Subcommittee that more than one year ago Hungary's first satellite, a cubesat, named Masat-1 was successfully launched. Together with six other European university cubesats it was a piggy-back payload on the maiden flight of the European Vega small launcher. The 1-kg satellite was designed and built by the students and educators of the Budapest University of Technology. The production of the satellite was mainly an educational and technological project.

It is my pleasure to announce that the satellite is still functioning perfectly, fulfilling all of our expectations. All on-board systems function without any failure. The satellite received after a few days of operation the official designation MO-72 from the Radio Amateur Satellite Corporation. The tracking of the satellite has a strong international aspect, since more than 160 radio amateurs from about 30 countries on five continents received and forwarded to the data centre hundreds of thousands of data packages. Since March 2012 the satellite regularly takes also colour images of the Earth, so these became the first remote sensed images by a Hungarian satellite. Due to our tasks according to the UN Registration Treaty the Hungarian Permanent Mission officially announced the launch of the Hungarian satellite to OOSA. Following this communication the first Hungarian satellite, internationally designed as 2012-006E has appeared in the UN Register of Space Objects, as it has been published in the document ST/SG/SER.E/648.

Earlier this year our cooperation with the Russian Federation reached a new milestone. The Progress M48M cargo ship delivered to the ISS among others the Obstanovka experiment. The development of Obstanovka experiment is carried out under the technical control of the Russian Space Research Institute in international collaboration, as a product of the cooperation of seven nations. The basic task of Obstanovka experiment involves research of plasma wave phenomena in the zone next to surface, investigation of interaction between magnetosphere and ISS, theory of wave distribution and research of geophysical relations. Two Hungarian institutions and two small companies are participating in this project.

I am pleased to inform the Subcommittee that in 2012 the UN-SPIDER programme and the Karoly Robert College of Hungary signed a cooperation agreement to establish a Regional Support Office of the UN-SPIDER programme at the College. As a new RSO, Karoly Robert College is very active in Hungary and abroad too. They established a strategic partnership with the Hungarian Association for Geo-Information. They became the first institution from Hungary having membership in Open Geospatial Consortium.

In cooperation with University of Baia Mare (Romania) the experts of RSO held a series of presentations about how to take advantage of GIS and remote sensing technologies in the case of natural disasters.

The Hungarian RSO launched a pilot project with Slovakian partner in Sajo valley, combined application of hyperspectral data and satellite images for floods management, including risk estimation.

Distinguished Delegates, the priority field of our international cooperation is the space field in cooperation with the European Space Agency. Hungary is a European Cooperating State of the Agency. The implementation of the PECS Agreement goes smoothly and successfully. In the past ten years we launched nearly hundred projects in the framework of this cooperation.

Of these projects I highlight the Hungarian students' participation in the REXUS/BEXUS programme, which is realized under a German-Swedish bilateral agreement. The Swedish share of the payload has been made available to students from European countries through collaboration with ESA. Last year three Hungarian teams, involving students of three different universities were selected. Two of those carried out successfully their balloon-borne experiments, the third one is preparing a rocket flight due to later this year. All these Hungarian students' activities are financed through the PECS programme.

Thank you for your attention. Thank you Mr. Chairman.

The Chairman I thank the distinguished representative of Hungary for his statement.

The next speaker on my list is the distinguished representative of Pakistan. You have the floor.

Mr. A. Bilal (Pakistan) Thank you, Mr Chairman. It gives me great pleasure to congratulate you on your chairmanship of this session. My delegation looks forward to constructive and fruitful deliberations and successful conclusion of the present session of the Committee under your able guidance. To this end, I assure you of my delegation's complete support and cooperation.

Let me acknowledge the untiring efforts of the staff and management of OOSA under the sterling leadership of Dr. Mazlan Othman, to enable to the convening of this session and for the preparation of the documents for this meeting.

Allow me also to take this opportunity to express our profound appreciation of Dr. Othman's invaluable services as the Director of UNOOSA. We wish her every success for her future endeavours subsequent to her departure from OOSA toward the end of this year.

Mr Chairman, I would also like to take this opportunity to congratulate China on the successful Tiangong 3 mission with one woman astronaut on board, besides others. I will also like to acknowledge the contribution of women towards progression of space science and technology and especially the women astronauts, as we celebrate the 50th anniversary of the first woman astronaut in space. It was in many

ways nostalgic to have the first woman astronaut among us yesterday.

Mr Chairman, Pakistan is fully supportive of the persistent contribution of COPUOS toward the dissemination of the benefits of space technology to the developing countries. While considerable work is underway for the promotion of international cooperation in space affairs, there is a need for further enhancing cooperation between the developed and developing space-faring nations for realizing the shared goals of sustainable development. To our mind, COPUOS, through its constituent bodies, is well equipped to advance such cooperation.

Pakistan has always and continues to vociferously advocate the peaceful uses of outer space. Space is the common heritage of mankind. States have a responsibility to abide by the guidelines and regulations governing outer space activities to ensure that the benefits of space assets are accrued in a safe, secure and sustainable manner. In this context, Pakistan welcomes the capacity-building initiatives instituted by such regional and international organizations as APSCO, APRSAF, IAF, ISNET etc.

Mr. Chairman, let me apprise you of some space related activities conducted in Pakistan since June 2012.

We believe that space technology applications acts as a catalyst in the socioeconomic development of the country, with more influence in some specific sectors. Consequently, to gather public and political support for the country's space programme, concerted efforts are being made in Pakistan to create awareness of the benefits of space technologies at different levels.

In 2012 World Space Week celebrations were extended to 10 cities, in which 400 schools, 34 universities and 20 other organizations across Pakistan participated. The Pakistani electronic and print media also played its due share in extending our reach to the masses.

In September 2012, three space related conferences were arranged in Pakistan. The first was the National Agricultural Conference focused to promote the use of space technology for agricultural management. This was followed by Pakistan's first National Space Conference. This conference was well attended by international and national representatives.

Later in October SUPARCO and China Satellite Navigation office (CSNO) jointly organized a symposium on "Global Navigation Satellite System (GNSS) and its Applications" and also "Beidou/GNSS Application Demonstration and Experience Campaign (BADEC)" was initiated to highlight the importance of

current and prospective applications of GNSS, including surveying; digital map production for road vehicle navigation; public safety and disaster management; mapping and resource positioning; mining and quarrying; and applications for Civil Aviation.

SUPARCO partnered with UNESCO to hold an International Workshop on Flood Risk Mapping using spatial technology in December 2012. The 3-day training was followed by a 2-day workshop and one day-training by experts. It provided experts in disaster management agencies, relevant government departments, researchers and academicians, an insight into the use of Satellite Remote Sensing data integrated with Geographical Information System tools to model and simulate real time flood scenarios in rivers.

Pakistan collaborated with UNOOSA to hold the UN/Pakistan Workshop on Integrated Use of Space Technologies for Food and Water Security in March 2013. This workshop brought scientists, researchers and subject experts from around the world at one platform and was instrumental in sharing of experiences on agricultural and water-related issues from different regions of the world.

In addition to this, over 150 SUPARCO officials have participated in different international seminars, symposia and workshops to present their research work and learn from the experiences of other nations.

Pakistan continues to undertake bilateral and multilateral cooperation with different countries and organizations for capacity-building in space technology and its applications.

Mr. Chairman, managing agricultural productivity and water resources is an important concern for Pakistan. To ensure food security and to facilitate development of intelligent food budgets, satellite technology is being used for crop yield estimation. Monthly satellite-based crop monitoring bulletins are issued to relevant agricultural authorities and farmers. These bulletins are also made available on the Internet. Space-based technologies have helped us to effectively upgrade and manage the irrigation network which is the backbone of our agricultural system. A number of different agriculture, land use mapping, environmental monitoring and mapping projects are currently being undertaken in collaboration with local authorities and international developmental agencies including UNFAO.

Mr. Chairman, launched in August 2011, our communications satellite, Paksat-1R, is effectively catering to the needs of the growing communications and broadcast industry in Pakistan.

Mr. Chairman, I must indicate that being a founding member at the platform of Asia Pacific Space Cooperation Organisation (APSCO), we participate and support different initiatives and projects that are undertaken at this platform. We appreciate the support provided by all member countries.

We also participate in various activities and initiatives being undertaken at the Asia Pacific Regional Space Agency Forum (APRSAP). The activities undertaken with respect to initiatives like Sentinel Asia & Space Education & Awareness Working groups are very valuable indeed.

We also support and have benefitted from the capacity building activities at the Inter-Islamic Network on Space Sciences & Technology (ISNET) forum, which is emerging as a viable collaborative network for OIC member countries.

Mr. Chairman, Pakistan recognizes the importance of disaster prevention and management and is fully committed to working towards strengthening the UN-SPIDER Regional Support Office established in Pakistan.

Lastly Mr. Chairman, today, most developing countries are simultaneously managing challenges at the economic, social and security fronts. Space technology can play a pivotal role in helping manage all these fronts more effectively.

The role of international cooperation in supporting the development of these countries cannot be overemphasized. We are confident that with the concerted efforts of international fora like UN COPUOS, benefits of space science technology and their applications will reach all nations of the world.

I thank you, Mr Chairman.

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

The next speaker on my list is the distinguished representative of the United States of America. You have the floor.

Mr. K. Hodgkins (United States of America) Thank you, Mr. Chairman.

Mr. Chairman, on behalf of the U.S. delegation, I extend my congratulations and appreciation to you and the rest of the bureau for your leadership of the Committee. We look forward to continuing to work with you to ensure a successful outcome. I would also like to express our deep appreciation to the staff of the Office for Outer Space Affairs for their superb work over the past year, and for their diligent efforts to prepare for our meetings over the coming days.

Since this is Dr. Othman's last session with us, my delegation wishes to congratulate her for an outstanding career as Director of the Malaysian Space Agency and the Office for Outer Space Affairs. We will miss you deeply and wish you all the best for the future.

Mr. Chairman, in accordance with the U.S. National Space Policy of June 2010, the United States is placing increased emphasis on international cooperation to promote the peaceful use of outer space in a wide range of areas. We are working closely with the United Nations and with other countries and organizations to continue to address the growing problem of space debris and to promote "best practices" for sustainable use of space. We will also continue to pursue pragmatic transparency and confidence-building measures to mitigate the risks of mishaps, misperceptions and miscalculations in space. The U.S. Space Policy reaffirms the longstanding policy that we are open to space-related confidence building and arms control concepts and proposals, provided they meet the rigorous criteria for equitability, effective verifiability and consistency with our national security interests.

