

**Committee on the Peaceful  
Uses of Outer Space***Unedited transcript*600<sup>th</sup> Meeting

Thursday, 4 June 2009, 3 p.m.

Vienna

*Chairman:* Mr. Suvit Vibulsresth(?) (Thailand)

*The meeting was called to order at 3.08 p.m.*

**The CHAIRMAN:** Good afternoon distinguished delegates. I now declare open the 600<sup>th</sup> meeting of the Committee on the Peaceful Uses of Outer Space.

This afternoon we will continue our consideration of agenda item 4, General Exchange of Views. We will also begin our consideration of agenda item 5, Ways and Means of Maintaining Outer Space for Peaceful Purposes, and agenda item 6, Implementation of the Recommendations of UNISPACE III, and agenda item 7, the Report of the Scientific and Technical Subcommittee on its Forty-Sixth Session.

At this point, I would urge delegations to inscribe their names on the list of speakers as soon as possible. The advanced information on the statements to be made by delegations will clearly facilitate organizational aspects of the meetings.

Following the Plenary, there will be four technical presentations by Mr. Naoki Yamaguchi of Japan entitled "Disaster Management of the ADRC". Then by Mr. R. Schweickart of the Association for Space Explorers on "Asteroid Threats: A Call for Global Response" and a presentation by Mr. S. K. Shivakumar of India on "Chandrayaan-1: Mission and Scientific Achievements". And another presentation by the Ambassador, Heung-Sik Choi, Secretary-General of the IAC Local Organizing Committee of the International Astronautic Congress, IAC 2009.

I would kindly urge delegates who intended to make technical presentations to submit them to our

Conference Officers at least one day in advance so that they can test them and upload them on to a conference computer.

**General exchange of views (agenda item 4)**

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

The first speaker on my list is the distinguished representative of Malaysia, Mr. Mustafa Din Subari. Please.

**Mr. M. D. SUBARI** (Malaysia): Thank you Mr. Chairman. Mr. Chairman, distinguished delegates, on behalf of the Malaysia delegation, I would like to join other member States in expressing our great pleasure at seeing you again in this session's meeting of the Chair, Thailand and Portugal as the First Vice-Chairman and Second Vice-Chairman respectively.

We would also like to express our deep appreciation to the dedication of the Office for Outer Space Affairs under the able leadership of Dr. Mazlan Othman for their untiring efforts in ensuring the smooth running of this meeting.

Mr. Chairman, distinguished delegates, over the last one year we have continued our endeavour in the development of our space and space application programmes that we believe will prosper the nation and benefit our people, our neighbours and the global community.

It is my pleasure to report to this meeting on progresses that we have made since our last meeting last year.

In its resolution 50/27 of 6 December 1995, the General Assembly endorsed the recommendation of the Committee on the Peaceful Uses of Outer Space that, beginning with its thirty-ninth session, the Committee would be provided with unedited transcripts in lieu of verbatim records. This record contains the texts of speeches delivered in English and interpretations of speeches delivered in the other languages as transcribed from taped recordings. The transcripts have not been edited or revised.

Corrections should be submitted to original speeches only. They should be incorporated in a copy of the record and be sent under the signature of a member of the delegation concerned, within one week of the date of publication, to the Chief, Conference Management Service, Room D0771, United Nations Office at Vienna, P.O. Box 500, A-1400, Vienna, Austria. Corrections will be issued in a consolidated corrigendum.



The Space Education and Awareness Programme continued to become our strategic programmes. The National Planetarium, our main facility for this purpose is currently installing a new digital planetarium show system which will enable us to offer a better and wider scope of planetarium shows.

Another exhibition gallery is also in progress due to be completed by the end of the year.

Education programmes targeting primary, secondary and especially schoolchildren has continued successfully over the past several years. Some of the main ones are the National Space Challenge, the Water Rocket Competition, the CANSAT Competitions and the more exciting Zero Gravity Public Flight Experiments.

For the entire 2008 and still continuing until now, the Angkasawan, or the Astronaut Awareness Programme, has reached out to millions of people throughout the whole nation, especially schoolchildren, promoting the excitement of science and technology and space exploration.

The International Year of Astronomy, IYA 2009, Celebrations have been chiefly participated nationally as well as at State level. Public talks, discourse, participatory events such as the DAKSCAR(?) Initiative and Earth observations, workshops, telling story competitions and exhibitions have been organized throughout the country. Riding on this excitement, several States have shown their interest in setting their own mini-observatories and science centres.

We are only in the midst of the IYA 2009 celebration now and we hope to carry out with the excitement until the year ends.

Educational research in astronomy and astrophysics at our Langkawi National Observatory is actively taking place. Within a year or two in mapping the sky, God willing, we may be on the verge of discovering a new comet.

A Seminar on Micro-Gravity was done in September 2008 mainly to report on the partial finding of the first ANGKASA-1 experiments. The results have been very encouraging and we expect to obtain the full analyses by the second half of the year.

Some reports on the downside(?) on a remote sensing satellite, RAZAKSAT, scheduled launch in April this year has been delayed again due to some

technicalities. The proposed new date of launch is currently somewhere in mid-July this year. The satellite is currently at the launching site and preparation to integrate the satellite with its launcher is currently underway. Collaboration efforts in research and development, in remote sensing, of RAZAKSAT image in particular, involving government agencies, universities, industries, has been coordinated by the Malaysian Remote Sensing Agency with the objective to enhance the use of it.

The expansion of the Differential GPS Infrastructure for modern users, SISPELSAT, was completed at the end of the year 2000(?) with four beacon stations covering the shoreline of peninsula Malaysia. With this upgrade, educating with an \_\_\_\_\_(?) of data than five metres is possible within the intended area of coverage.

Applications of space systems and technologies have been increasingly widening. Location-based systems, in particular GPS, have been well accepted in Malaysia. Public utility applications such as vehicle navigation, goods and personnel tracking, LBS and mobile phones is increasingly popular, aside from the conventional use in positioning and navigation.

The nation has been well served by our communication satellite services, the MEASAT series. Another satellite, the MEASAT-3A, forming MEASAT-1R, is scheduled to be launched in June this year from Baikonur, Kazakhstan. The satellite carries 12 Ku-Band and 12 C-Band transponders and features free antennas to provide C-Band fixed satellite services across the Asia-Pacific, the Middle East, Africa, Europe and Australia, and Ku-Band direct-to-home television broadcasting to Malaysia and Indonesia.

The Malaysian Meteorological Department has also included a collection of data usage from satellites in the World Meteorological Organization's World Weather Watch System through various satellite data reception systems. This satellite information \_\_\_\_\_(?) to monitor day-to-day weather conditions and longer term climate change over the country and the region.

Ratifying the Space Treaties is definitely of high priority in our agenda although it is slow in its progress simply because the formation of a Local Space Bill to undertake the implementations is a slow process. Work on the formation of the nation's Space Policy, as well as the Space Bill, is currently in progress. We hope to complete the exercise by next year.

Mr. Chairman, distinguished delegates, we believe that international collaboration in space exploration is vital. It has become our strategy from day one. Our satellite system development and our ANGKASA-1 Programme were samples of these collaborations. Currently we have collaborations with our Japanese colleague, JAXA, on the protean crystallization experiments to be undertaken in the JAMI(?) Kibo(?) on the International Space Station.

We are also in collaborations with APRSAF members in the development of an Earth Observation Satellite, or the STAR Project.

This, I believe, Mr. Chairman, is the spirit that you wanted to prosper in space exploration. On this note, Mr. Chairman, we look forward to actively involve in the deliberations of the United Nations Space Policy, as you have mentioned in your statement earlier.

Mr. Chairman, distinguished delegates, space has given us enormous benefits in enhancing the quality of life of our people. On the other hand, natural disasters, apart from wars, continue to be the main cause that endangers human life. Hurricanes and typhoons, flooding from storms, tornado, devastating earthquakes, forest and wildfires, continues to make thousands of people homeless and require of basic necessities of life.

It seems that the more we try to make use of our high-tech technology, space-based system included, and our expertise for the purpose of improving our readiness in facing these natural challenges, the more challenging it has become. These disasters do not recognize geographical boundaries. It is, hence, obvious that we have no other choice than to work together as one team, one people of the world. Thank you for now Mr. Chairman. Our delegation will provide more information under the coming relevant agenda items. Thank you.

**The CHAIRMAN:** Thank you very much distinguished delegate of Malaysia for your very comprehensive information from technology, cooperation and also for the capacity-building and outreach programmes.

Next, I would like to request the delegate of Canada, Mr. David Kendall, to give your presentation.

**Mr. D. KENDALL** (Canada): Thank you Mr. Chairman. Mr. Chairman, Canada wishes to congratulate you on your continuing chairmanship of

COPUOS. Under your guidance, the fifty-first session achieved progress on a number of subjects of concern. We are confident that, once again, you will apply your extensive experience to guide this session to achieve positive results. We look forward to many beneficial decisions over this year under your leadership. As we move forward together, Canada would like to give the assurance of our desire to provide constructive input to discussions throughout this session.

Canada believes that many milestones were achieved during the meetings of both the Scientific and Technical Subcommittee and the Legal Subcommittee. These achievements, realized after broad and comprehensive discussions, need to be supported with vigour throughout this session.

The adoption of the Safety Framework for Nuclear Power Sources Applications in Outer Space, constitutes a good example of one such achievement. However, this Framework only addresses in part our concerns regarding the safety of outer space activities. Canada looks forward to continuing collaboration with the Working Group on this issue.

Although the Space Debris Mitigation Guidelines are being successfully implemented in many countries through national mechanisms, as we are all aware, any rise in space debris threatens access to and the use of space in both the long term and the short term. Canada, therefore, welcomes constructive initiatives which contribute to finding solutions to this problem. In this regard, Canada was supportive of the decision of the Scientific and Technical Subcommittee last February to review at this meeting a proposal by France to a new agenda item which would establish a Working Group within the Scientific and Technical Subcommittee on the long-term sustainability of outer space activities. Canada supports the addition of this item to the agenda of the COPUOS Subcommittee in 2010 with the following provisions.

One, that the work to be conducted by this Working Group would not be prejudicial to the role of other United Nations Organizations, in particular the Conference on Disarmament, the International Telecommunication Union, and the World Meteorological Organization.

Two, that the Working Group would encourage and utilize the expertise of such agencies, where possible.

And, three, that there would be encouragement of the communications channel for

private sector input into the Working Group's deliberations.

Effects impacting on our space infrastructure are also a concern related to space safety. Thus, during the Scientific and Technical Subcommittee sessions, Canada expressed its support to a new international space weather initiative.

Canada would also like to express its deep appreciation of the work being carried out by both Working Groups on the Use of Nuclear Power Sources in Outer Space, and on Near-Earth Objects.

Canada was pleased that the Legal Subcommittee reached consensus on space debris as a new agenda item and that there continues to be a healthy debate among delegations on how national legislation could be used and are strengthened to contribute to the implementation of the Space Debris Mitigation Guidelines.

The work of COPUOS could be optimized by enhancing the channels of communication that exist between the various United Nations bodies that have interest in outer space. This includes, as already noted, the International Telecommunication Union, the World Meteorological Organization, the Conference on Disarmament, and the United Nations General Assembly, particularly its First and Fourth Committees.

The United Nations Inter-Agency Meeting on Outer Space Activities is also a useful coordination forum. Although some dialogue and lines of communications have been established among a number of bodies, we strongly encourage the establishment of formal links in some cases.

*(Continued in French)* Mr. Chairman, until the very last year, we began to continue to perfect our knowledge and scientific skills in different areas of the space field. Earth observation is one of the main objectives of the Canadian Space Agency, thanks to the expertise we have acquired in terms of radar, including the emissions RADARSAT-1 and RADARSAT-2. The Canadian Space Agency has undertaken the design of emission of RADARSAT constellation. The next stage in the RADARSAT Programme will be to ensure that the Government, the scientific circles, the private sector and international partners continue to have access to data and information coming from radar technology.

Our commitments with regard to space exploration were evidenced in 2008, thanks to the

participation, sustained participant, for the World Exploration Strategy. We were pleased to be a part of the Phoenix Mission by NASA, which used Canadian instruments and we are working on new undertakings, in particular the Mars Science Laboratory and EXOMARS.

Since the last meeting of the Committee, we would like to express the European Space Agency for the very successful launching of the Herschel and PLANCK astronomical missions, as well as Japan for the successful launching of the GOSAT IBUKI mission on climate change, India for the success of its Chandrayaan-1 Moon mission, China for its Moon mission, CHANG'E-1, and for the sustained success in the field of human space travel and manned flight, and NASA for the unexpected success of the very ambitious mission of the Space Shuttle to repair and lengthen the use and life of the Hubble Space Telescope.

Mr. Chairman, our efforts to continue the construction of the International Space Station have never stopped over the past year as we joined our efforts with our partners on the Station to continue its construction. Our partners are very pleased to see the continual and robust support provided by the Russian vehicles, Soyuz and Progress, as well as the accomplishment of four missions, STS-122, 123, 124 and 126, by the Space Shuttle. The STS-123 mission was of particular importance, historically-speaking, for the Canadian Space Programme with the launching of the Flexible Tele-Manipulator, DEXTRE, on board the Endeavour Shuttle and its successful installation on board the Station that followed. DEXTRE has just put the final touches on a mobile maintenance system for the Station which also includes the CANADARM-2 and the mobile base, a very significant contribution from the field of Canadian robotics expertise.

