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Committee on the Peaceful Uses of Outer Space

Unedited transcript

604th Meeting
Monday, 8 June 2009, 3 p.m.
Vienna

Chairman: Mr. Ciro Arévalo Yepes (Colombia)

The meeting was called to order at 3.10 p.m.

The CHAIRMAN *(interpretation from Spanish)*: Good afternoon ladies and gentlemen, distinguished delegates, I would like to call to order this session of the Committee of the United Nations on the Peaceful Uses of Outer Space.

We would like to resume the item 4 debate, General Exchange of Views, and we have a request from Saudi Arabia which is to speak under that item and then we will revert to item 5 because there we have had a request from Venezuela which is to speak under 5. Then we will continue item 6 and hope to indeed conclude on that. Then we will continue with item 6, Implementation of the Recommendations of UNISPACE III, and then go on to the following items, 7 and 8. That latter is the report of the Scientific and Technical Subcommittee, and then item 9, Spin-Off Benefits. And then if we have time, we could start item 12 as well as item 13.

Now once we conclude with the Plenary session, *per se*, this afternoon we are going to be having three technical presentations. The first of these will be delivered by Argentina and that will be entitled "International Charter Space and Major Disasters". The second presentation will be by the Earth Observation Group which will be speaking to us about technologies to be used for climate control. And the third presentation will be from Algeria, as I have already said this morning, entitled "Algeria: A Response to Floods in the Region".

So much for the various presentations which are going to be given at the end of our Plenary session.

After that, we will be having a Roundtable on the Prospects for Cooperation Between Latin America and Europe in Space Cooperation, and the Institute for Space Policy is going to be throwing a Reception after that. As I have already told you, you have been given invitations that have been put in your respective pigeonholes.

Could I ask the delegations to present to the Secretariat any changes that may be necessary to the list of participants, that is Conference Room Paper 2. This would enable the Secretariat finalizing the final list of participants and this should be done before the end of tomorrow afternoon.

General exchange of views (agenda item 4)

Now let us go back to item 4, General Exchange of Views, and Saudi Arabia has the floor.

Mr. M. A. TARABZOUNI (Saudi Arabia) *(interpretation from Arabic)*: In the name of God, the Compassionate, the Merciful, Mr. Chairman, peace be upon you.

I have the pleasure on behalf of the Kingdom of Saudi Arabia to see you chair this fifty-second session of COPUOS. I appreciate the efforts you have made as well as your collaborators and I am fully confident that your experience and your good guidance of our work will result, God willing, in achieving the expected outcome. I would like to assure you in this

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that my country will cooperate with you in achieving that goal.

I also have the pleasure to thank Ms. Mazlan Othman and all the staff in her Office for all the preparation made for this session. I wish Ms. Othman full success.

Mr. Chairman, it is my pleasure now that 25 years have elapsed since one of the Arab Muslim astronauts has participated in the flight within Discovery, the American Shuttle, STS-51G, in order to launch ARABSAT-1B, which is an Arab communication satellite. That astronaut was His Highness the Prince Sultan Bin Salman Abdulaziz Al-Saud. That satellite was launched to conduct some medical experiments in participation with one of the French astronauts, Mr. Patrick Baudry.

The first mosaic map was thus produced encompassing 171 spatial images obtained through LANDSAT-3 satellite which provided those images of Saudi Arabia.

Mr. Chairman, Saudi Arabia has experienced during the past few weeks earthquakes in Madinah at the west of the Kingdom. It is an area covered with volcanoes. The earthquake reached an intensity of three on the Richter Scale. This has led to nervousness with citizens there. They were afraid that volcanoes would erupt in that area since it used to be an active volcanic area a thousand years ago.

Various authorities in Saudi Arabia have dealt with the earthquake, those authorities being the Ministry of Interior, as well as through its Directorate of Civil Defence, the Ministry of Health, the General Directorate of Meteorology and Protection of the Environment, as well as the Saudi Red Crescent, the Geological Survey in Saudi Arabia, and KICST, King Abdulaziz City of Science and Technology, and other Saudi Universities. They devoted all their potential through stations to monitor earthquakes, through satellite imagery thus analyzing that imagery as well as weather forecasts on the basis of the requirements of that event. They have proceeded to evacuate citizens to safe havens as a first stage in a voluntary manner and, as a second stage, by compelling citizens to leave the area when those earthquakes have reached an intensity of 5.7 on the Richter Scale. They have even encompassed other cities such as Medinah, Tabuk, Omlige(?), and around the capital as well, Riyadh.

Thank God we were able to overcome that ordeal thanks to the support and wisdom of the Guardian of the Holy Places, King Abdulaziz Al-Saud and his Government and thanks to the cooperation of all citizens and parties concerned.

Indeed, the shelter, safety and schools have been provided to all students, male or female. Care has also been provided to citizens. The State has dealt with the situation in that area and other areas also to avoid any similar incidents.

Years ago, the Ministry of Municipalities and Public Works had already published Building Codes for those areas closed to seismic lines especially cities close to the Red Sea and the Arab Gulf.

We would, therefore, like to call on this Committee to support any studies related to earthquakes in the Middle East, as provided in the recommendations set out and resulting from the Annual Congress which took place in the brotherly Arab Republic of Syria in 2006. These recommendations are still dead letter, just like many other recommendations from other areas in the world.

Indeed, funding is not available to achieve those studies through the support of the Office for Outer Space Affairs budget.

To allow us to achieve such studies, support should be given through international fellowships provided by poverty-reduction organizations and development organizations as well as by developed countries or spatial agencies in the world and through the United Nations and its other agencies, they being to limit the damage to people and property and to encourage countries to cooperate among themselves. Indeed, any problem faced by any country is a problem that extends to others too.

Mr. Chairman, Saudi Arabia has ratified the Treaty of Principles Governing Activities of States in the Exploration and Peaceful Uses of Outer Space, Including the Moon and Other Celestial Bodies, as well as the Liability Convention. It is currently studying the possibility of ratifying the remaining three other conventions.

With the steady progress in the activities by States in the field of exploring and peacefully using outer space, including the Moon and other celestial bodies, States should commit themselves not to place any objects that would carry nuclear weapons or any WMD on an orbit close to Earth or the Moon and other celestial bodies. Indeed, these are a province to all States in the world and not to one of them.

My delegation would like to call on this Committee, 40 years later, to give attention to the needs to give a definition and delimitation of outer space according to previous statements here. My delegation thinks that the definition and delimitation of outer space will contribute to aerospace law and space law as it would define the rights and the sovereignty of States in cooperation between these Committee and the ECOW(?).

The geostationary orbit should always be used according to the provisions of United Nations treaties related to outer space and the ITU's regulations. We should also guarantee the possible access to such orbits by all States within fair conditions and by meeting their requirements.