I would like to note for delegations that May 14 was the 40th anniversary of the launch of Skylab, America's first space station. The three Sky lab crews proved humans could live and work effectively for long durations in space. The knowledge gathered during Skylab helped to inform development and construction of the International Space Station, just as the research and technology demonstrations being conducted aboard the ISS today will help shape a new set of missions that will take spacefarers farther into the solar system.

Mr. Chairman, this year marks another significant milestone in the exploration of outer space, that is, the 50th anniversary of the first woman in space. Yesterday's special panel was a fitting commemoration of the valuable role women have played in advancing space and scientific endeavours. We wish to congratulate OOSA for organizing this outstanding event as well as the exhibition in the rotunda.

During the past year, we have continued to witness extraordinary international scientific and technical accomplishments in our quest to explore space. Eighteen different astronauts representing each of the five ISS partners flew aboard the Station. The 2012 Expeditions aboard the ISS included many research activities carried out at an unprecedented rate with as many as six crewmembers in orbit at a time and a visiting spacecraft, traffic pattern that included the first U.S. commercial vehicles as well as European,

Japanese, and Russian resupply missions. Utilization research activities over the last year are showing a number of significant benefits for humanity in the areas of human health, Earth observation, disaster response and education. Looking ahead in the area of human space flight, NASA is developing the vehicles and technologies to enable humans to go beyond Low Earth Orbit, to asteroids and eventually to Mars.

On August 30, 2012, NASA launched the Radiation Belt Storm Probes, recently renamed the Van Allen Probes, to study the two extreme and dynamic regions of space surrounding Earth known as the Van Allen Radiation Belts. The mission, consisting of two identical probes, will also broadcast real-time space weather data that may help to further develop forecast models for space weather and lead to a design of spacecraft to better withstand the rigors of space. The Mars Science Laboratory known as Curiosity successfully landed on Mars on August 6, 2012, inspiring new excitement about space around the world. In its short time on Mars, the rover has already found evidence of an ancient riverbed and a complex chemistry within the Martian soil. Launched in 1977, the Voyager 1 spacecraft has entered a new region at the far reaches of our solar system that scientists believe is the final area the spacecraft will cross before reaching interstellar space. New observations by the MESSENGER spacecraft provide compelling support for the long-held hypothesis that Mercury harbours abundant water ice and other frozen volatile materials in its permanently shadowed polar craters. Space telescopes Hubble, Spitzer, Chandra and Fermi are all contributing enormously to the world's knowledge of outer space.

With respect to Earth observation, the Suomi National Polar Partnership (Suomi NPP) spacecraft was launched on October 28, 2011, and is in the final stages of its calibration and validation period. This spacecraft is a polar-orbiting weather and climate monitoring satellite that serves as a bridge between the current Polar Orbiting Environmental Satellite (POES) system and the forthcoming series of Joint Polar Satellite System (JPSS) satellites. The Suomi spacecraft is already improving weather forecasts and advancing Earth and climate science.

Mr. Chairman, the U.S. Geological Survey (USGS) continues to operate the Landsat 7 satellite and make its data (plus the image data from all previous Landsats) available to users worldwide. Landsat 5 will be decommissioned this year, after nearly 29 years of successful operation and 2.6 million land-surface images captured and down-linked to receiving stations around the world. Landsat provides essential

information for land surface monitoring, ecosystems management, disaster mitigation and climate change.

NASA and the USGS worked in partnership to develop the space and ground systems for the Landsat 8, which was launched in February of this year and became operational at the end of May. This mission continues the legacy of moderate-resolution land imagery that was begun in 1972. The USGS will continue to make the image data freely available to users worldwide through a web interface. Since December 2008, when the full Landsat image archive was made available to users free of charge over the Internet, we have witnessed phenomenal growth in the delivery of Landsat scenes to users worldwide — from an average of just over 50 scenes per day in USGS's best sales year, to more than 10,000 scenes per day in 2013. By March of this year, the USGS had provided over 11 million Landsat scenes to users in 186 countries.

Mr. Chairman, in closing I would like to note that the United States has a longstanding policy to provide GPS civil signals free of direct user fees, and to provide open specifications on the signal design. In January 2013, the Governments of the United Kingdom and the United States announced that they had reached a common understanding of intellectual property (IP) rights related to the GPS and will work together to address broader shared effort to advance compatibility and interoperability among civil satellite global navigation systems IP issues. This understanding is part of a broader shared effort to advance compatibility and interoperability among civil satellite navigation systems and transparency in civil service provision. The two governments reaffirmed their joint commitment to ensuring that GPS civil signals will remain perpetually free and openly available for users worldwide. As part of this effort, the U.K. is dedicating all government-held patents and patent applications relating to U.S. GPS civil signal designs and their broadcast from GPS and other GNSS to the public domain. The U.K. has committed to not pursue or assert IP rights over any aspect of these signals, now or in the future.

Mr. Chairman, as this list of achievements indicates, we are indeed moving forward in the exploration and use of space, and the United States will continue to pursue a leading role in international space science and exploration endeavours.

Thank you.

The Chairman I thank the distinguished representative of the United States of America for his statement.

The next speaker on my list is the distinguished representative of the APSCO. You have the floor.

Mr. Zhang Wei (APSCO) Thank you, Mr. Chairman.

Mr. Chairman, Distinguished delegates, it is my privilege to make this statement on behalf of Asia Pacific Space Cooperation Organization, or APSCO, at 56th Session of the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS).

First, I would like to congratulate the fifty years of women in space and also congratulations for the Chinese successful launching of Shenzhou 10 and also including the women astronauts in space orbit.

Mr. Chairman, we are appreciative of the efforts of the director and staff of the Office of the Outer Space Affairs for planning, preparing and organizing this session in a benefit manner. And also I would like to show our thanks to the professor Mazlan Othman for her directorship and also guidance for APSCO in establishment and operation stages and also we hope everything is well for his future and we can keep our continually friendship later on.

Mr. Chairman, Distinguished Delegates, APSCO is stepping into fifth year of its operation, since it became functional in December 2008 in Beijing, China. The APSCO Council has already held six meetings during last four years; four of them in Beijing, China, one in Pattaya, Thailand, and one in Tehran, Iran. APSCO has already made significant progress on all cooperative projects. I will briefly review the significant progress of some projects here.

“Data Sharing Service Platform and its Applications Pilot Project” was the top priority project whose feasibility study was completed. The Data Sharing Service Platform has been established last year in May. While the data are being cumulated in the Data Sharing Service Platform, proposals on the applications pilot projects were invited from Member States. Four Application Pilot Projects have been awarded, one each to Bangladesh, China, Pakistan and Thailand, mainly focusing on the disaster risk reduction and food security. With the kind donation of the Government of China, data from 5 of the Chinese satellites including the currently operating satellites and those due to be launched in this year. Images from these satellites cover high and middle resolutions in the categories of optical sensor and also radar depth. All of these will be made available to APSCO Member States.

Asia Pacific Ground Based Optical Space Objects Observation System is another prioritized project whose feasibility study was completed and is approved for implementation in two phases. In phase 1,

the basic space surveillance network and its processing centre will be established with the existing resources of the Member States and in phase 2 the observation nodes will be upgraded to observe objects in the geostationary orbit. This project will facilitate space object detecting, tracking and identifying, orbit determination and cataloguing, and also collision early warning. A joint observation was carried out last year.

Feasibility study report of two optional projects, relating on the Applications of Compatible Navigation Terminal System, were also approved by the APSCO Council last year for implementation which were led by Pakistan and China, respectively. Project Management Boards relating to these projects have already deliberated on the implementation and the projects are ready to kick off in near future. China also proposed the plan of “the Application of Beidou (Compass) constellation system in Asia-Pacific region (BADEC)” to APSCO and this plan was also approved by the 6th Council Meeting.

The feasibility study of “Research on Atmospheric Effects on Ka Band Rain Attenuation Modeling” project was also completed last year and was approved by the APSCO Council to be implemented leading by Thailand.

Communication Satellite, Student Satellite, Electromagnetic Satellite Payload for Earthquake Prediction, Communication Satellite Applications, Research on Ionospheric Modeling through Study of Wave Propagation and other projects are also in the feasibility study stages.

I would like also to share some information that recently, China, as one of our Member States, has extended their invitation to APSCO in cooperation in human space flight programmes. This includes joint micro-gravity environment tests, joint training of astronauts and other missions. We are very impressed by the openness and generosity of our Member States in sharing infrastructure, knowledge and resources, which clearly fit into the mandate of APSCO.

Mr. Chairman, exchange of information and sharing of knowledge is also a priority area for which symposiums are organized regularly by APSCO. Last year APSCO organized a symposium on Communication Satellite Technology and its Applications in Indonesia and this year a symposium on GNSS Technology and its Applications will be jointly organized by APSCO and TUBITAK UZAY of Turkey.

APSCO also organized five short training courses during the last year for the benefit of Member States, including regular training, project training and also joint training with UN-SPIDER and COSPAR.

Two years Masters programme (MASTA) has also become a regular feature to enhance space relating knowledge among the Member States. From year of 2013, the new three years plan will start in which will recruit 20 Master students and 5 Doctoral students each year by inviting proposals for candidates from APSCO Member States and also studying the China's Beihang University Besides, APSCO will commission Education and Training Center/Network based on tele-education concept for frequent exchange of information and knowledge among Member States.

Mr. Chairman, in accordance with the APSCO Convention, we kept close cooperation with the agencies in the United Nation system by taking part in the UNCOPOUS and its subcommittees, participated in a number of international events organized by GEO, UNESCAP, APRSAF, UNSPIDER and IAF, and also received delegations from various diplomatic missions.

The 2013 APSCO annual Space Law & Policy Forum will be held in Beijing during 26-28 of June this year. This Forum will provide a one of a kind opportunity for the space law community especially under regional mechanisms such as APSCO. I would like to extend our invitation to all of you for this event APSCO is willing to support any space law initiative under United Nations. APSCO is also working on the establishment of a Research Center for Space Law and Policy to discuss the regional space guidance in cooperation.

Mr. Chairman, Distinguished Delegates, APSCO is pursuing for the socioeconomic development of the Asia Pacific region, harnessing space technology tools, more and more countries of the Asia Pacific region and the world in general are showing interest to become members or associate members of APSCO. We in APSCO welcome all nations of the world to cooperate with us for exploring and exploiting peaceful uses of outer space. And finally, I would like to extend my invitation to all of you to participate in our reception tomorrow afternoon here and to share any comments and suggestions from your point of view.

Thank you very much, Mr. Chairman.

The Chairman I thank the distinguished representative of the APSCO for his statement.