*(Continued in English)* Mr. Chairman, 2009 marks the beginning of a new era for the Canadian Space Programme. Increased support for the development of advanced robotics and space technologies and with the expectation of a new long-term space plan, the Canadian Space Agency is preparing itself to realize new directions, initiatives and milestones, both nationally and with our international partners. This will coincide with the commemoration of a number of historic events. In 2009, Canada will celebrate the Canadian Space Agency's twentieth anniversary as well as the twenty-fifth anniversary of Canada's first manned space flight and 30 years of cooperation with the European Space Agency.

Under Canada's long-standing spirit of collaboration, we will continue to welcome innovative approaches to developing and advancing common space initiatives. As noted, we celebrate the success of the launch of the Herschel and PLANCK satellites with the Canadian contributions on board. We will closely be following the launch of the Indian Space Agency ASTROSAT space astronomy satellite with a Canadian contribution to the Ubit(?) instrument.

We will continue to fully support our contribution to the NASA/ESA and Canadian Space Agency's James Webb Space Telescope and we will soon be completing our own small satellite, CASSIOPAY, to elucidate space weather phenomena and NEOSAT to track near-Earth objectives from space and assist in space surveillance activities.

The year 2009 is an exciting year for Canada in space. A couple of weeks ago, we announced two new Canadian astronauts who will be supporting Canada's contribution to the International Space Station Programme. Last week, the first six-person long duration mission was successfully launched with Canadian astronaut Robert Thirsk on board. And on 13 June, Canadian astronaut Julie Payette will be launched to the ISS on board Space Shuttle mission STS-127 for a 10-day mission.

Through the Canadian Space Agency's new long-term Space Plan, Canada is committed to furthering projects and programmes that provide strength and global security, improving our ability to monitor our environment and mitigate changes to our climate, especially in relation to the Arctic, working together as nations to cooperate in the exploration of our solar system and advancing knowledge to the benefit of humanity.

Among multilateral organizations, Canada wishes to reassure all member States of Canada's positive support and desire to advance the work of the Group on Earth Observation, the Committee on Earth Observation Satellites, the World Meteorological Organization, and the International Telecommunication Union, to name only a few.

In terms of the engagement of non-governmental organizations, Canada was pleased to have hosted in May 2009, an International Interdisciplinary Congress at the McGill Institute of Air and Space Law, Montreal, on Space Debris, which attracted academics, practitioners, satellite operators and the Office for Outer Space Affairs officials, all with the objective of identifying innovative ways of

addressing the issue of space debris mitigation in the future.

For this subject to gain the attention it deserves, there must be awareness in the wider society and not just among regulators and satellite operators. It will, therefore, be important to continue the awareness-building which would be so necessary to consensus-building in the years to come.

Mr. Chairman, for this session, Canada is particularly interested in the agenda item on space and climate change. As Canada has developed a number of instruments and missions that are aiming at understanding, mitigating and adapting to climate change, as well as monitoring space debris and near-Earth objects, we are looking forward to actively participating in the deliberations on these topics. Thank you Mr. Chairman.

**The CHAIRMAN:** Thank you the distinguished representative of Canada for his statement.

Now the next speaker on my list is the distinguished delegate from Poland, Mr. Piotr Wolanski.

**Mr. P. WOLANSKI:** Mr. Chairman, I would like to express my sincere congratulations to you, to Philippe Santos and to Ciro Arévalo Yepes for the excellent chairing of this session. I deeply believe that your experience, knowledge and leadership will contribute to the success of this session of COPUOS.

We would like also to congratulate Dr. Mazlan Othman and all the members of the Office for Outer Space Affairs Bureau for the preparation and supporting the work of this session.

Now I would briefly to mention Polish activity in the field of space exploration.

Our Meteorological Group Receiving Satellite fixture is working in Krakow for 40 years but only this year Poland becomes a full member of EUMETSAT.

We are also very actively engaged in remote sensing. In Minz Mazowiecki, since the late 1990s of the last century, SCOR Station is collecting high-resolution pictures from IPRONESS(?) (IKONOS?), WITHBERTH(?) and other high-resolution imaging satellites for Central and Eastern Europe.

Also, the Institute of Geodesy and Cartography, as well as the University, are

participating actively in remote sensing for geodesy, agriculture, urban(?) development and other proposed for more than 30 years.

GPS, CNES and other satellites are using Poland for geodesy and scientific programmes. Last year, we completed construction of 100 reference stations for the European Reference Network in Poland.

Also last year, a Workshop on Laser Ranging was held in Poznan with the attendance of more than 100 scientists from all over the world.

Besides the World Conference on CO<sub>2</sub> Reduction held last year also in Poznan, many conferences and seminars on problems related to the climate change were also held in Poland. Discussion and research in this field are focused on solving complicated problems of different factors which contribute to this process. We believe that space-based measurements will help us to solve many controversies on factors which have more significant influence on the climate change on our planet.

Many Polish scientists are also involved in the study of space weather which is an important factor also in weather prediction as well as in the climate change.

Poland is very active in many international missions related to space physics, such as Integral, Coronas-Photon, IBEX, SPHINX Compress-2(?) and others. Also on a Herschel launched recently by ESA Space Research Centre and the Nicolaus Copernicus Astronomical Centre of the Polish Academy of Sciences participated in construction of the sophisticated spectrometer.

This week in Warsaw, a special workshop on the use of space techniques for security is being organized. In two weeks, special conferences on space technology will be organized by the Ministry of Economy. At this Conference, a new strategy of Polish engagement in space activity will be announced.

In the PECS(?) \_\_\_\_\_(?) Programme with ESA, we are trying to increase our commitments but recent crises slowed down our initial plans. A Special Parliamentary Committee is also working now on establishing a Polish Space Agency and also submitting a Space Policy Act to the Polish Parliament.

Poland fully supports the French proposal for the introduction of the new item into COPUOS, long-term sustainability of outer space activities.

The education on space is continuously widening in Poland. This includes a special education programme for basic high schools and universities. Next week our students will have detailed information about day activity related to space exploration so I will only briefly mention construction of PWSAT which was selected by ESA to be launched along with other eight cube student satellites on the maiden flight of the new ESA launcher, VEGA, later this year or probably early next year.

In April, Polish students participated in a Joint Aerospace Conference held in Kiev Technical University and this meant the Polish and Ukrainian Governments will sign an Agreement which will boost cooperation in education and research in the field of space exploration.

Last year we celebrated in Poland the fiftieth anniversary of NASA highlighted by the visit of the United States astronaut George Zanic(?).

This year we are also preparing to celebrate the fortieth anniversary of the landing on the Moon.

Mr. Chairman and distinguished delegates, I would like to mention also one important anniversary which opened the new way of Poland and many European countries involved in many international activities including space research.

Today we celebrate the twentieth anniversary of the first partially democratic election in Poland. This election opened the way to big democratic changes in Europe. Soon after this election, the fifth democratically-elected Polish Government was created and a Solidarity leader, Lech Walesa, was democratically elected President of Poland. This Polish movement triggered the way of democratic changes in Europe, followed by the Velvet Revolution in Czechoslovakia and the destruction of the Berlin Wall, with many democratic changes in other European countries.

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

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

Next on my list is the distinguished representative of Germany, His Excellency Ruediger Luedeking. Thank you.

**Mr. R. LUEDEKING** (Germany): Thank you Mr. Chairman. I would like first of all to express my delegation's appreciation to see Ambassador Arévalo as well as yourself, Mr. Chairman, guiding our work at the fifty-second session of the Committee on the Peaceful Uses of Outer Space. You can count on Germany's cooperation in making this meeting a productive and successful one.

I would also like to use this opportunity to express our thanks to the Director of the Office for Outer Space Affairs, Ms. Mazlan Othman, and her team, for the outstanding work they have done during the past year and in preparation of this session.

Mr. Chairman, in Ambassador Arévalo's opening statement, the work done over the last 12 months was reviewed. We would like to join him in expressing satisfaction about the progress made on the various subjects under consideration of this Committee.

In particular, I would like to commend the achievements of the Scientific and Technical Subcommittee and the Legal Subcommittee under the very able chairmanship of Mr. Kedjar and Mr. Kopal.

We welcome the adoption by the Scientific and Technical Subcommittee of the Safety Framework for Nuclear Power Sources in Outer Space.

We also attach great importance of the Legal Subcommittee on the agenda item and I quote "general exchange of information on national legislation relevant to the peaceful exploration and use of outer space". We make good progress on this subject.

We also welcome the agreement to continue the consideration of the agenda item "general exchange of information on national mechanisms relating to space debris mitigation measures" at next year's session of the Legal Subcommittee. We believe that not only to develop enough common norms, standards and rules should command our attention, particular emphasis must also be placed on their implementation.

Mr. Chairman, I would go beyond the scope of my statement to do justice to all the subjects that we discussed and made progress on during the last 12 months. My delegation is committed to actively contribute in a result-oriented manner to the work of this Committee. The work of the Committee is getting increasingly important against the backdrop of an increasing dependence of the entire international community on space-based assets, a rapidly-increasing number of space actors, applications and activities, as

well as a rapidly-changing environment for the utilization of space. Thus, we welcome the initiative of the Committee's Chairman for a holistic approach to space. I am convinced that Ambassador Arévalo's paper entitled "Towards a United Nations Space Policy", circulated yesterday, provides a good basis for a focused discussion charting the course of the future activities of this Committee.

Mr. Chairman, the principle, as enshrined in Article 1 of the Outer Space Treaty, that the exploration and use of outer space be carried out for the benefit and in the interests of all countries, remains the pivotal reference point for our work. Thus, we support the pursuit of the work on space applications addressing the needs of all mankind.

We welcome the progress made on UNSPIDER which is a good example of the implementation of one of the recommendations by UNISPACE. UNSPIDER is an important system to support national relief efforts in case of disasters. Germany has contributed substantially, both in terms of expertise and financial support, to this Programme. Now it is of paramount importance that this Programme can be continued on a sustainable basis. Thus, we call on all States to ensure the long-term viability of UNSPIDER through voluntary contributions.

I would also like to stress that my delegation looks forward to the discussion at this year's session of the issue of how space can be utilized to mitigate the effects of climate change. Climate change is a challenge that can only be effectively addressed jointly by all members of the international community. It is an issue where we have to live up to a joint responsibility that we have for future generations.

Mr. Chairman, the utilization of space for the benefit of mankind presupposes a secure and sustainable environment for space activities. Thus, space security must remain a subject of fundamental importance in our work. The Committee on the Peaceful Uses of Outer Space can and must continue to play an important role in ensuring a secure and sustainable space environment.

The adoption of the Space Debris Mitigation Guidelines represents an important achievement. We are now called upon to ensure that these Guidelines do not remain a dead letter but a properly implemented and, where necessary, improved. We have noticed with interest some of the proposals that Ambassador Arévalo has made in his paper in this regard. These proposals merit detailed examination.

In the context of the issue of space security, we also welcome the initiative taken by Gérard Brachet on the long-term sustainability of space activities. We support the inclusion of this item in the agenda of the Scientific and Technical Subcommittee and look forward to fruitful discussions on it.

Mr. Chairman, I would also like to draw attention to the EU proposal of a Code of Conduct for Outer Space Activities which provides for a pragmatic and concrete approach which would strengthen safety, security and predictability of activities in outer space.

It takes the freedom for all to use outer space for peaceful purposes as a point of departure and is aimed at ensuring the preservation of the security and integrity of space objects in orbit. The unprecedented collision between two satellites that occurred in February this year clearly underlines the topicality of this issue. We are convinced that space security is indivisible and requires to be addressed by a comprehensive and coordinated approach.

Mr. Chairman, expanding space activities require the existence of a sound and dependable legal framework. The Outer Space Treaty remains the cornerstone of the legal regime governing outer space. We are committed to the basic principles that are enshrined in it which probably are more topical today than they have been ever before. We call on all States which have as yet not done so to accede to the Treaty as soon as possible. And we welcome the work undertaken by the Secretariat towards the universalization and implementation of this Treaty.

We stand ready to strengthen and expand the legal regime governing outer space and we support the call of the Chairman of the Committee to use this Committee to facilitate the legal harmonization of existing domestic and international legal frameworks for outer space activities.

Mr. Chairman, Germany has over the last year stepped up and broadened its space activities. We have significantly raised funding for space projects which contribute to the economic, scientific and social objectives. Thus, for example, the application field of Earth observation is of high priority for us. We are also active in other fields like robotics in space. We are happy to provide you with further information on our national activities in the course of or in the margins of this meeting.

Mr. Chairman, I have only been able to address a few aspects of our work. My delegation will

again ask for the floor under the various items on our agenda.

I would also like to announce that we will make two presentations under agenda item 10, Space and Society. We will make a presentation entitled "From Quarks to the Universe: The Big Bang in the Lab", and under agenda item 12, Space and Climate Change, the German Space Agency will make a presentation on "Earth Observation Activities for Risk and Vulnerability Assessment". Thank you Mr. Chairman.

**The CHAIRMAN:** Thank you very much distinguished representative of Germany for your statement.

Now the next speaker on my list is the representative of the Russian Federation, Mr. Sergey Shestakov.