Since no part of outer space is the property of anyone, then any orbital sites in the geostationary orbit cannot be used by any country on the pretext of sovereignty or of its use especially its recurrent use. Therefore, this Committee should cooperate with the ITU before the Conferences of both to adopt recommendations and orientations which will be fair to all and from which all developing countries could benefit.

My delegation, Mr. Chairman, has listened to all previous delegations magnanimously and with great interest. We would like to thank them all. We would also like to thank you for your kind attention, praying God that he will lead us to success and would lead us to success and would lead us to achieving the ambitions of member States regarding the use of space technology in order to find solutions that would achieve prosperity and security to all.

Mr. Chairman, delegations, since the International Conference on the Use of Space Technologies in Water Resources Management has succeeded, and that is a Conference which took place in King Abdulaziz City of Science and Technology in Riyadh in April 2008. It is a Conference which has been co-organized by Saudi Arabia, represented by that City, as well as the Prince Sultan Bin Abdulaziz Awards for Water and the United Nations, represented by the Office for Outer Space Affairs and UNESCO. We would like to declare on behalf of the Prince Sultan Bin Abdulaziz Awards for Water that we are ready to hold that Conference periodically every two years in various capitals of the world and we are ready to contribute to its organization by contributing US$30,000 in collaboration with the Office for Outer Space Affairs and the host country. Thank you Mr. Chairman.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much representative of Saudi Arabia for that statement that you have just made. In your statement you spoke about the programmes ongoing in your country and you referred to your country's water concerns. You spoke about the Water Prize which was awarded and the conferences that you have organized in your country.

So with this statement we have wrapped up our discussion under item 4, General Exchange of Views.

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

We are now going to be reopening item 5, Ways and Means of Maintaining Outer Space for Peaceful Purposes, item 5, and I believe that Venezuela has put in a request to speak under this item.

Mr. R. BECERRA (Bolivarian Republic of Venezuela) *(interpretation from Spanish)*: Thank you very much Chairman. I would like to start off by making a comment on interpretation. Very often we have heard that our statement was not fully interpreted. I know that it is difficult and it was not the fault of the interpreter in any way. I just had read my statement too quickly, far too quickly. I, however, would like to ask the following question. If the interpreters have the written statement distributed to them, why is it that they do not read that out because it is very important for my entire statement to be read out because it is important for the interpreters to state exactly what they have read out so it is not just a matter of, it is important for the interpreters to say exactly what the delegates are saying, that is exactly what I am going to be trying to do actually (says the delegate?).

So now I am going to be making a statement and this statement will enable us to enrich this morning's debate which was particularly interesting indeed. I would now like to read my declaration.

My delegation has listened with interest to the statements made by a group of friends on this statement under item 5. We have indeed reflected a whole series of programmes and activities which are intended to promote space technology development and in doing this, we have spoken about the peaceful use of outer space. We are happy to see that that is the case. However, our declaration (delegation?) believes indeed that this debate should not only concentrate on the promotion of international and national programmes of space activity. It is rather necessary to go into depth and have a very thorough discussion

about the present issues having to do with outer space activity which endangers international cooperation. I believe that COPUOS should be very attentive to the ways and means to ensure that outer space is going to continue being used for peaceful purposes. Consequently, it is necessary to address and discuss basic issues such as the disarmament race in outer space, in the ways of which we can mitigate space debris, or indeed ensure that nuclear power sources are properly used in outer space. I would like to say that this is of fundamental importance for the sustainability of space activities in this field.

I continue this statement. Finally, this delegation believes it is necessary to bring up-to-date the five outer space treaties to maintain the peaceful uses of outer space through clear norms and rules with regard to the critical issues mentioned above. The existing uncertainties and the absence of regulations on these issues make it impossible to maintain for the future the peaceful condition of outer space.

I would like to add, Mr. Chairman, because I do not want the debate to come down to mere words. I would like to suggest the following.

In view of the fact that the Scientific and Technical Subcommittee and the Legal Subcommittee have approved the Safety Framework for the Use of Nuclear Power Sources in Outer Space, it would be good if this Committee could ask that these Guidelines be further developed within the Legal Subcommittee. This would be a good example of how we can follow up on a discussion and take specific steps to maintain outer space for peaceful uses. Thank you very much for your attention Mr. Chairman.

The CHAIRMAN *(interpretation from Spanish)*: Thank you distinguished delegate of Venezuela. You have not taken too much of our time, not at all. Your delegation has every right to make these points and to comment on every issue. Thank you very much for your proposal which is, of course, open for consideration by the Committee. If there are delegations willing to make specific comments, you have an opportunity to do so, the floor is open.

I see no requests. Thank you very much to the delegation of Venezuela.

Now this was the last statement under agenda item 5 this afternoon on measures to maintain outer space for peaceful purposes.

Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, UNISPACE III (agenda item 6)

We continue with the implementation of UNISPACE III recommendations, item 6, and we hope to be able to conclude this item today. This is again the Implementation of the Recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, UNISPACE III.

I declare open the discussion on this item. I see no delegation, no requests on my list at the moment.

I would like to remind the delegates that we have in various sessions have a chance to look at document A/AC.105/2009/CRP.7 entitled "Contribution of this Committee to the Work of the Commission on Sustainable Development for the Thematic Cluster for the Years 2010-2011". So again, this is CRP.7, Conference Room Paper 7. We need to approve this text, paragraph-by-paragraph, starting, of course, with Page 2, Annex, with _____ *(not clear)* by the Secretariat. We start with the actual Annex.

Venezuela, you have the floor.

Mr. R. BECERRA (Bolivarian Republic of Venezuela) *(interpretation from Spanish)*: Chairman, we do not have the Spanish language version of this document.

The CHAIRMAN *(interpretation from Spanish)*: Yes, I understand the problem. I am going to ask the Secretariat to respond to this.

Mr. N. HEDMAN (Deputy Secretary, Office for Outer Space Affairs): Thank you Mr. Chairman. Yes, maybe I should have introduced the document first. As delegations recall, the Committee at its last session, its fifty-first session in 2008, agreed upon a plan for its contribution to the work of the CSD, the Commission on Sustainable Development, for the thematic cluster 2010-2011 which will begin next year. And also this issue has been deliberated in the Scientific and Technical Subcommittee and delegations should be aware of the plan how to contribute to this document. The Secretariat sent out a Note Verbale in September last year and no replies or submissions from member States were received. The Secretariat, therefore, during the Scientific and Technical Subcommittee earlier this year, in February, drew up a deadline, a new deadline, for submissions by interested delegations and that deadline was on 30 April 2009.

The Secretariat has received one submission, one contribution, and that is from Japan which is incorporated into this document.

Now, distinguished delegates, this document will be edited and translated into all official United Nations languages and it will be submitted to the Division for Sustainable Development, which is the Unit in New York that is handling the Commission on Sustainable Development. The reason why this document is in a Conference Room Paper in English only is because there it is impossible to have a draft document before this Committee since the document will anyway be changed and it should only appear in one single document once it is approved the Committee and ready for submission to the Commission on Sustainable Development. This is the same practice as was used two years ago in 2007 when the Committee on the Peaceful Uses of Outer Space Affairs agreed to its contribution to the Commission on Sustainable Development thematic cluster for 2008-2009.

