Committee on the Peaceful Uses of Outer Space

Script

Fifty-seventh session

678th Meeting
Thursday, 12 June 2014, 3.00 p.m.
Vienna

Chairman: Mr. A. Oussedik (Algeria)

The meeting was called to order at 15.03 p.m.

The CHAIRMAN: Good afternoon distinguished delegates, I now declare open the 678th 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.

Before opening the floor for statements by delegations, I will invite the Executive Director of the United Nations Office of Drugs and Crime and the Director-General of the United Nations Office in Vienna, Mr. Yury Fedotov to address the Committee. We will then continue our consideration of agenda item 5, General Exchange of Views, and we will continue and hopefully conclude our consideration of agenda item 6, Ways and Means of Maintaining Outer Space for Peaceful Purposes. We will also continue our consideration of agenda item 7, Report of the Scientific and Technical Subcommittee on its Fifty-First Session.

There will be four technical presentations this afternoon by a representative of Germany entitled "Technology for Disaster Management and Humanitarian Assistance", by a representative of Chile entitled "The Contributions of Chilean Satellite "Fasat-C": The Development of Chile", by a representative of China entitled "China Lunar Exploration Programme", and by a representative of Austria entitled "OPS-SAT: An Advanced Nanosatellite Mission by the European Space Agency".

The Space Missions Planning Advisory Group is holding its second meeting from 2.00 p.m. to 5.00 p.m. in Meeting Room C5 on the Seventh Floor of the 'C' Building.

Expert Group B of the Working Group on the Long-Term Sustainability of Outer Space Activities is meeting from 3.00 p.m. to 6.00 p.m. in Meeting Room C0739 to discuss its final report.

This evening, after the conclusion of the afternoon meetings, delegations are cordially invited to attend a reception hosted by the Asia-Pacific Space Cooperation Organization to be held in the Coffee Corner outside this Board Room D starting at 6.00 p.m.

Are there any questions or comments on this proposed schedule?

I see none.

Thank you.

I invite the Executive Director of the United Nations Office of Drugs and Crime to give his statement. Thank you very much.

Mr. Y. FEDOTOV (Executive Director, United Nations Office of Drugs and Crime. Director-General, United Nations Office at Vienna): Thank you Mr. Chairman, good afternoon ladies and gentlemen. As there are not so many drugs and crime in the outer space, allow me to address you in my capacity as the Director-General of the United Nations Office in Vienna.

But before I start addressing you, at the outset, I would like to express congratulations to Simonetta Di Pippo, who was appointed in March 2014 by the Secretary-General, Director of the United Offices for Outer Space Affairs. And, as I understand, that is the first session of the United Nations Committee on the Peaceful Uses of Outer Space for her as the United Nations Office for Outer Space Affairs Director. I would like to wish you every success at this session of COPUOS but also the future in your new position. Dr. Di Pippo has had a distinguished career in both the Italian and the European Space Agencies and her experience in these positions will be of tremendous benefit to the work of the United Nations Office for Outer Space Affairs and COPUOS in the coming years.

Mr. Chairman, ladies and gentlemen, it gives me great pleasure to address this session of the United Nations Committee on the Peaceful Uses of Outer Space.

My message to you today is very clear that it is the time to make the overall governance of the peaceful uses of outer space an integral part of the international community's global commitments on sustainable development.

Your Committee, as well as the Scientific and Technical Subcommittee and the Legal Subcommittee, provide a unique platform at the global level. They have, for many decades, helped deliver extraordinary advances in international cooperation in the peaceful uses of outer space.

We are now steadily moving towards the post-2015 Development Agenda, including a review of the Millennium Development Goals and the launch of the new sustainable development objectives.

It is, therefore, important to demonstrate to the international community the essential role of space in development, particularly within the context of the outcome of the Rio+20 Conference and the emerging post-2015 Development Agenda.

The post-2015 Development Agenda requires effective and innovative tools to support its implementation. Among those tools are the ones offered by space science and technology.

Space technology can catalyze development in virtually every sector and it can help bridge the gap between developing and developed countries. The benefits of space technology must be harnessed for the benefit of all but there is a lack of awareness among policy-makers, local authorities and planners about its practical application for development.

Agricultural planning and crop monitoring, water resource management, adaptation and mitigation, rural and urban planning, disaster management and response, global navigation, and telecommunications, among many others, can all enable and support sustainable development.

There is also a need to fully recognize the importance of space tools and geospatial information to meet the objectives of the Global Development Agenda. Space tools are an important means of implementation of development objectives. Access to information and the ability to use data to support decision making at all levels is absolutely fundamental.

The General Assembly Open Working Group on Sustainable Development Goals is now completing its work and the post-2015 Agenda is taking shape. We need to ensure that the Spatial Data Infrastructure is recognized as a means of achieving those development objectives.

Political commitment also needs to be mobilized to increase the understanding of the role played by scientific and technological cooperation in eradicating poverty and accelerating the achievement of the Millennium Development Goals.

The United Nations Office for Outer Space Affairs is also the main resource of the United Nations Secretariat in promoting international cooperation in the peaceful uses of outer space and taking leadership of the United Nations space inter-agency coordination in this area, in carrying out the United Nations Programme on Space Applications, undertaking the United Nations-SPIDER activities, serving as the Executive Secretariat to the International Committee on Global Navigation Satellite Systems, performing capacity-building activities in space law and supporting the Secretary-General in discharging his responsibilities under the UN treaties on outer space.

The Office has a fundamental role to play in the overall space affairs of the United Nations system and the Office for Outer Space Affairs and the Committee on the Peaceful Uses of Outer Space jointly work to ensure that we continue to bring the fruits of space activities to people around the world.

A dynamic, inclusive dialogue on how we can work together to build on the Millennium Development Goals and create a shared vision for sustainable development in the future is exactly what is needed.

We should also remember that we are carrying out this work not only for those who live today, but also for the generations who follow.

I thank you Mr. Chairman.

The CHAIRMAN: I thank Mr. Fedotov for this important address to the Committee.

General exchange of views (agenda item 5)

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

The first speaker on my list is the distinguished delegate of Ukraine, Mr. Hryhorii Khomenko.

Mr. H. KHOMENKO (Ukraine): Mr. Chairman, distinguished delegates. The delegation of Ukraine supports the agenda items of the fifty-seventh session

of the Committee and hopes that the session will contribute to further progress in the solution of issues that have a practical importance for space activities, ensuring long-term sustainability, transparency, confidence-building, openness and development of international cooperation.

Ukraine welcomes the work of the Committee and its Subcommittees in coordination the efforts of the world community regarding the effective use of outer space science and technology achievements for the benefit of mankind, harmonization of national legislation of outer space activities, promoting international cooperation and mutual understanding.

Ukraine proceeds from the premise that given the current development of space activities, that exploration and use of outer space should be implemented through active international cooperation at the international, interregional and regional levels.

Ukraine adheres to the position that the exploration and use of outer space shall be carried out exclusively for peaceful purposes and in accordance with the applicable rules of international law and stresses the importance of such principles as equal and non-discriminatory access to outer space for all States, regardless of their level of technical, scientific and economic development; equitable and efficient use of outer space; non-appropriation of outer space, including the Moon and Other Celestial Bodies; demilitarization of outer space and its use exclusively for peaceful purposes; ensuring of transparency and confidence-building measures in outer space activities.

As an active participant of outer space activities, Ukraine is of the view that the process of accession to the main United Nations treaties on outer space of the States that have not yet joined them is important. Ukraine also supports the work of preparing international instruments regulating certain issues of space activities, including the initiative of the European Union on the preparation of the International Code of Conduct on Space, the purposes of which are to enhance safety, security and sustainability of outer space activities, creating mutual understanding and trust in outer space.

However, taking into account the current challenges and problems of outer space, Ukraine considers relevant to study the issues of developing a Comprehensive Convention on Space Law. The Convention's preparation, in our opinion, is timely and will raise international space law to a new level of development.

In this regard, Ukraine emphasizes the need to ensure greater coordination between the Committee and its Subcommittees, as well as between the Committee and other international forums, the activity of which is related to the use and exploration of outer space.

Thank you Mr. Chairman.

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

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

Mr. A. H. SIRAJ (Pakistan): Thank you Mr. Chairman. Mr. Chairman, on behalf of the Pakistan delegation, it is my honour to address this fifty-seventh session of the United Nations Committee on the Peaceful Uses of Outer Space.

First of all, Mr. Azzedine Oussedik, my delegation would like to congratulate you on your election as Chairman to this Committee and wish you all the success. We are confident that under your able leadership, this Committee will achieve substantive progress on the issues currently under discussion

We would also like to congratulate Ms. Simonetta Di Pippo on her appointment as the Director of the United Nations Office for Outer Space Affairs.

Mr. Chairman, the United Nations COPUOS is the apex multilateral forum to deliberate upon the opportunities, challenges and issues confronting its member States in their activities of scientific exploration and peaceful uses of outer space. We believe that the Committee and its member States, over the years, have significantly benefited humanity through convergence of views among nations on key scientific, technical and legal issues related to outer space. Due to the contribution of this Committee, international cooperation is now central to all outer space activities. Nowadays, no single nation is deemed to be fully independent in its space endeavours and thus bilateral and multilateral cooperation and collaboration have become the norm. My delegation attaches great importance to enhancing international cooperation in the peaceful use of outer space.

Mr. Chairman, Pakistan recognizes the importance of international cooperation and the role of international intergovernmental organisations in exploration and peaceful use of outer space. Pakistan is a member of the International Astronautical

Federation, the Inter-Islamic Network on Space Sciences and Technology, and the Asia-Pacific Space Cooperation Organization, and contributes actively to the activities undertaken under the framework of these fora as well as those of the Asia-Pacific Regional Space Agency Forum, APRSAF. SUPARCO hosts the United Nations-SPIDER Regional Support Office and Mission Control Centre of COSPAS-SARSAT. We welcome the introduction of the agenda item entitled "Review of International Mechanisms for Cooperation in the Peaceful Exploration and Use of Outer Space" to the agenda of the Legal Subcommittee, which, we hope, will highlight the various mechanisms adopted by States for international cooperation. Like other core activities, Pakistan considers space as a national responsibility and, as a State, would like to fully engage in the peaceful exploration and use of outer space in a non-discriminatory manner.

Mr. Chairman, on the issue of space debris mitigation, Pakistan believes that outer space should be used in a manner which ensures safety, security and long-term sustainability of peaceful space activities. We support all instruments which are aimed at achieving this goal including all possible measures to mitigate space debris. However, we would like to point out that not all emerging space-faring nations may have the requisite financial and technological resources to comply with the United Nations COPUOS Space Debris Mitigation Guidelines or any other set of guidelines or technical standards in totality. My delegation believes that much of the existing space debris has been created as a result of the past activities of major space-faring nations, and hence, they have a moral responsibility to assist new entrants in implementing these guidelines through the provision of the Conjunction Assessment Risk Analysis and Space Situational Awareness systems. My delegation would like to assure this Committee that Pakistan would take all measures possible to address this issue while remaining within available financial and technological resources.

Mr. Chairman, my delegation believes that the issue of weaponization of outer space, including the placement and installation of weapons in space and celestial bodies, poses a serious threat to future of space operations. Whereas the issue itself merits exclusive and extensive deliberation, it should also be considered inseparable with that of space debris mitigation. The current international regime, as it stands, does not ban the placement or use of conventional and other non-nuclear weapons in outer space. My delegation believes that unless a treaty on the prevention of an arms race or the placement of weapons in outer space is in force, the peril of exponential increase in space debris will continue to loom over us for many more years to come and would negate the objective of achieving long-term sustainability of outer space activities.

Mr. Chairman, my delegation notes with appreciation the efforts, led by the European Union, in negotiating the so-called International Code of Conduct for Outer Space Activities. Pakistan supports all efforts aimed at strengthening the existing international legal regime governing space activities, whether those are legally binding or not, which take into account the needs and interests of the developing countries and the existing international space law. Pakistan is participating in the negotiations along with other countries. However, my delegation is of the view that the final document should be presented to this Committee before its adoption to afford it international recognition and facilitate its wider acceptability.

Pakistan is party to all the five United Nations outer space treaties and supports the idea of space without arms. We oppose all kinds of weaponization and militarization of outer space, and believe that space is the common heritage of mankind and cannot and should not be subjected to appropriation by any means. We also believe that all possible measures should be taken to avoid harmful contamination of the outer space environment in order to ensure safety, security and sustainability of outer space activities. My delegation is of the view that all legally binding, as well as non-legally binding instruments related to the peaceful uses of outer space should be concluded at this forum.