The next speaker is the distinguished representative of the National Space Society (NSS). You have the floor.

Ms. A. Moore (NSS) Mr. Chairman, distinguished delegates and representatives, it is with great pleasure that I make this statement on behalf of the National Space Society at the 56th Session of the Committee on the Peaceful Uses of Outer Space.

The National Space Society (NSS) is a non-profit organization dedicated to promoting space exploration and manned activities in space. It is widely acknowledged as the pre-eminent grassroots voice on space issues, with members and chapters around the world. The Society also publishes Ad Astra magazine, an award-winning periodical chronicling the most important developments in space. NSS seeks to promote social, economic, technological and political change to advance the day when humans will live and work in space — when Earth will become a space-faring civilization.

My comments today will focus on NSS activities in three areas: celebrating women in space, outreach and recognition, and protecting the planet.

Celebrating 50 Years of Women in Space, NSS joins the Outer Space Committee and the entire UN community in celebrating 50 years of women in space and marking the 50th anniversary of the first space flight by a woman, cosmonaut Valentina V. Tereshkova on 16 June 1963. NSS makes special effort to increase public awareness of the UN role in promoting the peaceful uses of outer space and recognizing the contributions of women to space activities. The Summer 2013 issue of Ad Astra features the article "50 Years of Women in Space" by Claire Stephens McMurray and Clifford R. McMurray.

The 2013 International Space Development Conference (ISDC) honoured women in space through a celebration of the American astronaut Sally Ride. The ISDC was held within a mile of the Sally Ride Science Headquarters located on the University of California, San Diego.

Earlier this year, NSS officer and director Lynne Zielinski received the National Space Club's "National Space Educator Award" at the Robert H. Goddard Memorial Dinner in Washington, D.C. The award is given annually to secondary school teachers who mentor students in the field of space, science and technology. Recipients are also given a \$1,500 grant and a plaque for their respective school. Ms. Zielinski does even more. Annually she organizes the activities that attract hundreds of students to the Society's ISDC for the NSS/NASA Ames Space Settlement Design Competition.

I myself was privileged to attend the UN New York NGO Briefing dedicated to 50 years of women in space on 11 April 2013. The panellists included Mr. Evgeny Zagainov from the Russian Mission to the UN, Ms. Anousheh Ansari of the X-Prize and first female space tourist, and Ms. Susan Chodakowitz of Tetra Tech AMT. They explained their individual backgrounds and discussed in details the opportunities

for women on space missions and in the aerospace industry.

Outreach and Recognition: Each year, NSS brings together industry leaders, policy experts, scientists, and educators to share developments and foster collaboration with NSS members and other space advocates at its International Space Development Conference. The ISDC 2013 theme was “Global Collaboration in the 21st Century”.

Held in San Diego, California from 23-30 May, this year’s ISDC followed several tracks wherein breakthroughs in space development were discussed. Key focus areas included use of and protection against asteroids, living in space, breakthrough science and space technologies, emerging uses of space to improve life on Earth, and opportunities for lunar and Martian exploration. Attendees also focused on space and education. Discussions about space business and policy rounded out the agenda. The Society also took the occasion to formally release its latest “Roadmap for Space Settlement and Development”, a document that puts practically all space-related activities in context and explains how humanity can overcome the major expected barriers to growing our civilization into space.

Public support for space is a major goal of the Society. To this end, NSS takes pride in its outreach efforts. Each year at the ISDC, the NSS honours individual and groups and these include awards of special significance.

The Wernher Von Braun Award (given only in odd-numbered years) was awarded to Dr. Abdul Kalam, former President of India, for his long-time work in and support of India’s space programme and his support for space development. A highlight of the Conference was his major address “Space Solar Power: Key to a Livable Planet”. Dr. Kalam proposed a multinational research programme for a liveable world, with a focus on producing electricity in space from sunlight and beaming it back to Earth.

The Space Pioneer Awards usually include three given each year in recognition of significant accomplishments in opening the space frontier. The five 2013 recipients were Dr. Mae Jemison, the Hon. Dana Rohrabacher, the X-37B Orbital Test Vehicle Development team, the Gravity Recovery and Interior Laboratory (GRAIL) Team, and the Mars Science laboratory (Curiosity) Descent and Landing Team.

The NSS plans to hold the 33rd ISDC in Los Angeles from May 23-27, 2014.

Protecting the Planet: With the surprise explosion of the asteroid over Chelyabinsk, Russia, last April that

injured over 1,000 people, the world awoke to the dangers of incoming meteors and asteroids, and the need to “protect the planet”. To this end, the NSS supports the new NASA budget item that would provide close to \$100 million for a mission to rendezvous with a small asteroid and move it into orbit around the Moon where it could later be visited by astronauts.

“An asteroid capture mission is a tremendously important mission, and one that could not be more relevant to the challenges our civilization faces today,” said Mark Hopkins, Chairman of the NSS Executive Committee, quoted in the NSS Press Release dated April 11, 2013. “Robotic asteroid capture is the first step to exploiting the vast material resources of the solar system for a helpful and prosperous future for mankind.”

Robotic asteroid capture is also a key step toward an effective planetary defence. The mission will mature the ability to capture and deflect a hazardous asteroid — protecting civilization from suffering the same fate as the dinosaurs. The search for suitable targets will find huge numbers of smaller, currently unknown asteroids which pose a very real meteor threat to cities as evidenced by the explosion over Russia.

NSS also supports the mission as it involves development of cost-effective new technologies of crucial value both to public and private activities in space. Robotic asteroid capture will drive improvements to Solar Electric Propulsion, a critical enable of cost-effective transportation in Earth-Lunar space and the inner solar system akin to the development of large ocean faring vessels — opening up possibilities for even more ambitious missions in the future.

For further details on NSS, its programmes, press releases, the ISDC, and Ad Astra magazine, I invite the distinguished delegates to visit the National Space Society website at www.nss.org. Copies of the Ad Astra Summer 2013 issue will be made available during the Committee’s session.

In closing, the National Space Society congratulates the Committee on the Peaceful Uses of Outer Space on its work, and the work the Scientific and Technical Subcommittee and the Legal Subcommittee. NSS looks forward to working with COPUOS, its subcommittees and the Office of Outer Space Affairs as we continue to bring the benefits of space to the people of Earth and the people of Earth into space.

Thank you. I do have an addendum. At this time I would like to add my voice to the swelling chorus of “best wishes” to Mazlan Othman in her new roles,

whatever they may be. Dr. Othman is both a friend and an inspiration. She and her team at OOSA have given great service to the Committee and its participants.

I thank her. I thank them. And I thank you for your attention.

The Chairman I thank the distinguished representative of the NSS for her statement.

The next speaker is the distinguished representative of Greece. You have the floor.

Mr. Cassapoglou (Greece) Thank you, Mr. Chairman. Good afternoon. I want to apologize for my omission this morning, the beginning, to say a wonderful woman was absent yesterday who left this world some months ago. Sally Ride, the U.S. first woman in space flight just thirty years before our dates, and the youngest American in space. So nevertheless, we consider she was present with us.

And secondly, because last year I was not here, we lost also last year the first man on the moon, Neil Armstrong, left from this temporary passage from the Earth. So we have not forget that some days, some weeks, we had also celebrate on 20th of July, his first step on the moon, which was, according to his words, a big effort of humanity.

Because I have the floor, I would like to publicly thank NASA for an excellent translation they made of the famous Russian scientist, the deputy of professor Korolev, Boris Evseyevich Chertok who published in 94 to 99 his famous four volumes book "Rockets and People". And thanks to NASA, a big effort, NASA published it in English from 05 to 2011, and provides it free of charge through electronic means.

And I would like to thank the history department, or office, it doesn't matter, of NASA for this contribution because this book is very very important for the non-Russian-speaking people because we have all the details about the famous Soviet space programme.

Thank you very much for your kind attention and remember these first heroes of space. Thank you.

The Chairman I thank the distinguished representative of Greece for warm words.

Distinguished delegates, we will continue our consideration of agenda item 4, General exchange of views, tomorrow morning.

Distinguished delegates, I would like to inform you that I have received a request from the Director of the Office for Outer Space Affairs for the opportunity to briefly address the Committee at this afternoon's meeting. Therefore, if there are no objections, I would

like to give the floor at this time to the Director of the Office for Outer Space Affairs, and, on behalf of the Committee, invite her to deliver her statement.

Seeing no objections, I give the floor to the Director, Ms. Mazlan Othman. You have the floor.

Ms. M. Othman (OOSA) Thank you, Mr. Chairman.

Mr. Chairman, distinguished delegates, I warmly welcome you to the fifty-sixth session of this Committee and thank you for the opportunity to inform this session of the work of the Office for Outer Space Affairs over the past year.

Mr. Chairman, I am pleased to once again see you chairing the session of the Committee. I am certain that the Committee will continue to achieve major accomplishments under your guidance. I would also like to welcome Filipe Duarte Santos of Portugal and Piotr Wolanski of Poland of Poland and wish them success in accomplishing their tasks at this session of the Committee. I would like to assure you of the support of the Secretariat in facilitating your work to our utmost ability.

Mr. Chairman, distinguished delegates, I am now pleased to briefly highlights key aspects of the work of the Office in, that the Office is carrying out, in the context of its operational priorities and expected accomplishments for 2012 and 2013.

With regard to staff changes, Mr. David Stevens of Brazil has moved to a post within the United Nations International Strategy for Disaster Reduction in Rio de Janeiro in November 2012. Mr. Stevens was instrumental in the establishment and implementation of the UN-SPIDER programme and the Office is grateful for his long service, and wishes him every success in his new post.

Within the Office, Ms. Natércia Rodrigues of South Africa moved from the Committee, Policy and Legal Affairs Section to the Office of the Director. Ms. Sama Payman of Australia has again been seconded to the Office of the Director General of UNOV and Mr. Michael Newman of the United States is now filling that post.

Regretfully in 2012 the Office had to wish farewell to Mr. Yusuf Hascicek and Mr. Enes Koytak, both from Turkey, who were experts on non-reimbursable loan. I would like to thank those professionals for their valuable contribution to the work of the Office.

The Office also fortunate to have Ms. Ms. Heike Steffens, also an expert on non-reimbursable loan from Germany, join the Office in the Human Space

Technology Initiative in January 2013. The Office would like to express its appreciation to the Government of Germany for making her available, and also to the Governments of China and Japan for continuing to make their experts available to HSTI.

Ms. Anne Knauer and Ms. Antje Hecheltjen, joined the UN-SPIDER Bonn office as associate experts in 2012 and the UN-SPIDER Beijing office was pleased to have Ms. Ms. Han Juanjuan of China join the office as a non-reimbursable loan in 2012. Mr. Werner Balogh of Austria has assumed larger responsibilities at a temporary post as a programme officer within the Space Applications Section until the end of 2013.