I would like to take this opportunity just to introduce the document as such. So delegations would see then in the Annex, starting on Page 2, there starts the actual contribution by COPUOS to the Commission on Sustainable Development. First, there is an introduction just to introduce the issue and then a Section II, COPUOS is then addressing the thematic cluster 2010-2011. And these issues have been reviewed already during the Scientific and Technical Subcommittee. We have had a discussion on how to handle and how to address the thematic clusters of the Commission on Sustainable Development.

Based on the decision by the Scientific and Technical Subcommittee earlier this year, there was an agreement that this contribution should focus on (a) the role of space in transport and (b) on space solutions for sustainable resource management consumption and production. And this was in the view that the thematic cluster addresses mining, chemicals, waste management, but in the view of the Scientific and Technical Subcommittee, it was important to try and capture the overall sustainable resource management and also, if possible, address some of the cross-cutting interlinkages to other important areas such as water management, pollution and climate issues.

So, Mr. Chairman, this document is then before all delegations for agreement so that the Secretariat can proceed with editing and translating the document into all languages so that it can be submitted to the Commission on Sustainable Development. The Secretariat would like to add that when the document is finalized and ready, it will appear as a general document of the General Assembly, which means that it will appear on the official document ODS of the United Nations system. And in the cover letter that the Secretariat will send to the Division on Sustainable Development, the Secretariat will also pinpoint some of the issues that relate specifically to the various thematic clusters to be addressed in 2010 so that the DSD(?), Division on Sustainable Development, can include a couple of elements on space technology applications into their various documents that are being produced before delegations in New York during the Commission on Sustainable Development, in May, I suppose, in 2010. So that the Secretariat is trying to do its utmost to have the largest impact as possible to the Commission on Sustainable Development. Thank you Mr. Chairman.

The CHAIRMAN *(interpretation from Spanish)*: I thank the Secretariat for introducing the document and for providing explanations as to the procedure involved. I believe that very good work has been accomplished here and obviously the Committee should consider it a priority to look at and approve very concrete, very specific suggestions such as this one as to the Committee's contribution to the work of the Commission on Sustainable Development for the thematic cluster 2010-2011.

So if the Committee is in agreement with the procedure outline here, let us proceed to approve the document with the understanding, of course, that once the observations are made, it will be distributed among all delegations and translated into all the official languages of the United Nations and then re-submitted to the Committee.

If there are no comments on this, Colombia, please.

Mr. J. H. OJEDA BUENO (Colombia) *(interpretation from Spanish)*: Good afternoon Mr. Chairman. Thank you very much. We have no objection. We would like to emphasize the good work accomplished by the Secretariat and the efforts of other agencies of the United Nations, such as the FAO, UNESCO, WMO and others. This is a cooperative, very productive effort, inter-agency effort which involves a number of countries. We would like to emphasize the fact that priority issues for humanity have been included such as food security, management of resources in a sustainable manner, environment and its protection, transport, land, air and maritime, all of these are issues of the greatest concern particularly to developing countries and they are part of the agenda of sustainability which includes proposals from countries concerned about sustainable development.

So, once again, many thanks to the Secretariat for your work and for the work of the other United Nations bodies. Thank you.

The CHAIRMAN *(interpretation from Spanish)*: Thank you. So we will start with paragraph 1.

Approved.

Paragraph 2.

Approved.

Paragraph 3.

Approved.

Paragraph 4.

Approved.

Paragraph 5.

Approved.

Section II. Space Contributions to the Thematic Cluster 2010-2011.

Paragraph 6.

Approved.

Paragraph 7.

Approved.

Sub-Section A. The Role of Space and Transport.

Paragraph 8.

Approved.

Paragraph 9.

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Paragraph 10.

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Paragraph 39.

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Paragraph 40(a).

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Paragraph 40(d).

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Paragraph 40(e).

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Paragraph 40(f).

Approved.

Paragraph 41.

Approved.

Conclusion. Paragraph 42.

Approved.

Paragraph 43.

Approved.

Paragraph 44.

Approved.

Paragraph 45.

Approved.

The document in its entirety.

Approved.

I would like to thank all delegations for cooperation. Many thanks.

Report of the Scientific and Technical Subcommittee (agenda item 7)

Very well, now we continue with the Report of the Scientific and Technical Subcommittee on its Forty-Sixth Session, item 7.

Distinguished delegates, we are going to continue and hopefully conclude our consideration of agenda item 7, the Report of the Scientific and Technical Subcommittee on its Forty-Sixth Session.

And the only issue here, we are still in consultations, but I have three delegations asking for the floor under this item. We will start with the Russian Federation, Mr. Sergey Shestakov. You have the floor Sir.

Ms. L. V. KASATKINA (Russian Federation) *(interpretation from Russian)*: Mr. Chairman, could I ask for the statement to be postponed until tomorrow, if possible.

The CHAIRMAN *(interpretation from Spanish)*: I am sorry. I apologize. This is not Mr. Shestakov. This is Madam, what is your name please? You have the floor and I apologize for having misnamed the speaker. You have the floor.

Ms. L. V. KASATKINA (Russian Federation) *(interpretation from Russian)*: Mr. Chairman, I am going to be brief in presenting the position of the Russian Federation with regard to the report of the Scientific and Technical Subcommittee.

The Russian Federation supports the report, approved by consensus by the Scientific and Technical Subcommittee to COPUOS. We highly evaluate the results achieved by the Scientific and Technical Subcommittee in its work to come up with a technical and substantiated Safety Framework for the Use of Nuclear Power Sources in Outer Space.

The document contains high-level recommendations with a view to organizing the use of nuclear power sources raising the responsibility of governments and intergovernmental organizations involved in the development and use of nuclear power sources in outer space.

That document is not legally binding. It is of a voluntary nature and it is not a supplement to or an interpretation or a change of the existing principles and treaties of the United Nations. The idea is to promote the safest possible use of nuclear power sources in outer space and that, in our view, meets the national interests of all countries, with no exception.

We believe that there is no need to talk about revising the Principles Governing the Use of Nuclear Power Sources in Outer Space, let alone to develop a new legally-binding document.

At present, only an insignificant number of States have the technology to develop nuclear power sources and even fewer States use them in practice. The Safety Framework developed jointly by COPUOS and IAEA experts make it possible for all interested States to create their national normative basis governing the safe use of nuclear power sources in space.

Mr. Chairman, as to the issue of space debris, which was also considered by the Scientific and Technical Subcommittee at its most recent session, the Russian Federation would like to express its serious concern in view of the threat posed by the manmade contamination of outer space. In that context, the Russian Federation is satisfied with the decision of the United Nations General Assembly in 2007 when it approved the Guidelines for Safe Debris Mitigation, approved and developed by the Scientific and Technical Subcommittee, with a view to preventing and mitigating space debris. That document is a set of Guidelines that can help States at national level to address the issue. They are not legally binding. It is implemented on a voluntary basis. The scope of action covers only the newly-designed and developed space technology.