Mr. Chairman, Pakistan is fully committed to utilizing space-based resources to improve the socioeconomic indicators of the country. In this context, SUPARCO has carried out a host of activities which include satellite-based monitoring of major crops, automation of field data collection process through android-based smart phone applications, and development of LCCS Atlases, in collaboration with the United Nations Food and Agricultural Organization, mapping of impact of floods on agriculture and bank erosion modelling along the upper region of the lndus River, and strategic strengthening of flood warning and management capacity of Pakistan, in collaboration with UN-FAQ, UNESCO and the University of Southampton, United Kingdom, and implementation of the National Environmental Information Management System for the Federal Ministry of Climate Change.

In the field on tele-epidemiology, a project on identification of hotspots for dengue outbreak and

another on the Polio Digital Mapping System, in collaboration with UNICEF, were undertaken.

Mr. Chairman, it gives me great pleasure to inform the Committee that SUPARCO, in collaboration with the Institute of Space Technology is organizing an International Conference on Space, from 8-10 September 2014 in Islamabad, being organized under the theme "Space for Development". The Conference shall focus on how emerging space-faring nations can effectively apply space-derived techniques and solutions for sustainable socio-economic development. The Conference will also discuss the existing international legal regime and the regional and national mechanisms governing outer space activities. My delegation would like to take this opportunity to invite you, Mr. Chairman, and Ms. Simonetta Di Pippo, Director of the United Nations Office for Outer Space Affairs, and all the delegations present here today, to attend the Conference. We hope that your presence would be a source of inspiration to other participants and attendees and would give us the opportunity to extend our traditional warm hospitality

Mr. Chairman, Pakistan is carrying out numerous cross-disciplinary activities to facilitate the implementation of the Millennium Development Goals and expanding its capacities for implementation of the Sustainable Development Goals that will lead to the Post-2015 Development Agenda.

The key thematic areas and cross-sectoral issues as laid down in the document in which space-enabled applications are being utilized in Pakistan are food security, nutrition and sustainable agriculture, sustainable cities and human settlements, health and population, oceans and seas, disaster risk reduction, in the context of the Hyogo Framework for Action 2005-2015), climate change, forests, and education.

My delegation would like to assure you that Pakistan will, in its capacity as a developing country, continue to play its due role in facilitating the implementation of the Global Sustainable Development Agenda under any programme of regional and international cooperation.

Before I conclude my statement, Mr. Chairman, I would like to avail of this opportunity to urge the international community, particularly developed countries, to step up their contribution towards bridging the existing scientific and technological divide through capacity-building and transfer of technology to developing countries in accordance with the relevant United Nations General Assembly resolutions, for, without their support, the goal of all-inclusive global development will not be achievable.

I thank you Mr. Chairman.

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

As it was the last statement on my list, are there any other delegations wishing to make a statement under this agenda item at this time?

I see none.

We will, therefore, continue our consideration of agenda item 5, General Exchange of Views, tomorrow morning.

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

The first speaker on my list is the distinguished delegate of Italy, Ms. Gabriella Arrigo.

Ms. G. ARRIGO (Italy): Thank you Mr. Chairman. Mr. Chairman, in accordance with paragraph 20 of the United Nations General Assembly resolution 67/113, the Italian delegation considers this item among the priorities in our work within this Committee, whose primary goal is, indeed, to promote space technology development and to maintain outer space applications for peaceful uses. In this regard, Italy is convinced that a strengthened international cooperation is a key factor to also foster those regional and interregional collaborations inspired by the recommendations of the World Summit on Sustainable Development.

Mr. Chairman, distinguished delegates, we believe that being Party to this Committee is a privilege as COPUOS is the only United Nations body aimed at promoting the peaceful use of outer space. Nonetheless, although an effective institutional framework does represent an essential prerequisite, it depends on us to keep our dialogue, here in Vienna, fruitful and open. Building more and more confidence among us it is our own responsibility, as member States.

Space assets can be used to protect populations and their resources. They can also contribute to the integrity and the capabilities of their technological base. Space systems offer a variety of technical solutions on the global scale.

In this regard, future guidelines on long-term sustainability of outer space activities will mark a fundamental step forward towards the elaboration of space policies consistent with the purpose of maintaining outer space a safe and peaceful environment.

Mr. Chairman, coming to the regional level, the application of the European COPERNICUS services can give an important contribution to the fulfilment of several needs in the field of safety, security and emergency response, such as maritime surveillance, border control, and food security.

In addition, the Galileo Global Navigation Satellite System offers a highly accurate, guaranteed global positioning service under civilian control for the well-being of populations and citizens. It is also inter-operable with the United States GPS and the Russian GLONASS systems.

Finally, the European Satellite Communications are essential in ensuring critical information infrastructures for peaceful purposes.

Before turning to some national initiatives, allow me also to briefly mention the Space and Security Conference organized by the Greek European Union Presidency in collaboration with the European Commission which will be held in Athens, Greece, next week, on 19 and 20 June.

Mr. Chairman, Italy is fully engaged in several space activities promoting ways and means of maintaining outer space for peaceful purposes, such as the development of programmes related to human space flights, Earth observation, navigation and communication systems, training and education of the young generation.

In particular, with regard to the latter, let me touch upon the on-going project “Journalists in the Green”, sponsored by the Italian Space Agency and the University of Rome, Tor Vergata. This project is targeted on young reporters, aged between five and 29 years old, in the field of environmental communication. Its eighth edition was titled “Crews of Change”, recalling the spirit of team/community flying towards a sustainable change and development.

On this subject, children of first grade classrooms realized a model of a spaceship called “C4C” in honour of the Italian astronaut of the ESA Corp of Astronauts, Luca Parmitano. Finally, I am pleased to announce that the Italian astronaut, Luca Parmitano, has recently been appointed by the Italian President of the Republic as Ambassador of Italy for the upcoming Italian semester of Presidency of the Council of the European Union.

Mr. Chairman, in conclusion, we firmly believe that bilateral, regional and multilateral international cooperation in the peaceful uses of outer space is essential for all those States keen to develop and strengthen their capacity to achieve benefits from space activities. International cooperation on space projects between space-faring and non-space-faring countries can also contribute to confidence-building for the benefit of all nations and all humankind.

Thank you Mr. Chairman.

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

The next speaker on my list is the distinguished representative of Indonesia, Mr. Thomas Djamaluddin.

Mr. T. DJAMALUDDIN (Indonesia): Thank you for giving me the floor Mr. Chairman. My delegation has followed the discussion on this agenda item with great attention. Based on our observation, it is important to note that the exploration and the use of outer space shall be solely meant and applied for peaceful purposes as well as for the enhancement of the quality of peoples’ lives, in line with the principles of the Space Treaties.

In this regard, my delegation would like to commend the Committee and its Subcommittees for their continuous efforts in providing a broad set of cooperation and initiatives in the use of space technologies for peaceful purposes at the global, regional and regional levels, especially for developing countries. Such efforts have opened the wide opportunity for developing countries to further participate in this cooperation.

On the same note, allow me to reiterate Indonesia’s position on the importance of non-weaponization of outer space for the benefits of humankind. As a non-faring nation, we also look forward to further engage in a constructive dialogue in the discussion of the non-legally binding United Nations instruments in this Committee or the Subcommittee, within its respective mandate. Such discussion is also important to meet the objective that such instruments should be in line with the principles of a fair, beneficial and sustainable use of outer space for peaceful purposes for all humankind.

Thank you Mr. Chairman.

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

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

Mr. A. H. SIRAJ (Pakistan): Thank you for giving me the floor again Mr. Chairman.

Pakistan is party to all the five United Nations outer space treaties and believes in space without arms. We are against all kinds of weaponization and militarization of outer space, including the placement, installation and possible use of ground- and/or space-based conventional and nuclear weapons in space or on celestial bodies. We believe that space is the common heritage of humankind and cannot, and should not, be subjected to appropriation by military means. We also believe that all possible measures should be taken to avoid harmful contamination of the outer space environment order to ensure its safety, security and sustainability.

My delegation is of the view that while legally binding as well as non-legally binding instruments related to the peaceful uses of outer space may be negotiated at the respective fora, this should be brought for discussion at concluding stages to the United Nations Committee on the Peaceful Uses of Outer Space.

My delegation would like to reiterate that, without prejudice to on-going discussions on the International Code of Conduct for Outer Space Activities, a legally-binding treaty must be concluded to prevent the possibility of an arms race in outer space. Deliberations on such a treaty are in progress in the Conference on Disarmament. The Committee should establish closer coordination with the Conference on Disarmament and facilitate further discussion on the issue.

I thank you Mr. Chairman.

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

The next speaker on my list is the distinguished delegate of Mexico, Ms. Rosa Maria Ramirez de Arellano y Haro.

Ms. R. M. RAMIREZ DE ARELLANO Y HARO (Mexico) *(interpretation from Spanish)*: *(interpreter* – microphone for the speaker please).

Mr. Chairman, as I stated previously, I would like to once again congratulate you upon assuming the chairmanship of this COPUOS plenary and equally commend the staff who are joining you and Mr. Wilkins for the excellent work accomplished.

My delegation also wishes to extend a warm greeting to Ms. Simonetta Di Pippo, the Director of the Office for Outer Space Affairs, to use its English abbreviation, OOSA.

Dr. Francisco Javier Mendieta, the Director-General of the Mexican Space Agency, had an opportunity to meet you at the past meeting held in May at the United Nations Headquarters in New York and he has asked me to congratulate you once again on his behalf and I shall repeat some of what he said. I wish to convey to you that he told me that he was given an impression of an individual of great professionalism and strength of character.

Mr. Chairman, I shall now touch upon a number of principles that Mexico has stated at the various working meetings that have been held both within the standing Legal Subcommittee and the Scientific and Technical Subcommittee, as well as at the plenary, as was the case at the previous meeting held in Luxembourg on an International Code of Conduct for Space Activities.

Mexico's foreign policy as regards outer space affairs seeks to promote and strengthen international cooperation to support the exploration and use of outer space for peaceful purposes, enhancing and fine-tuning international law, specifically as regards the regulation of aspects related to the use of outer space which is enshrined in the five space treaties, we believe requires universalization so as to ensure that this contributes towards promoting international cooperation as regards the peaceful use and exploration of outer space, thus promoting greater transparency and confidence in activities related to this field. It is indispensable, therefore, that those States that have not yet done so ratify or adhere to these treaties and should consider the possibility of doing so in order to grant certainty and legal security to those activities that are governed by the afore-mentioned treaties in outer space.

As regards the contents of the space treaties, these must be upheld as the common heritage of humankind. We must prevent their militarization or the placement of bombs or other weapons of mass destruction or such devices, and this text, we have used the English term "weapons session" we were unable to find the Spanish term for this English phrase. While these guidelines are valid, they are not binding. In

order to protect the integrity of outer space to ensure the well-being of States and their inhabitants to promote international cooperation in order to support the peaceful uses of outer space, we require a solid basis for multilateral verification that would contribute towards confidence-building between and among States.

Knowledge regarding outer space must be shared as a point of departure to ensure shared and orderly growth for all countries, given that isolation and restrictions of such knowledge can lead to a dispersal of resources and a duplication of efforts that have been made when it comes to attaining the shared goals of humankind.

To that end, Mexico recognizes and supports the work undertaken by COPUOS in order to promote international cooperation in the peaceful use of outer space and in promoting research and the dissemination of information in this area.

This goal has only partially been met, we feel, as there are certain entities outside of COPUOS that have convened fora for the adoption of guidelines or rulings that subsequently are not binding but we must recall they will set a precedent.

At the start of the race in outer space, following the launching of Sputnik on 4 October 1957 by the former Soviet Union, there were only two main protagonists at the time, the United States of America and the former Soviet Union, due to a various set of circumstances, agreed to share the high costs that such activities entailed and agreed on a basis of international cooperation to work jointly with other countries that had access to outer space as well as resources. This led to the building of the International Space Station as well as other international projects such as the establishment of the Global Positioning System, known as the GPS, Galileo.

Given the shortage of financial resources, as I said previously, and given that space activities require a high level of investment, the participation of the private sector has been encouraged and this in turn has led to the commercialization of outer space.

In this regard, we must not lose sight of the fact that the States Parties to the space treaties continue to bear the main responsibility towards the international community.

I would like to underscore the need to invite those countries that have not yet ratified those treaties to do so in order to ensure the legal certainty within in the international space community.