In the meantime, Mr. Lorant Czarant of Romania has left the Office for a 10-month assignment at the United Nations Cartographic Section in New York.

Mr. Chairman, distinguished delegates, at this time, I would like to bring to your attention to an administrative change that has occurred since the Committee last met. In order to better reflect the full range of responsibilities carried out by the Section formerly known as the Committee Services and Research Section, as of 1 January 2013, the name of the Section has officially been changed to Committee, Policy and Legal Affairs Section, abbreviated CPLA. The Section under its new name will continue to carry out its responsibilities with the same professionalism and deadline as before, but it is our belief that this new name more accurately depicts the Section's role in carrying out the Office's overall legal and policy-related work.

Mr. Chairman, distinguished delegates, before I inform you of the implementation of our mandate and actions planned for 2013, let me briefly turn to the status of the Office's resources for this year, and the prospects for 2014-2015, as well as longer term, as these issues, as you know, reflects the Office's overall ability to carry out its activities.

The programme on the peaceful uses of outer space is funded for the regular budget and voluntary contributions, the voluntary contributions of which are both in cash and in-kind. In 2012, a total of almost 900,000 dollars was received from donors to supplement the funds of the Office received from the regular budget. The Office benefitted extensively from the services of a number of associate experts and senior experts - NRLs - the associated resources of which were provided by Austria, China, Germany and Turkey.

In addition the Office also received in-kind contributions from the host of the various activities organized during the course of the year to cover the

costs of participant airfares, special events, conference venues, facilities and equipment, accommodation, registration fees and much more.

I would like to express our deep appreciation to all of the donors, the Governments and institutions that supported our work in the past year. I trust that we can continue to work together in 2013 and in the future and on more funding from you.

With respect to the regular budget, the Office has received in 2013, \$570,000 to cover non-post-related costs and approximately 400,000, or two thirds, of this will be utilized for implementing the Office's capacity-building activities.

Now, while the Office hopes that it can continue to generate the same level of extrabudgetary support in 2014 and 2015, unfortunately the picture for the regular budget is not good — and I've told you this before. Last December, the Office submitted the no-growth programme budget proposal for the next biennium. However, following the decision of the General Assembly in December 2012, wherein the regular estimated budget overall approved was approximately 100 million less than that proposed by the Secretary-General, and in this case, all programme were instructed to reduce their requirements. Cuts are being applied across the board.

The impact on the Office is over \$200,000. Of this sum, it is stipulated that not more than 30 per cent is allowed to be taken from non-post resources. This means that the Office has to abolish a post in order to meet that level of reduction. We have thoroughly assessed all functions and needs within the Office and we took the decision to abolish a P-4 post in the Space Applications Section. This decision of the Office was conveyed to the Programming and Budget Division in New York.

In this connection, I wish to inform the Committee that, on the coming 28 June, the Advisory Committee on Administrative and Budgetary Questions (ACBQ) will review the proposed programme of the Office for 2014-2015, which now reflects the loss of the P-4 post in the Space Applications Section. Needless to say, to compensate for this loss, the Office will have to further realign its human resources functions.

Mr. Chairman, distinguished delegates, this brings me to the last resource related matter that I wanted to draw to your attention. As you know the last years have seen a welcome growth in both the work of the Office as well as its extrabudgetary resources level. However, the bulk of the cash contributions are earmarked fully for specific activities under preferred theoretic areas.

The level of funds received for the Office to utilize as needed has reduced significantly over these past years, and the Office will need to address this aspect urgently, if we are to continue to have enough resources to cover costs associated with the general administration, operations and management of the various programmes, initiatives and projects that it has taken on board in recent years.

The ability of the Office to absorb these costs, particularly in the face of the expected regular budget reductions is not sustainable in the long term. In fact, the Office anticipates that, if the level of unearmarked resources cannot be increased by the end of 2014, it will begin to affect on our ability to fulfil the mandates — your mandates — and the objectives of these programmes and initiatives that rely a great deal on earmarked contributions.

I therefore come to you with this begging bowl, yet again, take this opportunity to appeal to our existing donors to consider allowing the Office to designate a marginal amount of the contributions to cover staff travel, equipment and software-related costs, or station support fees — it sounds sad, doesn't it? — and other expenses for which we have minimal funds. Increasing the allocation for these within the regular budget means simply decreasing the funds for activities to act on member States' requests and requirements.

The Office has prepared an updated portfolio of activities and will include varying a full costing of what is necessary in order for the Office to implement a full range of activities. This portfolio will be presented to the Committee on Wednesday, next week, 19 June. My colleagues and I will also be entering the discussion with many of you regarding the possibility of additional cash contributions towards strengthening the operational framework of the Office's programmes. In the current economic situation, every dollar counts for us and we welcome any contribution that your Government might be willing to make.

So, but then, Mr. Chairman, distinguished delegates, despite the challenging economic situation, I am still pleased to update you on the implementation of our mandates, accomplishments in 2012 and the actions planned for 2013.

The responsibilities of the Office towards the Committee and its subsidiary bodies kept the Office, and in particular the Committee, Policy and Legal Affairs Section, fully engaged in the past year. As is customary, the Office provided you the full range of services needed for servicing your work and the subsidiary bodies, and when requested, provided

assistance in matters of substance and guidance on organizational matters.

Time and documentation management continue to present us with unique challenges, but I am confident that with your assistance the Office will continue to respond to the changing needs of the Committee, particularly in the context of organizational matters.

Delegates may be interested to note that since 1961, approximately 93 per cent of all functional space objects have been registered with the Secretary-General. Notwithstanding the progress being made, the Office would like to once again encourage all member States who have launched and operate space objects to register them with the Secretary-General in accordance with the Registration Convention or General Assembly resolution.

As delegates are aware, the Office has maintained a searchable online index of objects launched into outer space since 2001. We are deeply committed to ensuring we discharge our responsibilities within the mandates given to us in this respect, in the most effective and efficient manner, and we are pleased that the register continues to enhance confidence among space actors by providing transparency through its mechanisms.

Mr. Chairman, distinguished delegates, another highlight of our work is the programme on space applications. Under the programme, the Office successfully organized five workshops, two symposia and one expert meeting in 2012. All these activities as always were aimed at building capacity in the use of space science and technology in developing countries as well as to raising awareness of socioeconomic benefits of space technology applications. Delegations will be provided with detailed information on these and other activities of the programme, including the activities planned for 2013 in the statement of the expert on space applications.

In connection with the practical and legal arrangements relating to holding those workshops I mentioned, the training courses and seminars organized by the Office on behalf of the United Nations and held away from established headquarters, I would like to once again please draw your attention to the necessity for the conclusion of an agreement or exchange of matters. This has been mandated by the General Assembly that such agreements must be concluded prior to the holding of these events. Hence, I would urge member States to be mindful that the Office cannot proceed with such activities in the future unless an agreement with the standard U.N. clauses is concluded at least three months before the anticipated

date of the meeting, because this will allow formal letters of invitation and other obligations to be carried out. We endeavour to establish firm deadlines with member States for the conclusion of all legal agreements, including agreements and exchange of letters. I'm upset to say non-compliance could result in the postponement or cancellation of the event.

Going back to the Space Applications Programme, I would like to inform you that the International Committee on Global Navigation Satellite Systems (ICG) held its seventh meeting in Beijing from 4 to 9 November 2012. The Office for Outer Space Affairs in its capacity as the executive secretary of ICG and its providers forum, and through its programme on space applications, continues organizing workshops and training courses, focusing on capacity-building in the use of GNSS-related technologies in various fields of science industry.

This year, GNSS education curriculum will be introduced at the regional centres for space science and technology education affiliated to the United Nations, which also serve as information centres for ICG.

As regards UN-SPIDER, in the past year the major accomplishments included the provision of technical advisory support to 28 countries. The detailed evaluation of the UN-SPIDER knowledge portal, which forms the basis of its development roadmap, and the organization of or support to a number of international and regional workshops as well as expert meetings.

UN-SPIDER held its fourth annual UN-SPIDER regional support offices (RSOs) meeting during the fiftieth session of STSC, and this brought together not only thirteen RSOs that were already part of the network but also Indonesia and Nepal, which joined the network during the STSC. So RSOs have become increasingly involved in SPIDER activities and I am pleased to see the joint efforts that are taking place to further increase this important collaboration.

For your information, in the course of the session of the Committee, the Office will be signing a cooperation agreement with the Ministry of the Russian Federation for single defence, emergencies and evaluation of consequences of natural disasters. Fortunately it can be abbreviated to AMACON, making it the sixteenth RSO.

Mr. Chairman, distinguished delegates, you will recall that at our last session, where we considered the proposed 2012-2013 plan of work for the UN-SPIDER programme, I brought to your attention that the resolution, which established the programme, specifically stated that the programme should be supported through voluntary contributions, and to a

rearrange of priorities within the framework of the United Nations, and if necessary, a rearrangement of priorities in the Office. The current structure of operational priorities of the Office have been realigned to accommodate the UN-SPIDER programme. We are thankful to the Governments of Austria, China and Germany for their continuous commitment to the programme and we are now collaborating with each Government to ensure continuity of these arrangements.

However — there's always a "however" with me — in order to carry out the plan of work for 2014-2015 and to respond to the growing demand for support in disaster risk reduction and emergency response, we need additional commitment from member States to provide the necessary resources as voluntary contributions. So let me know not talk anymore about your contributions.

So Mr. Chairman, distinguished delegates, let me now provide information on the Office activities in the framework of the United Nations inter-agency meeting on outer space activities.

The thirty-third session of the inter-agency meeting was held in March this year in Geneva, Switzerland, and was hosted by the United Nations Office for Disaster Management and Risk Reduction. The session resulted in a number of important outputs, which include the preparation of the endorsement of the special report on the use of space technology within the United Nations system for culture development and food security.

Now, the meeting also agreed to abbreviate the words "inter-agency meeting on outer space activities" to UN-SPACE, to enhance the reference to space. The inter-agency meeting has sequestered the Secretariat to prepare for its implementation. So unless there are any objections from the delegations at this session of the Committee, the Office stands ready to act on the procedures for incorporating the acronym UN-SPACE.

As part of the inter-agency meeting, an open informal session was held on the theme "Space and disaster risk reduction: planning for resilient human settlements". A website on the coordination of outer space activities within the U.N. system continues to be maintained by the Office through its Committee, Policy and Legal Affairs Section.