It is necessary to further improve the designing practices for spacecraft, their management in terms of mitigating and preventing the generation of space debris.

In the Russian Federation, work to prevent space debris generation is carried out within the framework of national mechanisms, taking into account the experience of other States. As of 1 January 2009, a National Standard has entered into force entitled “General Requirements for Space Technology With a View to Space Debris Mitigation”. The Standard contains requirements aligned with the appropriate requirements contained in the United Nations Guidelines for Space Debris Mitigation.

The Federal Space Programme for 2006-2015 of the Russian Federation involves the development of the first automated warning system for dangerous situations arising in outer space. Thank you very much.

The CHAIRMAN *(interpretation from Spanish)*: I thank the distinguished representative of

the Russian Federation for her contribution under this agenda item.

The next speaker on my list is Mr. Joachim Marschall von Bieberstein of Germany. You have the floor.

Mr. J. MARSCHALL VON BIEBERSTEIN (Germany): Thank you. Mr. Chairman. Before commencing in the next part of my statement concerning the review of space-related priorities and activities in Germany, my delegation would like to express once more our satisfaction about the achievements of the forty-sixth session of the Scientific and Technical Subcommittee. We would like to commend the able leadership of the Chairman of the Scientific and Technical Subcommittee, Mr. Aboubekr Seddik Kedjar, as well as the excellent work of the United Nations Office for Outer Space Affairs staff.

The German delegation noted with appreciation that the Scientific and Technical Subcommittee has adopted the Safety Framework for Nuclear Power Sources in Outer Space and, therefore, congratulates the Joint Expert Group of the Scientific and Technical Subcommittee and the IAEA under the able chairmanship of Mr. Sam Harbison.

Mr. Chairman, in the framework of the International Charter on Space Major Disasters and other national and international cooperations, the DLR Centre for Satellite-Based Crisis Information, the ZKI, was involved in emergency mapping using for the first time data from the TERRASAR-X satellite. The ZKI also provided its support, especially during the flood in Kavango, Namibia. Heavy rainfalls in Angola and in parts of the western provinces of Zambia, led to serious inundation in the north and north-east of Namibia. Due to the complex drainage pattern in the region, satellite observation is an important tool in providing an overview of the large area flood situation.

Furthermore, in January 2009, the DLR, in collaboration with UNSPIDER, carried out a National Capacity-Building Workshop and Technical Training on Earth Observation Technology for Flood Mapping and Emergency Disaster Management in Namibia. The Workshop was organized by the Namibian Ministry of Agriculture, Water and Forestry and funded by the German Technical Cooperation Organization.

The capacity development measure takes place within the framework of a UNSPIDER Technical Advisory Mission to Namibia with the aim of supporting the Namibian institutions on increasing their emergency disaster management capacities.

Mr. Chairman, I would like to reiterate that at the meeting of the Scientific and Technical Subcommittee in February, the Director of the Office for Outer Space Affairs has made a general statement concerning operational priorities. She indicated that a Strategic Framework for the Office for Outer Space Affairs' priorities, *inter alia*, embodies principles of engagement that focus on capitalizing on space solutions for sustainable development with a focus on climate change and building indigenous capability in basic space technology.

Our delegation appreciates that statement and wishes to point out that the identification of solutions for sustainable development in the development of space technology plays an important role for the German Government. Within the scope of the Federal Republic's High-Tech Strategy 2006, space programmes take a prominent place. National funding of space activities has been significantly increased in those areas where space can contribute to economic, scientific, strategic and social goals.

Mr. Chairman, the area of Earth observation is of high priority for Germany. In the framework of the National Space Programme, a number of missions, Rapid Eye, TERRASAR-X, and TANDEM-X contribute to the unique end-to-end competences Germany has developed in the field of Earth observation, ranging from optical and SAR satellites to front-end ground segment solutions and a broad spectrum of application expertise.

Germany is a leading contributor with 317(?) million Euros or 37 per cent of the initiative jointly coordinated by the European Space Agency and the European Union on Environmental and Security Policy entitled "Global Monitoring for Environment and Security".

Germany is thus well-prepared to respond to complex questions regarding environmental observation, prediction and forecasting of natural disasters and security-related items.

Additionally, Germany seeks to maintain a high profile in scientific Earth observation. The high altitude and long-range research aircraft at the DLR Research Airport in Oberpfaffenhofen should be mentioned in this context. This unique research aircraft heralds a new chapter in the history of German atmospheric research and Earth observation.

In the framework of the National Space Programme, a number of missions contribute to the unique and to any competences Germany has developed in the field of Earth observation, ranging from optical and SAR satellites to front-end ground segment solutions in a broad spectrum of application expertise.

The German Rapid Eye satellite constellation was launched successfully from Baikonur Cosmodrome, Kazakhstan. The five identical Earth observation satellites provide data from space for civil use. The satellites are in a shared orbit at 630 kilometres and will circle the globe 15 times daily. Rapid Eye will be able to reliably deliver high-quality data from any given point on Earth. The constellation is designed to provide insurance and food companies, farmers, governments, other agencies and institutions throughout the world with up-to-date customized information, products and services. Rapid Eye's applications extend to the area of disaster relief. Future products include thematic maps for harvest planning, provision of crop damage and digital elevation models.

Another highlight constitutes the successful start to the operational service of the TERRASAR-X mission at the beginning of this year and its first scientific results which gained exceptional recognition worldwide. Within the framework of public/private partnership, the DLR is able to provide free access to TERRASAR-X data for scientific purposes. The first projects have already been initiated, such as the following projects: Hydrologic History of the Sahara: A Framework for Archaeological Exploration; Landslide Detection in the Lisbon Area By Means of TERRASAR Interfero Metric Data; and the Analyses of Winter Habitat for Salmon by Mapping Ice Cover in River Channels.

Within this context, the open initiative between UNESCO and DLR for the protection of world heritage sites has been established. However, more details will be given in later sessions in another statement on the topic of "Use of Space Technology in the United Nations System".

As we speak, the preparations for the launch of the TANDEM-X mission is scheduled for September 2009 are underway. The satellite is a new national high-resolution interfero metric SAR mission with the main goal being to achieve a high-definition digital elevation measure of the Earth's surface. Therefore, the two satellites, TANDEM-X and TERRASAR-X are flying in a closely controlled formation with typical distances between 250 and 500 metres. For this mission, the DLR will work in cooperation with Canada for planning the establishment of a ground station in Inuvik which constitutes an important element of the ground segment of TANDEM-X.

Together with Swedish partner, SFC, a ground station for the reception of the TANDEM data transmissions will be set up. As an additional measure, this ground station will also be able to relay navigation signals.