Our country exercises the Pro Tempore Secretariat of the Sixth Space Conference of the Americas and as part of our activities, international cooperation has been established as a primary goals. Plans are under way to convene a meeting within the International Astronautics Congress, to be held in Toronto, Canada, in order to address the following themes, such as the prevention, mitigation and recovery following natural and man-made disasters, such as forest fires.

Following the establishment of the Mexican Space Agency in 2010, which began its activities in 2012, Mexico has sought to strengthen its scientific and technological capacities as well as its educational and industrial potential in the aerospatial field through the exchange of experience in order to contribute towards human development as well as global peace and security.

As part of this objective, we have undertaken space projects which have included agreements signed with the space agencies of Germany, the Ukraine, Italy and the United Kingdom. In the Ukraine, and this is a message that was conveyed to me formally, we have an invitation from the Chairman of the Ukrainian Space Agency for this year. When it comes to Italy, we are also planning to convene a meeting. The date has not been established yet but this as follow-up to agreements previously met. The same applies to Germany and the United Kingdom,

In other words, Mr. Chairman, I wish to tell you that this is about more than just signing agreements or pacts, rather it is about ensuring that positive steps are taken in order to meet the obligations that we are all under. In the same vein, we have signed an agreement with the European Union in order to enhance and strengthen Mexico's industrial capacities.

Recently, and following the visit of President Orland(?) to our country, the French and Mexican Space Agencies signed a Framework Agreement and negotiations and agreements are planned between space agencies of ISRO, in India, and JAXA of Japan, as well as the further signing of such agreements. Allow me to tell you that we have also enjoyed strong support in undertaken such actions.

The same applies to Argentina and Brazil, who are brotherly countries in Latin America, where we are currently engaged in negotiations on a government-level agreement with the Russian Federation

concerning the peaceful and scientific uses of outer space. And this also includes agreements that have been reached with scientific and academic foreign institutions, as would be the case of the Agreement for Cooperation signed with the National Aeronautics and Space Administration, NASA, on further human capital training. We also have other scientific projects that are in the pipeline.

It would be remiss where I fail to mention the reception that APSCO has invited us to and I would also like to tell you that the Foreign Secretary of my country, of Mexico, has also expressed his consent allowing Mexico, as well as Canada, to serve as observers in APSCO.

As regards national scientific and technological institutions, the Mexican Space Agency has also signed a number of Cooperation Agreements in order to ensure that we can use our full capacity to carry out those projects that we deem necessary for national development and which are currently listed in the Space Agency's programmes.

While it is true that the Mexican Space Agency is new and has only just started its functions as an agency, it is also true that for many years, and for many decades indeed, Mexico has taken a great interest in space and an example of this would be the role played by the Mayas.

As regards space safety and security and as regards space capacity, we would now like to touch upon space infrastructure which includes, inter alia, both space-based and ground-based segments which are vital for national security as well as the maintenance of international peace and security. This is particularly important given the Mexican geographic location and this requires not only land-based exploration satellites but also requires the cooperation and experience of highly-developed countries that have experience in these areas.

These are matters of great importance, both when it comes to the competence of the units that are involved in the Security and Safety Cabinet in the Mexican Government, as well as regards their input to health, education, food security, environmental protection, disaster prevention and rehabilitation, as well as other aspects to promote a social well-being which is one of the main aims of the Mexican State. To undertake activities in this fields, we require cooperation and international know-how in order to use ground-based observation satellites.

As regards the Mexican National Plan for Development for 20-13-2018, we have included a heading to deal with telecommunications, the land-based infrastructure of MEXSAT satellite, the Centanario and Morales-3 satellites. We are also preparing the upcoming generation of these land-based satellites, also using the early warning system and GNSS, which is the Global Navigation Satellite System which provides support for public transport and for land-based communication.

We are also planning further launchings and broadband satellites. The first satellite of the MEXSAT group was launched in 2012 and this was the Bicentennial Satellite which made it possible to close certain gaps when it comes to our knowledge of space and served to promote the telecommunication sector in Mexico. It helped to bind all Mexican citizens in the national development process and serve to provide greater access to information and communication technologies. Here, satellites such as the Bicentennial Satellite play a key role.

In early 2015, and halfway through the aforementioned year, we also plan to launch the Centennial and Morales-3 satellites to support national security and provide further satellite services.

Mr. Chairman, I am grateful to you and to the distinguished members of this Committee for having given me an opportunity to share with you a number of the projects concerning the security and certainty of the peaceful exploration of outer space and this opportunity to share these comments with you.

However, if you would allow me, Chairman, I would also like to read out the following text that my Government submitted at the previous meeting of the International Code of Conduct to Govern Space Activities, held in Luxembourg in May, and this point deals specifically with the preservation of the peaceful use of outer space.

Mr. Chairman, I am a Mexican and I am a Spanish speaker, English is not my mother tongue, but I shall read out the following text in English, unlike my usual habits to simply to make it quite clear what Mexico had stated at the Luxembourg meeting.

(Continued in English) Taking into account that the Code of Conduct does not include the comments made by Mexico in the previous meetings, the Mexican Delegation reiterates the same positions expressed in Bangkok, in November 2013.

Mexico appreciates the intention of to protect the use of outer space for peaceful purposes, safety, sustainability and trust-building measures for space activities.

Although the Code does not constitute a binding instrument and mainly adds political value as a measure to enhance trust building, it includes positive elements, such as political commitments on space debris, sustainability of space activities, use of space for peaceful and scientific purposes and security from the perspective of space applications to enhance social welfare. Nevertheless, it contains elements of concern for my government such as security and militarization, which should not be included in the Code.

International cooperation for the exploration and use of outer space, should be preserved for peaceful purposes, in accordance with international law. Therefore, Mexico is concerned that the Code of Conduct expressly includes concepts such as national security, legitimate right of defence, and the destruction of space objects. Furthermore, there is not a generally accepted definition of these concepts that go beyond the principle of freedom of access to outer space for peaceful purposes.

The references stating that the Code does not prejudge the work that could be done on these topics in COPUOS or the Conference of Disarmament, constitute an unnecessary link between outer space affairs with military issues and security. It is most important to take into account that the Conference of Disarmament has not done substantive work on any topic of its agenda, including the prevention of the arms race in outer space, for more than 17 years.

(Continued in Spanish) Plans are also underway to convene a meeting of the Disarmament Conference on new topics or new themes.

(Continued in English) The Code indicates that space debris is a threat that limits space activities and its capacities. In this sense, the Code should be more specific on the issue of space security, security and safety, they are different words and a different meaning. Mexico considers important to address the provisions of the Registration Agreement as well as the eventual emplacement of dual-purpose satellites in space.

In order to have a wide range of States endorsing the Code, it should be subject of multilateral negotiations. In its current form it could be an obstacle to advance negotiations of new legally binding instruments. Mexico considers that all States should ratify the five United Nations treaties on outer space.

(Continued in Spanish) Thank you very much Chairman. Thank you very much distinguished members of the Assembly.

The CHAIRMAN: I thank the distinguished delegate of Mexico for her statement.

The next speaker on my list is the distinguished delegate of Venezuela, Mr. Roberto Becerra.

Mr. R. BECERRA (Bolivarian Republic of Venezuela) *(interpretation from Spanish)*: Thank you Mr. Chairman. Thank you for this opportunity to once again address the room.

We listened with great attention to the other statements and have to modify our own earlier statement. I apologize and I am going to speak very slowly to make sure that the interpreters have no inconvenience.

Mr. Chairman, for my delegation, this agenda item is one of the most important items in particular, because it goes to the heart of COPUOS to the fundamental principle which is the peaceful use of outer space. When we talk about the peaceful use of outer space, the emphasis is on peace and when we talk about peace, we cannot only concentrate on setting up workshops, courses, seminars, they are important and we promote them, we value them but we cannot claim that this is just an international forum for seminars and for discussions. As I said, they are important but if we want peace, real peace, we have touch upon other sensitive issues such as the use of weapons in military conflicts and to some countries that is not to their liking.

We have to understand that COPUOS is an advisory body to the General Assembly and, therefore, it has both technical, legal and political functions.

We are concerned that some countries have expressed their clear interest in deploying certain types of armaments in outer space and we cannot ignore that. We have to really work to prevent that from happening. Fortunately, there are not many countries like that. It is a small number but these countries, in turn, tell us that we should not be discussing these things in COPUOS, that there are other fora for that purpose, so I wonder is not COPUOS not part of the United Nations? Then what is COPUOS? Is it a completely separate type of Committee, somewhere off the charts, as it were? No, it is certainly within our competence to talk about

peace, to touch upon these issues, to discuss these important and sensitive issues.

It is important to recall the statement made by the representatives of Egypt, Russia, Indonesia and Pakistan and I am happy that these statements have been made because these are the types of discussions that we must have in this Committee. Yes, we promote technical cooperation but not only technical, there are other important aspects of cooperation.

As everybody knows full well, the legal regime that governs outer space does not guarantee, per se, the prevention of an arms race in outer space. Therefore, it is imperative that we take adequate and effective measures that would make it possible to rule out the use of armaments in that area. The existing regulations have lacunae. The absence of certain rules and regulations do not make it possible to truly maintain outer space for peace and we have to raise our voice. It is our responsibility. We are responsible in front of all of humankind.

Therefore, Mr. Chairman, it is important to promote international norms and standards that would fully cover various types of activities that happen in outer space, whereby it would be clearly and absolutely forbidden to use any type of weaponry in outer space. I repeat, while there are other international fora and agencies to consider this issues, the General Assembly, the Disarmament Conference, even so, it is the duty of COPUOS to suggest and recommend peaceful conduct with regard to these issues and we have the capability to talk with other entities, the International Atomic Energy Agency, for example, to mention a recent example of such cooperation. We have the obligation to work with other bodies and agencies of the United Nations system towards the objective of maintaining and preserving outer space for peaceful purposes exclusively otherwise this objective would hardly be achieved.

Thank you very much Mr. Chairman.

The CHAIRMAN: I thank the distinguished delegate of Venezuela for his statement.

It was the last speaker on my list. Are there any other delegations wishing to make a statement under this agenda item at this time?

I see none.

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

Report of the Scientific and Technical Subcommittee on its fifty-first session (agenda item 7)

Distinguished delegates, I would now like to continue our consideration of agenda item 7, Report of the Scientific and Technical Subcommittee on its Fifty-First Session.

The first speaker on my list is the distinguished delegate of Japan, Mrs. Akiko Suzuki.

Ms. A. SUZUKI (Japan): Mr. Chairman, distinguished delegates, on behalf of the Japanese delegation, I am pleased to have the opportunity to address the fifty-seventh session of COPUOS. Japan supports the report adopted by the fifty-first session of the Scientific and Technical Subcommittee. I would like to express our appreciation to the Chairman of the Subcommittee, Dr. Elod Böth from Hungary for his excellent work.

Mr. Chairman, taking into account the increasing number of operators and amount of space debris in outer space, we are of the view that the United Nations Space Debris Mitigation Guidelines, adopted in the Scientific and Technical Subcommittee in 2007, is essential for tackling the issue of space debris, which in turn is critical to maintaining the long-term sustainability of space activities. Japan encourages all countries to follow these Guidelines in order to promote the responsible and fair use of outer space.

Japan also promotes efforts to enforce the global governance of space activities. We would, therefore, welcome and encourage the Subcommittee to engage in discussions towards setting best-practice guidelines for securing the long-term sustainability of outer space activities

Our sincere gratitude goes to all of the experts participating in the Expert Groups, the co-Chairs, and, of course, to the devoted Dr. Peter Martinez, Chair of the Working Group, for his outstanding efforts to submit his proposal for the consolidation of the set of draft Guidelines on the Long-Term Sustainability of Outer Space Activities. Japan will continue to contribute to the work of the Working Group and the Expert Groups in order to ensure practical and constructive outcomes for maintaining the long-term sustainability of space activities,

Mr. Chairman, I would also like to take this opportunity to introduce some Japanese contributions to the United Nations initiatives on space activities. We are very pleased with the work of Dr. Takao Doi, Chief

of the Space Applications Section of the Office for Outer Space Affairs, to establish the Human Space Technology Initiative, (HSTI), under the framework of the United Nations Programme on Space Applications, which promotes international cooperation in the field of human space exploration. Japan is supporting his initiative with the United Nations Trust Fund for International Cooperation for Development, We believe that our activities, geared towards the advancement of peaceful uses of outer space, are in line with those of HSTI.