Mr. Chairman, distinguished delegates, under agenda item 8, which encompasses the implementation of UNISPACE III, the Secretariat has prepared a conference room paper on "Rio+20 and beyond". It informs the subcommittee that the outcome document of Rio+20 entitled "The future we want" is recognized in paragraph 274. Sorry. The outcome document

recognized in paragraph 274 the importance of space technology-based data.

The inclusion of this paragraph with this important document should not be undervalued and it is the result of persistent efforts by COPUOS and several member States before and after the Conference. Further, you will see that the paper informs the subcommittee that within the United Nations system, in order to initiate preparation for the formulation of the UN Development Agenda beyond 2015, the United Nations Secretary General established, in September 2011, the UN System Task Team. I will refer to it as UNTT.

On the post-2015 UN Development Agenda, the first report prepared by UNTT entitled "Realizing the future we want for all" has been published, and with the efforts of the Office, two paragraphs in that report touched on space-related issues. Paragraph 72 acknowledges that improved scientific understanding and knowledge sharing on climate change, natural hazards, the space environment and natural resource limits will be necessary. Paragraph 79 brings attention to the importance of improved access to geographic information in geospatial data.

Now, in order to ensure these issues are carried forward and acted upon in the set of sustainable development goals for 2015 and beyond, COPUOS and member States need to have the same level of engagement, commitment and persistence as demonstrated in Rio+20 document process. I am confident this can be accomplished and the Office looks forward to further assisting the Committee in this respect.

Regarding World Space Week, I am pleased to report that World Space Week 2012 reached record proportions with over 700 events in nearly 70 nations. The Office for Outer Space Affairs followed a successful model workshop that was organized in 2012 in Bangladesh and last year, we partnership with the International Astronomical Union and the Ethiopian Space Science Society to organized a capacity-building workshop on astronomy and space science intended primarily for secondary school teachers. In 2013, the Office is looking at opportunities to partner with IAU and UNESCO in Latin America and the Caribbean.

The year 2012 saw quite an enrichment of the permanent exhibit of the Office for Outer Space Affairs, which as you know is located in the corridor that stretches between building E and D of the V.I.C. In June 2012, the People's Republic of China donated a satellite model of its BeiDou Compass Navigation Satellite Constellation, and in October 2012, the GLONASS Navigation Satellite Model was donated by

the Russian Federation. Both models joined the GPS model by the United States.

This week, the space exhibit was supplemented by a model of the Galileo satellite, which was donated by the European Commission. Next week, on 20 June, we expect to add a new model, this time by Israel.

Mr. Chairman, distinguished delegates, I would like to remind delegations that, according to the agreement of the Committee, nominations for the Bureaux of the Committee and its subcommittee for the period 2014-2015 should be finalized at this upcoming session of the Committee, of this Committee.

Now, as of the fifty-fifth session in June 2012, the Committee noted that the African States endorsed the candidature of Azzedine Oussedik of Algeria for the office of the Chair of the Committee. The Latin American and Caribbean States had decided that Ecuador would nominate this representative for the office of First Vice-Chair of the Committee. The Eastern European States had endorsed the candidature of Előd Both of Hungary for the office of Chair of the Scientific and Technical Subcommittee. The Western European other States endorsed the candidature of Kai-Uwe Schrogl of Germany for the office of Chair of the Legal Subcommittee. And the Asian States would nominate their candidate for the office of Second Vice-Chair/Rapporteur of the Committee.

As of today, the status remains unchanged and we would like to urge regional groups concerned to make their decisions and to update the Committee accordingly.

Mr. Chairman, distinguished delegates, I wish to use this opportunity to address an important administrative matter, relevant to the Office collaboration with member States and permanent observers of the Committee. This is a preparation of courtesy letters for Austrian visa purposes.

In accordance with the strict guidance given to us by the Visa Support Section of the United Nations Office at Vienna, applications for such letters containing clear personal and passport details of delegates should be submitted no later than 17 days prior to the first day of the meeting. The respect of this rule is of paramount importance, and the Office has no choice but to strictly follow this arrangement in the future, so we seek your understanding and cooperation in this regard.

So we have seen that 2013 is an important year for the space community yet again, as we are celebrating the fiftieth anniversary of the first space flight by Valentina Tereshkova. Cosmonaut Tereshkova herself as you saw was present and took

part in the panel yesterday. This panel consisted of prominent women in the fields of space exploration, science, technology, education, business and policy.

I would also like to remind you that this evening a panel of women astronauts and cosmonauts will discuss women in space, the next fifty years. It will take place at the Natural History Museum of Vienna.

Mr. Chairman, distinguished delegates, please allow me at the juncture, to use the occasion to address you and distinguished delegates in my personal capacity.

As you all know by now, this is the last time I will be acting in the capacity of Director of the Office during COPUOS. Allow me this time to revisit some aspects of my tenure.

For the Office to meet its mandates against a backdrop of dwindling resources, you have heard me speak over the years about the necessity for rearrangement of priorities and realignment of resources, particularly human resource functions. I should let you, maybe you would have guessed, that this aspect took up the majority of my time in office, and my energy, not to mention my emotions. It took several years for my strategies to come to fruition.

As an example, the Office has to act as the executive secretary of the ICG, and to do this within our existing resources. One of the staff members was assigned the task of secretary to the Secretariat. So to ensure that this task is sustained in the Office, I felt it was necessary to institutionalize it. In this context, through negotiations with the human resource management services, I changed the job profile of this office to ensure that the function would be retained.

Another example related to UN-SPIDER, to ensure smooth coordination of the programme, it was necessary to realign the senior programme officer's job functions in the Space Applications Section, so that it would encompass the coordination of the UN-SPIDER programme. But this necessitated the integration of the UN-SPIDER programme into the Space Applications Section.

A further example is the redeployment of a post to the Director's Office, which is now fully dedicated to budget human resource and evaluating and monetary functions that reinforces strategic planning and programme implementation.

All of these changes have made the Office more integrated, more efficient, and I believe more effective. While it looks like further realignment is necessary in view of the latest cuts in posts, I will have to leave that to my successor.

In terms of thematic priorities, the Office's senior management and I have put in place OOSA strategic direction and operational priorities, which have had the full and sustained engagement of the entire Office. The latest document covers the period 2013-2015. It focuses on the Office's uniqueness and strengths, and focuses on thematic areas that we are able to implement within existing resources.

Speaking of thematic areas, I would like to say that, even though certain thematic areas had to be excluded, the Office embarked on two new initiatives. The basic space technology initiative arose from the interest of member States, particularly developing countries, in acquiring basic space technology. And the human space technology initiative is driven by the heightened interest of member States in human space exploration. These two initiatives have exciting potential and could serve developing countries in ways the Office has not been able to do in the past. In particular, for PSTI, we tried to make the activities unique, by allocating about 30 per cent of the time of the workshops on regulatory matters with the full engagement of the International Telecommunication Unit.

Still talking about the management of the Office, one of my greatest concerns when I took office is the lack, was the lack of visibility of the Office, and the positioning of the Office in the U.N. system was unclear. As a result of our persistence, the Office was represented at the High-Level Committee on Programmes, the High-Level Committee on Management and we are now in the process of working on a separate Secretary-General's bulletin for the Office, which could take us out of the shadow of the United Nations Office at Vienna. A separate Secretary-General's bulletin would help us position the Office within the U.N. system that will create awareness of the importance of space science and technology in the work of the U.N. system. We have also managed to achieve better visibility of the Office and the awareness of the importance of space science through our contributions to the United Nations Task Team on the Post-2015 Development Agenda.

Still in the context of visibility, I was also concerned with the lack of consistent branding of the Office. I am pleased to say that the Office now has a branding scheme that encompasses publications as well as other aspects of our outreach programmes. Also relevant to the branding, I've told you that we have now been able to put a special brand onto the inter-agency meeting by getting other U.N. entities to agree on the now abbreviation on UN-SPACE. As I mentioned earlier we are counting on you to approve this so that we can move forward.

In addition, as also I told you, we have obtained U.N. management's approval to change the name of our section to Committee, Policy and Legal Affairs Section. That better reflects the work of that section, and, in my view, ensures a consistent branding.

Another aspect of the Office's work that I feel strongly about is the contribution of the Office to regional mechanisms interwoven with my particular concern for how space benefits development in Africa. For this reason, we have established a significant funding basis and strong organizational links with the Africa Leadership Conference. It is unfortunate that our resources do not allow us to support other regional mechanisms for the time being.

The other successful aspect of our work that I personally relate to is the institutionalization of capacity-building activities in space law. Apart from the usual education for workshops, we now set aside special funding for supporting activities in space law. We have also made capacity-building in space law an indicator of success in the strategic framework of the Office approved by the General Assembly since the 2012-2013 biennium.

These are some of the highlights. Much more can be said, particularly the management aspects, but I won't say them, and I will now just round up my comments, my remarks.

It has been remarked that the United Nations is an 800 pound gorilla that cannot be moved and change is not possible. I would disagree with that, and my successor can take heart that the U.N. does allow change, but like all other situations, we just need to persevere. I have given you examples of how we can do things creatively. One of my business school professors, Michael Porter of the Harvard Business School, said to me: "It is not good enough to be the best. To get ahead of the competition, you have to be unique." This is the strength of the Office. It has unique functions and it has a unique branding that could be capitalized on in many ways.

I would like now to say something about my colleagues. Someone remarked: "No one can whistle a symphony. It takes a whole orchestra to play it." My colleagues are that orchestra and you know this — you know this very well. They have been playing wonderful music for you. In leadership some people talk about leading from behind or leading by example. I have a secret to tell you. In the main, I do not have to do any of these things because my colleagues lead themselves from within. From within each of them, they have passion, motivation and perseverance to do what is best.

I would like to dedicate my last words as Director of the Office to you, distinguished delegates. I quote Einstein. He said: "The most beautiful experience we can have is the mysterious. It is the fundamental emotion which stands at the cradle of all true art and science. Whoever does not know it and can no longer wonder, no longer marvel, is as good as dead and his eyes are dimmed." This sentiment is what our business is about. Space is about unravelling the mystery of the universe. To guide us how to do this, I would like to quote Daniel Goldin, who said: "So with imagination, ingenuity and audacity, explore, discover, and change the world." With that, I would like to say what an intense pleasure and honour it has been for me to serve you all.

I thank you for that privilege.

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

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

The first speaker on my list is the distinguished delegate of the United States of America.

Mr. K. Hodgkins (United States of America) Thank you, Mr. Chairman.