All these missions contribute to the unique end-to-end competences Germany has developed in the field of Earth observation. The competences range from optical SAR satellites to front-end ground segment solutions in a broad spectrum of application expertise.

Germany is also seeking to actively bring robotic research to the EU level as it provides an important element in Europe's means for space exploration. As a prelude to this, the German Federal Ministry of Economics and Technology and the DLR had organized the First National Conference on Space Robotics which was held in Berlin on 13 and 14 May 2009. This Conference constitutes a new direction and focal point for space research and robotics in space.

Mr. Chairman, in September 2008, the new Galileo Control Centre was launched with the attendance of the EU Commissioner for Transport at the DLR site of Oberpfaffenhofen.

At the meeting of ESA's Council of Ministers in The Hague in November 2008, Germany took on a financial engagement of 2.7 billion Euros of the proposed ESA budget of 10 billion Euros, making this the largest national contribution among ESA members.

Germany will continue to show that about a quarter of the total contributions of the future.

Germany is furthermore making a large financial contribution to the Mars-500 Isolation Study in Moscow. This study is focused on the question how human beings can stay physically and psychologically fit in the extreme conditions of a journey to Mars. On 31 March 2009, the very ambitious isolation experiment commenced at the Institute for Biomedical Problems of the Russian Academy of Sciences. Six people are being isolated in a chamber for a period of 105 days in order to train for some aspects of a simulated journey to Mars. In addition, to four Russians and a Frenchman, the crew includes a young German Defence Force Officer.

The official opening of the International Year of Astronomy was celebrated in Germany with the theme of "The View to Heaven" during the evening of 20 January this year, at the Museum of Telecommunications in Berlin.

Following the announcement of the global slogan "The Universe: Yours to Discover", this coincided with a live broadcast from the La Silla Paranal Observatory in Chile.

Moreover, the UNESCO/DLR Exhibition on World Heritage Sites "As Seen From Space" attracted large public interest in Paris during the spring.

On the occasion of the bi-century ceremonies of independence in countries of South America, the German Ministry of Foreign Affairs financed an exhibition of satellite images in several of these countries.

Meanwhile, the topic space is being more and more prevalent among the German population, as was shown by the number of German applications in the recent ESA Astronaut Recruitment Drive. Among approximately 8,400 applications, there were nearly 1,800 German candidates representing slightly more than 20 per cent. Furthermore, for the first time, the DLR, in conjunction with the German Academic Exchange Service, is offering research fellowships in the fields of space, aeronautics, energy and transportation research. Currently, of the 44 positions that were offered worldwide, several candidates have already been identified and the first places have been taken up in DLR institutes.

Finally, the Fifty-First COSPAR Conference will be held in Bremen, Germany, from 18 to 25 July 2010. Bremen, a seat of a number of prominent German space companies and research institutes, belongs to one of the largest space-related sites in Europe. Researchers from all over the world are, therefore, invited to attend this Conference in Germany next year. Thank you Mr. Chairman.

The CHAIRMAN *(interpretation from Spanish)*: Thank you very much Mr. Marschall von Bieberstein for your statement. You have referred in the course of that presentation to the work of Germany and the United States of America and the ESA as well and you have spoken about financial commitments and the German candidates for this work, 1,800 German candidates were presented. That was quite an impressive figure indeed.

I would now like to call upon Malaysia, Mr. Adnan Bin Ismail.

Mr. A. B. ISMAIL (Malaysia): Thank you Mr. Chairman. It is my pleasure to see you at the Chair of this session and the other Secretariat led by Dr. Mazlan Othman.

Mr. Chairman, distinguished delegates, Excellencies, ladies and gentlemen, the Malaysian delegation is pleased to report the progress that has been made thus far in the implementation of remote sensing activities in Malaysia. Remote sensing technology and application development in Malaysia has been spearheaded by the National Remote Sensing Committee, NRSC, since its formation in 1988 under the National Remote Sensing Programme, NRSP. The NRSC oversees the implementation of the NRSP. It has 34 members and comprises of government, technical agencies, universities, research institutes and State-_____(?) agencies.

The Malaysian Remote Sensing Agency, acting as the Secretariat of the NRSC, has been the driving force behind the implementation of the NRSP. The implementation of NRSP resulted on a three-prong approach: user, ground and space segment. To date, the NRSP has made significant insights in the user segments having successfully developed an application and a system for national resources and natural disaster management programmes.

To date, the Malaysian Remote Sensing Agency has developed an Integrated Geo-Spatial Database and Planning System, IGDP, with cooperation with relevant agencies. The IGDP System is developed due to the concern on the absence of centralized and integrated natural resources, environment and related database with the full geographic analytical capabilities. The IGDP Database contains thematic layers attribute of various sectors such as land use, soil, topography, hydrology, geology, forest types and function, urban and rural areas.

Socio-economic and coastal resources. With the continuous development of both the Optical and SAR satellite technologies and the ability of high-spatial SAT meteorology(?) and satellite data, many new applications in that area will be developed. This opportunity will enhance a better spatial planning and management of natural resources at both macro and micro levels.

A prototype on environmental health modelling system using a remote sensing and geographical information system was developed jointly

by the Malaysian Remote Sensing Agency, the University of Science Malaysia, and the Ministry of Health. The main objective of this system is to assist authorities in enhancing the efficiency and effectiveness of the surveillance(?) management system by providing a reference map to identify areas at high risk of hanging a Dengue outbreak based on the environmental monitoring factors and epidemiological data using remote sensing and GIS. The reference maps produced can be used to identify and establish the environmental indicators of variables derived from remote sensing imagery and to study the correlation the Dengue case distribution.

Furthermore, activities related to disaster management in Malaysia are coordinated by the National Security Council, NSC, under the Prime Minister's Department. The NSC is the principle policy-making and coordinating body for disaster management in the country. The NSC coordinates plans and observes all activities related to preparedness, prevention, response relief operations and rehabilitation of disaster management.

The remote sensing information management approaches has been widely used in disaster risk reduction efforts such as disaster hazard mapping and a real time early warning system. Currently, the Malaysian Remote Sensing Agency established a central system for collecting, storing, processing, analyzing and disseminating value-added data and information to support the relevant agencies in mitigation and relief activities of disaster management applications in the country. The system produces and disseminates partial(?) disaster information such as flat(?) map, landslide hazard map, forest fire hazard map, for the use by the relevant agencies for disaster management purposes, infrastructure and area development and a guide for the value of property. The Agency has also enhanced partially(?) the hotspot information from the ASEAN Specialized Meteorological Centre, ASMC, System to facilitate enforcement agencies monitoring and controlling the hotspots and forest fires for faster and more efficient response.

Mr. Chairman, distinguished delegates, as a conclusion, the Malaysian delegation would like to reiterate our commitment to fully utilize remote sensing data and to further develop the applications in order to achieve our national and global objectives. Thank you.

The CHAIRMAN *(interpretation from Spanish)*: Thank you ever so much the delegate of Malaysia for that statement.