**Mr. S. SHESTAKOV** (Russian Federation) (*interpretation from Russian*): Thank you very much Chairman. Ladies and gentlemen and distinguished delegates, to start off with, I would like to ask you to allow me to congratulate the Chairman for his very skilful guidance of the work of our Committee on the Peaceful Uses of Outer Space. As we all know, the Committee was established by a United Nations General Assembly resolution of 12 December 1959 and 50 years have elapsed since then. Over these years, the Committee has achieved outstanding results in its work and the very fact that 69 States are members of the Committee testifies to its importance and authority.

Once again, the Russian Federation would like to confirm its principle position that the Committee's role must be strengthened on issues relating to the multilateral regulation of peaceful activity in outer space. They dynamics and the evolution of trends as relates to space research and the emergence of new forms of such activity, including commercial ones, and new technologies, most evidently require us to progressively develop international space law. It is extremely important that our filling in the present lacuna in this area of law and work on its principles and standards, should be comprehensive in nature. This is something that could be done in the framework of the Russian initiative to develop a comprehensive United Nations convention on outer space law.

Now, the cause of preserving the outer space for peaceful purposes would be served by the implementation of the Russian-Chinese initiative with respect to development of a draft project to prevent the



deployment of weapons in outer space and to ensure the non-threat or use of force on space objects. A very important role is played in this regard by the Scientific and Technical Subcommittee and the Legal Subcommittee. Indeed, the Russian Federation would support the consensually-adopted reports which were approved of in these two Committees in 2009. We are going to be speaking more about this subsequently.

We would like to take this opportunity to note the progress made with regard to implementing UNISPACE III objectives and goals. We believe that indeed priority importance should be attached to implementing and applying global navigation satellite systems to ensure sustainable development, making use of outer space technologies to prevent and ensure that emergency situations are controlled to develop international cooperation in using remote sensing of the Earth as well.

I would like to recall that this September in St. Petersburg there will be a regular session of the International Committee on Global Navigation Satellite Systems where it is planned to pursue work to agree principles of compatibility and complementarity of existing and future global navigation satellite systems.

The second part of the Russian statement will be presented to you by Mr. Malitkov.

**Mr. E. M. MALITKOV** (Russian Federation) (*interpretation from Russian*): Thank you very much ladies and gentlemen, distinguished delegates. Over its history, man and mankind are very often and all too often is totally powerless in the face of the challenges and dangers unleashed by nature on Earth as well as in the Universe and, indeed, we very, very often have to note that we are in a very perilous situation indeed, a precarious situation in the face of manmade and natural disasters. However, human civilization, which very often reacts quite violently in the face of people dying following casualties, the same human civilization very often is all too quiet in the face of the unleashing of natural forces because one cannot effectively indeed avail against that. This is the supreme judge indeed. The human heart is very moved when one single individual dies, especially a close relative. However, as the number of fatalities steeply spikes, people very often become much more neutral, become much more calm and serene because the measure, the dimension of these deaths is overwhelming for them. And with statistics fatalities is as follows. Every single year indeed when there are earthquakes, 30,000 people die and the economic impact of such seismic phenomena can be tottered up in the billions of dollars and there are developing

nations indeed which fall even further back because of the impact of these natural disasters.

If we should tot up the natural and the manmade disasters, we would come up with a sum of a mind-boggling one trillion dollars per year. In 2008, for example, there 137 natural disasters, 174 anthropogenic disasters and 240,000 people died as a consequence of this, 269 billion United States aid dollars were indeed annihilated thereby. The ISDR, the International Strategy on Disaster Mitigation notes that over the last 30 years the effect has been the death of 1.8 million people and the economic disaster wrought was 1.5 trillion United States dollars.

In the years to come, experts believe that this is something which is going to be spiking most impressively indeed and the Global Domestic Product of the planet as a whole is going to be severely impacted. Given this, it is important for us to take measures in due time and for this it is necessary to join the positions of States and the governments of the world to integrate their joint political and scientific and technical efforts which they have made the State policies of their countries. This is something which is not just topical and extremely indispensable and important, it needs urgently to be resolved.

I would like in this connection to present to you our draft International Aerospace System Global Event Monitoring System, the MAKSM. This has been advanced and developed by the Tsiolkovsky Russian Academy of Cosmonautics and this is being further pursued in cooperation with United Nations aegis. This system, the MAKSM, is intended to give early warning and notification of earthquakes, volcanic eruptions, droughts, floods, landslides, storms, asteroid risks and other disasters. This would allow for people to be evacuated in due time. For example, if one were to place a proper sensor on a glacier which is descending, one could calculate the time of descent of the glacier and then evacuate people from the gaping fissure at the bottom of the glacier in due time and save their lives.

On the other hand, the MAKSM system would also be very useful in eradicating the disasters of natural and manmade cataclysmic events as well. For example, it would be possible, thus, in this fashion to also properly assess the amount of emergency relief assistance and aid that must be expedited to these emergency sites, be they tents or warm clothing, water or food.

There are three segments in this system, the MAKSM. The air segment comprises helicopters, air

lifts with flights and dirigibles from various States. There is a land-base segment with collection centres and information processing centres with sensors for direct control. Indeed, this system would produce a mass of information that would be sent on to the emergency crisis data information processing centre and then they would be subsequently properly processed and there would be real-time transmission data to the United Nations as well and then early notification and warning systems in the various nations would also be properly sensitized and coordinated. Very often, the reaction of States around the world comes way too late but even a Super Power in the world is not doing enough and not effectively enough and not in a timely enough fashion. It is necessary for us to join our forces, consolidate, coordinate and integrate the proper response that must become timely. This is something of extreme relevance at a time of economic crisis which is upon us throughout the world.

The expenses that would indeed be involved are hundreds of times of less than the damages which are incurred following emergency situations. Think of the dramas and the epidemics that have been spread because of natural disasters. Just give this a thought. In Shanghai, in Tunisia, in Glasgow and Paris, this sort of response has been discussed and astronautics association representatives from Germany, India, Italy, China, Nigeria, Russia, the United States, Tunisia, Ukraine and France have all participated in these discussions and contributed their views.

In order indeed to overcome national egotism and to attract interest to this project, from 2 to 4 November in 2009, in Limassol in Cyprus, there will be a Symposium scheduled on "Outer Space and Global Security for Mankind". And the light motif of this Symposium is to prevent natural disasters and manmade disasters and to mitigate their impact, their consequences and to prepare for a response to this which economically which would be indeed more than profitable because it is easier to prevent rather than to react *ex post facto*.

The Secretary-General of the United Nations, Ban Ki-moon, indeed when he visited Moscow a month ago, very warmly supported this initiative and I would call upon the Committee of the United Nations on the Peaceful Uses of Outer Space to equally support this initiative and to participate in the work of the Symposium that I have referred to on outer space and global security for mankind. Thank you very much for your attention.

**The CHAIRMAN:** I thank the distinguished representatives of the Russian Federation for their statements which are very interesting.

Next on my list is the Libyan Arab Jamahiriya, Mr. El Hadi M. Gashut.

**Mr. E. H. M. GASHUT** (Libyan Arab Jamahiriya) (*interpretation from Arabic*): In the name of God, Mr. Chairman, on behalf of my delegation, it gives me pleasure to express my profound thanks and appreciation to you personally for the success you have scored in leading these deliberations and we are confident that we will realize the objectives to which we all aspire.

I wish as well to extend my thanks and appreciation to the two Vice-Chairmen as well to Mrs. Mazlan Othman, Director of the United Nations Office for Outer Space Affairs as well as the teams in the Secretariat for the efforts they are deploying in order to lay a firm foundation of an outer space architecture which is free from racial discrimination and hegemony.

I wish as well to present my congratulations to China for the amazing progress which we witnessed as it enters outer space and we wish China all the prosperity as well as the same wishes which go to all other countries who wish to catch up with this civilizational process.

My country, as other developing countries, wish to use space technology as we consider this item as one of the main sciences for human life, especially when it is mobilized and used for developing mankind and improving the current life and future life of mankind.

We have followed all the developments in the field of space activities and applications and its use in managing resources and overcoming the obstacles through sustainable development. We are constantly keen on implementing the recommendations of UNISPACE III in the field of using space technology, especially in important fields such as tele-education and tele-medicine as well as confronting the problem of water scarcity, desertification, as well as diseases resulting from agricultural and animal pests. These matters urgently require regional and international cooperation, these themes, and programmes should be considered realistically and we should earmark the necessary national and international resources to deal with them.

The Jamahiriya, therefore, as a country which seeks to catch up with this civilizational process, has

accorded priority and we have established national institutions that are specialized in the field of remote sensing and space sciences especially in order to deal with the problem of water and we are keen on cooperating with the relevant international regional organizations.

We have also focused on another problem, no less important, which faces North African countries and certain other countries, such as desertification and shifting sands. We have exerted great efforts nationally and internationally so as to deal with this phenomenon in a coordinated manner and use space-based data to follow up and confront this phenomenon.

My country, in the field of communications, has cooperated with the African Communication Agency as well as a number of other companies and we have launched the first African communications satellite, RASCOM-1, and we are presently constructing the second generation of this satellite.

The Jamahiriya has established a Station to directly receive the satellite data as well as satellite imagery using as well the well-known French satellite series called SPOT as well as ENVISAT.

My country is also contributing to mitigation natural disasters. We have the most modern Seismological Network in the region so as to monitor and track seismological events and tectonic movements in the Mediterranean Basin area. We cooperate with regional and international organizations and we are cooperating with the European Centre for Seismology as well as other regional and international networks in a bid to reduce the harmful effects of earthquakes.

My country is fully conscious of the importance of this Committee. This recognition is reflected in our constant following up of all developments and in this field, especially we are following the various researches and studies. We are convinced of the importance of outer space and its use for peaceful purposes, according to the internationally agreed methodology. We have adhered to the 1967 Treaty. We have adhered to three other conventions, the Liability Convention, the Rescue Convention and the Registration Convention.

My delegation wishes to add its voice to the statement by the Ambassador of Bolivia on behalf of GRULAC concerning the right of developing countries to accede to outer space and to possess its technology. Outer space is an important and natural resource for humanity at large without any discrimination and in

keeping with set relevant General Assembly resolutions.

We need to maintain outer space as a secure area free from armaments. Here we call for enhancing international cooperation for the peaceful use of outer space and to provide fair access to all countries especially the developing countries in order to build up their capacities in a bid to realize sustainable development.

In spite of these efforts by our Committee, we do have a number of concerns concerning the use of nuclear power sources in outer space, space debris, as well as the over-use of the GSO.

As for membership in this Committee, my delegation wishes to reaffirm that this Committee should continue as it has in the past, that is to accord the honour of membership to those countries whose practices are in keeping with the objectives of the Committee. We should not give this honour to a country which uses outer space in a manner that has nothing to do with peaceful purposes. My delegation believes this is indeed an important point because this Committee is the bastion which strengthens the use of outer space for peaceful purposes exclusively. My country believes that the resources of outer space should be placed at the disposal of developing countries.

In conclusion, my delegation reiterates its thanks and appreciation for the efforts exerted by the Scientific and Technical Subcommittee, as well as the Legal Subcommittee, and the work of the Secretariat. We wish to extend our thanks to all the members of delegations for their kind attention and we wish all success to this session. Thank you Sir.

**The CHAIRMAN:** I thank the distinguished representative of the Libyan Arab Jamahiriya for his statement.

Now may I call upon His Excellency Mr. Reza Taghipour Anvari, Vice-Minister, the representative of Iran. The Islamic Republic of Iran to make your statement.

**Mr. R. TAGHIPOUR ANVARI** (Islamic Republic of Iran): In the name of God, the Compassionate, the Merciful. Mr. Chairman, at the outset, I would like to extend my delegation's sincere appreciation to you and other members of the resulting Bureau for your efforts to ably guide this forum.

The delegation of the Islamic Republic of Iran also sincerely appreciates the Director of the United Nations Office for Outer Space Affairs, Madam Mazlan Othman, and all her able colleagues in the Office for their efforts to further promote international cooperation on the peaceful uses of outer space.

Mr. Chairman, Iran, as one of the first COPUOS members, has constantly supported and contributed to the work of the Committee to uphold the fundamental principles governing space activities, the fundamental principles which stipulate that the outer space as the province of all mankind should be kept open to all States for peaceful purposes regardless of their economic and scientific development on the basis of equality and in accordance with the provisions of the Outer Space Treaty. It also requires that all benefits provided, all benefits derived from space activities should be extended to all nations without discrimination.

The delegation of the Islamic Republic of Iran would also like to re-emphasize that \_\_\_\_\_(?) of an arms race in outer space is a matter of concern that requires increased international awareness and preventive efforts.

Mr. Chairman, the Islamic Republic of Iran will aver(?) of the fact that space activities and applications play an essential role in sustainable development to remarkable(?) steps for what to develop its space programme. As we have already informed the Committee, several momentous events unfolded over the last year since we met in the last COPUOS meeting in June 2008.

On 17 July 2008, Iran successfully launched its first indigenously-made satellite launch vehicle, SLV, named Safir Omid(?). On 26 November 2008, Iran launched its second sub-orbital rocket called Kavoshgar-2. And on Friday, 2 February 2009, we successfully the launched indigenously-made satellite launch vehicle, named Safir-2. It carried out Iran's first ever home-built telecommunications satellite called Omid. The satellite was placed in low-Earth orbit, LEO. A side for conducting further launching of our national satellite launch vehicles was established.

Several projects on student satellites have been carried out within the framework of targeted development programmes on space technology.