Mr. Chairman, today, there is more international cooperation in space than ever before. The United States has a long and successful history of civil space cooperation with other partners. Over the past five decades, the United States has concluded over 4,100 agreements with more than 100 nations and international organizations. And the level of new cooperation is rising each year. Since COPUOS last met, NASA alone signed 120 new international agreements with other governmental and non-governmental entities bringing the total for the U.S. for 2012 to 133 new agreements. The number of nations investing in space activities has steadily grown, and we now have a significant private sector presence in outer space. Looking to the future, international space cooperation will continue to be fundamentally important to the United States.

Since our last meeting, the United States has 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 many productive bilateral relationships in the area of Earth and space science.

In the area of global navigation satellite systems, we meet regularly with India, Japan, Russia, China, and the European Union to discuss ways in which we

can enhance interoperability among our systems and improve services for the global user community.

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 (GEO) with the other 79 member countries, the European Commission, and 46 participating organizations to establish a Global Earth Observation System of Systems (GEOSS). The GEO vision for GEOSS is to realize a future wherein decisions and actions for the benefit of humankind are informed via coordinated, comprehensive and sustained Earth observations and information. The United States is also a member of the Committee on Earth Observation Satellites (CEOS). CEOS has been recognized as the principal space segment coordination mechanism for GEO, and is coordinating space agency support to GEOSS.

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 concerns regarding the weaponization of outer space. There is no scarcity of appropriate multilateral mechanisms where disarmament matters can be discussed. COPUOS is not and should not become one of them. More than 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, still valid today, was to establish the committee as the body of the General Assembly concerned exclusively with promoting international cooperation in space. It was clear that there would be entirely different efforts to deal with disarmament issues, and those would include fora such as the First Committee of the General Assembly and the Conference on Disarmament in Geneva.

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 of outer space. In our view, there are tangible opportunities to enhance international cooperation in keeping with the

Committee's mandate. Our consideration of the ways and means of maintaining outer space for peaceful purposes has produced measurable results in the revitalization of COPUOS. Under this item, Member States concluded that reinforcing international cooperation in space implies the need for the Committee to improve the form of its own work. This has been reflected in the restructured agendas of the Scientific and Technical and Legal Subcommittees and their long list accomplishments that have a real and positive impact on space cooperation.

Another indication of the success of our efforts to revitalize COPUOS 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 intergovernmental 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 solving sustainable development and exploration challenges will depend heavily on their continued involvement.

In this regard, I am pleased to note that my delegation frequently includes representatives from such organizations as the AIAA, the Space Foundation, the Satellite Industries Association, and representatives of the U.S. academic community.

Thank you, Mr. Chairman.

The Chairman I thank the distinguished representative of the United States of America for his statement.

Distinguished delegates, we will continue and hopefully conclude our consideration of agenda item 5, Ways and means of... I recognize the distinguished representative of Greece. You have the floor.

Mr. Cassapoglou (Greece) Thank you, Mr. Chairman. I follow with great tension the intervention of my distinguished colleague and friend of the United States of America on this specific topic of our agenda, and I have the impression we are living in paradise, but unfortunately it is not the case.

From at the currently circulating around the Earth grosso modo 1,000 satellites about 350 are military satellites and the remaining are some governmental and the other ones are a little bit civilian and private. I have not with me the numbers but this famous U.S. scientific association or organization concerned scientists in its last month issued, I mean electronic issue, gives us the real situation with the uses of outer space for peaceful military purposes.

That is an antinomy, it's a kind of a... I cannot say what exactly has with the real human logic considering the military uses of outer space as peaceful. It's incredible. Nevertheless, all of us will forgotten what Eisenhower thought, at the very beginning, even two years before Sputnik-1 concerning the uses of outer space for peaceful purposes. Nevertheless, and that is regrettable, that recently, no more than 5 years, appears in official texts, this newly à la mode expression using space for national self-defence purposes. That means, you can undertake military operations using space means for the time being on the Earth but in the near future even for military operations outside.

This discrepancy, or phrenitis, concerning this problem is apparent because fortunately for humanity, the cold war is finished for almost one quarter of a century but nevertheless we continue to have the same mentality and the famous Alexander Haig was also at the same time at the moment the chief of NATO but later on the U.S. Secretary of State said at the moment that it is very difficult to change attitudes or mentality. It is better to change philosophies and ideologies. And this differentiation that began in 1958, saying that the peaceful uses is the job of our committee or the assessor of our committee and the non-peaceful uses, that means military uses, is the job of then subcommittee on disarmament, now the disarmament conference.

But if you follow day by day, even two days ago on the 11th, the works of the conference on disarmament in Geneva, you can realize that for almost 19 — nineteen, 1-9 — the works there are blocked because they are not agreeing on the agenda items. Some of the sessions are also devoted to the outer space uses for peaceful purposes but there is also another blockage.

The problem now is to decide what we really want. Why use space for military purposes? You can imagine saying that killing a man is a crime but if you kill them for others, it is not a crime. The only, and this is not only applicable for the United States but for all other powers, but recently what is for me unacceptable is that even in the Code of Conduct of the European Union there is a specific provision speaking for, a kind of reservation, legally, a legal reservation, concerning the uses of space for military purposes in the case of self-defence by virtue of the corresponding provision of the U.N. Charter.

That is the only remarks I have to make and say how we have to surpass these — how can I say? — complexes, from the cold war and after one quarter of a century begin this same habit, the same stance, the same attitudes. So we have to change attitudes.

Thank you, Mr. Chairman.

The Chairman I thank the distinguished representative of Greece for his intervention.

Distinguished delegates,

We will continue and hopefully conclude our consideration of agenda item 5 tomorrow morning and also we will continue our consideration of agenda item 7, Report of the Legal Subcommittee on its fifty-second session, tomorrow morning, because of the time limitations.

I would now like to proceed with technical presentations. Presenters are kindly reminded that technical presentations should be limited to 15 minutes in length.

The first presentation on my list is by Mr. Cesaro Jaramilo of Canada is entitled "Space security index: 2013". Mr. Jaramilo, you have the floor.

Mr. C. Jaramilo (Canada) Thank you, Mr. Chairman. I am very pleased to present an overview of the report "Space Security Index 2013" before this Committee on behalf of the project partners of this international research consortium. The SSI project partners believe that discussions at forums such as this one are conducive to the type of collaborative multilateral approach that is required for addressing the complex challenges facing the outer space domain.

The primary outcome of the SSI project is an annual report on Space Security. We are very proud to have reached an important milestone with Space Security Index 2013 as this is the 10th edition of our annual report. It is the only report of its kind in the world that systematically tracks key developments that may have an impact on the sustainability of outer space.

From search-and-rescue operations to weather forecasting, from banking to arms control treaty verification, the world has become increasingly reliant on space applications. The key challenge is to maintain a sustainable outer space domain so that the social and economic benefits derived from it can continue to be enjoyed by present and future generations.

Thus, the primary goal of the SSI is to improve transparency on space activities and provide a common, comprehensive knowledge base to support the development of national and international policies that contribute to the security and sustainability of outer space.

Although the report is non-partisan, fact-based, and policy neutral, the conceptual framework for our research is embodied in a specific definition of space security that we have adopted. We understand space

security as the secure and sustainable access to and use of space, and freedom from space-based threats.

The primary consideration in this definition is not the interests of particular national or commercial entities, but the security and sustainability of outer space as an environment that can be used safely and responsibly by all. This broad definition encompasses the security of the unique outer space environment, which includes the physical and operational integrity of man-made objects in space and their ground stations, as well as security on Earth from threats originating in space.

Regular readers of the report will notice a change in the way the information is structured in the 2013 edition. In previous years, developments were organized under eight chapters — each covering one major aspect of space activity such as civil, commercial, policy or military. To be sure, key developments related to these areas are still covered in the report. However, given the increasing interdependence, mutual vulnerabilities, and synergies of outer space activities, the decision was made, after consultations with several international space security experts, to reorganize information under four broad themes, each of which is divided into various indicators of space security. We trust that this arrangement better reflects the close relationship among developments that may have an impact on the security and sustainability of outer space.

Therefore, the structure of the 2013 report contains the following four themes: condition of the space environment; access to and use of space by various actors; security of space systems; and outer space policies and governance.

The first theme, on the condition of the space environment, includes indicators of space security related to such areas as orbital debris, radiofrequency spectrum, near-Earth objects, space weather and space situational awareness.

With regard to the condition of the space environment, perhaps the most critical challenge to the security and sustainability of outer space continues to be the threat posed by space debris to spacecraft of all nations.

Today the U.S. Department of Defense (DoD) is using the Space Surveillance Network to track around 23,000 pieces of debris approximately 10 centimetres (cm) in diameter or larger. Experts estimate that there are over 300,000 objects with a diameter larger than one centimetre and several million that are smaller.

In recent years awareness of the space debris problem has grown considerably, and efforts to

mitigate the production of new debris through compliance with national and international guidelines have become highly important. The future development and deployment of technology to remove debris promises to increase the sustainability of outer space if and when it becomes operational.

Likewise, the development of space situational awareness capabilities to track space debris provides significant space security advantages when used to avoid collisions. While the sensitive nature of some information and the small number of leading space actors with advanced tools for surveillance have traditionally kept significant data on space activities shrouded in secrecy, recent developments covered in this report suggest that there is a greater willingness to share space situational awareness data through international partnerships.

This is a sample of the type of developments related to the condition of the space environment that are covered in this year's report: international dialogues on debris problem, active debris removal, and other solutions continue; orbital debris continues to threaten safe space operations for both satellites and the International Space Station; growing demand for, and crowding of, radiofrequency spectrum; space weather events continue to affect space operations; and efforts continue to increase SSA sharing among various space actors.

The second theme deals with access to and use of space by various actors and includes indicators of space security related to space-based global utilities, priorities and funding levels in civil space programmes, international cooperation in space activities, the commercial space industry, public-private collaboration and space-based military systems.

The use of space-based global utilities has grown substantially over the last decade. Millions of individuals rely on space applications on a daily basis for functions as diverse as weather forecasting, navigation, communications and search-and-rescue operations.

As barriers to entry decrease, the rate at which new space-faring nations emerge will continue to grow. However, the limited nature of some space resources will pose governance challenges to ensure equitable access for newcomers, so that their ability to enjoy the benefits of space is not contingent on the date when they acquired the wherewithal to access this domain.

International cooperation remains a key aspect of both civil space programmes and global utilities. Collaborative endeavours in civil space programmes can assist in the transfer of expertise and technology for the access to and use of space. International

cooperation can also help nations undertake vast collaborative projects in space, such as the International Space Station, whose complex technical challenges and prohibitive costs are difficult for any one actor to assume.