And now I would like to give the floor to the last speaker on my list and it is the delegate of Venezuela. You have the floor.

Mr. R. BECERRA (Bolivarian Republic of Venezuela) *(interpretation from Spanish)*: Thank you very much Chairman. The delegation of the Bolivarian Republic of Venezuela would like to note with satisfaction with the achievements noted in the report of the Scientific and Technical Subcommittee during its forty-sixth session. And we would like to say that we would like to continue discussing the issues broached by the Subcommittee in the future and we would also like to touch upon the other themes which are related to the air of competence of this Committee in order to promote the peaceful use of outer space so as to make space technology accessible to all the peoples of the Earth.

We would like to give our views on paragraphs 5 and 8 of the report having to do with space debris and the use of nuclear power sources in outer space.

In general terms, my delegation believes that it is indispensable to promote the development of binding international standards in this regard, given the significant impact and the link between these issues and activities and life on Earth. This is, furthermore, one of the main responsibilities of the United Nations in the legal arena. It is its responsibility to promote the progressive development of international law and its regulation as regards the environment and outer space. So consequently, it is necessary to strengthen the interaction between the two COPUOS Subcommittees.

As concerns space debris, we believe that it is necessary to continue to delve into this matter. It is necessary to be especially attentive to debris generated by NPS, nuclear power sources in outer space. We must be very attentive to the collision of space objects with space debris and other related material and we must seek to improve monitoring technology for such debris.

We must strengthen the involvement of States so as to disseminate information on space debris properly, especially on the side of the States responsible for the generation of said space debris because they are the parties which have managed or mis-managed this for such a long time and this in pursuant to resolution 62/217 of the General Assembly.

Now as for the nuclear power sources in outer space. My delegation believes that there has been true

progress achieved. The Safety Framework for Nuclear Power Sources in Outer Space has been approved. However, we nonetheless have to strengthen research on this so as to look into the possibility of making use of other alternative sources of nuclear energy which must be searched for. We understand that it is necessary to use nuclear energy to make inter-planetary missions sustainable and enabling the conduct of technological missions for the benefit of mankind and indeed nuclear power sources in outer space must be exclusively for peaceful purposes, thereby preserving life and the environment. We cannot allow the use of nuclear energy in the near-Earth zone.

To conclude, we would like to say that we fully respect international norms and standards and I would call upon the Committee to read the last report. We have profound respect of international norms and we would like to reiterate the fact that regulations having to do with the operation of nuclear power sources is something which is uniquely the responsibility of States, irrespective of what their degree of socio-economic, scientific or other development may be. It is the international responsibility which is incumbent upon the national governments to do this on the basis of the use of nuclear power sources, indeed, this irrespective of whether use is made of these nuclear power sources by governmental or intergovernmental authorities. It is necessary for this use to be made for the benefit of peoples on Earth and not against their ends.

I would like to say that when we request for the intergovernmental framework be submitted to the Legal Subcommittee, it does not mean that this has to be subject to amendment. It is just simply that the Subcommittee must be given the opportunity to express it views, to put together its views for the purpose of developments in this field to better enable proper development of legislation in this field.

I would like to reiterate that it is necessary to regulate this management. Achievements and technical progress has taken place and it is necessary for this Subcommittee indeed to regulate the operations and use made of these resources. Thank you very much for your attention.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): Thank you very much distinguished representative of Venezuela for your statement.

Now is there any other delegation wishing to speak under this agenda item this afternoon?

Yes, the distinguished representative of Venezuela.

Mr. R. BECERRA (Bolivarian Republic of Venezuela) *(interpretation from Spanish)*: Thank you. I just wanted to make a correction. I referred to orbits, Earth orbits. I said Earth orbits when I spoke. I just wanted to make that perfectly clear. Thank you very much.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): Thank you. It will be corrected. Thank you.

I see none.

Distinguished delegates, since there are no further statements and I understand from the Secretariat that no delegations have inscribed under this item tomorrow morning, I would like to record the following.

(a) With respect to space-based disaster management support, you have before you the document A/AC.105/937 containing the proposed Work Plan for the Biennium 2010-2011 of the United Nations Platform for Space-Based Information for Disaster Management and Emergency Response, UNSPIDER. The Work Plan was reviewed and agreed upon by the Scientific and Technical Subcommittee at its forty-sixth session. May I take it that the Committee endorse the Work Plan, as contained in the document A/AC.105/937?

Thank you very much. I see no comments.

It is so decided.

(b) Now coming to the second one, with respect to the use of nuclear power sources in outer space, delegations have them before them document A/AC.105/934. This document contains a Safety Framework for Nuclear Power Sources Applications in Outer Space, as adopted by the Scientific and Technical Subcommittee at its forty-sixth session. I am pleased to inform delegates that the document, as adopted by the Subcommittee, was reviewed and agreed by the IAEA Commission on Safety Standards at its twenty-fifth session held in Vienna from 22 to 24 April 2009. May I take it that the Committee endorses the Safety Framework, as contained in document A/AC.105/934?

I see no comments.

It is so decided.

Distinguished delegates, at this juncture, I would like to express appreciation to the Expert Group, to the Working Group of the Subcommittee on this item and also the International Atomic Energy Agency for their cooperative work. Since this is a good example of successful inter-agency cooperation within the United Nations system, I request the Secretariat to transmit our appreciation to the IAEA.

We have, therefore, concluded our consideration of agenda item 7, Report of the Scientific and Technical Subcommittee.

The only issue left is the agenda of the Scientific and Technical Subcommittee for its forty-seventh session next year, pending the ongoing consultations.

Report of the Legal Subcommittee on its forty-eighth session (agenda item 8)

Now may I go to the next item, item 8, Report of the Legal Subcommittee on its Forty-Eighth Session.

Before giving the floor for statements, I would like to note that the views of delegations and agreement of the Subcommittee are contained in document A/AC.105/935. In particular, I would like to draw your attention to paragraphs 183 to 195 of the report of the Legal Subcommittee which reflects the views of delegations and recommendations of the Subcommittee regarding its agenda for its forty-ninth session to be held in the year 2010.

I now open the floor for statements.

The first speaker on my list is the distinguished representative of the Czech Republic, Professor Vladimir Kopal. You have the floor Sir.

Mr. V. KOPAL (Czech Republic): Thank you Mr. Acting Chairman for your giving me the floor. On behalf of the Czech Republic, I would like to make a number of comments on the agenda item report of the Legal Subcommittee on its Forty-Eighth Session and to briefly evaluate the results of and trends in the work of the Subcommittee.

But prior to doing it, let me express my full satisfaction in my capacity of Chairman of the Legal Subcommittee at seeing Ambassador Ciro Arévalo Yepes as Chairman of this Committee and I would like to wish him full success in presiding over the deliberations of the Committee during the second year of his term.

At the same time, I would like to extend my full wishes to both Vice-Chairmen of the COPUOS.