Japan has contributed, in particular, to those activities of the Programme relating to small satellites and supports the Basic Space Technology Initiative. In cooperation with the Office for Outer Space Affairs, the Kyushu Institute of Technology, (KIT), has given developing countries the opportunity to use the nanosatellite development and testing facilities available at KIT through the Long-Term Fellowship Programme on Nanosatellite Technology. Following the start of the Programme in 2011, nine international students in total are studying at KIT.

Kyushu University established the International Centre for Space Weather Science and Education, or ICSWSE in 2012, which conducts space weather research, including the operation of the MAGDAS global network of magnetometers and space weather education, including the implementation of MAGDAS Schools for international capacity-building. In addition, ICSWSE continues to publish the ISWI Newsletter under a mandate of the United Nations and actively supports a wide range of ISWI activities, such as the support of ISWI workshops and ISWI schools.

We are pleased to announce that Kyushu University will bid to be the host of the 2015 United Nations/Japan Workshop on Space Weather.

The National Institute of Information and Communications Technology, NICT, regularly disseminates space weather information serving as the regional warning centre for Japan of the International Space Environment Service. Since 2003, NICT has constructed a ground-based observation network of the ionosphere and the geomagnetic field called SEALION, South East Asia Low-latitude lonosperic Network, for the purpose of monitoring and forecasting equatorial ionospheric disturbances. NICT has organized the Asia-Oceania Space Weather Alliance, AOSWA, for the collaboration of operations and research of space weather in the Asia-Oceania region since 2011. At present, 26 institutes in 13 countries are members. NICT has published several AOSWA Newsletters as the AOSWA Secretariat.

Mr. Chairman, Japan would like to also emphasize the Committee's role to promote close communications between the COPUOS and the regional and interregional cooperation mechanisms, enabling all of the nations and regions to share the results of space research and applications irrespective of their economic development.

In the Asia and Pacific regions, Japan promotes the Asia-Pacific Regional Space Agency Forum, APRSAF, which has established international projects to cope with common issues in the Asia-Pacific region and has implemented concrete actions, such as Sentinel-Asia for Disaster management, Space Applications for Environment, or SAFE, Climate-R3 for climate change, and Kibo-ABC to promote Kibo utilization in Asian countries.

In 2013, Sentinel-Asia implemented 18 emergency observations for flood, earthquake and forest fires which occurred, for example, in Indonesia, the Solomon Islands, the Philippines and Japan. In addition, Sentinel-Asia has a collaboration mechanism with the International Disaster Charter and activated this Charter for six disasters last year. Sentinel-Asia started its final phase, Step-3" last year. The goal of Step-3 is to expand activities to cover all the disaster management cycles, such as the mitigation and preparedness phase, the response phase and the recovery phase, utilizing various Earth observation, communication and navigation satellites. As the Advanced Land Observing Satellite-2, or TALOS-2, was successfully launched by the H-llA Launch Vehicle last month, we look forward to enhancing the activities of Sentinel-Asia using data from ALOS-2.

The Space Applications For Environment, SAFE, is an initiative that aims to encourage environmental monitoring for dealing with deforestation, droughts, floods and food security and to launch prototyping projects using space applications. For example, the Drought Index developed in the SAFE prototype was adopted to be utilized in the drought monitoring project in the Great Mekong sub-region by the Asian Development Bank, and in a project for an Agro-Weather Information System for Drought Early Warning using Japanese Earth observation satellites in the ASEAN region proposed by Japan in the meeting of ASEAN+3 Ministers on Agriculture and Forestry.

An initiative, Kibo-ABC, or Asian Beneficial Collaboration through Kibo Utilization, which aims to share the values of the Kibo utilization in Asia, was established through the activities of APRSAF in 2012 and nine countries in this region are participating in its activities. We are confident that our Kibo-ABC

activities will contribute to the development of the Asia-Pacific region in the field of human space technology in the same spirit of HSTI.

We will make a technical presentation about the Advanced Land Observing Satellite-2 or, ALOS-2. on 13 June, tomorrow. ALOS-2 is expected to contribute to some initiatives of APRSAF, such as the Sentinel-Asia and SAFE.

Thank you for your kind attention.

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

The next speaker on my list is the distinguished delegate of China, Mr. Yulong Tian.

Mr. Y. TIAN (China): Distinguished Chairman, the Scientific and Technical Subcommittee achieved significant results at the fifty-first session held in February this year. The Chinese delegation would like to take this opportunity to express it thanks and appreciation to Mr. Böth, the Chairman of the Subcommittee, and the entire Secretariat for the excellent job done.

Mr. Chairman, the Chinese delegation highly value the results achieved at the fifty-first session of the Scientific and Technical Subcommittee and views with appreciation all the progress achieved on different items. The Scientific and Technical Subcommittee offers the best platform for all the member States to conduct cooperation and dialogue on such global issue as space weather, disaster mitigation through space technology, space debris, nuclear power sources in outer space, long-term sustainability of space activities, the United Nations Space Application Programme, the UN-SPIDER Programme, Satellite Navigation and remote sensing, near-Earth object mitigation, etc.

The relevant guidelines and reports of the Long-Term Sustainability Working Group constitute one of the major achievements made by the Scientific and Technical Subcommittee in recent years. China believes that the long-term development of mankind can only be guaranteed by the sustainable use of outer space, where issues of development should also be solved through development. China appreciates the staged results achieved by the Scientific and Technical Subcommittee at its fifty-first session, where the text of the Guidelines, with the joint efforts of China, the Chairman and all the member States of the Scientific and Technical Subcommittee, reflected the results of the work of the Expert Group with more concise and clear ways of expression.

While China's space activities are developing continuously, it is also constantly studying the issue of how to avoid the possible negative impact of major space activities on the space environment, how to reduce the constraints and the threat of the space environment on space activities and how to develop corresponding technical means for management. China stands ready to share all its relevant practices with other countries.

Mr. Chairman, in the field of space debris. China has always attached great importance to the studies and management of space debris. Steadily promoted the mitigation of and preventative work on space debris and carried out end-stage passivation of carrier rockets and de-orbiting disposal of abandoned satellites for many times. It also developed a comprehensive protective design for important spacecrafts and carried out studies and provided services on early warning of space debris collision and re-entry, thus contributing to the in-orbit flight safety of spacecrafts and a clean space environment.

At the same time, China has also actively participated in the international exchanges and cooperation on space debris. From 12-15 May 2014, the thirty-second session of the IADC was held in Beijing and representatives from 14 countries and organizations attended the meeting.

The Administrator of the China National Space Administration, Mr. Xu Dazhe, attended the opening ceremony and delivered the opening speech. The participants at the meeting conducted exchanges on latest developments in the studies and researches on space debris, adopted meeting minutes of the Steering Group of the IADC as well as other relevant documents and chose NASA as the next rotating Presidency Agency of the IADC.

In the field of space weather. China has established a professional space environment monitoring network and a space weather forecasting system to provide both the early warning for disastrous space weather events and services for China's major space missions and the safety of space assets.

During the two space flight missions. namely the rendezvous and docking between the Shenzhou-10 spacecraft and Tiangong-1 space capsule and the launching of the Chang'e-3 spacecraft, China provided space weather forecasting and space environment protection services. Given the requirement for high-precision orbit forecasting for the rendezvous and docking, China provided the short- and medium-term forecasting covering the relevant space weather index

and space environment parameters, which increased the precision of the orbit forecasting and contributed significantly to the smooth operation and safety of China's major space missions.

Mr. Chairman, during the Scientific and Technical Subcommittee session in February, due to the fact that the Safety Framework for Nuclear Power Source Applications in Outer Space still had many items to be discussed and improved, the Subcommittee agreed to extend the mandate of the Working Group on Nuclear Power Sources in Outer Space to 2017, which reflected the great importance given to this issue by all the member States. China is willing to exchange technical and management experience on this issue and to explore the direction of its future development with other countries.

In April 2014. the China National Space Administration sponsored and hosted the thirty-first session of the Conference of the Directors and Executive Secretaries of the International Charter on Space and Major Disasters in Beijing. More than 80 participants from 15 official member agencies such as CNSA. ESA, the National Space Research Centre of France, the Russian Federal Space Agency, the United States National Oceanic and Atmospheric Administration, and the Brazilian National Institute for Space, attended the Conference and adopted the meeting minutes of the thirtieth session. The Russian Federal Space Agency joined the Charter as a full member. CNSA also promised to add the Haofen-1 and Fengyun-3C satellites as the satellites on duty for the Charter.

Through the important international space disaster mitigation platforms like the Charter and the UN-SPIDER Beijing Office, China stands ready to give a full play of its role in Earth observation systems with a view to allowing more countries, especially the developing countries, to enjoy the benefits brought about by the development of space technology.

Thank you. Mr. Chairman.

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

The next and last speaker on my list for this item is the distinguished representative of Austria, Mrs. Irmgard Marboe.

Ms. I. MARBOE (Austria): Thank you very much Mr. Chairman. Austria has closely followed and actively participated in the work of the Scientific and Technical Subcommittee in the past session in February 2014. It would like to express its highest appreciation to Mr. Böth from Hungary for his competent dedication and commitment in chairing this Subcommittee.

Austria wishes, in particular, to highlight the progress that has been made under the agenda item on Long-Term Sustainability of Outer Space Activities and wishes to thank and to congratulate Peter Martinez from South Africa for his outstanding and professional leadership of the respective Working Group.

The establishment of four Expert Groups under this item has turned out to be an effective and efficient means of dealing with the various aspects of this important topic. Austria wishes to thank the respective Chairs and co-Chairs of the Expert Groups for their able guidance of the work in the Expert Groups and for putting together the Working Reports of Expert Groups A, C and D at the last session of the Scientific and Technical Subcommittee.

Austria also appreciates the submission of the preliminary draft report and proposed Candidate Guidelines of Expert Group B on Space Debris, Space operations and Tools to Support Collaborative Space Situational Awareness.

Austria wishes to highlight once again that the involvement of numerous experts, in addition to governmental representatives from COPUOS member States, provided valuable insights and contributions to the work in the Expert Groups. The nomination of National Points of Contact for the Working Group has also contributed to improve cooperation and exchange of information. Most importantly, the establishment and maintenance of a dedicated internal website space on the website of the United Nations Office for Outer Space affairs relating to the item "Long-term Sustainability", which contains all relevant documents, names and addresses, has proved to be an excellent tool of keeping up-to-date with the progress of work in the different Experts Groups. This is particularly important for delegations which could not be presented in each of the Expert Groups.

Austria highly appreciates that after last session of the Scientific and Technical Subcommittee, a draft set of consolidated guidelines was put together by the Chair of the Working Group and was circulated among member States for their comments. Austria congratulates the Chair for this consolidation which highlights the most important conclusions and guidelines developed in the various Working Groups and helps to avoid overlaps and duplication. By rearranging the guidelines developed by the Expert

Groups and adding references to the original sources, i.e. the Working Reports of the respective Expert Groups, the Chair succeeded in submitting an excellent tool for the finalization of the guidelines which shall be a concrete and tangible result of the work of the Scientific and Technical Subcommittee on the issue of Long-Term Sustainability of Outer Space Activities

Intersessional consultations, amongst others, at the margins of the Legal Subcommittee in April. helped to exchange views on the draft and to further improve the set of draft guidelines.

In view of this efficient and concrete work on the topic, Austria sees a realistic chance that the work of the Working Group can be concluded soon. It supports the prolongation of the agenda item and the work plan of the Working Group until 2015 in order to allow a complete evaluation of the work done and a presentation to the wider public in an appropriate form. This is particularly important as the long-term sustainability of outer space activities is a pressing issue for all nations. It does not only affect space-faring countries, but all States and the daily lives of people worldwide. Space has become indispensable in many areas, not only in terms of technological progress, but more generally for economic, social and cultural development. It is hardly thinkable that the use of outer space will one day become impossible because of a lack of awareness of the responsibility by current and aspiring actors for the preservation of the outer space environment.

Austria appreciates that the outcome of the Working Group will be a joint report containing a consolidated set of current practices and operating procedures. technical standards and policies associated with the safe conduct of space activities together with the set of guidelines to be applied by States, international organizations and non-governmental entities on a voluntary basis. These guidelines will not have a legally-binding force and not establish international obligations. However. Austria would like to point out that they can be regarded as representing the current standard of good practices in the conduct of space activities. All States and international organizations should, therefore, consider them in good faith.