Some posters about the background of Iran's space activities and its latest achievements are displayed in the corridor next to the Conference Room.

Booklets with the same contents are also available on the desk in the back corner of the Conference Room.

Mr. Chairman, the Islamic Republic of Iran attaches great importance to the international cooperation in the field of space-related activities, particularly within the framework of COPUOS for getting optimal benefits of space applications. To that end, Iran gives a high priority to capacity-building which we are convinced that plays an essential role in sustainable development of space technology.

In this context, Iran has paid much more attention to regional workshops over recent years with the valuable cooperation of the Office for Outer Space Affairs, several workshops and symposia on the space law, UNSPIDER and applications of space science and technology have been organized in Iran.

As you are aware, Iran had already hosted a Workshop on Space Law in November 2007. This is my pleasure to announce that the United Nations and the Iranian Space Agency are conducting the Workshop on Space Law entitled "Status and Development of International Space Law Regarding Current Problems and Perspectives for the Future Regulations and Addressing National Legislation Needs", in Tehran, from 7 to 9 November 2009.

The latest space-related Workshop in Iran was organized on the UNSPIDER Programme. The Iranian Space Agency in close cooperation with the Office for Outer Space Affairs successfully organized the Workshop entitled "ISA/UNSPIDER Regional Workshop: Building Upon Regional Space-Based Resolutions for Disaster Management and Emergency Response, from 6 to 8 October 2008, in Tehran, where the issue of specific UNSPIDER activities for the region to be carried out by the Regional Support Office was extensively discussed. Over 60 regional experts participated in the Workshop.

This brings me, Mr. Chairman, to the UNSPIDER Programme and the latest measures carried out by the Islamic Republic of Iran support its implementation. First, allow me to express my delegation's deep satisfaction on the progressive trend of the UNSPIDER Programme thanks to the constant efforts made by UNSPIDER, United Nations Office for Outer Space Affairs, in particular the Programme Coordinator and his colleagues.

Mr. Chairman, Iran, as already stated, realizes the considerable merit of the UNSPIDER Programme. This is because of the UNSPIDER's function which as an open network of providers of space-based solutions

supports disaster management activities. Furthermore, in our view, the \_\_\_\_\_ (*not clear*) duty(?) of Asian countries to disaster gives a high importance to implementation of the UNSPIDER in this region. A study shows that the Asia-Pacific region is the world's most disaster-prone region which has the highest capability to natural disasters. The region, based on the report of the United Nations accounts for 91 per cent of the death toll originated from natural disasters in the past century and 49 per cent of the resulting economic damage. According to the UNSPIDER reports, Asia accounts for about 75(?) per cent of human life losses as the result of natural disasters in 2007. This figure stood at 78 per cent for the period of 2002-2006.

Iran, bearing in mind the above-mentioned facts, and being faced particular as other situations resulting from the various types of natural disasters, fully supported the UNSPIDER Programme since its initial stage in 2007. Later on in June 2008, and for the purpose of making further effective contributions to the implementation of UNSPIDER, the Islamic Republic of Iran, through the Iranian Space Agency, expressed its readiness to host the UNSPIDER Regional Support Office. On the basis of the General Assembly resolution 61/110, paragraph 11, with regard to the UNSPIDER and its Regional Support Offices for implementing the Programme and based on the guidelines provided by COPUOS at its fifty-first session, the Islamic Republic of Iran and the United Nations Office for Outer Space Affairs finalized their discussions on establishing the UNSPIDER Regional Support Office in Tehran. Now it is a great pleasure for me to announce that the Cooperation Agreement between the United Nations Office for Outer Space Affairs and the Iranian Space Agency on the establishment of the UNSPIDER Regional Support Office in the Islamic Republic of Iran has been signed this afternoon.

We look forward to taking the next step, that is to say, the definition of a Work Plan for the Office. The Islamic Republic of Iran is convinced that a network of Regional Support Offices in Asia functions as an effective coordinated means to promote the UNSPIDER Programme and maximize the advantages it offers to all nations in the region. It also contributes to further strengthen regional cooperation in the field of disaster management, relief operations and accordingly helping to save lives and properties against natural disasters.

Mr. Chairman, I conclude and I would like to express our sincere hope for the successful and satisfactory conclusion of this session. I assure you,

Mr. Chairman, of my delegation's fullest cooperation to this end. I thank you.

**The CHAIRMAN:** I thank His Excellency Vice-Minister of the Islamic Republic of Iran for his statement.

May I now ask the distinguished representative of The Netherlands, Mr. Alain Ancion, to make his statement.

**Mr. A. ANCION** (Netherlands): Thank you Chair. In order to be brief and to the point, I would like to concur with previous speakers as to the pleasure to see you in the Chair today. Also should my speech be longer than 15 minutes, political or otherwise unclear, please cut me off for the sake of having an efficient meeting.

During the discussions on Space Debris Mitigation Guidelines at the fiftieth COPUOS session, The Netherlands indicated that the space issue would increasingly play a role in our societies, for instance, when formulating and executing policy in the economy and health care and civil security. In our daily life, we constantly come across the applications of space activities. It is, therefore, of eminent importance that the entire space infrastructure continues to function properly and that the access to space will be ensured.

In this context, The Netherlands supports actively the development of a Code of Conduct on Outer Space Activities by the European Union.

Mr. Chairman, in order to ensure the continuity of a well-functioning space infrastructure, we have to maintain and, where possible, increase the attention on this issue.

Upon COPUOS adoption of the earlier-mentioned Space Debris Mitigation Guidelines in 2007, my delegation is of the strong opinion that a new agenda item is required to build on this momentum. For that reason, The Netherlands supports the French proposal for a new agenda item entitled "Long Term Sustainability of Space Activities". This would be a logical next step after the adoption of the mentioned Guidelines. COPUOS can and should play an important role in ensuring the continuity of space activities. A possible question that may arise and requires an answer is to what extent the existing legal framework is sufficient in this context and if it needs adjustment but also how can improved and enhanced technologies be applied in an efficient manner.

In the end, COPUOS should strive for keeping space available for peaceful uses for future generations so that they also can benefit fully from the advantages that space provides. A new agenda item “Long Term Sustainability of Space Activities”, as proposed by France, could facilitate COPUOS work in this regard. As mentioned before, The Netherlands supports this proposal for a new agenda item wholeheartedly. Thank you Mr. Chair.

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

**Mr. C. ARÉVALO YEPES** (Colombia) (Chairman) (*interpretation from Spanish*): Good afternoon ladies and gentlemen. I would like to thank the Vice-Chairman who has been guiding our work up until this point in time.

We are now going to be taking up the observers list.

Our first observer is Mr. Berndt Feuerbacher from the International Astronautical Federation. Over to you Berndt.

**Mr. B. FEUERBACHER** (International Astronautical Federation): Thank you very much Mr. Chairman. Dear delegates and observers, on behalf of the International Astronautical Federation, I wish to congratulate you, Mr. Chairman, for your success in leading this Committee, and Dr. Mazlan Othman for running the Office for Outer Space Affairs so efficiently.

I am pleased to have the opportunity to report to you last year’s achievements and briefly mention the outlines for the next International Astronautical Congress.

The International Astronautical Federation is a worldwide Federation of institutions active in space. It is well-known as the organizer of the premier annual global space conference, the International Astronautical Congress. Our activities, however, go far beyond this. Following our theme “Bringing Space People Together”, the advanced communication, cooperation and education in the field of astronautics worldwide.

Our membership comprises about 200 organizations from 47 countries all around the world. It includes the major space agencies and the number of membership applications from space agencies from emerging countries is rapidly increasing. In addition,

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

Mr. Chairman, please let me report about the activities that IAF has been developing this year.

On Monday, 9 February, as part of the Forty-Sixth Session of the United Nations Committee on the Peaceful Uses of Outer Space Scientific and Technical Subcommittee in Vienna, the IAF organized a Symposium on the Role of Earth Observation Satellites in Promoting and Understanding and Addressing Climate Change Concerns. The IAF Symposium consisted of two Roundtables. One was “Space Systems for Observation and Monitoring of Climate Change”, and the other was “Space Systems Contributing to Understanding and Forecasting Climate Behaviour”. Delegations are invited to download the presentations by visiting our website under [www.iafastro.org](http://www.iafastro.org).

IAF has initiated a new programme under the name “Youth Grant Programme”. This will provide support towards enabling students and young space professionals to participate in IAF activities, in particular the International Astronautical Congress. The Programme will support the participation of students and young professionals at the Sixtieth IAC in Daejeon, Republic of Korea, October 2009. One hundred applications, mainly from emerging space nations, have been received on the first call and are presently being evaluated.

Our Federation organized together with the Office for Outer Space Affairs a series of UN/IAF Workshops aimed at representatives of emerging space nations. The most recent of these Workshops was held in September 2008 at the University of Glasgow on the topic of “Integrated Space Technology Applications: Support to Managing Potential Hazardous Events”.

The nineteenth of these UN/IAF Workshops will be held in October 2009 in Daejeon, Republic of Korea, and it will be dedicated to the topic of “Integrated Space Technologies and Space-Based Information for Analysis and Prediction of Climate Change”.

Mr. Chairman, regarding our upcoming projects, I would like to mention the Global Lunar Conference which will be jointly organized by the IAF and the Chinese Society of Astronautics, to take place in Beijing, China, in May 2010. The Conference will gather the China National Space Administration and its Lunar Office, the China Aerospace Technology Corporation, and the China Academy of Space

Technology, together with international space actors. Delegates will be offered a unique technical visit programme to space facilities in China following the meetings. The Technical Programme of the Global Lunar Conference will be detailed in the call of papers available on our website.

Mr. Chairman, IAF has taken a special initiative to enhance the cooperation with African countries under the theme "Heading for Africa". For the first time in the 62-years long history of the IAC, it will come to the African continent in October 2011. Cape Town will be the city for the Sixty-Second International Astronautical Congress in 2011. In this context, yesterday we had a meeting with the representatives of African countries to discuss how to prepare the way in order to reach an African Space Summit at the occasion of the Sixty-Second IAC and to involve all interested nations of the African continent in this effort.

Mr. Chairman, our most visible product is the IAC held in various locations throughout the world. Our last Congress gathered more than 3,000 space professionals in Glasgow, Scotland, in September 2008. The city of Daejeon, Korea, will be the site of our next Congress which will be held from 12 to 16 October 2009 under the theme "Space for Sustainable Peace and Progress". At this occasion, we will celebrate not only the fortieth anniversary of the Apollo Lunar Landing but also the sixtieth anniversary of the IAC and give tribute to the International Year of Astronomy 2009. Our colleagues in Korea have chosen an excellent venue and are working hard in finalizing plans for this important event.

The IAC always includes a major space exhibition. In this year, it will for the first time dedicate a special focus on small and medium companies in the framework of the First International Aerospace Cluster Forum.

My colleagues from the Republic of Korea will give you a more detailed presentation about the Sixtieth IAC in the following of this session.

It is an honour to share with you in a very informal way that IAF has had the opportunity to meet and invite the United Nations Secretary-General, Ban Ki-moon, to strongly support our Congress in Korea.

We are looking forward to holding our Sixty-First International Astronautical Congress in Prague, Czech Republic, in 2010. If your country, dear delegates, is interested to act as a host for a future Congress, please contact me or our Secretariat in Paris.

Mr. Chairman, thank you for the opportunity to discuss the activities and the plans of the IAF with your Committee. I invite you and all distinguished delegates to join us for a Reception, co-hosted by IAF and the LOC of the Sixtieth IAC, today at 1800 hours. Thank you very much.

**The CHAIRMAN** (*interpretation from Spanish*): Thank you very much Berndt for this statement and thank you for your kind words as well. Thank you very much. The International Astronautical Federation has demonstrated its great involvement in space activities. Its participating in COPUOS work. It is not the first time either and I really do believe that, for us, your presence is very important. It is a pleasure to have you working with us and by our side as an associate in developing space activities, especially in developing countries. Once again, a warm thanks.

Now I would like to give the floor to our next speaker and the speaker will be Mr. Ray Williamson from the Secure World Foundation, SWF.

**Mr. R. WILLIAMSON** (Secure World Foundation): Thank you Mr. Chairman. Mr. Chairman, on behalf of the Secure World Foundation, I would like to congratulate you on your skilful leadership of this Committee. We also note the excellent work of the Office for Outer Space Affairs under the direction of Dr. Mazlan Othman. We are confident that the Committee and the Office will continue successfully to support the peaceful uses of outer space resources especially for emerging space States.

The Secure World Foundation is pleased once again to attend this Committee meeting as a permanent observer. Over the past year, we have worked hard to foster the peaceful uses of outer space in a long-term sustainability of space activities. Today, I would like to summarize our activities over the past year in the three major themes in which we are active: space security, in other words, developing the foundation for the effective management of space operations for a sustainable space environment and the peaceful uses of outer space; human and environmental security, that is maximizing the international cooperative use of space assets for the benefit of humanity; and for planetary defence, promoting a unified international policy approach to the protection of our planet from the threat of near-Earth objects.

Mr. Chairman, since its inception in 2004, the Secure World Foundation has consistently expanded its portfolio in and its support of efforts to work towards

the long-term sustainability of space activities. We continue to be one of the major contributors to the field of space security in the non-governmental sector. Our engagement at both national and international level has been steadily growing.