Our satisfaction and greetings are also addressed to the Director of the Office for Outer Space Affairs, Dr. Mazlan Othman, Mr. Niklas Hedman, who was Secretary during the session of the Subcommittee, all staff members who assisted the Legal Subcommittee who are now servicing the fifty-second session of the COPUOS.

As already emphasized in our earlier statements, the delegation of the Czech Republic considers it important to continue the efforts of COPUOS and its Legal Subcommittee to widen and strengthen the present legal basis for space activities by increasing the number of States and international organizations adhering to the United Nations space treaties.

We particularly welcome that this year the main space law instrument, the 1967 Outer Space Treaty, reached the number of 100 States Parties which was aimed by the Legal Subcommittee during the recent period.

With a great interest, our delegation watches the deliberations of the Working Group on the Status and Application of the Five United Nations Space Treaties, headed by the distinguished representative of Greece, Dr. Vassilios Cassapoglou.

In particular, our delegation followed the discussion in the Working Group on the fifth United Nations Space Treat, the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies. We appreciate the efforts of the delegations of seven States Parties to the Moon Agreement which submitted in 2008 their joint statement on the benefits of adherence to the Agreement and created a useful basis for a just assessment of that instrument. The discussion should continue, as we hope, at the next session of the Legal Subcommittee and of its Working Group on the Five Space Treaties.

The delegation of the Czech Republic also evaluates as very useful the Symposium organized by the International Institute of Space Law and the European Centre for Space Law, which was held on the first day of the forty-eighth session of the Legal Subcommittee on the “Thirtieth Anniversary of the Moon Agreement: Retrospective and Prospects.

And we look forward with great interest to the Interdisciplinary Seminar on Issues Related to the Moon Agreement to be organized by Austria, in connection with the forty-ninth session of the Subcommittee in 2010.

Mr. Chairman, the delegation of the Czech Republic also supports the efforts of the Chairman of the Working Group on the Definition and Delimitation of Outer Space, Professor José Monserrat Filho of Brazil, to reach some realistic progress in discussing that long-standing issue. This is why we share the conclusions agreed by the Working Group in paragraph 13 of the report of its Chairman and also his proposal that a topic for the next IISL/ECSL Symposium in 2010 could relate to the issue of the definition and delimitation of outer space.

Mr. Chairman, the delegation of the Czech Republic welcomes the result of efforts of the Joint Expert Group of the Scientific and Technical Subcommittee and the International Atomic Energy Agency which accomplished the development of a technically-based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space. My delegation shares the view that the discussions and development of the Safety Framework have been a good example of inter-institutional cooperation which should be followed in other appropriate cases and we are happy that this Safety Framework has just been approved and endorsed by the COPUOS at this session.

While recognizing the merit of the view of some other delegations that a revision of the 1992 Nuclear Power Sources Principles, as expected by Principle 11 of that document, would not be necessary at this time. We agree with the recommendation of the Legal Subcommittee that this item should remain on the agenda of the Legal Subcommittee.

Mr. Chairman, the delegation of the Czech Republic has been satisfied by further progress of discussions on capacity-building in space law. The Czech Republic wants to cooperate in increasing knowledge of the legal bases of space activities and the role of the Legal Subcommittee in that regard. In particular, our delegation welcomes that the Office for Outer Space Affairs in cooperation with space law educators and representatives of the Regional Centres for Space Science and Technology Education, produce the preliminary draft of a curriculum on space law and is ready to further cooperate in this direction.

My delegation also supports the efforts of the Office for Outer Space Affairs to continue in a series of workshops which have been a meaningful contribution to capacity-building in space law and to education of young space lawyers in all parts of the world, particularly in the developing countries.

Mr. Chairman, in this year's agenda of the Legal Subcommittee, a new single issue item for discussion was included, namely "General Exchange of Information on National Mechanisms Relating to Space Debris Mitigation Measures". Recently, the considerations of the impending problem of space debris in the Scientific and Technical Subcommittee successfully produced the COPUOS Space Debris Mitigation Guidelines which were endorsed by the United Nations General Assembly in its resolution 62/217 of 21 December 2007. Moreover, the COPUOS Guidelines have been accompanied by Space Debris Mitigation Guidelines of the Inter-Agency Space Debris Coordination Committee. Though both these documents are of a scientific and technical nature and are not legally binding, they have a great significance for the consideration of legal aspects of the undesirable effects of space activities which, in our opinion, will become warranted sooner or later. Therefore, we consider it useful that the item "General Exchange of Information on National Mechanisms Relating to Space Debris Mitigation Measures" remains on the agenda of the Legal Subcommittee. I believe that this suggestion or recommendation is important also in the light of the discussion that was developed this morning at our session.

Mr. Chairman, at present the Legal Subcommittee has in its agenda but one item under a Multi-Year Work Plan, namely "General Exchange of Information on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space". My delegation, however, believes that the consideration of this item, particularly at the level of the Working Group on this subject under the very able guidance of Professor Irmgard Marboe of Austria, belongs to the highlights of the forty-eighth session of the Subcommittee. Therefore, our delegation is confident that the continuation of the discussion in the Subcommittee, and particularly in its Working Group, will prepare a good ground for conclusions of the work on this item in accordance with the Plan. Thank you Mr. Chairman and distinguished delegations for your attention.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): Thank you very much distinguished representative of the Czech Republic also in your capacity as the Chairman of the Legal Subcommittee

with very good progress on the excellent work on the five outer space treaties and also on many other issues. Thank you very much.

The next speaker on my list is the representative from China, Ms. You Zhou. You have the floor.

Ms. Y. ZHOU (China) *(interpretation from Chinese)*: Thank you Mr. Chairman. Mr. Chairman, the Chinese delegation is pleased with the outcome of the Legal Subcommittee headed by the distinguished Chairman, Mr. Kopal, and we would like to congratulate him on his full success.

We would also like to make some comments on the report of the Legal Subcommittee.

Mr. Chairman, the Chinese delegation appreciates the highly effective work by the Working Group set up to work on the item of general exchange of information on national legislation relevant to peaceful exploration and use of outer space. Under the guidance of Madam Irmgard Marboe, countries have carried out full and active exchanges on their respective national legislation regarding launching, registration, regulation, liability, regime in outer space and laid a solid foundation for the work in the future.

The Chinese delegation attaches great importance to the work of the Working Group and recommends that the findings will be summarized and synthetized in order to put together a legislative guide to better serve the respective countries legislative efforts relevant to outer space.

Mr. Chairman, this year marks the thirtieth anniversary of the adoption of the Moon Agreement. The Chinese delegation thinks highly of the Symposium entitled "Thirtieth Anniversary of the Moon Agreement: Retrospective and Prospects" organized by the International Institute of Space Law and the European Centre for Space Law and we took an active part in the relevant discussions.