In addition, the instrument of national space legislation can be used to ensure that the guidelines are complied with also by non-governmental entities.

Austria will continue to support the efforts being made under the agenda item on Long-Term Sustainability of Outer Space Activities and is convinced that the Committee on the Peaceful Uses of Outer Space has a fundamental role to address these challenges.

Thank you Mr. Chairman.

The CHAIRMAN: I thank the distinguished delegate of Austria, Mrs. Irmgard Marboe, for her statement.

Are there any other delegations wishing to make a statement under this agenda item at this time?

I see none.

We will, therefore, continue and hopefully conclude our consideration of agenda item 7, Report of the Scientific and Technical Subcommittee on its Fifty-First Session, tomorrow morning.

Technical presentations

Distinguished delegates, I would now like to proceed with the technical presentations.

Presenters are kindly reminded that technical presentations should be limited to 15 minutes or less.

The first presentation on my list is by Mr. Johann-Dietrich Wörner of Germany, Chairman of the Executive Board of the German Aerospace Centre, DLR, entitled “Technology for Disaster Management and Humanitarian Assistance”.

Mr. D.-J. WÖRNER (Germany): Mr. Chairman, distinguished delegates, I feel very much honoured to be able to talk to you about our contributions to global challenges focusing on humanitarian applications. In order to have a base for my presentation, I would like to just introduce what is DLR and to do so, I do it in a little bit different than you normally get presentations like this.

You travelled to Vienna and most probably you had to take a car or a train or even an airplane and you have to do this in the right order. So, therefore, for instance, like this is shown over here, you travelled with a car maybe to the next station, then with a train to the airport. You had some security check. You took the plane. You landed in Vienna. Hopefully you got the same luggage back, not a different one, and then with a car and finally you are here in Vienna and everything is fine.

So what happens during this way? You were using cars and trains so transport is an important issue.

You are using planes and so planes are not only a comfortable means of transport but it is, at the same time as the others also, having some emissions and there is the security issue. You need energy for whole part and if everything is fine, you are using a navigation system to reach the stations, the planes are controlled by satellites and maybe you also wanted to know in advance what about the weather conditions in Vienna. To say this in a short word, you have aeronautics, you have space, you have energy, transport and security and this is what DLR is doing. It is just combining these different aspects to have a seamless, ecological, efficient chain of transport.

DLR is the German Space Agency, and at the same time, we are a research centre covering the fields of aeronautics, space, energy, transport and security and our main question is, why are we doing something? Though we are not just doing it and then saying, OK, we did it, but we always point out the question, why are we doing something? You see this astronaut coming back from the Moon, paining the Moon and got a very silly question, why did you do it? And an answer like this is not sufficient, just to say it because it worked. What we are really tackling is global challenges and here you a list. From my point of view, it is a comprehensive list of challenges. You might have your own priority. This is not a priority list but you see that there are very important aspects on it. Most of them are very concrete and you can follow them directly. There is one which is not as concrete as the others, this is curiosity, which, to my mind, is the strongest driver for humans, much stronger than all these different other activities and DLR is covering all these different challenges in order and for the sake of mankind.

So if we now look to the challenges, and this is why question of global dimension. You see, of course, climatic change, the environment, resources, sustainable development, megacities, mobility, hazards and disaster, and for all of this, we have an equivalent and respective means by space. So we can use space to tackle all of these different challenges.

Space is more than going to the Moon. Space is right now, it is Earth observation, it is communication, navigation, it is research under zero gravity, it is technology development, it is also international cooperation. Please, I would like to remind you in 1975 when Soyuz and Apollo had a rendezvous and docking in space at the time where you needed very strict passport regulations and visa if you wanted to meet Russians and Americans on Earth. So space is a means for international cooperation but space is also exploration and science meaning curiosity.

Now if you have your own mobile phone, smart phone or your own digital camera and you fly around the globe, you would get a picture like this. You see this is Munich. This is a small lake. Here is a highway. You do not see it really but meanwhile with our better satellites, you really see it. There is Munich. There is a lake. Here is a highway. By the way, this is one of our sites of DLR. And, of course, you all know these type of pictures but we know we can do more than that, for instance, by infra-red, we can even see which are hotspots. So you see the lakes are rather cold. Munich is, let us say, medium warm, whatever it means, and then you have some hotspots over here which are hot areas as a storage of heat.

We can use this infra-red information, for instance, also to detect forest fires. So here at the vegetation of the south of Brasilia, you do not see any forest fire, but if you look into an infra-red camera, you see here some hot spots which might be really some forest fires. So by using satellites, we can detect all these types of fires very early.

Another aspect which we could have for the future which is important for humans is the question of the health of the forest. We can all hear about deforestation by agriculture but have you ever seen it? Here, I will show you an example. Red means a very healthy forest. So more or less everything is healthy. There are some tiny areas where agriculture has demolished already the forest. If you see here, there is a road through the forest and if I now go to the next picture which is only a few years late, 1985, now this one is 2003, you see the same road over here and you see what happened to the forest. So we can detect deforestation very efficiently by the means of satellites.

Another one, when I saw this picture for the first time, it is an artist's painting. It is not. It is agriculture in Kansas and this is artificial irrigation and the different colours so that the moisture of the soil, so by means of satellites you can help agriculture to further develop. You even can also see other things like this. This is irrigation in the Saudi Arabian desert and it is using fossil ground water which may have some environmental impact in the future.

With this same procedure, still in agriculture, we can do precision farming which helps in order to minimize use of fertilizer and water but to have the most efficient output of the agricultural activities.

But also energy is a field where we can help. This picture shows the solar radiation on the ground during one year. So it means if it is green, there is a lot of solar radiation coming to the ground. So if you want

to have solar thermal energy or photovoltaics, you better know what is the best place. So, for instance, here Vienna is not the best place for that, as you can see, but the northern part of Africa or Australia is a very nice location.

Now, the next question is where do you need the energy? And again, we can use satellites. We are looking during the night because lighting is in direct measure for global power requirement. And now you see Vienna very nicely but Vienna needs power, electric power, and, therefore, it is the question where to get it from. So if we really want to go to solar energy, it is not that difficult. You see, if you take the desert and take this small square, this is sufficient for the whole electric demand of Germany so Austria might be similar but this is so. But we do not have an energy problem in the world, we just have to use it.

But also humans would like to live in a green environment. The picture on the left-hand side shows how the ground of Germany is sealed. The red place means the ground is really sealed and, of course, there is the city of Berlin, Munich, Cologne and its environment, it is Hamburg, very much sealed. But does it really mean that the soil is sealed. If we now divide it by the citizens living in that area, you get a totally different result. You see, this is Berlin. This is the Cologne area. This is Hamburg. But these are areas where no people are living but a lot of sealed areas, roads, etc. So it is a help for the citizens for the future of how to develop a certain area.

And if we are talking about help, we have to talk about refugees also. You know that these refugee camps are really a big question mark for the future, how to control it, how to know how people are there, and from space we can do that because it is not so easy to count it on Earth. You see here is the camp and by having different pictures at different times, I will show you, you see that at the beginning only three buildings and about 25 tents. Then a little bit later in the same year, four buildings, 400 tents. A little bit later, 10 buildings and more than 2,600 tents are visible. So you can directly see what is a development and you can provide all the things which are needed.

This brings me to from refugees to the question of disasters and we have worldwide disasters and DLR is one of the members of the International Charter for Space and Major Disasters covering all different fields of natural and man-made disasters, for instance, flooding in Mexico, which gives an important information for the service on-site, where to go first. I will give you another example. This is the United States. It is the Mississippi flooding. Or a third example, this is Germany from last year. You see here the flooding area. It is also interesting for the insurance companies but here I am looking just to the humanitarian aid.

And the same is also true for forest fires. From space, we can not only detect where the forest fires are but we can also help the rescue teams to go the right place at the right time and not endanger them by their work.

Earthquakes, this is an example. It is a scientific picture because the colour gives the formation after an earthquake. It gives the measure of the earthquake in this very special case, up to two metres the formation before and after the earthquake. This is not a help for society. This is, first of all, a help for the scientists but in step number two, the scientists can use this data to provide some help for the future.

But these are pictures and products, as we call them, for direct help of people. One square has the size of 250 x 250 metres at Haiti after the earthquake and the colour is now linked directly to the amount of demolished buildings. So this colour means about 10 per cent of the buildings are destroyed. This means between 10 and 40 and this up to more than 40 per cent. So it gives a direct hint where to go first but how to go there and we provide also the rescue teams on-site maps like this where the next emergency rescue station and which road is still accessible.

We are doing this also for other fields, together with our international colleagues, for instance, after the earthquake and tsunami in Japan in 2011, but also in Indonesia. In Indonesia, this picture was before the tsunami. You see it is from 2003, the tsunami happened in 2004. And now I will move to the next picture which is directly after the tsunami and you see how big the effect was and through that we developed then, together with some others, a decision support system in Jakarta in order to have for the authorities early warning systems and also have a very fast decision support media because you cannot just put a map on the table and say, so now you have to decide whether it is dangerous or not. You need data for that and you cannot calculate fast enough if you have a source of an earthquake under sea, what will be the tsunami. So we have a very special method for that, a decision support system which was implemented in Jakarta and then through loudspeakers and other means, people are informed and warned to move away.

Volcanoes, another question which has a certain interest with us. Our Terra-SAR satellite, a radar satellite, we can measure in a very detailed way, the

formation of volcanoes in order to predict. We are not able right now to predict directly, but this is the data we need for the predict in the future and you see here that the mountain is really moving and this movement shows that there might be an eruption very soon.

This is a super volcano in Italy and again, big deformations over here which show that this area is still very active and might have a big eruption in the future.

So the opposite, not that the structure is getting up but that you have some subsidence due to groundwater pumping in Mexico. Again space activity can give information, what about the overall situation.

As this is not only for the natural part, but at the same time also for man-made structures, I give you an example from Germany. This is the main railway of Berlin. Here are the tracks. This is the main building and the colour you see in this picture is linked to the vertical deformation of that building, so why it is deforming in the vertical way, it is not settlement in this way, it could be settlement, but in this it is just the thermal expansion of the building. In the summer, it is a little bit higher than in wintertime. You see only in the millimetre range and this shows that we can use these type of data to predict settlements of buildings but also warn people if the settlement is getting too large.

Maritime security and respective services is another are where we can help through satellites. It is piracy. It is the security and safety within harbours. It is also pollution by ships but also off-shore wind parks and ships are interacting so maritime security is a very important aspect. You see here some pictures from the oil spill in the Gulf of Mexico. This was at the beginning. This is some days later, a much bigger part is covered by oil.

The question of piracy is always linked to the detection of ships and through satellites we can have the information of ships and I will show you an example. Over here you will see some ships, nothing is detected so far but now you see by using different means, terrestrial as well as satellites, we can identify the different ships and we can have even a smaller, better view on it to see what happens to a ship in order to prevent any piracy or to warn early enough.

Finally, of course, climate change is of importance and through measurements and remote sensing, we can show the change of our tiny, nice world. For instance, you can see the change of the ice cap of the North Pole and it is getting smaller and smaller, just for time restrictions, I cannot show the whole picture but I can show you that by that we can also monitor the sea ice and show what happens in the future and we should be aware about the consequences.

Space debris, you mentioned that it is an important aspect. It is not only space debris but also all other types of near-Earth objects which communication might endanger but also people directly. If you remember the meteorite at Tscheljabinsk last year, 1,500 injuries and we better prepare for the future because this was a tiny meteorite. We could have a much bigger one and we should be prepared.

And then if we, for instance, collisions of satellites. There were the Russian and an American satellite colliding. We have additional debris which is endangering other satellites and, therefore, endangering an infrastructure which is necessary communication for navigation and other aspects and we are preparing right now a mission where we would like to catch up with obstacles in space in order to prevent further debris in the space area.

So I hope I could show that there are different and very many different tasks we can do with technology and innovation for humanitarian tasks. It is monitoring of developments. It is telecommunication and it is for refugee camps. It is crisis monitoring, early detection and warning and also post-crisis and disaster needs assessment. The registration of refugees sounds very trivial but it is an important aspect and we have to cover it for support for delivery of helping goods after any type of catastrophe but also the fleet management logistics is important, especially also for refugees but also for catastrophes.

And the energy supply for the future is an important aspect because welfare around the globe is one part to have a peaceful world. Therefore, I think all of this fits together.