Highlights of our recent and upcoming activities include our role as co-organizers last November with the European Space Policy Institute and the International Academy of Astronautics, a Workshop entitled "The Fair and Responsible Use of Space: An International Perspective". It was attended by more than 60 high-ranking professionals and that Conference examined the current space security situation and analyzed key challenges to achieving the fair and sustainable use of outer space. It also prepared a list of 10 steps to achieve fair and responsible use of outer space. Papers from that Conference are being compiled by the European Space Policy Institute and edited in a series by Springer "Studies in Space Policy" and will be available by the end of this year.

Also, last November, the Secure World Foundation partnered with the United States Stimson Centre to host a Workshop in Bellagio, Italy, focused on improving dialogue between delegates of the Conference on Disarmament and the space sector. Discussions within this Workshop centred on ways in which to further space diplomacy and to facilitate new diplomatic initiatives on space treaties and confidence-building measures.

We were very pleased that the current and immediate past Chairpersons of this Committee were able to take part in both November events and bring the interests and concerns of this Committee to the discussions.

Early this year, following the 10 February accidental collision between the functioning Iridium communication satellite and the inoperable Cosmos-2250 communications satellite, the Secure World Foundation was at the forefront of efforts to explain the circumstances of the collision to the public and to argue for improved international space situational awareness of objects in Earth orbit.

Accordingly, in late March, the Secure World Foundation partnered with INTELSAT General and other organizations to host the Third International Conference on Space Situational Awareness entitled "Improving Our Vision III". The conference, attended by more than 140 participants, brought debris and astrodynamics experts from Europe and the United States together with policymakers and government officials to explore international solutions for improved

space situational awareness. The technical and political hurdles are high but the end goal of increased space safety and security is worth a substantial effort by all space-faring States. We were encouraged by the progress towards this goal that the Conference demonstrated.

One of the Secure World Foundation's key efforts centres on strengthening or developing the policies and institutions that improve the utility of space technologies in support of human security needs. Human security is a concept that was developed out of the experiences of the Cold War in which major power politics very often rode roughshod over the needs of individuals, communities and small States. It involves seven aspects of human existence: economic security, food security, health, environmental, community, personal and political security.

Earth observing systems, telecommunications systems and satellite position, navigation, and timing systems all have a role in improving human security throughout the world. In order to further our interest in promoting the effective use of these systems in support of human security, this January, the Secure World Foundation entered into a partnership with Imaging Notes Magazine, which has had a history of presenting informative articles on the applications of Earth imaging satellites to human security needs. It is published in hard copy and also online.

Now, as never before, the world community operates sufficient numbers and varieties of satellite systems to make an enormous positive difference in the lives of billions of people around the world. The benefits to society worldwide are potentially very great, yet space systems are not yet well organized to deliver these benefits efficiently and effectively. For example, many countries of the world face serious difficulties in providing sufficient fresh water for their citizens. Space systems can help in finding and managing the preservation of fresh water sources.

In another example, the world's space agencies have demonstrated their ability to capture data from satellites soon after a natural disaster. However, in both examples, more needs to be done by the international community to make sure the acquired information reaches affected populations timely and in a form that they can use quickly and efficiently.

We at the Secure World Foundation believe that we can assist in improving the flow of benefits from space systems by helping to establish more effective institutional mechanisms for delivery of



services and devising common international data policies for public good data and information.

On the planetary defence, thanks to the work of many scientists around the world, we now have a much better understanding of the threat that asteroids pose to Earth and its peoples. Although the chances of suffering a major asteroid strike appear to be quite small, recent analysis of the 1908 Tunguska event over Siberia has led scientists to believe that the chances for smaller, but still significant, asteroid strikes is higher than previously realized. The large body of recent research on near-Earth objects raises the following questions: if observers were to discover an asteroid headed towards Earth, whose job would it be to decide how to respond? Should space agencies attempt to deflect it into a safe orbit that would not threaten humanity? What methods should be used? If deflection is not an option, how should we organize the emergency response services that would be needed if the projected impact threatened populated areas? In order to reduce the potential serious negative effects of a future asteroid strike, all of these questions and many more will need to be answered, the topic of the Action Team 14.

In order to further investigations into these questions, the Secure World Foundation partnered with the Association of Space Explorers on its efforts to develop a draft response plan for a NEO threat, elements of which have been presented to this Committee several times. Further, this April, the Secure World Foundation sponsored a Conference with the University of Nebraska at Lincoln Law School on the legal and policy concerns posed by near-Earth objects. The following week it co-sponsored, with the International Academy of Astronautics and others, the Third Planetary Defence Conference in Granada, Spain. In both conferences, the issue of finding the appropriate means for governing the response to a future asteroid impact was a subject of interest.

The Secure World Foundation is a private operating foundation dedicated to maintaining the secure and sustainable use of space for the benefit of Earth and all its peoples. It acts as a research body, a convener and facilitator to advocate for key space security and other space-related topics and to examine their influence on governance and international development. The Foundation believes that the challenge of sustaining the space environment into the future must be dealt with in a truly international manner.

We at the Secure World Foundation believe that today the path to development depends in large

part on the benefits that space technology brings. There is a close link between maintaining the long-term sustainability of outer space activities and human security. Coupled with this, the Secure World Foundation is a strong proponent of preventing global conflict from spilling into the space sector through the effective promotion of internationally accepted norms of behaviour for further space activities. We also strongly support the other side of preventing global conflict from spreading into space. That greater predictability and knowledge of the state of the space environment can only help to lower tensions among space actors here on Earth.

The Secure World Foundation strongly supports the work of this Committee. Part of that support is provided through our website, which we are constantly improving. On there you can find fact sheets, position papers, and periodic newsletters, as well as other information of use to the delegates of this Committee.

As the benefits of space activities expand and improve, keeping outer space available for peaceful activities and free of destructive weapons will become ever more important. As we move into the last half of the first hundred years of the Space Age, we have a unique opportunity to safeguard the secure and sustainable use of the space environment. Never before has humanity been so interconnected with the technologies and capabilities to plan new space systems. The stage is set to design and implement comprehensive new international cooperative institutions and agreements that will provide a secure future for space and benefit for the Earth. We look forward to continuing to support the Committee's efforts to achieve such a future. Many thanks.

**The CHAIRMAN** (*interpretation from Spanish*): Let me thank Ray Williamson from the Secure World Foundation for that very interesting message that describes the activities and purposes of his Foundation as well as for the description of the different events that it has co-sponsored around the world on very diverse topics which range from the legal aspects of space policy to the theme of asteroids, which is a fairly delicate subject in which we are going to be further dealing with in other presentations. Thank you very much for that presentation.

Now, the representative of Chile, Raimundo González, wishes to speak.

**Mr. R. GONZÁLEZ ANINAT** (Chile) (*interpretation from Spanish*): Thank you very much Chair. First of all, that was an excellent summary but I

think that there was one important point missing. But before that, first of all, let me say that the NGOs whose representative just spoke led to a debate and discussion during two consecutive sessions of the United Nations Space Committee and I am very pleased to see the SWF(?) (*not clear*). I think that they are making a contribution here which I feel is quite essential. I followed the statement very closely given by the Secure World Foundation. I do not know what the Spanish translation is. I do not particularly like to use other languages when I speak my own but I see no translation for it. He emphasized something that I think we have seen and established consensus on in General Assembly resolutions in documents of Heads of State and Government, the meeting on a high-level, for example, during the Millennium Decade or Declaration. I cannot quite remember which on which occasion but I do remember this being mentioned and the fact that there was an agreed text on this aspect of mankind, the 1999 Vienna Declaration, the UNISPACE III, where we mentioned security. And it is not a minor issue, human security. This has been discussed in very prominent fora, in the last Space Conference of the Americas as well.

So the emphasis has been put here on a topic which is extremely important, human security, and this can also be seen in the 1994 UNDP Report. A world free from fear and shortages and that all tools available should be used to that end to prevent that and to remedy that or in the case where it occurs with no prejudice to human dignity. And let me give you a case, El Niño, which afflicts my country. We need to have a very early warning so that people who are living along the coastal areas can move about 100 kilometres away in order to save their lives. And now thanks to satellite imaging, these coastal dwellers are being given a certain measure of security.

Now, if I do have the right to speak, Sir, and I know that you have to consult with the Secretariat but as the representative of a sovereignty country, you know that I am not doing this for personal reasons.

**The CHAIRMAN** (*interpretation from Spanish*): Sorry Ambassador, do not please misinterpret my gesture up here. My gestures up here, the idea was to actually in giving you more breathing space and to mention that we were going to be dealing with this at a later stage but please do not worry about the podium up here.

**Mr. R. GONZÁLEZ ANINANT** (Chile) (*interpretation from Spanish*): As I said, this is a very weighty subject and the previous speaker is really reiterating what something that the United Nations has

already on a consensus basis has approved and on the basis of which, without fear of contradiction, I can see is a kind of a concertudinal(?), habitual practice from a legal viewpoint.

So space technology can be used to meet this need of mankind. There is a gap here that needs to be filled and we have to convince the citizens that this technology can be immediately beneficial to them and human security is one way that that can be done and can be done through the technology that we have.

So, through you, Chair, I would like to commend the representative of that Organization because he has indeed laid emphasis on an extremely important issue and something that is often complementary to what was said by France concerning sustainable development.

**The CHAIRMAN** (*interpretation from Spanish*): Thank you for those observations. Indeed, the theme of security is a fundamental one and the description that was made by the Foundation of that seven dimensions, you mentioned one of these, which do indeed coincide with a mandate given to the United Nations. I thank you very much for those remarks Mr. Ambassador.

### Technical presentations

I think we have nearly completed the section of our work dealing with the different presentations and we now move on to the technical presentations with the very efficient aid of the Secretariat.

I would like to invite Mr. Naoki Yamaguchi from Japan to present "Promoting Disaster Reduction in the Asia Region". Mr. Yamaguchi, you have the floor.

**Mr. N. YAMAGUCHI** (Japan): Thank you Mr. Chairman. My name is Naoki Yamaguchi from the Asian Disaster Reduction Centre, Kobe, Japan. I seek attendance to this Conference to be \_\_\_\_\_(?).

First, I would like to report on behalf of the ADRC and I am very happy to inform you that the ADRC and the United Nations Office for Outer Space Affairs have just signed the Cooperation Agreement, the UNSPIDER Regional Support Office.

We would express our sincere gratitude to all of you.

Now, the ADRC and the United Nations Office for Outer Space Affairs have studied in the internal and practical discussions on the earliest(?) Work Plan for the ADRC.

I am \_\_\_\_\_(?) that multiple participants do not know well about the ADRC and its activities. I would like to introduce our overview about the ADRC.

Here summarized is the outline of the ADRC. The ADRC was established in 1998 after a great \_\_\_\_\_(?) earthquake in Kobe, Japan. The ADRC has 22 member countries and four advisory countries at the time of the establishment. Now the ADRC has 27 member countries and five advisor countries and one observer organization.

The operation of the ADRC mainly funded by the contributions from member countries. The members of the staff is totalling 29 including the two visiting researchers from Thailand and Malaysia now.

The ADRC takes a membership system consisting of 27 member countries in Asia. Member countries are spread throughout the Asian region. The counterpart organizations in each of the countries are departments mainly in charge of disaster management in their national governments.

Through the network of this Organization, the ADRC had been keeping in touch with each member country very closely. Also the ADRC had been implementing various kinds of projects in cooperation with United Nations agencies.

The ADRC has three activities in Asia: information sharing, human resource development and community capacity-building.

Information sharing includes organizing international meetings and seminars, disseminating(?) integrated disaster information, promoting the disaster database development, and Sentinel-Asia activities.

Human resources development includes organizing training courses for the national government staff for member countries and accepting visiting researchers.

Community capacity-building includes promoting total disaster risk management. Conducting community-based hazard mapping, development of tsunami awareness and collecting(?) practice. I will explain in detail each activity.

The first activity is information sharing. One thing that year, the ADRC has held a Asian Conference on Disaster Reduction in one of its member countries. This is an annual meeting of the ADRC in which all member countries and advisor countries and related to the international organization activity. The aim of the meeting is to promote information sharing among government officials and experts. Last year, we just held the meeting in Bali, Indonesia.

The ADRC also timely approached the latest disaster information to the website of the ADRC. Disaster management information from member countries are also given to the public through the Internet.

All the publications ADRC issue once a month a newsletter which introduce the recent activities of ADRC. Natural disaster data books which give an analytical overview of natural disasters throughout the world is also issued one a year by the ADRC.

As part of information sharing, I would like to introduce GLIDE to you, Global unique disaster IDENTifier, which gives a common but unique number to the disasters all over the world.

GLIDE is firstly(?) proposed by the ADRC and had been adopted and used in more than 20 international organizations, research institutes and so on. The GLIDE number format is shown on this slide. According to GLIDE, disaster information is \_\_\_\_\_(?) up.

The second activity is human resource development. Many activities among the human resource development is the visiting researcher programme which the ADRC has been organizing regularly. Two persons from ADRC member countries stay for half a year in the ADRC in order to learn disaster management knowledge and experience and enhance the human network among the member countries. To learn disaster management knowledge through not only staying, studying documents but also visiting the various disaster reduction-related facilities in Japan. So far, 40 visiting researchers have finished their programmes since the start of the Programme. Now two visiting researchers are at the ADRC.