The role that the commercial space sector plays in the provision of launch, communications, imagery and manufacturing services and its relationship with government, civil and military programmes make this sector an important determinant of space security. A healthy space industry can lead to decreasing costs for space access and may increase the accessibility of space technology for a wider range of space actors.

The military space sector is an important driver in the advancement of capabilities to access and use space. Many of today's common space applications, such as satellite-based navigation, were first developed for military use. Space systems have augmented the military capabilities of a number of States by enhancing battlefield awareness, offering precise navigation and targeting support, providing early warning of missile launch and supporting real-time communications.

However, the use of space systems to support terrestrial military operations can be detrimental to space security if adversaries, viewing space as a new source of military threat or as critical military infrastructure, develop space system negation capabilities to neutralize the space systems of other nations.

This is a sample of the type of developments covered under this theme in this year's report: navigation systems of various nations continue to evolve; China conducts first manned mission to Tiangong-1 space station; analysts and industry predict continued satellite industry growth; Space X delivers first commercial payload to the International Space Station; and major space-faring nations continue to update their military space systems.

The third theme is concerned with the security of space systems, with a focus on the related space security dynamics of space systems protection and space systems negation. Indicators of space security covered under this theme include the vulnerability of satellite communications, broadcast links and ground stations, the protection of satellites against direct threats, the capacity to rebuild space systems and integrate smaller satellites into space operations, Earth-based capabilities to attack satellites and space-based negation-enabling capabilities.

The security dynamics of space systems protection and negation are closely related and space security cannot be divorced from terrestrial security. Under some conditions protective security measures

can motivate adversaries to develop weapons to overcome them.

In this context, it is important to highlight that offensive and defensive space capabilities are not only related to systems that are physically in orbit, and they include orbiting satellites, ground stations, and data and communications links.

While military satellite ground stations and communications links are generally well protected, civil and commercial assets tend to have fewer protective features. This vulnerability raises security concerns, since a number of military space actors are becoming increasingly reliant on commercial space assets for a variety of applications.

While no hostile anti-satellite (ASAT) attacks have been carried out, recent incidents testify to the availability and effectiveness of missiles to destroy satellites in orbit.

Satellite protective measures include system redundancy and interoperability, which have become characteristics of some satellite navigation systems.

Further, the ability to rapidly rebuild space systems after an attack could reduce vulnerabilities in space. Smaller spacecraft that may be fractionated or distributed on hosts can improve the continuity of capability and can enhance security through redundancy and rapid replacement of assets. While these characteristics may make attack against space assets less attractive, they can also make assets more difficult to track, and so inhibit transparency in space.

These are just some key developments related to this theme covered in this year's report: the High Integrity Global Positioning System (HIGPS) capability prepares for full operational deployment; deployment of smallsats is on the rise; jamming incidents and capabilities proliferate; missile systems are pursued by various countries; and orbital rendezvous and docking capabilities continue to be pursued.

The fourth and last theme covered in the report relates to developments on outer space policies and governance, under such indicators of space security as national space policies and laws, multilateral forums for space governance and other initiatives that may lead to policy development for space activities.

With regard to the normative environment for outer space activities the Space Security Index recognizes that the existing normative framework for space activities is insufficient to address the current challenges facing the outer space domain.

International instruments that regulate space activities have a direct effect on space security because they establish key parameters for acceptable behaviour in space. These include the right of all countries to access the space domain, prohibition against the national appropriation of space and against the placing nuclear weapons and weapons of mass destruction in this domain, and the obligation to ensure that space is used with due regard to the interests of other nations and for peaceful purposes. International space law can make space more secure by restricting activities that infringe upon the ability of actors to access and use space safely and sustainably, and by limiting space-based threats to national assets in space or on Earth.

While there is widespread international recognition that the existing regulatory framework for space activities is insufficient to meet current challenges, the development of an overarching normative regime has been painfully slow. International space actors have been unable to reach consensus on the exact nature of a space security regime, despite having specific alternatives on the table for consideration. Either as legally binding treaties, such as the proposed ban on space weapons (otherwise known as the PPWT) proposed by China and Russia, or politically binding norms of behaviour, such as the European Union's proposed International Code of Conduct for Outer Space Activities.

More recently, the establishment of a Group of Governmental Experts on Space by the United Nations General Assembly (UNGA) and of the Committee on the Peaceful Uses of Outer Space (COPUOS) Working Group on the Long Term Sustainability of Space Activities, both of which held their first formal meetings in 2012, are widely seen as positive efforts toward the adoption of agreed transparency and confidence-building measures for space activities.

This is a sample of developments related to outer space policies and governance that are included in the report: deadlock continues at the Conference on Disarmament; it is unable to agree on a Programme of Work; the Working Group on Long-Term Sustainability of Space Activities holds its first formal meetings; the first meeting of United Nations Group of Governmental Experts on TCBMs in Outer Space Activities is convened; the European Union kicks off multilateral consultation process on the proposed International Code of Conduct for Outer Space Activities; and the United Nations Institute for Disarmament Research hosts the 11th annual space security conference.

Mr. Chairman, to finish, I would like to acknowledge those whose continued support makes the

Space Security Index project possible. For their generous financial and in-kind contributions, I would like to thank Secure World Foundation, The Simons Foundation, Project Ploughshares and McGill University. The primary research is conducted by a team of researchers based at the George Washington University Space Policy Institute, McGill University Institute of Air and Space Law and Secure World Foundation. Last but certainly not least, our deep gratitude and appreciation goes to the Canadian delegation to this Committee for their continued support of the Space Security Index project, including their support for this very presentation.

Thank you very much for your attention.

The Chairman Thank you, Mr. Jaramilo for your presentation. I'm sorry. Due to time limitations, I cannot invite questions.

The second presentation on my list is by Ms. Akiko Suzuki of Japan and Mr. Master of Malaysia, entitled "Twenty Years of History and the Future of the Asia-Pacific Regional Space Agency Forum (APRSAF)". Ms. Akiko Suzuki, you have the floor.

Ms. A. Suzuki (JAXA) Thank you, Mr. Chairman. Distinguished delegates, Representatives, on behalf of Akiko Suzuki, Manager of International Relations and Research Department, JAXA, it is my great pleasure and honour, Yuko Suzuki, to participate in this session of the UN COPUOS. Following this morning's introduction to APRSAF, to provide a history and future of the Asia-Pacific Regional Space Agency Forum, APRSAF, with our esteemed partner, Mr. Mohd Zamri Shah Mastor, Science Officer of ANGKASA, the National Space Agency of Malaysia.

APRSAF is an open and flexible regional cooperation framework to offer opportunities to discuss cooperation for space activities in concrete terms.

And we are happy to announce with pleasure that APRSAF celebrates its 20th anniversary at its next session in December this year.

APRSAF has played an important role in the Asia Pacific region and has three unique characteristics: first, it is the largest space community in the Asia-Pacific region; second, it is involving not only space agencies, it also includes organizations using space technologies, such as governmental bodies, international organizations, universities, private entities and so on; third, APRSAF is seeking measures to contribute to socioeconomic benefits in the region.

These characteristics make APRSAF a regional cooperation framework model.

This slide shows at a glance how APRSAF has expanded over the past 20 years. In the past 20 years, the number of participants has grown 6 times, and APRSAF was hosted in 10 different countries in the region, gathering people from various countries and entities.

I would like to get back to the first momentum to create APRSAF. It was the “International Space Year (ISY)” in 1992, which was validated by the United Nations. ISY was designed to promote international cooperation in the peaceful uses of outer space, and a number of conferences and seminars were held all over the world in support of ISY.

As one of the activities of ISY, Japan hosted the “Asia-Pacific ISY Conference (APIC)” in Tokyo. The Japanese Crown Prince spoke at the opening ceremony, and there were 900 people from 32 countries from various regions. Some 200 participants were from outside of Japan.

The five-day Conference identified “Mission to Planet Earth” and “Space Activities in the Asia-Pacific Region” as the common interests in the region, and the establishment of APRSAF was declared at the closing ceremony to continue to discuss the regional interests consistent with the principles of ISY.

Since the 1st Session of APRSAF held in Tokyo in 1993, APRSAF has been providing a regional space cooperation framework to people in the Asia-Pacific region for the past 20 years.

Japan took the leading role at the initial stage of APRSAF, but in recent years, many other countries in the region have shared the roles with Japan. To date, 9 countries co-hosted APRSAF starting with Mongolia, hosting APRSAF-5 in 1998.

The second APRSAF held outside Japan was APRSAF-8 in 2001 in Malaysia and the current 4 working groups were established then.

APRSAF-9 was co-hosted with Korea.

APRSAF-10 was held in Thailand.

APRSAF-11 was held in Australia. The first APRSAF initiative, “Sentinel Asia”, to promote disaster management was established at this session.

APRSAF-13 was held in Indonesia.

APRSAF-14 held in India.

APRSAF-15 was held in Vietnam in 2008. The second APRSAF initiative, “SAFE”, to enhance for environmental monitoring was established at this session.

Thailand co-hosted APRSAF for the second time, and at APRSAF-16 participation exceeded 300 for the first time.

APRSAF-17 was held in Australia, also for the second time.

APRSAF-18 was held in Singapore. At this session, the new initiative “Climate R3,” proposed by Australia, was established. Also, the special astronaut event “Asians in Space: Achievements of Human Spaceflight in Asian Countries”, was held.

Last year, Malaysia co-hosted APRSAF for the second time. Mr. Mohd Zamri Shah Mastor will give a presentation on the results of APRSAF-19 later. APRSAF-20 will be held in Vietnam in December this year.

In addition to these co-host countries, countries and organizations such as the Philippines, Nepal, Pakistan, Kazakhstan, Laos, Turkey, the United States, China, ASEAN, UNOOSA, UNESCAP, etc. have actively participated in APRSAF.

This slide shows a summary of current APRSAF activities. APRSAF currently organizes 4 working groups: Earth Observation (EO), Communication Satellite Applications (CSA), Space Education and Awareness (SEA), and the Space Environment Utilization (SEU).

Based on the discussions in those 4 working groups, APRSAF also supports the establishment of international projects, as known as “Initiatives,” as solutions for common issues in the APRSAF community.

There are 4 initiatives we are focusing on: Sentinel Asia, for disaster management in the Asia-Pacific region; SAFE, or Space Applications for Environment, to use space-based technologies to contribute to the environment; Climate R3, for dealing with climate change; and Kibo-ABC, a new initiative to promote the Kibo/ISS utilization.

In addition, several related activities, exhibitions and side events are held during the annual session.

Now, we would like to report three major successful outcomes of APRSAF.