And finally, I would just end with a nice picture which has no political meaning. It is just to say to you, yes, our Earth is very beautiful. This is a picture you can never see. It is the biggest mountain of the world. It is not Mount Everest. It is Mauna Kea which is taller than Mount Everest, if you count the height from here to the very bottom under the sea and here you can see what is maybe possible in the future, fusion of different sources of satellite data, on Earth data and underwater data, which altogether covers the possibilities and, I think, yes, the pale blue dot deserves global cooperation.

Thank you very much for your attention.

The CHAIRMAN: Thank you Mr. Wörner for your presentation.

Is there any delegate who has any questions for the presenter?

I see none.

The second presentation this afternoon by Mr. Juan Carlos Reyes from Chile, entitled "The Contributions of Chilean Satellite "Fasat-C": The Development of Chile".

Mr. J. C. REYES (Chile) *(interpretation from Spanish)*: Thank you very much Chairman and good afternoon. My name is Juan Carlos Reyes. I am a member of the Chilean delegation and the Head of the Land Observation Satellite System, SSOT.

The current operating satellite is Fasat-C. Its features, uses and the contribution it has made to the Chilean development are the topic of this briefing.

The point of departure of Chile's Space Programme is based on our vision and our objective regarding the use of our space capacities to support the development of our country, making use of available technology and applications derived from those areas on which Chile has based its economy, that is in tackling natural disasters and in research and development and to space matters.

I should be dealing with the following themes in this presentation. We will be discussion Chilean satellites in the Fasat Programme. These features of the Fasat-C satellite, the operational concept and national space structure, naturally the uses of Fasat-C and also future development as regards space development in our country.

The Fasat Programme was established in 1995 by the Chilean Air Force following a first attempt to put an experimental satellite in orbit, that was Fasat-A. Unfortunately, this launch failed and the satellite was destroyed following landing. Three years on, in 1998, Fasat-B was successfully launched, which remained in operation until 2001. This was an experimental satellite. After that, there were not space activities for quite a long period of time in our country until December 2011, when, as part of a national initiative, and, once again, under the responsibility of the Chilean Air Force, the first operational Chilean satellite was launched and this was Fasat-C, which has been providing us with images since 2012.

Some of the features of the Advanced(?) Applied Observation System. This consists of two segments. A space segment, which consists of a AstroSat-100 platform of the Myriads family which was built by Aster, as well as its camera, known as the NAOMI Camera, which consists of five spectral bands, panchromatic band, with 7,000 pixels, as well as one camera with 1,750 bands. This gives us a sampling distance of 1.45 for the blue infra-red bands. The band width is of 10.15 kilometres, at a distance of 620 kilometres of altitude.

Then there is also the ground segment, which consists of the Bi-Band Ground Station, used for the uploading of remote controls and the downloading of satellite telemetry and the downloading of satellite images.

We also have a Control Station, which has all necessary procedures for the development of the space images.

In turn, there is an Image Processing Station for basic levels, that is 1- and 2-Alpha and this is responsible for radiometric and geometric correction.

If there is a need for more advanced image processing, we have a Pixel Factory which is able to develop mosaic images quickly.

Turning now to the operational concept and national space structure. Here, as regards the operational concept, the Chilean Air Force is responsible for operating the satellite system as well as for the generation of products and the distribution of these products. And this responsibility is carried out by two entities. First of all, the Group of Space Operations, which was established in order to operate the system and provide specialized technical assistance in space matters. And the second entity is the Aerial Photogrammetry Service which is responsible for the generation and distribution of the satellite image products that are provided by Fasat-C and by other satellites.

They provide their products to various users, such as the Council of Ministers established for digital and space development. The main function of this Council is to provide input to the telecommunications and transport sector under the aegis of the Under-Secretariat for Telecommunications and Transport.

There is a need, of course, to ensure that sufficient human capital is trained and able to carry out these activities and to make sure that we can uphold Chile's future space capacity, that means building on

national links between various research entities and also on the international level and cooperation with other countries and research institutions. Ultimately, we have established an operational area as well as the users who I identified previously.

As I said at the outset of this presentation, we have focused chiefly on those areas or priorities in our national economy, such as agriculture and forestry, which are extremely important in Chile, where, for example, we are engaged in pest detection, force of vegetation and precision-farming. We consider this image of the City of Talca, which is an agricultural, central area, images were disseminated in order to see what this area looked like from space. In the same area, then, you can see the impact of the vegetation index which then allows us to better identify those areas where precision-farming could be most successful. Various projects are now underway in order to enhance production in these areas.

A further important use is in the sector of mining and industry through exploitation data analysis, change detection and environmental operations. Here we have an image of a mining site in 2009 in northern Chile where a mine was authorized to carry out operations. However, if we compare this to the satellite image that was issued in 2013, then we can see what changes took place and we can see that operations began but that this had an impact on the surrounding areas. In this context, therefore, the space tool is fundamental in supporting our mining sector.

There are also ongoing public services of the satellite systems for the development of rural cadastres, land registries, analysis of natural disasters and land management. Here we have an image of the Port of Iquique, which is in northern Chile, as affected by the 2014 earthquake and tidal wave and it can show you some of the damage that was wrought. It also provided us with images of the 2012 forest fire, which affected a large area in southern Chile. Furthermore, we have images of the activity of the Chaitén volcano in the south of Chile which caused a landslide as well as a mudslide affecting a small coastal village in Chaitén in 2011. And you can actually see the progress of this mudslide on this satellite image. You can see here how the mud flooded the coastal village.

All of these, therefore, are tools or instruments that are used by the National Geological and Mining Service in Chile.

Turning to a more current topic now, we are also able to use our space capacity in order to monitor fires in the coastal region of Valparaiso, which was the case in April 2014. Here is a monitoring image dated 13 April and then we can see how things changed between then and 14 April.

We also have an image of the post-fire analysis which shows us the total surface area that was razed by the disaster, a total area of 925 hectares.

Further, supplementary analysis using the vegetation indices have confirmed that the vegetation cover in the areas of Valparaiso was almost entirely destroyed as a result of the fire, razing all existing flora and forests in that area, and you can see that there is very little red to be seen in the image subsequently.

Then, as regards next year's winter in Chile and the forecast of high-levels of precipitation, we have carried out a digital relief model of the area that was affected by the fire. In order to identify those areas where landslides or mudslides might occur, given that there is no longer any vegetation providing a natural barrier to stop or to stave off that mud or water, as you can see, we have a series of uses for natural disaster mitigation.

The studies have been carried out and published in various international research reviews which have confirmed the potential of Fasat-C, proving it to be a useful tool in the monitoring, studying and analyses of land surface areas that are undergoing constant changes, such as, for example, the semi-arid plains that lie to the north of Chile. The study carried out a radiometric calibration and a subsequent atmospheric correction of the Fasat-C images covering the area known as Las Cardas calculating spectral curves for vegetation and bare soil, in order to compare these to the Aster Spectral Library and thus identifying similar behaviour allowing us also to identify various levels or indices of vegetation.

A further significant point was the calibration of the platform and its images using radiometric correction and using Modus products which gave us specific results as regards the reflectants of the surface area as corrected.

Other universities and research centres are also carrying out studies using the impact on hydrography of various areas in our woodlands.

As was the case of the CUBESAT Project where we have been able to use space technology for new professional areas.

As regards future development, you can see that there was a first failed attempt in 1995, a successful

attempt followed this in 1998, which was experimental in nature, and between 1998 and 2012, there was a large period of time when nothing took place up until the current period where we have a satellite in orbit. We now plan to focus on further developing our satellite capacity, both in terms of developing new techniques and professionals in the area and thus deriving new applications for this research.

By way of conclusion, one might say that Fasat-C is a concrete contribution to the space capacity of Chile in many areas indeed. Secondly, we can also say that the uses of Fasat-C have been increasing since it took up operation, above all, for areas that are of importance to our national economy and this has now been extended to other areas too, and future satellite development is essential in order to maintain and increase Chile's space capacity in terms of operation, research, investigation and also extrapolating those to our cooperation with other member States nations and international organizations.

Chairman, distinguished colleagues, thank you very much.

The CHAIRMAN: Thank you Mr. Reyes of Chile, and excuse me for my bad pronunciation. Thank you for your presentation.

Is there any delegate who has any questions for the presenter?

I see none.

The third presentation this afternoon is by Ms. Wenbo Zhao of China entitled "China Lunar Exploration Programme".

Ms. W. ZHAO (China) *(interpretation from Chinese)*: Mr. Chairman, on behalf of the CNSA, I would like to report on the latest developments in the Chinese Lunar Exploration Programme.

My presentation has three parts. Part One concerns the overall planning of the Chinese Lunar Exploration Programme. Part Two concerns the phases one, two and three of the Programme and Part Three concerns the scientific achievements of the exploration so far.

The Chinese Lunar Exploration Programme consists of unmanned missions before 2020 and it has three phases.

Phase One is 2004 to 2007 to achieve lunar orbiting. Phase Two was from 2008 to 2014 to complete a lunar landing. Phase Three is from 2011 to 2020 and it concerns landing on the Moon and returning to Earth.

This presentation represents a roadmap of the Chinese Lunar Exploration Programme.

The Chang'e-1 was successfully launched on 24 October 2007. On 1st October 2010, the Chang'e-2 was successfully launched. On 2 December 2013, we carried out a landing on the Moon under Phase Two and the third will be carried out in 2017.

The Phase One of Chang'e-1 carried out a comprehensive remote sensing survey and obtained a 120 metre resolution full Moon image elevation map and element content distribution map. On 1 March 2009, it made a controlled crash into the Moon successfully completing its mission. The total time of in-orbit operation was 494 days.

The Chang'e-2 was the first satellite of Phase Two and was launched successfully on 1 October 2010. It tested and validated some of the key technologies of lunar landing and the search for a landing area for the subsequent Chang'e-3 mission. It obtained the full Moon map in a seven-metre resolution and a 1.5-metre resolution local image maps and discovered chromium micro- and magneto-sphere and a solar wind acceleration and deceleration on the Moon.

The next two slides will show the achievements of the exploration so far.

The Chang'e-2 carried out extended experiments starting from its lunar orbit and the Chang'e-2 flew around the L2 Sun-Earth Lagrange Point to carry out an x-ray and gamma-ray astronomical exploration, plasma detection in the distant magnetotail region and others.

On 13 December 2012, seven million kilometres away from Earth, it rendezvoused with the Toutatis Asteroid at a close distance of 3.2 kilometres. It is currently more than 90 kilometres away from the Earth and is expected to fly back to a position of seven million kilometres from Earth in 2029. At present, it is still flying in orbit.

This is information concerning Chang-e-3. The mission objectives of Chang'e-3 is the first Chinese spacecraft soft landing on the Moon as well as patrolling and probing.

The scientific objectives are the following.

First, conduct survey of lunar surface morphology and geological structure. Second, conduct a survey of the constitution of the lunar surface and available resources, and third, to implement Earth plasma layer probing and lunar-based optical astronomical observations.

The Chang'e-e has two parts. One is the landing on the Moon consisting of a Lander. The Lander, with the Rover on board, after launch and injection into orbit, completed the Earth and Moon orbit transfer, Moon orbiting and powered descent and carried out the probing after a soft landing on the pre-selected landing area in the Rainbow Bay of the Moon.

This shows the core specifications of the Lander.

This is the Rover, the Yutu Lunar Rover. After landing on the lunar surface and the Yutu Lunar Rover started roving and probing.

This is about the main features of the Lunar Rover.

This is a schematic image of the Earth and Moon orbit transfer. It took about 112 hours to finish the Earth and Moon orbit transfer followed a powered descent and a soft landing on the lunar surface.

This is about the landing area or site. It is 44.12°N and 19.51°W in the north-west are of the Mare Imbrium.

This is the process of the lunar orbiting. After each exploration point was decided, the Rover used the tele-operation to implement the lunar surface exploration. The Rover would walk to the exploration point. The first is the process of perception. When the route was decided, the Rover would rove over to a point for probing and the sending of data it acquired to the ground.

The key of the Rover consists in lunar night survival. As we all know, each lunar day and night is 14 Earth days, a temperature difference is from 120^{o}C to -180^{o}.

At present, the main achievements of the Lunar Rover are currently it has worked in orbit for six months and the Lander acquired 118 gigabytes of data and the Rover acquired 32 gigabytes of regional probing or exploration data. These are results achieved after the Lander and the Rover photographed each other.

This is an extreme ultraviolet camera. The image can show us the outline of the Earth and the Earth's shadow, the range of the Earth's plasma layer, the profile of ionospheric airglow. More than 600 images have been obtained.