A typical example of the third activity. I will touch upon the community-based hazard mapping. Usually hazard mapping such as a flood map or earthquake map and drawn by the national or local government and the distributed committees. The key of community-based hazard mapping is involvement of

local people who have their own knowledge as well as the researchers who have current scientific and technological aspects in order to develop their own hazard maps.

The method called Town Watching is widely used and utilized. The Town Watching Method is one of the major two ways that affects all stakeholders and local residents and local government officials and scientific experts work together to develop their own hazard maps.

The Sentinel-Asia project is a best effort volunteered-based in an initiative by 52 organizations of 20 countries and eight international organizations. The objectives of this project is to share disaster-related information including especially satellite images by Earth observation satellites.

The ADRC serves as a contact when emergency observation is required in the event of disasters. Upon the receipt of the request for emergency observation, the ADRC \_\_\_\_\_(?) whether it accepts or not, it depends on the scale status and \_\_\_\_\_(?) of the disaster. If we did yes, the ADRC request an observation to a space agency. From April 2008 to March 2009, 20 times emergency observation were implemented.

Last year we surveyed in some countries how the image data that had been distributed through the Sentinel-Asia was used. I would like to introduce the example of the flood of the Koshi River in Nepal. This flood had occurred in the Sunsari(?) District, south-eastern Nepal last year. The ADRC received an emergency request from the Survey Department in Nepal and emergency observation was implemented.

After emergency requests, satellite image data was distributed to the Survey Department in six days through the Sentinel-Asia website. This map was processed by the Survey Department in Nepal based on the current(?) image distributed through the Sentinel-Asia.

The map was distributed from the Survey Department to the Prime Minister's Office, National Planning Commission, Nepal Police, Ministry of Home Affairs, Ministry of Land Reform and Management, and the Red Cross.

And as an example of the utilization, the Ministry of Home Affairs of Nepal utilized for the victims rescues a restoration plan of the disaster area and supply of subsidy to victims.

This is good practice for the utilization of satellite data, I think now. We will utilize just as a result of the survey for good utilization of satellite data in the future.

Now the ADRC implements some projects about the utilization of satellite data. Emergency observation through Sentinel-Asia will be continued. A capacity-building project, ADRC implementing the project of the satellite imagery application of disaster reduction by Japan ASEAN(?) (Asian?) Integration Fund.

This project is implemented under the cooperation of the Asian Institute of Technology, AIT Thailand(?). And the ADRC is making an Action Plan now for GLOF. This Plan includes a hazard map and early warning system in the mountains using satellite technology.

The ADRC would like to serve as the Regional Support Office based on those activities and experiences on the application of satellite technology to disaster reduction. Thank you very much for your attention.

**The CHAIRMAN** (*interpretation from Spanish*): I would like to thank Mr. Yamaguchi for his presentation on promoting disaster reduction through the multi-national cooperation of the Asia region. I do not know if he is listening to me. I was saying that this is a regional cooperation case that is very encouraging in dealing with an issue that is a very serious one, not just for that region but for many other regions in the world. The Sentinel-Asia Programme is one that I think we can learn a lot from. Thank you very much for that presentation Sir.

I would now like to invite our friend, Mr. Schweickart from the Space Explorers Association to talk to us about asteroid threats. They call for a global response. You have the floor Sir.

**Mr. R. SCHWEICKART** (Association for Space Explorers): Thank you Mr. Chairman, honoured delegates, I am Rusty Schweickart, the Chairman of the Association of Space Explorers Committee on Near-Earth Objects, and I am reporting to you today on the work that we have done and the document and efforts which have now been submitted to COPUOS and which will be on the COPUOS agenda for the next several years. The document itself which was provided to all members this morning in your boxes is shown on the screen here, Asteroid Threats: A Call for Global Response. The document is a decision document, a decision programme, developed by the Association of

Space Explorers and an International Panel on Asteroid Threat Mitigation which we formed to gain the broad experience of people from around the world and informed in diplomacy and space law, as well as science and disaster management, in pulling together a proposed decision programme for the international community when confronting the issue of the threat of asteroid impacts. This report was finalized in 2008 and presented to Action Team 14 of COPUOS and was earlier presented this year in the Scientific and Technical Subcommittee in February.

The report was developed by our Association of Space Explorers Neo-Committee, on the left, it is bit hard to see but let me just tell you we have astronauts and cosmonauts on the Committee from five different nations. On the right before you is the list of the members of our Panel on Asteroid Threat Mitigation that include many people with whom you are familiar, for example, at the top of the list is Ade Abiodun, also Roger-Maurice Bonnet, who is a Chairman of COPUOS, I mean, excuse me, of COSPAR, of Sergio Camacho, whom all of you know, Peter Jankowitsch, and on down the list, Walther Lichem and others with whom you are familiar with. These are experts who work with us over a period of two years in a series of four workshops. These people are from a total of 11 different nations and in this series of workshops which began in April 2007 in France, then again in September in Romania, April again in Costa Rica in 2008 and we finished our work last year in September of 2008 in San Francisco. And again, if you had a chance to have a look at the pictures you would recognize many people.

Following our Workshop in Costa Rica, astronaut Franklyn Chang-Diaz of Costa Rica and I briefed President Oscar Arias on the findings of our Workshop. This was of considerable interest as you will see in a few moments because of the track of the potential risk corridor of the Asteroid Apophis crosses the northern border of Costa Rica. Briefings were held after our report was completed here at the United Nations last November for member States and in addition Ambassador Peter Jankowitsch and Walther Lichem and I, as well as cosmonaut Dorin Prunariu, with whom you are all familiar, briefed the President of the General Assembly, His Excellency Miguel d'Escoto Brockmann. That was last October in New York.

The key recommendations within our report, and I am going to leave the details of this for your reading in the document which was provided, but the key recommendations were a set of functional responsibilities when dealing with asteroid threats

which need to be addressed. And we see those functional responsibilities breaking into two primary blocks on the bottom. On the left is an information analysis and warning network. In some sense, this is an equivalent to the IPCC in a climate work, that is it is principally information which is being analyzed to understand limits, thresholds being passed, actions which would be appropriate to be taken, etc.

On the bottom right are a collection essentially of the space agencies with perhaps other participants as well, that is a mission planning and operations. If we are going to end up deflecting an asteroid at some point, clearly it will be the space-faring nations at that time who would collectively handle that responsibility.

Sitting above those two very key groups who are action-oriented is an oversight. Those two groups may not include representatives from all member States or all member nations in the world and yet their actions are to, on behalf of the entire international community. And so the mission authorization and oversight group in the middle block is that oversight function which would represent all member nations, in fact, all members of the international community in establishing criteria or decisions to take action. And ultimately if one is either going to be deflecting an asteroid away from an impact with the Earth or, for that matter, dealing with an interface with the disaster management world by issuing a warning to evacuate a major portion of a nation or a city, that kind of action would ultimately be sanctioned by the United Nations Security Council on the top.

Now I leave again, as I say, the details of this for your reading in the report itself. In addition to the report which you have already received, there is, I believe, on the back table here on the side a Summary Report that I have written a bit more readable than the formal report which is available for your reference.

Now at this point, rather than going into further detail of the document, what I would like to do is illustrate the need for action in this area of NEO threats. And to do that, I will give three examples which are relevant today from the real world.

The first occurred last 6 and 7 October when a near-Earth object, luckily a very small near-Earth object, was detected in space on a collision course with the Earth. In the 19 hours prior to the actual impact, 28 telescopes from around the world were brought to bear on this object and a total of 500 separate observations were made, were all fed into the Minor Planet Centre which processed the data and sent out information. It

was handled by the NEODYs System in Pisa, Italy, and by the Sentry Analysis System of the Jet Propulsion Lab in the United States. A forecast was made of the precise point where that impact would occur and what time it would occur and the next morning, this is a map showing from the very upper left, it is a bit obscure, that red line from the upper left to the right is the path of the asteroid as it impacted in the northern Sudan. The next morning, this was the result in a pre-dawn photograph of the trail left by the asteroid as it disintegrated at about 120,000 feet, 37,000 metres, in the upper atmosphere. Subsequently, or subsequent to that, an astronomer from the United States and a Professor of Physics from the University of Khartoum and his students trekked across the desert along the path underneath and discovered pieces of that asteroid that had disintegrated in the upper atmosphere.

Now this is an interesting example but luckily the asteroid was only two to three metres in diameter. Had this asteroid been instead on the order of 30 metres in diameter, it would have triggered a formal warning, or should have triggered a formal warning and an evacuation depending upon where it might have impacted, and yet today there is no such group which is authorized or sanctioned either in any nation or in the international community as a whole to issue such warnings. And that is the function of that lower left group, the Information Analysis and Warning Network that we identified.

The second example is the familiar case of Apophis, an asteroid discovered in 2004, but which is today headed for a close encounter with the Earth in April of 2029 at which point it will come closer to the Earth and our own geostationary orbit and the white line in the upper left of that diagram just inside the geostationary orbit illustrates the uncertainty region where that asteroid will pass. Now a blow-up of that is now in the upper left. The uncertainty represented by the length of that white line, however, within that white uncertainty region is a much smaller region called a keyhole. This is the 7:6 keyhole if the asteroid Apophis in 2029 on Friday, 13 April, of course, passes through that keyhole, that narrow 600 metre region, it will return seven years later and impact the Earth on again, 13 April 2036. That is not a Friday but it is Easter Sunday. This is not a gift from the Easter Bunny but it is a real threat. In this particular instance, if you look at this from the perspective of riding on the asteroid heading towards the Earth, you may go to the left of the Earth, you may hit the Earth, you may go somewhere to the right of the Earth, that plane represented here extends a great distance now, given the information we have. However, if you are riding the asteroid in 2036 and it has already gone through the

keyhole back in 2029, you will hit along that red line, shown in this Google image of the Earth, that is called the risk corridor, it is a plane cutting through the Earth and the asteroid would hit somewhere along that red line. That risk corridor is shown here in a more conventional map. Again, this is now, given the best tracking information we have, a one in 45,000 chance that this will occur. As our tracking continues, those odds will change and in all likelihood they will go to zero and there will be no chance of this impact but there is that slight possibility that, in fact, with further tracking, the probability will go up and ultimately reach one and that is why we are doing this.

Now in this second example, we have the opportunity to deflect this asteroid away from the keyhole if, in fact, it is headed towards it and we have two more viewing opportunities in 2012 to 2013 and in 2021 and 2022 to get better data on whether or not this asteroid is headed for the keyhole. If it does not go through the keyhole, it will not hit the Earth and, therefore, the simple tasks that we have, if it appears to be headed for the keyhole, is to make a small deflection so that it misses that 600 metre keyhole. We have a good bit of time to do this. So that is the second example.

The third example, however, is very current. This is an asteroid which was only discovered a bit over two weeks ago. This is 2009 KK. It is exactly the same size as Apophis, 270 metres in diameter. It is today in the larger ecliptic orbit that you can see there. It is the blue dot on the left hand side, trailing behind the Earth as we both go around the Sun. In the upper right now I have blown up that geometry and you can see that the asteroid is something like two tenths of an astronomical unit behind the Earth at the moment. However, all you have to do is picture the next month or so with the Earth moving over towards the right and the asteroid passing through the Earth's orbit and down below the Earth's orbit. The bright blue is above the Earth, the ecliptic plane and the darker blue in the asteroid's orbit is below the ecliptic plane.

The Earth is at the current time gently pulling on this asteroid and increasing its orbital period. It is putting it into a slightly larger orbit and approaching the 13:7 keyhole. If, in fact, the Earth pulls on this asteroid at exactly the right amount within the next two weeks, that asteroid will, on 18 June in another two weeks, pass through the 13:7 keyhole which means it would return in 2022, 13 years downstream, and impact the Earth. In this instance, we have no opportunity to cause it to miss the keyhole. It is now flirting with that keyhole within the next couple of

weeks. Whether it passes through or not, remains to be seen.

If I look at the datasets that have come down, I am just running through these, but this is beginning a couple of weeks ago when we first discovered that the probability of impact was one in 34,000. With further tracking, it went through this progression of one in 31,000, one in 32,000, one in 22,000, one in 27,000, one in 28 and today the probability of impact has increased to one in 10,000. Now again, in all likelihood, with further tracking, the probability of impact will again drop to zero. That is 9,999 chances out of 10,000 that that will be the case. However, we will not know whether this asteroid, in fact, goes through this keyhole until later this year. If it does, we are dealing with a very different situation because now the asteroid is headed directly for the Earth and our options would be to deflect it, a large deflection required, or to take the hit and evacuate. The question, of course, is, do we have the capability to deflect it? And again, the missing, so far, Information Analysis and Warning Network are the group of people who would be making this kind of analysis for us and advising the nations of the world what the situation is and informing the mission planning and operations space-faring nations of what the situation was.

I am giving you a very informal and approximate assessment here when I tell you, if I look at the Apophis requirements, and this is, again, the same size as Apophis, my own personal conclusion is that, in fact, we do not have the capability if it passes through the keyhole to deflect this asteroid from an impact using a kinetic impulse, a kinetic impact. That would leave us the options of using a nuclear pulse, which is obviously not desirable but maybe the only alternative to taking a hit and evacuating a large portion of a city or a country.

So this is the kind of analysis that is necessary and that we are recommending in responding, the international community responding to asteroid threats. Now even though impacts *per se* occur very infrequently, these kind of situations that I have just outlined have all occurred within the last three to four years. And as we improve our telescopes and begin finding the more numerous smaller ones, we are going to have this same kind of situation arising at a much higher frequency and we need to have resources put to understanding this situation and advising the world community on options and on taking action.