First, APRSAF started as the forum for exchanging information among participants, but now it successfully focuses on measures to use space technologies to solve socioeconomic problems in the region. Since 2001, four working groups have been engaged in major socioeconomic issues.

Second, APRSAF has provided not only a place for discussion, but a framework for implementing

actual projects. Currently we are working on several socioeconomic issues in the region; disaster management, environment, climate change, utilization of ISS, education and so on.

We appreciate that the number of participants are increasing recently and approximately 380 participants from 33 countries and 14 international organizations, including from countries outside Asia, attended the last session.

It is also our pleasure that we are welcoming many high-ranking officials and the number grows year by year. We have welcomed Mr. Charles Bolden, the Administrator of NASA of the United States, last year.

So this is the shot I have been explaining.

As one of the successful examples of APRSAF regional cooperation, I would like to introduce the result of disaster monitoring through the “Sentinel Asia” initiative.

In March, 2011, Japan experienced an unprecedented disaster, the Great East Japan Earthquake.

After the earthquake, satellite data were provided through Sentinel Asia. As these pictures show, thanks to the three satellites, THEOS of Thailand, FORMOSAT-2 of Chinese Taipei, and CARTOSAT-2 of India, Japan was able to access images of the affected areas immediately.

We greatly appreciate once again this significant collaboration under the framework of Sentinel Asia.

Twenty years after its inception, it is now the time to review the past and to think about the next 20 years and beyond.

Over the past 20 years, circumstances around the world and in the Asia-Pacific region have changed. In an increasingly globalized world, environmental issues such as global warming and ozone layer depletion are being studied utilizing the advanced space technologies.

Also, the overwhelming majority of natural disasters exist in the Asia-Pacific region.

APRSAF has played an important certain role in dealing with these environment issues and disaster management. Looking ahead to the next 20 years, APRSAF will have to continue to improve in order to respond to the changes in the world and the region.

APRSAF is expected to address more issues of common interests and create new values in the Asia-Pacific region, strengthen the space community to accomplish missions that cannot be implemented by

one country, and utilize the Executive Committee (ExCom), established at the last session in 2012, to involve more space agencies in the planning and management.

Currently, the ExCom is working to develop the long-term vision of APRSAF. It will be discussed at the next session of APRSAF, and we welcome your participation.

Now, let me hand over this presentation to our APRSAF partner, Mr. Zamri Shah Master, the National Space Agency of Malaysia, who will talk about the last and next APRSAF conferences. Thank you.

Mr. Master (Malaysia) Thank you for the introduction, Ms. Suzuki. I would like to give a presentation on the result of the last session of APRSAF, held in Malaysia, and introduce the next session to be held in Vietnam.

The nineteenth session of APRSAF was held with successful results in Malaysia last December.

Approximately 380 participants from 33 countries and international organizations attended the last session.

APRSAF-19, under the main theme entitled “Enriching the quality of life through innovative space programmes”, was jointly organized by the Ministry of Science, Technology and Innovation of Malaysia (MOSTI), the National Space Agency of Malaysia (ANGKASA), MEXT and JAXA.

APRSAF-19 featured a special high-level Panel Discussion with the participation of senior representatives of space agencies in Asia, namely ISRO from India, LAPAN from Indonesia, JAXA from Japan, KAZCOSMOS from Kazakhstan, GISTDA from Thailand and VAST from Viet Nam. Chaired by Dr. Mustafa, the Director General of ANGKASA under the theme of APRSAF-19, the panel recognized the need to make more efforts to make space benefits for the society more visible to the general public.

Besides the panel discussion, side events such as the Water Rocket Event, space agencies and industry exhibitions, and a workshop on the protection on space environment also took place.

We are pleased to announce that the next session; APRSAF-20, will take place in Hanoi, Viet Nam, from 3 to 6 December 2013, co-organized by Japan and Viet Nam. We would like to thank the Viet Nam Academy of Science and Technology, or VAST, for generously agreeing to host this historical session.

Building upon the joint achievements over the past two decades, and with a new body established within APRSAF to integrate substantive inputs from

various space agencies into planning for the future, we are confident that APRSAF will continue to thrive as an effective and dynamic framework for regional cooperation.

Thank you very much for your attention and we are looking forward to seeing many of you at APRSAF-20 and to celebrating the 20th anniversary with you.

The Chairman Thank you, Ms. Suzuki and Mr. Master for your presentation.

The third presentation on my list this afternoon is by Ms. Xiaochun LU of China entitled “The latest developments of Beidou Global Navigation Satellite System”. Ms. Xiaochun Lu. Oh, mister. I’m sorry. You have the floor.

Mr. Jianwen Li (China) Thank you, Mr. Chairman. Ladies and gentlemen, my name is Li Jianwen. Ms. LU is my colleague. My presentation is development of BeiDou Navigation Satellite System.

China is developing BDS from last century and the target is providing continuous stable and reliable satellite navigation service for global users, serve the world and benefit mankind, suffice the requirements of national security and eco-social development, accelerate the national informatization construction as well as economy development mode transformation, realize social and economic benefits derived from satellite navigation industry.

China develops BDS in three steps. In 2000 China developed the BeiDou demonstration system, and last year we developed the regional system. In 2020, we will develop a global positioning system.

The BDS architecture includes space constellation, a ground control segment and user terminals. The space constellation consists of 5 GEO satellites and 30 non-GEOs. The ground control segment includes the master control stations, uplink stations and monitoring stations. The user terminals include the BeiDou user terminals and other terminals compatible with other GNSS.

BeiDou will have four types of service, open service and authorized service, and we will provide wide area differential service and short message service too. The designed accuracy of positioning is better than 10 metres. The velocity accuracy is better than 20 centimetres. The timing accuracy is better than 20 nanoseconds.

Let’s introduce the last progress. By the end of last year, 14 operational satellites are in orbit and we have completed the second step of space constellation deployment.

We carry out system tests continuously. The BeiDou System is under continuous and stable operation. Service performances meet the designed requirements.

Last December, China declared that the BeiDou System formally provide Full Operational Service for China and its nearby. And also released the Interface Control Document (ICD).

The service area of BeiDou now is from longitude 55 to 180, latitude from south 55 to north 55.

The service performance is accurate positioning: horizontal is 10 metres and vertical is 10 metres too. The velocity accuracy is better than 0.2 metres per second. Timing in a one-way model is better than 50 nanoseconds. And also we provided short message communication and wide area differential and ground-based augmentation services.

On the international activities, last year China established a regional centre for space science and technology education. And China held ICG, the seventh ICG meeting, last year. China have many discuss with other countries including such countries as Pakistan and America and Russia. And we carried out the BeiDou/GNSS Application Demonstration and Experience Campaign, further promoted the international GNSS monitoring and assessment, published monitoring and assessment parameters document. No we start overseas site survey and construction preparation work, push forward the development of GNSS.

Exchange and training, just now I said we established a centre for space science and technology education. And we have held summer school for overseas students, international students.

On the research and development of fundamental products, we have developed many kinds of chips for multi GNSS and we manufactured receivers including navigation model and geodetical models.

BeiDou and GNSS is in wide use in China, including in the transportation field. The main of BeiDou is to monitor the dangerous vehicle, and meteorology, popular vehicles, in emergency and disaster rescues. This picture show Lushan earthquake in April 20, this year. The other one is BeiDou receiver.

Our standardization affairs, we prepare to establish a technical committee on satellite navigation standardization and prepare to enter into the ICAO and IMO standard framework, and engaging in the Third Generation mobile communication standard Partnership Project (3GPP).

Let's introduce the recent plans. We will improve the BeiDou System's navigation performance, especially availability and stability; providing continuous, stable and reliable services for users.

Also we continue to deepen Sino-Russian, Sino-US, China-EU, Sino-Pakistan, Sino-Indonesia bilateral cooperation; continue carry on BADEC with the help of multilateral platform such as APSCO and China-ASEAN "10+1" cooperation; promote cooperation in international GNSS monitoring and assessment domain and hope to become one of the monitoring and assessment centres of ICG, to share raw data and products with all members around the world.

Also we continue to continuous carry out standardization affairs such as ICAO, IMO and 3GPP, and start to investigate and implement BeiDou international standardization tasks.

The last thing I want to say is that BeiDou System has completed the second step of development plan; can provide Full Operational Service; provide free of charge, stable and reliable PVT services.

China always refers to BeiDou as belonging to both China and the world. We actively boost the joint development of GNSS and enable resource-sharing and mutual complementarity in the development of navigation satellite systems. That's all, thank you.

The Chairman Thank you, sir, for your presentation. I'm sorry we lost the interpretation service for the last two minutes, but thank you anyway for your presentations.

Distinguished delegates, now only the English will be continued.

I will shortly adjourn this meeting. Before doing so, I would like to inform delegates of our schedule of work for tomorrow morning. We will meet promptly at 10.00 a.m. At that time, we will continue our consideration of agenda item 4, General exchange of views, and we will continue and hopefully conclude our consideration of agenda item 5, Ways and means of maintaining outer space for peaceful purposes, and continue agenda item 7, Report of the Legal Subcommittee on its fifty-second session.

There will be three technical presentations tomorrow morning: by representatives of Italy entitled "Italian Master Course in Space Institutions and Policies", by a representative of Japan entitled "Japan's contributions to the International Space Station (ISS)", and by a representative of Belarus entitled "National Space Program of the Republic of Belarus".

During lunch time tomorrow, starting at 2.00 pm, there will be a screening of two videos. The first one is entitled "Japanese space women", and it is presented by Japan. The video is 5 minutes in length. The second video is entitled "Shenzhou-9", and it is presented by China. The video is 10 minutes in length. The two videos will be repeated until 3.00 pm. Delegations are cordially invited to the screening of these videos.

Are there any questions to this proposed schedule?

I see none.

Finally, I wish to remind delegations that this evening, starting at 7.00 pm, there will be the Women Astronauts and Cosmonauts Panel entitled "Women in Space: The Next 50 Years" at the Natural History Museum here in Vienna. The museum is located at Maria-Theresien-Platz, in the 1st district. All delegations are warmly welcome to attend.

I will give the floor to the Secretariat. You have the floor.

The Secretariat Thank you, Mr. Chairman. A very brief announcement. There will be a meeting tomorrow morning at 9 o'clock with member States concerned with African leadership conference preparations. I repeat, African leadership conference preparations, tomorrow morning, Friday 14 June, 9 o'clock in conference room C0713. I repeat, room C0713 in this corridor outside. Thank you.

The Chairman Thank you, Niklas. Now, this meeting is adjourned until 10.00 a.m. tomorrow morning. Thank you very much.