These are the results from the Lunar-Based Astronomical Telescope. It can observe the brightness and variances in a near-UV Band for various celestial bodies. Up to now, more than 32,000 images have been obtained. It can carry out a long-time observation, 18 hours per day, no atmospheric or other disturbances and can get 14-magnitude star.

This is a result achieved by a lunar probing radar and a dual-channel time-domain pulsed radar with no carrier frequency to obtain the thickness and structure of the lunar regolith. The chart on the left showed obvious stratification down to 140 metres. The slide on the right showed obvious stratification down to 10 metres.

This is a result from a Particle X-ray Spectrometer. It analysed the chemical element composition of the lunar surface samples. And this is the result from an Infra-red Imaging Spectrometer. It uses both VNIR and SWIR.

Currently, the Rover will be in the sixth Moon night by 23 May. The Lander is proper functioning. The Rover encountered a control malfunction, part of the loading works normally.

And this is about Phase Three of the Lunar Exploration Programme. We plan to schedule for launch around 2017 and the newly-built launching site at Wenchang, on board the newly developed Changzheng-5 carrier rocket.

In conclusion, and to thank our friends from home and abroad for their interest in the Lunar Exploration Programme, tomorrow, at 1.00 p.m., we will donate a real-size model of this Lunar Rover to the United Nations. You are all welcome to attend the ceremony.

Thank you.

The CHAIRMAN: Thank you Ms. Zhao for your presentation.

Is there any delegate who has any questions for the presenter?

I see none.

The final presentation this afternoon is by Mr. Otto Koudelka of Austria entitled "OPS-SAT: An Advanced Nanosatellite Mission by the European Space Agency".

Mr. O. KOUDELKA (Austria): Thank you Mr. Chairman, distinguished delegates. It is an honour having the opportunity to present the OPS-SAT mission where we have currently completed a Phase A/B1 study. I will give you an overview of the background, the motivation, I will introduce the spacecraft and then I will talk about the ground segment and the experiments which are envisaged to be carried out on this small spacecraft.

New ideas have been generated by ESA and the European industry for evolving space mission control, patents, studies, prototypes and breadboards have been produced, but the majority of these developments never make it near a real mission. The reason is there is the vicious cycle has never flown, will never fly. And the reason is risk aversion, this is healthy when dealing with large space missions, but this is not very good for innovation. For sure, when you build a 300 million Euro telecommunications satellite, which has to generate revenues for the next 18 years, then, of course, you will be very cautious and you will be more conservative in the design.

In 2011, the European Space Operations Centre had the idea for a low-cost, in-orbit demonstrator, to demonstrate new mission control methods based on a very low-cost CUBESAT and this was nicknamed OPS-SAT.

In 2012, a concurrent design facility study was funded and this declared the idea feasible.

In May 2013, ESA launched an open call for OPS-SAT experiments and more than 100 experiment ideas came in from 17 ESA member States and precisely a year from now, last year actually, there was an OPS-SAT Open Day with more than 100 participants and there was great interest shown in the concept.

Now, if you would look in the IT evolution versus evolution in space software, the younger delegates here may not even recognize what this picture is about. This is the DOS Operating System with floppy disks and ancient PCs. If the space software, the IT on the ground had developed the same way, we would still have that and the Packet Utilization Standard, which is still in place, was issued in 1994.

In order to break this cycle, has never flown, will never fly, a Phase A/B1 contract under the GSTP Programme was awarded to TU Graz as the prime contractor, with a Centre of Telematics in German, and Magna Steyr in Austria. And then there was a Contract Change Notice to include the experiment requirements from the open call. This study was kicked off in July 2013 and we completed the study in January this year.

The OPS-SAT Mission Statement says OPS-SAT is a safe hard and software laboratory flying in a low-Earth orbit, reconfigurable at every layer, from channel coding upwards, available for authorized experimenters to demonstrate innovative new mission operation concepts. It took us some hours to agree on these few lines here but we were successful in the end.

The design goals have been derived from the experiment evaluation and the core of the mission is a powerful processor. We will use the latest technology system on module with dual ARM9 processors and Field Programmable Erase with the substantial on board memory. It will run Linux. We will carry a High-Resolution Camera. We will have a Fine-Pointing Attitude and Control System including GPS and a number of other payloads of opportunity which I will address shortly.

The orbit will be compliant with the Space Debris Guidelines so to make sure that the spacecraft will burn up in less than 25 years.

The spacecraft itself will be a Triple CUBESAT 10x10x30 centimetres small with a launch mass of approximately six kilograms. Since we have a substantial power demand for such a small spacecraft, we will have deployable solar arrays and we can generate about 30 watts of electrical power with the solar arrays.

As any spacecraft will consist of a Bus and a payload. The Satellite Bus consists of commercial off-the-shelf components. Many of those you can buy from small companies which are typically spin-offs from some universities but now commercial companies. So the On-board Computer, the Fault Detection and Recovery System will be part of the bus. There will be a UHF Communication System using the protocols which are derived from amateur radio, stuff for the bus, but, as you will see, we will also have a completely CCSTS-compatible S-Band payload and transceiver as well. The Electric Power System with deployable solar arrays, batteries and charge and discharge regulators are also part of the Bus.

The payload which we will be responsible for will consist of the latest Altera Cyclone V system and module. This is deliberately not a space-qualified unit. For this reason, we will do some radiation shielding and we will have it four times in code redundancy in case there will be a failure. Nevertheless, in summer, there will be some radiation testing at S-TEC(?) just to see how this performs in a space environment.

The interesting bit is that there is a fairly large Field Programmable Array on board and with this system on module, we will be able to do something which is normally a no-go for a space mission, we will be able to change the complete flight software and also part of the flight hardware, the hardware configuration, in-flight. Of course, this module has also for the memory error correction coding so this will make it more tolerant to the radiation environment.

The Processing Software Platform will be based on Linux and read to any other operating system. By default, we will support Linux but if an experimenter wishes to do some experiments with another operating system, he or she is at liberty to do so. It can be uploaded as well.

So the standard procedure will be an experimenter has a flat set facility at ESOC so there will be a variant, a representative hardware version of the spacecraft. Software experiments can be uploaded there. They can be tested first and then it will be uploaded to the spacecraft and run on the spacecraft by the Operations Team in Darmstadt.

Now let us talk about the satellite payload. This will carry a High-Definition Camera, a Fine-Pointing Attitude Control System, in addition to the one which is on the Bus, the Course Attitude Control System. With this one, the experimenters can carry out attitude control experiments. It will also contain a small star tracker. There will be GPS on board and now, this is quite novel for such small satellite missions, the satellite will carry a fully CCSTS Compatible S-Band Transceiver and, therefore, the spacecraft can be contacted from any professional ground station and it is completely compatible with the S-Track Ground Segment.

There are also some payloads of opportunity. There will be a 50 megabyte per second X-Band Transmitter on board for downloading high-speed data. We will have some Optical Retro Reflectors on board to determine the position of the spacecraft from some Laser-Ranging Stations. Then we plan to put a small Optical Receiver on board. This is, of course, not a full-fledged optical terminal but at low-data rate, we will demonstrate that we can uplink data optically from a Laser Ground Station and one experiment we have in mind is to upload an encryption key and the optical link is very hard to intercept.

We will also carry a Software-Defined Receiver and this will be used for radio signal monitoring. The plan is to monitoring ADSB signal, ADSB is used for aviation for determining the position of an aircraft, but we could cover other frequency ranges as well if so needed.

This is here a picture of the architecture. We have the Bus with the simple UHF Commslink which is a fall back. A Course ADCS. The power system, the on board computer and then here this is really the core, this is the processor module in four full code redundancy. We have a Bus power plus data bus so each of the sub-systems can be disconnected in case of failure so that the spacecraft remains safe.

The experimenters have access to the fine ADCS. However, if the spacecraft should get out of control due to the fact that an experimenter does something crazy with it, it will be monitored and then the experiment would be simply shut off and then the spacecraft will be recovered.

For high-speed data, for instance, from the camera, we will be use the X-Band Transmitter and then we can access the spacecraft from any professional ground station using the S-Band telemetry.

The satellite deployer is a standard ISIPOD CUBESAT Deployer which has flown on literally most of the launches having flown to low-Earth orbit and this has flight heritage.

The ground segment is at ESOC in Darmstadt. There is a small two-metre ground station which is the primary one but then for S-Band back-up, we may use any of the S-TRACK stations.

The Mission Control is fully compatible with the SCOS-2000 system which is used for any ESA mission. And in parallel, we have the simple CUBESAT Mission Control so that we can in parallel access the Bus of the satellite.

As I mentioned, there was a very successful open call last year with more 100 experiments submitted. Ninety-three experiments were evaluated. Here you can see the geographic distribution where the experiments came from. Nearly half deal with on board software but they are also attitude control experiments, magnetic

field monitoring, protocol and software, scheduling and autonomy, radio communication and some camera experiments, some simple remote sensing experiments with some on board processing planned.

We evaluated these experiments and in turned out that 91 per cent of all are possible, 75 per cent are feasible with moderate effort, 16 per cent feasible with major effort and only nine per cent were not feasible at all from the submitted experiments.

There is also a heritage, for instance, from our colleagues in Wurtzburg(?), the UWE-3 nanosatellite, which was launched last November, from here, we will use the redundant OBC then many of the Bus systems will be used from Denmark and the equipment is flying on GOMX-1 currently but there is also some sub-systems which have been flown on UKUBE-1 and TURKSAT-3U satellite.

The development process will be such that we will start with the KUBESAT COTS components. We will integrate the full detection and recovery system then we will gradually build up the FLATSAT with the payload. We will do the full-fledged test and qualification of the sub-systems, integrate into flight configuration, carry out the full environment test and qualification and then in parallel we will build a FLATSAT for the experimenters so that they can carry their development in parallel.

Programmatics, the Phase C/D will start in the fall of 2014. The Consortium will be composed of organizations and companies from Austria, Poland, Germany and Denmark.

And now I will summarize. OPS-SAT will offer a unique opportunity to test, demonstrate and validate novel operational concepts in flights and experimenters will have an excellent opportunity to exchange flight and ground control software and reconfigure both flight and ground hardware during this mission.

And we have designed a mission which can allow this to take place with minimal risk and at minimal costs. There may be the question of how much this mission costs so we are just above two million including launch.

With the acknowledgements of the contributions, I would like to thank the distinguished delegates for your attention.

The CHAIRMAN: Thank you Mr. Koudelka for your presentation.

Is there any delegate who has questions for the presenter?

I see none.

Mr. Niklas Hedman from the Secretariat has the floor.

Mr. N. HEDMAN (Secretary, Office for Outer Space Affairs): Thank you Mr. Chairman. Distinguished delegates, as you will see, we have 30 minutes left, half an hour until the reception hosted by APSCO and I checked with the kitchen and they are not yet ready so we cannot offer you the reception right now but it looks promising, I can tell you. However, in order to use the time efficiently, would any delegation inscribed on the list for the general exchange of views would be ready to make the statement already now at this moment in the remaining time of this meeting?

General exchange of views (agenda item 5)

The CHAIRMAN: The distinguished delegate of Canada, you have the floor.

Mr. J.-M. CHOUINARD (Canada): Thank you Mr. Chairman. We were prepared to make the presentation tomorrow but I am very pleased to use the available time of the Committee.

Mr. Chairman, Canada would like to join the other delegations that have already done so in congratulating and welcoming you, Mr. Oussedik, as the Chairman of the United Nations COPUOS Committee. We look forward to your guidance of this Committee and would like to assure you of our full support. We are confident that your knowledge and experience that you have acquired in the space field will be instrumental as you steer the work and deliberations of the Committee over the next two years.

I would also like to express our sincere gratitude to your predecessor, Dr. Yasushi Horikawa, for completing a successful mandate.

At the same time, my delegation would like to congratulate and reaffirm its support to Madam Simonetta Di Pippo, recently appointed as the new Director of the Office for Outer Space Affairs. Canada is very pleased with this nomination of an outstanding individual with significant experience in both space science and management. Ms. Di Pippo succeeds another outstanding individual, Dr Mazlan Othman, the wisdom of whom the Committee had the privilege to benefit from since 2007. We would like express our

appreciation for Dr. Othman's leadership, dedicated work and support to the Committee.

We would also like to express our appreciation to the Secretariat of the Office for Outer Space Affairs for their diligent efforts in supporting the members and in preparing this fifty-seventh session of the United Nations Committee on the Peaceful Uses of Outer Space. We look forward to the deliberations that will take place and the progress that will be made over the next two weeks.