I want to, if you will bear with me for just a moment, I would like to read from this statement in the document which I have stated, hopefully is on the back

table here, if I can find it, Excuse me one moment, my computer is hanging up. I will tell you what, we will provide this to you and you can read it then at your leisure. Here it comes. I am gradually getting it up on my computer. I apologize for Mr. Gates interfering with this presentation. I think I will just let it go. But this is the penultimate, let me just refer to it, this is the penultimate paragraph in the separate document on the back table which I recommend to your reading. In essence, what it says is that it is problematic whether the international community, in fact, given the unprecedented nature of this challenge, is going to comfortably rise to the occasion. This is a very serious challenge and it will be a real challenge to this body to lead the international community in a responsible set of actions.

At this point, I would like to conclude my presentation and simply mention that if you wish an additional copy of the report that was provided, it is on the Association of Space Explores website and you can print it out from there. Thank you very much Mr. Chairman.

**The CHAIRMAN** (*interpretation from Spanish*): Indeed, thank you very much Rusty, Chairman of the Group that has been working very closely on an analysis of this urgent question. I am sure there are a lot of questions in the room. I am sure there is a lot of interest and that is why I am grateful for the offer he has made that this presentation is available to all members of the Committee.

The theme of the inexistence of a platform to react here is, of course, of concern to the international community and I am sure that these responses will be taken more and more account of in that sense.

Before I give the floor for questions, we do have two technical presentations that remain. One is from Mr. Shivakumar which is a report relative to a very interesting programme which is the Chandrayaan-1 scientific mission, and we have another one we want to have presented here, it is Ambassador Choi, the Secretary-General of the International Astronautic Congress(?) Administration(?) which is to be followed a Reception. We need to conclude before 6.00 p.m. so let me give the floor without any further ado to my friend, the Ambassador Walther Lichem from Austria.

**Mr. W. LICHEM** (Austria): A very brief question. Now this new case which, in fact, when we met as a panel was known to us, KK 2009. What is the response? Which countries will be motivated to do something and why do we not yet know the risk

corridor? And, I am sorry, who has failed to tell us what the risk corridor is? Thank you.

**The CHAIRMAN** (*interpretation from Spanish*): Let me just say that concerning this, is going to be examined.

**Mr. R. SCHWEIKART** (Association of Space Explorers): Mr. Chairman, would you like a brief response? OK.

Ambassador Lichem, it is, of course, an excellent question. Let me say that there is no entity in the United States or in Italy or in the rest of the world which has the responsibility for determining the risk corridor. The risk corridor for Apophis, with which you are familiar, was developed by the B612 Foundation to give people an idea of the nature of an asteroid impact in terms of who would be put at risk and the way in which, geometrically, or geographically, that risk is distributed. However, the B612 Foundation is a non-profit corporation in the United States and it paid, it contracted independently to have that accurately computed in the case of Apophis. At the current time, no such contract has been issued nor has any government agency or analytic group such as NEODyS, made such a calculation for 2009 KK. Nevertheless, your question is very relevant because attention is focused, shall we say, when one understands the nature of the threat as a personal issue. And so it is certainly something which this Organization, it seems to me, with an awareness of the NEO threat, might justifiably request of those who could provide it. I think it is extremely useful information and illustrates the true nature of the threat we are dealing with. Thank you.

**The CHAIRMAN** (*interpretation from Spanish*): Thank you very much and thank you very much for being brief and to the point. Rusty, thank you.

Now we have the other two presentations. First of all, Mr. Shivakumar speaking about the Chandrayaan-1 mission. And let me ask him to make a special effort to kind of summarize, I am sorry to ask you this, but so we have time for Ambassador Choi for the final one as well. Thank you.

**Mr. S. K. SHIVAKUMAR** (India): Good evening to all of you, Mr. Chairman and distinguished delegates of the UNCOPUOS Programme fifty-second session. I have the great pleasure of presenting to you all about the Chandrayaan-1 mission in that India's maiden mission to the Moon.

Let me take you through what are the activities that we have conducted by ISRO while handling the Chandrayaan-1 mission.

In our national language, "Chandrayaan" stands for the vehicle to the Moon. So that is the name that we chose as Chandrayaan, "Chandra" stands for "Moon" and "rayaan" stands for the vehicle or the carrier.

Now the unmanned mission of India, the studies began in 1999 and culminated in declaring it the project and we started with the lunar orbiter and an impactor to attach to the lunar orbiter and both of them got to the Moon and performed the science experiments.

The Chandrayaan spacecraft was launched on 22 October 2008. The vehicle chosen was the well-proven PSLV-C11 and it was launched from the Satish Dhawan Space Centre, ISRO, that is the space port of India.

When we started thinking about the Chandrayaan mission, we set the goals like this: expand the scientific knowledge about the Moon, upgrade India's technological capabilities, provide training opportunities for planetary research, achieve high-resolution remote sensing of the Moon, preparation of a three-dimensional atlas of the lunar surface, and also chemical mapping of the lunar surface.

Most of the technologies which are already proven like in terms of flying our own cameras on board Chandrayaan and also our own launch vehicle which is already well-proven as world class. These were the considerations when we said that we would use the heritage which is available already for ISRO.

I will just take you through some of these photographs and clippings of different phases of the Moon mission.

This is the preparation of the Chandrayaan spacecraft. You are already seeing an almost near(?) integrated spacecraft at the ISRO Satellite Centre in Bangalore.

This one is a special one. We call it the Moon Impact Probe and this was an attachment to the Mother Ship, that is the Chandrayaan imager spacecraft, that is the orbiter, and the Moon Impact Probe which was having three experiments to do before it really hit the Moon surface, was attached to the mother vehicle and you are seeing the photograph already of this Moon



Impact Probe. This was made at the \_\_\_\_\_(?) Space Centre at \_\_\_\_\_(?) and it housed three experiments.

This is another view of the satellite while it was handled at Bangalore.

There are two sense of international cooperation. The Chandrayaan mission contained five experiments from Indian space centres and laboratories and six experiments from the international centres and laboratories. This was accomplished through a set of an announcement of opportunity by ISRO and the responses obtained from the different laboratories were evaluated and we made a conglomeration of a mixture of 11 experiments on board Chandrayaan and this how a truly national mission became an international mission with almost everybody who matters in science research pitching in with these experiments.

This is a closer view of the Moon Impact Probe. It has three experiments and this is the Terrain Mapping Camera which provided the stereoring(?) (terrain?) capability for after \_\_\_\_\_(?) three cameras included in one and we got terrain(?) pictures from the Terrain Mapping Camera.

The Hyper Spectral Imager has 64 bands multi-spectral durability(?) and that was a complement to the black and white camera that we had for terrain mapping instrument.

Then there is the Moon Mineralogy Mapper provided by our colleagues from NASA. The Lunar Laser Ranging Instrument built in India, and this is the one for mapping the Moon surface. The Chandrayaan-1 Imaging X-Ray Spectrometer, this is an experiment just included. The Sub keV Atom Reflecting Analyzer from Sweden and India, Japan, all of its laboratories which made this instrument. The High-Energy X-Ray Spectrometer made in India and that is the one just flown on board Chandrayaan. The Miniature Synthetic Aperture Radar provided by NASA is the one which you are seeing here. The Radiation Dosage Monitor and I show you those things. The Radiation Dosage Monitor and the Infrared Spectrometer provided by Germany and Bulgaria. They are the ones which you see there.

Ultimately the satellite(?) was integrated. This is how it looked like with all experiments accommodated within a small volume and the massive spacecraft at lift-off was 1,380 kilograms, 1.38 tons.

And the mainframe systems were provided by ISRO, by propellant system for taking the satellite

from Earth transfer orbit to the Moon's orbit and the rest of the sensors controls the systems, the communications systems, powers the \_\_\_\_\_(?), everything else was built by ISRO Centres spread over the country.

Another one which we need on the ground is the Deep Space Network Antenna, \_\_\_\_\_ (*not clear*). This was designed, developed and fabricated within the country that provided the gateway to deep space for India.

At the newly-built campus, we put a 32 metre antenna and an 18 metre as back-up and that is how the Chandrayaan mission preparations are made with these two antennas for \_\_\_\_\_(?) track and command operations and also science reception from Chandrayaan.

The Science Data Centre was especially built for archiving, for processing, archiving, retrieving and distributing the data was realized at Bangalore.

This is a view of the DAC(?) Centre, our storage systems, the network systems and the server systems at Bangalore.

And the Space Control Centre also located in Bangalore housed the facilities for the mission, an analysis team, the mission control team and the flight \_\_\_\_\_(?) team and the conference room that you are seeing there, all of them are housed in the same campus.

The Space Port, actually it is in Sriharikota, north of Chennai, is one which is the launch site of the Chandrayaan mission, the PSLV-C11 is what you are seeing on the launch pad.

And the launch occurred at 6.22 a.m., that is early morning of Indian time, and this is how one view is caught with the launcher sitting on the launch pad.

This is a view of the lift-off on 22 October at 6.22 a.m.

And this is how the whole mission evolved. We went through a series of manoeuvres from the Earth Transfer Orbit and we took it through different apogees. Ultimately, at the set point, when the Moon and the subject matter on 8 November, we broke the velocity and then ultimately we capture by the Moon's gravity and that is how we started the lunar orbit at 500 kilometres by 7,400 kilometres \_\_\_\_\_ (*not clear*) in distances. Later on we circulated the orbit to 100 kilometres going from Pole to Pole. That was

ultimately the mission in orbit that we wanted and this is how we achieved it. We set up complicated manoeuvres, well-timed and perfectly executed.

And on the way to the Moon when we going on 29 October, we took pictures of Earth with the Terrain Mapping Camera using the Lunar Transfer Trajectory, we took some pictures and by rotating the spacecraft and then making it look at Earth. These are another view of what we got at 7,000 kilometres from Earth.

Lunar Orbit Insertion, as I explained, occurred on 8 November 2008 and the Moon Impact Probe, after circulating orbit at 100 kilometres altitude above the Moon's surface, the very day we released the Moon Impact Probe and that landed on the Moon surface and we had painted the sides of the Moon Impact Probe with the Indian tricolour flag and that really create a good sense of satisfaction and jubilation within the country when the Indian tricolour landed on the Moon's surface.

These are the Ground Track that we took and the primary meridian(?) was required and we were able to get the signal to the Mother Ship by the following objects, that is the descending objects, and that data was collected and this is how the Ground Track looked like where the Moon Impact Probe is concerned.

It is supposed to go and hit(?) near the Lunar South Pole. We exactly landed where we wanted, 89.9 degrees for the latitude and 39.3 degrees West for the longitude.

And these are the pictures when descending, the Moon Impact Probe had an imaging sensor built into that. These are the pictures which we obtained from the Moon Impact Probe's imaging sensor.

This is data that we got from the spectrometer that was available on the Moon Impact Probe.

And the finer aspects could be studied and these are ultimately we zeroed on to exactly where the Moon Impact Probe landed and that its coordinates had been determined.

So this are different frames of images that we got from the Moon Impact Probe. About 3,100 frames have been obtained.

These are the images which we got from the Terrain Mapping Camera and both far side, near side and the far side of the Moon have been imaged quite

well by the TMC, the Terrain Mapping Camera, and you will see some of those pictures here.

With that, of course, the stereoing(?) capability and also the fly-through capability have been demonstrated and \_\_\_\_\_ (*not clear*) on what we could get, we have been able to put it on a fly-through.

And, of course, the interpretation has been going on. The data analyses are currently one and we should get analyses for those as soon as possible.

Anaglyphs have been prepared and this is what it is and the hyper-spectral image is operated along with the Terrain Mapping Camera always and this is the data that we have obtained from the hyper-spectral imagers.

So 64 bands data is available. Every time we make an orbit with the Terrain Mapping Camera, we get this data from the hyper-spectral imager.

These are the ones that we did on 25 March when the opportune moment came. We turned the satellite towards Earth and this is the one that you got with the 100 kilometre by 100 kilometre. This is how the Earth looked like at 6.13 UTC.

Then the Radiation Dosage Monitor has been providing data continuously, all through the launch phase and towards the Moon as it started travelling, they switched on this experiment and we have been getting data continuously from this experiment.

One is SARA, it is a payload that which is an energetic neutral analyzer, solar wind monitor and digital processing unit. These are really another set of experiments which have been conducted by scientists from these four countries and they have been given good data for us with the Sub-keV Reflecting Analyser.

These are the initial findings there but a detailed analysis experiments are going through and trying to find out anything new which they could find out from these events that they have got.

The Moon Mineralogy Mapper has been giving continuous data for us and this is how it looks like on different spectral bands imaging has been going on regularly.

And the 3-D Moon Imaging. This is what we have brought to date and the initial results from the Moon Mineralogy Mapper.

And if you look at the coverage, you can see that we intended to have Pole coverage and \_\_\_\_\_(?) region coverage. We have spent about six months of switching on these experiments and this is the latest coverage diagram for the Moon Mineralogy Mapper.

And the LLRI, the Lunar Laser Ranging Instrument has provided different terrain mapping as possible to the laser ranging. This is how the topography looks like.

So it has led to a study of various craters and the surface of the Moon. These are lunar spectrum under the XS Spectrometer. These are some of the events which have been caught and during one of those high activity days, they were able to get some of this data.

The Mini-SAR, the Miniature Synthetic Aperture Radar, has mapped most of the Pole regions of the Moon. One season has been completed and we are waiting for the second season.

This indicates the Mini-SAR coverage so you can see that most of the polar regions have been covered, especially the North Pole is small covered, the South Pole a small bank is there which we hope to complete it in the second season for the image.

This is what it is, by and large. The mission has been on the full successful part. People are getting science data now and we have been continuously operating a spacecraft from Bangalore, that is the Deep Space Network of India, and also complemented by the Ground Station at Maryland, APL Maryland, it is a \_\_\_\_\_(?) of the Johns Hopkins University, SAR Fellows(?) from Bangalore and Fellows from the United States Ground Station is providing the data continuously for us. And we did use many ground stations of member countries, from UNCOUOS and also independently from different agencies and we thank each one of them for having supporting the Chandrayaan mission and tracking operations which was used in the post-launch phase of the mission.

That is it, Mr. Chairman, with this I have concluded my presentation. Thank you very much.

**The CHAIRMAN** (*interpretation from Spanish*): Thank you very much Sir and also for the speed with which you went at that extremely interesting presentation. We would appreciate having a copy, I think, that we could have distributed and you would be able to answer questions.

Let me just say that the interpretation team has graciously given us an extension for 15 minutes so that we can finalize our programme today. After that 15 minutes, we will continue in English, if necessary. I hope it will not be necessary. This is why I want forthwith to give the floor to Ambassador Heung-Sik Choi to talk to us about the International Astronautical Congress 2009. You have the floor Mr. Ambassador.

**Mr. H.-S. CHOI** (Republic of Korea): Mr. Chairman, distinguished delegates, I am Heung-Sik Choi, Secretary-General of the Local Organizing Committee for the Sixtieth International Astronautical Congress in Daejeon, Republic of Korea. It is a great honour to have this chance to brief you on the Congress.

This is the contents of today's presentation.

From now on, I would like to start with an overview of the Congress.

The Sixtieth IAC is going to be held from 12 to 16 this coming October in Daejeon, Republic of Korea, whose theme focus is on "Space for Sustainable Peace and Progress". As a big Congress, the IAF Workshop as \_\_\_\_\_(?) from 8 to 11 will be respectively opened.

This Congress is co-hosted by the Ministry of Education, Science and Technology, Daejeon Metropolitan City, IAF and is also organized by the Local Organizing Committee which consists of the Daejeon City and the Korean Aerospace Institute.

This picture shows the main venue of the IAC 2009 also various places including the DCC and the Kotrex will be used for conferences, exhibitions and social events and space festivals.

For IAC 2009, Daejeon is being supported by the Central and Local Government including the Ministry of Foreign Affairs and Trade, the Ministry of Knowledge, etc., as well as the Korean Society for Aeronautical Space Sciences, Space Sciences in Korean Astronomy, Space Science Institute and other businesses and character agencies.

The IAC is organized for the success for hosting a successful hosting of the Sixtieth IAC. \_\_\_\_\_(?) Dejong(?), CDN President of the Korea Aerospace Research Institute serves as a co-Chair. In particular, we are proud to have the Prime Minister of Korea's Honorary Chair. As also including a Advisory Committee and Project Managing Committee consists of three departments and eight teams.

I will explain on conferences. This is the outline, as you see, with the different themes of each day, the technical programmes will take place in the DCC in a \_\_\_\_\_(?) (*not clear*) for five days.

The Conference Programme is comprised of planned events, highlight lecture, technical session, late breaking news. Also the IAF Workshop, IAF Academic Day will be held in conjunction with the IAC.

The UN/IAF Workshop will be held at KARI from 9 to 11 October and participated by more than 100 policy-makers and experts from local foreign countries. The Programme is mainly composed of opening ceremony, keynote addresses, technical sessions and reception. Consider the importance of climate change as a global issue, the theme focused on "Integrated Space Technology Application: Prevention of Natural Disasters".

The total number of 2,128 abstracts were submitted as it reflected the reputation of the Congress. A total number of 1,585 abstracts were selected from all around the world, including 215 abstracts from the United States, 182 from China, 161 from the Republic of Korea, etc. Papers will be presented in five categories which are divided into 150 sessions.

As for registration, an online registration system has opened on 29 April.

Let me know mention IAC 2009 Daejeon Space Exhibition. It is composed of an exhibition overview, exhibition site plan and a themed exhibition hall. The IAC 2009 Daejeon Space Exhibition will be held at Kotrex for five days from 12 to 16 October 2009. The first two days will be opened for all IAC participants while the remaining three days will be opened for the general public designated as Public Days.

This is an overview of the entire exhibition site. The first exhibition hall is existing in the pavilion of Kotrex, while the second and third are in outer pavilions made of TSF-10s (tents?). The Food Court in the back will be made of a lower(?) tent.

The next is the floor plan of the entire Exhibition Centre. The three exhibition halls will be used as different themed halls, namely Aerospace Technology, Aerospace Cluster and WTA Daejeon High-Tech Zone. The exhibition halls will be composed of 3,096 square metres paid exhibition area

and 1,017 square metres service area, 4,087 metres of pass of flow.

During the IAC Exhibition, we are planning to establish a hall called "IAC 2009 Themed Exhibition Hall" in order to celebrate the sixtieth anniversary of the IAC as well as the fortieth anniversary of the Moon Landing.

This slide represents the layout of the Hall. We have the IAC Zone, KARI Zone, Daejeon Zone and Lunar Landing Zone. The IAC Zone and KARI Zone display graphic panels about IAC activities and foras related to the historical Moon Landing. IAC-related exhibition items will be later through discussions with the IAF.

Let us move on to the social event category. Here we have the table contents. These are the social events in a nutshell. We have 11 cultural events in total. And six official five(?) social events from 9 through 16 October. I will give you the details of each programme later.

Let me talk the main locations. Although the six officials events, the opening and closing ceremonies will be held at the DCC. The welcome reception will be the Hanbit Tower Square and we have the Daejeon Culture and Arts Centre Square and Arts Zone for the international cultural nights. And for night will be the Expo Bridge and the Gala Dinner at the Uamsajeok Park, a Korean historic park.

Among the five social events, the UN/IAF Welcome Reception will be held on the Grass Square of the KARI. We are going to have a UN/IAF Dinner in the Hotel Spapia, an IAA Dinner in the Riviera Hotel, an IISL Dinner in the Daejeon Museum of Art. Also we will host a student party in the Expo Convention Hall.

Next, the Opening Ceremony will be held at the Multi-Purpose Hall of the Daejeon Convention Centre for about 50 minutes starting from 10.00 a.m. on 12 October. We will invite about 3,000 people, including VIPs, guests from home and abroad, Congress-related personnel, with \_\_\_\_\_(?) and general public. Simultaneous interpretation will be provided in Korean, English, German, French, Russian and Spanish.

The Welcome Reception will invite about 3,000 IAC participants to start about 7.30 p.m. on 12 October. The venue will be the Square of the Hanbit Tower of Daejeon. Participants will be able to enjoy performances and dinner. Traditional dance and choir

performances are prepared for the declaration of the theme of Space City.

The Culture and Arts Centre will be the ideal venue for the International Culture Night where the performers around the world will introduce their unique culture. And the Fun Night, we will have the most exciting moments with a variety of traditional experience programmes, including testing traditional drinks and wine wearing traditional clothes.

We are especially preparing the Gala Dinner here at Uamsajeok Park which houses the seventeenth century Korean building and gardens. I hope all participants can enjoy a wonderful dinner in harmony with the Korean traditional culture. Most of all, this experience will be the final touch to the most eventful and fantastic week of your life.

The Congress has four special programmes for the first time. First is the International Aerospace Cluster Forum. This is the first programme of its kind in the IAC aiming to gather aerospace clusters around the world which will be opened at the second exhibition hall on 15 October. This Forum will act as a catalyst for B2B(?) to be meeting and industry conclave.

Second is the Parliamentarian Meeting. This is to share information and current plans, social space activities among leading players which will take place at the Spapia Hotel on 11 to 12 October. Around 60 parliamentarians from around the world will discuss the status of climate change as prevention using space technology.

The next special programme is the Aerospace University Presidents Forum.

Finally, we are also planning a Space Festival with current events and space experience for the general public at the Expo Science Park and Caption(?) River Front which will be opened from 9 to 25 October.

Let us talk about hospitality. Three major airports, Incheon, Gimpo and Cheongju International Airports connect this to Daejeon where a pick-up service is available to and from the airports and general participants can use the complimentary shuttles operating every hour.

This is the transportation plan during the IAC Congress that the service from the Conference venue to the hotels will be offered every 15 or 30 minutes. Even during pre-meeting sessions of SGC, the UN/IAF and

the IAA, the service will continue to ensure that attendants can arrive in time for conferences.

When it comes to accommodation, 1,641 hotel rooms in the Training Institution and Home Stays for students and YPPs will be arranged. Good hotels from top and third class are available and various rates ranging from 60 to 160 Euros per night. We have many low-priced hotel rooms ranging from 35 to 65 Euros per night.

Technical tours have been arranged. Congress participants can where Korea's STI technology stands now in Korea's IT home. They can enjoy complimentary Daedeok R&D(?) District Tour on a first come, first served basis. And a site visit programme will be prepared so that conference attendants, their family, friends alike can enjoy the tour.

Site \_\_\_\_\_(?) programmes in Daejeon. Even Japan and China have arranged as pre- and post tours. The tourist destination of Korea includes Seoul, Jeju Island, Mount Gideon where visitors can enjoy a tapas tea(?) and Mount Sarrap(?) and enjoy beautiful scenery in autumn.

For the accompanying persons, a total of six to 12 programmes will be operated including Korea's traditional culture in ceramic-making in an art village in Daejeon and its suburbs.

Now let me introduce Korea and Daejeon as a metropolitan city. Korea is a dynamic country where old meets new and centuries-old heritage co-exists with the cutting-edge technology.

Daejeon is the fifth largest city in the Republic of Korea. The planned population which is as high as 1.5 million people. The \_\_\_\_\_(?) policy is Korea's biggest site government and private investment research institutes and companies(?). This is why it is dubbed as Korea's Silicon Valley.

Daejeon will be remembered as one of the convenient locations to visit, located at the heart of the nation. Daejeon is only 50 minutes to two hours from three domestic and international airports.

In conclusion, I would like to stress why member States and international organizations can provide a strong support for this Congress.

First, the IAC in Daejeon will be the very first springboard for member States and international

organizations to exchange information on cutting-edge space technology and identify the space markets.

Second, there is a globally-noticed issue, climate change is one of the main themes of the IAC 2009. The natural disasters caused by climate change have been a great threat to the safety of the world. Through active discussions we will seek ways to cope with climate change.

Third, as a meeting ground for global space agencies and companies, the IAC will offer you the chances to make new foreign business and research partners.

You can be an active supporter of the Congress in various ways. First, we ask member States and international organizations to participate in the technical sessions of the Congress and the UN/IAF Workshop.

I sincerely ask you to partake in the Space Exhibition since the IAC Exhibition will serve as a grand opportunity for space-related companies to build networks with the Korea's ITB(?) companies. Our pioneering technology has been recognized worldwide. About 1,000 official Expo, space agencies, industries attend this event.

Before wrapping up, I would like to emphasize that the IAC 2009, Daejeon, will be the best most productive event as ever before. The strong support for the Korean Government and people and give your contribution to the IAC 2009 will be the most memorable event in the space history. We look forward to seeing all of you in Daejeon this October. Thank you very much.

**The CHAIRMAN** (*interpretation from Spanish*): Thank you very much Mr. Ambassador. I wonder if you would have better possibility for your successful Convention or Congress after having made this presentation here. I think that if we look around and we see how closely this was followed, how much attention and interest there is in this, I think it is going to be a great boost to that undertaking. Thank you very much to you, and through you, to the Government of Korea for the excellent presentation Mr. Ambassador. Thank you very much. We are very enthusiastic.

Distinguished delegates, in just a few moments we are going to close today's session. So let me first, however, inform delegates that tomorrow morning we will meet at 10.00 a.m. sharp. We will then continue and conclude item 4, General Exchange of Views, and afterwards we will begin item 5, Ways

and Means of Maintaining Outer Space for Peaceful Purpose, item 6, Implementation of the Recommendations of UNISPACE III, and item 7, Report of the Scientific and Technical Subcommittee on its Forty-Sixth Session. And we will begin item 8, the Report of the Legal Subcommittee on its Forty-Eighth Session.

Following the Plenary, we will have three reports. One from Takemi Chiku from Japan on "Developing Peace Among Young People Through the Use of Space". Then Sergio Camacho will be speaking to us about the report on progress made in the Regional Training Centre for Space Science and Technology. And then Joseph Akinyede from Nigeria, on "Report of Progress Achieved in the African Regional Centre for Training" as well. This time an English-speaking institution.

At 1.30 p.m. there will be a video shown by the United States entitled "For All Mankind: The Story of Apollo 11".

If there are no further questions, I would now invite you all to the reception being hosted within a few minutes in the VIC Restaurant. The International Astronautical Federation and the Organizing Committee of the 2009 Conference.

Let me thank the interpreters for their kind gesture.

The meeting is adjourned.

*The meeting closed at 6.18 p.m.*