Mr. Chairman, distinguished delegates, this session will cover a number of timely topics. Canada is an active participant in this forum and its Subcommittees in an effort to advance some of the most pressing global space issues such as, but in no way limited to, the sustainability of outer space, space debris and space weather.

The Canadian delegation will make more statements under specific agenda items when they will be opened for consideration. More specifically, we intend to comment on the reports from the sessions of the Legal, and the Scientific and Technical Subcommittees that have been both constructive and allowed progress and fruitful discussions on several subjects. We also plan to make statements under the agenda item Space and Sustainable Development.

Mr. Chairman, distinguished delegates, Canada celebrates another remarkable year in its space history which started fifty-two years ago, when Alouette-1, our first satellite, was launched into space. Our accomplishments, from satellites that monitor the Earth to specialized robots that support work aboard the International Space Station, have fuelled a flourishing space industry and inspired our nation.

This year marks a milestone in Canada's space history as we celebrate the twenty-fifth anniversary of the creation of the Canadian Space Agency to coordinate our country's space activities.

In March 1989, the Canadian Space agency was created with the mandate "to promote the peaceful use and development of space, to advance the knowledge of space through science and to ensure that space science and technology provide social and economic benefits". This mandate was modelled on the 1967 Outer Space Treaty, which charges space-faring nations to consider space as a dimension to be explored, but, importantly, to be explored in a manner that is both responsible and sustainable.

Part of the CSA's mandate is carried out in collaboration with other international space agencies and organizations. Collaboration has been and will continue to be a hallmark of the Canadian Space Programme.

Mr Chairman, the Canadian delegation would like to extend our congratulations to the European members of this Committee on their fifty years of unique achievements and collaboration in Space. Canada's long-standing partnership with the European Space Agency began in 1979 with the signature of a Cooperation Agreement. The Framework Agreement bridges Canada with Europe, strengthening industrial and scientific collaboration, and facilitating the exchange of expertise and critical space data for our respective scientists, industry and governments. Our partnership with ESA has resulted in a multitude of projects and collaborations at the industry and the institutional levels. A recent example is Canada's participation in Swarm, ESA's first constellation of Earth observation satellites, which launched successfully last November. Canada is a proud partner in this unique endeavour.

We would like to congratulate them on the recent and successful launch of Sentinel-1A and we look forward to future cooperation between Sentinel and Canada's Radarsat Constellation.

We would like to reiterate to our European partners our strong appreciation of the ongoing and outstanding collaboration and congratulate them on their fifty years of cooperation, innovation and preparation for the future.

Mr. Chairman, on 6 August 2013, General Natynczyk became President of the Canadian Space Agency. Although General Natynczyk is new to the space community and his tenure at the Agency has been brief, he has already demonstrated that he masters the challenges of the space environment in Canada, providing services, managing innovation and leveraging partnerships. Prompted by his leadership, the Government of Canada announced in February the Canadian Space Policy Framework that will guide Canada's space activities in space over the coming years. It provides clarity with respect to Government priorities and strengthens governance of the space programme. This Framework is based on five core principles and proposes four avenues of strategic actions to ensure that the Canadian Space Programme will be able to deliver the services the Government requires to protect and advance national interests, that Canadian industry will find the necessary support to be competitive in global markets, and that academia will

be well-positioned to conduct the research that will be the foundation of future space missions. One of our key areas of action will concern space exploration. Canada intends to continue to be a sought-after partner in international space exploration missions and will continue to invest in the development of Canadian contributions in the form of advanced systems and scientific instruments as part of major international endeavours.

Mr. Chairman, more than 15 years have passed since the launch of the first element of the Space Station, a Russian module appropriately named Zarya, or Dawn, on 20 November 1998. The event marked the beginning of a new international collaboration that demonstrates daily how countries can work together to achieve a peaceful purpose.

As a partner in the International Space Station, Canada developed cutting-edge technology that is critical to the Station's daily operations. Today, Dextre, a special purpose dexterous manipulator that can be attached to the Canadarm-2 conducts routine maintenance jobs and frees up ISS crew time for science, recently proving that it can even repair itself. Canadian astronauts have travelled to, worked on and commanded the orbiting laboratory in eight distinct missions, including last year our current national star, Chris Hadfield.

The cutting-edge science conducted aboard this unique orbiting science laboratory touches a variety of fields of research vital to life on Earth. One of the most recent research activities undertaken that translates the results of the space studies into benefits for citizens, is the Canadian-led Space Health and Aging Research, the acronym is SHARE, initiative that seeks to bring together expertise in space and in the aging process, which is of interest to all of us.

Canada is very proud to lead SHARE, which was presented to the Human Space Technology Initiative earlier this year and received a lot of attention from a number of participants.

Mr. Chairman, after more than 10 years of studying the Universe, the Canadian MOST mission will come to an end later this year, having much exceeded its initial objectives. Since it was launched in 2003, MOST has caused over 100 science and technology publications and provided astronomers with new insights into the behaviour of stars. Originally planned as a one-year project, the briefcase-size telescope better known in Canada by its nickname Canada's Humble Telescope, will leave more than a decade of data for astronomers to analyse.

In 2013, the Canadian satellite SCISAT celebrated 10 years of scientific measurements. surpassing expectations by lasting well beyond its initially planned two-year mission. SCISAT's instruments continue to deliver excellent data related to ozone depletion, climate change, air quality and pollution.

Also in 2013, Canada and France completed their maiden stratospheric research balloon flight from Canada. This collaborative effort provides a new, inexpensive platform for scientists to test technologies in a near-space environment.

And in 2013 again, CASSIOPE, Canada's first hybrid/dual mission satellite was launched. CASSIOPE is making a significant contribution to the science of space weather through the use of a dedicated scientific payload that observes the ionosphere.

Mr Chairman, 2014 will be another exciting year for Canada in space. The Manfred Lachs Conference on Space Governance took place just two weeks ago at McGill University in Montreal. Canada is also hosting the 2014 Summer Session of the International Space University, of which the opening ceremonies took place earlier this week.

As was already mentioned by other delegations, the International Astronautics Congress is taking place in Canada, in Toronto, in September. On the margins of IAC, the United Nation/IAF Workshop will take place. The focus will be on Global Health and Maritime Application.

In the meantime, work continues on Canada's RADARSAT Constellation which will comprise three satellites to further enhance capability to carry out detailed, all-weather monitoring of the Earth's surface from space, with a target launch dating 2018.

When the Canadian and the Polish BRITE satellites join the two initial BRITE satellites launched by Austria last year, the constellation of six nanosats will be able to measure with great precision, variations in the brightness of large stars and continue the work initiated in 2004 by the Canadian MOST satellite.

Mr. Chairman, as in previous years, a presentation will be made on the 2014 edition of the Space Security Index on Tuesday 17 June, in the afternoon. We welcome the quality of the work done by the Governance Group and Advisory Committee, including the Secure World Foundation and Project Ploughshare, as well as numerous other contributors

including the McGill University Institute of Air and Space Law.

In conclusion, Mr. Chairman, I would like to reiterate the full commitment of the Canadian delegation and our entire support and collaboration. We look forward to a dynamic and constructive session.

Thank you Mr. Chairman.

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

The next speaker is the distinguished delegate of the Regional Centre for Remote Sensing of North African States, Mr. El Hadi Gashut.

Mr. E.H.M. GASHUT (Regional Centre for Remote Sensing of North African States, CRTEAN) *(interpretation from Arabic)*: Mr. Chairman, on behalf of the Regional Remote Sensing Centre of North Africa, and on my own behalf, let me congratulate you on the occasion of your election as Chairman of COPUOS.

Congratulations also to your two Vice-Chairpersons.

And we would like to pay tribute to your predecessor and the entire outgoing Bureaux for their excellent work over the years.

We also welcome Madam Simonetta Di Pippo, the new Director of the Office for Outer Space Affairs and we are grateful to the Secretariat for its efforts in ensuring the successful deliberations of this Committee for their indefatigable work since the inception of this Committee.

Mr. Chairman, ladies and gentlemen, let me remind delegations here that the North African Remote Sensing Centre was set up about a quarter of a century ago. A number of countries joined in over the years from the Middle East, from Sub-Saharan Africa as well, and we have followed very closely the progress of this Committee and its two Subcommittees in promoting peaceful uses of outer space in compliance with the decisions of the UNISPACE III Conference. And we have welcomed all efforts to promote peaceful applications of space science and technology to benefit sustainable development, efficient management of natural resources, environmental studies, water resource management, fighting drought and deforestation, as well as climate change, to name just a few.

Since the inception of our Centre, we have pursued a policy defined by member States and which focuses on national capacity-building, the training of professionals in outer space exploration, promoting scientific and technological development, and coordinating research projects, both bilaterally and on a regional scale, with reference to sustainable development in particular.

We have worked to remove barriers that might arise in the way of these projects through coordination, management working with competent national authorities. States Parties have adopted a new strategy, a short-term and a long-term strategy and designed a timetable with the idea of working closely together and in compliance with national policies in such areas as training, upgrading, improving the quality of research and development and this, of course, works in the national, regional and international arenas. Interregional and international cooperation has been particularly important in creating synergies, strengthening these policies and generating positive results.

Mr. Chairman, ladies and gentlemen, international cooperation is one of the pillars of the work of our Centre. A number of Memoranda of Understanding and Agreements have been signed with a number of international and regional organizations, as well as private sector cooperation in the space area, as well as educational centres, thus creating an appropriate framework for our work.

We have attended a number of international conferences and symposia over the years, for example, the one held in 28-30 April in Rabat, Morocco, on the mining industries, on the management of floods, that is another seminar, on fighting the drought cycle and desertification and we have worked together with a number of institutions such as the Development Bank. It was also attended by high-level experts from the Middle East and North Africa.

To conclude, we think we should work to further strengthen cooperation among North African countries, the great Sahara Basin, on the one hand, and Southern Mediterranean on the other hand, working together to derive the maximum benefits from space exploration because space is, after all, the province of all mankind and the common heritage, the wealth of all humankind. We call on countries that do not yet have a space programme to join in because being part of this process could have great benefits for their developments for helping them to meet the challenges that they come across in trying to improve their socio-economic well-being of their population.

Over the period under review, we have pursued a policy of pulling together the capabilities and resources of countries in terms of promoting a more efficient policy and exploring outer space for the benefit of people in general and the least developed nations in particular.

Once again, we express our gratitude to the Committee, the Secretariat and the Office for Outer Space Affairs and its new Director.

We also thank all delegations present here for their contributions which benefits all of us.

Thank you very much.

The CHAIRMAN: I thank the distinguished delegate of the Regional Centre for Remote Sensing of North African States, the General Director, Mr. El Hadi Gashut, for his statement.

Distinguished delegates, 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 5, General Exchange of Views, and we will continue and hopefully conclude our consideration of agenda item 7, Report of the Scientific and Technical Subcommittee on its Fifty-First Session.

We will also begin our consideration of agenda item 8, Report of the Legal Subcommittee on its Fifty-Third Session.

There will be three technical presentations tomorrow morning by a representative of Japan entitled "New Era of Global Monitoring by ALOS-2: Advanced Land Observing Satellite-2 'DAICHI-2'", by a representative of Luxembourg entitled "Space Activities and Regulatory Framework of Luxembourg: An Overview in Relation to the Application for Membership in the Committee on the Peaceful Uses of Outer Space", and by a representative of the European Space Agency entitled "Fifty Years of European Cooperation in Space".

A meeting among African States on the African Leadership Conference will be held from 9.00 a.m. to 10.00 a.m. in C0237 in the 'C' Building on the second floor.

The Space Missions Planning Advisory Group will continue its second meeting tomorrow from 9.30 a.m. to 1.00 p.m. in Meeting Room C5 on the seventh floor of the 'C' Building.

Expert Group B of the Working Group on the Long-Term Sustainability of Outer Space Activities will meet from 9.30 a.m. to 1.00 p.m. in Meeting Room C0727 to discuss its final report.

During this session of the Committee, the delegation of China is donating a scale model of the Yutu Lunar Rover. A reception to mark this donation will be held tomorrow during lunchtime in the Rotunda starting at 1.00 p.m.

Are there any questions to this proposed schedule?

I see none.

This meeting is adjourned until 10.00 a.m. tomorrow morning and now, I think, Mr. Hedman, we will have our reception. Thank you.

The meeting adjourned at 6.00 p.m.