In the view of the Chinese delegation, the convening of symposia on the relative outer space treaties promoting the exchanges among the countries and deepening the understanding of outer space treaties, will further promote outer space treaties and is also beneficial to the long-term development of outer space treaties.

On the status and application of the five United Nations Treaties on Outer Space, we believe that these five treaties on outer space have played a positive role in regulating national space activities, maintaining the order of outer space treaties and promoting cooperation in outer space. However, it must be noted that the current regime is not effective in preventing the weaponization of an arms race in outer space.

In order to fill the gaps in the existing outer space treaties and respond positively to the new challenges, the Chinese Government supports the idea of probing into the addition to and consolidation of the outer space treaties on the basis of keeping stable the basic framework of the existing outer space treaties so as to create conditions for the formulation of a comprehensive outer space treaty.

Mr. Chairman, regarding the Protocol on Matters Specific to Space Assets on the Convention on International Interests in Mobile Equipment, China supports UNIDROITS drafting exercise and has actively participated in all previous meetings, in the Steering Committee, and the Intergovernmental Panel of Experts. China believes that the Protocol is an active experiment in response to space commercialization and it constitutes a new breakthrough in the development of outer space legislation. China is willing to work together with other countries to address the difficulties in the drafting of the Protocol. China believes that it is necessary to coordinate well the Protocol with the existing outer space legal regime so as to make sure that the Protocol will not jeopardize the basic regime of outer space registration and compensation. China supports COPUOS and its Legal Subcommittee in continuing their active engagement in the drafting of the Protocol and playing a creative role.

Mr. Chairman, the Chinese delegation attaches great importance to the item of capacity-building in space law. We believe it not only provides a good platform for every country to exchange information and share experiences but also helps the developing countries in the development of their space legislation.

In the view of the Chinese delegation, the peaceful exploration and use of outer space is a matter for mankind. The international community and the United Nations Office for Outer Space Affairs should pay more attention to the developing countries and give them more help, take seriously the special requests of the developing countries on their capacity-building in space law and formulate preferential policies for the developing countries. China hopes that the efforts in this regard will not be affected by the Office for Outer Space Affairs' reduced expenditure.

The Chinese Government is willing, as always, to actively participate in the capacity-building efforts in space law and make its due contributions. Thank you Mr. Chairman.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): I thank the distinguished representative of China for her statement.

Next on my list is the representative from Japan, Mr. Kazushi Kobata.

Mr. K. KOBATA (Japan): Mr. Chairman, distinguished delegates, on behalf of the Japanese delegation, I am pleased to have the opportunity to address the fifty-second session of COPUOS. Japan fully supports the effort adopted by the last session of the Legal Subcommittee.

I wish to express our sincere appreciation and respect for the excellent work of Mr. Kopal, Chairman of the last session of the Legal Subcommittee, and Dr. Othman, Director of the Office for Outer Space Affairs and her staff.

Mr. Chairman, there is an increasing number of nations and even the private sector which are embarking on space activities and these activities are becoming more _____(?). Since many related issues have recently emerged, issues which were not envisaged at the time of adoption of the space-related treaties, it is very important to provide this ever-growing number of space activities with the necessary legal order.

In this sense, it is highly desirable that as many countries as possible accede to these treaties in order to consolidate the existing legal framework. At the same time, in order to meet the changing situations such as the space debris mitigation, we should explore the possibility of appropriate new rules including _____(?) law(?). In this context, Japan appreciates the increasingly important role of the COPUOS Legal Subcommittee.

Mr. Chairman, I wish to now note that the general exchange of information on national legislation relevant to the peaceful exploration and use of outer space is one of the most important agenda items in the current Subcommittee discussions since we can compare notes and share insights and experiences with other countries about the practice in governmental and non-governmental organizations.

As Japan reported at the last Legal Subcommittee, according to the basic space law, we will come up with the necessary domestic legislation within two years after enactment of this law with a view to ensuring domestic adaptation(?) of the four space-related treaties through the exchange of information. With the other COPUOS members under the agenda item, Japan will continue to take the necessary measures to fulfil its obligations to the space-related treaties.

Mr. Chairman, the COPUOS Legal Subcommittee is mandated with an important role of discussing legal aspects in order to ensure that the space activities are conducted in a free and fair manner. As one of the space-faring countries, Japan will continue to contribute to the Legal Subcommittee so that it may achieve its effective and productive goals. Thank you for your attention.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): I thank the distinguished representative of Japan for your statement.

Next on my list is the distinguished representative of Italy, Mr. Sergio Marchisio.

Mr. S. MARCHISIO (Italy): Thank you Mr. Chairman, distinguished delegates. The Italian delegation is pleased to congratulate the Legal Subcommittee for the outstanding results achieved during its forty-eighth session under the excellence chairmanship of Professor Vladimir Kopal from the Czech Republic. We commend the work accomplished by the Legal Subcommittee and its Working Group respectively on the Status and Application of the Five United Nations Treaties, the Definition and Delimitation of Outer Space, and the National Legislation Relevant to the Peaceful Exploration and Use of Outer Space.

We also wish to mention the importance of the activities of the Office for Outer Space Affairs as directly contributing to the progress made towards the universal acceptance of the United Nations space treaties.

Mr. Chairman, the Italian delegation endorses the recommendation that the mandate of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space be extended for one additional year with the understanding that the Subcommittee at its forty-ninth session in 2010 will reconsider the need to extend the mandate of the Working Group beyond that period.

We also note with satisfaction the fruitful debate that continued to take place within the Working Group on Matters Relating to the Definition and Delimitation of Outer Space and wish to congratulate its Chairman, Professor Monserrat Filho from Brazil, for his excellent guidance.

Mr. Chairman, my delegation wishes also to congratulate the Chairperson of the Working Group on the General Exchange of Information on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space, Professor Irmgard Marboe from Austria. We express our deep satisfaction for the fruitful discussion that the Working Group and the Subcommittee devoted to this agenda item. The exchange of information on the existing legislation and practices is the best way to identify common principles and procedures. We welcome that the Working Group agreed that at its next session in 2010, it should devote for the consideration to a number of issues of private law character.

We also support the decision of the Legal Subcommittee that the item concerning the developments concerning the draft Protocol on Matters Specific to Space Assets to the 2001 Cape Town Convention should remain on its agenda for its forty-ninth session. The recent meetings of the UNIDROIT Steering Committee of the draft Protocol on Space Assets, held in Paris, from 13 to 15 May 2009, reached very positive results. As a consequence, the Committee of Governmental Experts of UNIDROIT will be reconvened for its third session in Rome from 7 to 11 December this year to resume the negotiation on the draft Protocol. As you are aware, Mr. Chairman, Italy is committed to the completion of the draft Protocol and openly works for a final diplomatic conference to be held in 2010.

Mr. Chairman. The Italian delegation is pleased to express its satisfaction for the decision adopted by the Legal Subcommittee to retain capacity-building in space law as a single issue item for discussion on the agenda for its forty-ninth session.

Notable progress was made in the preparation of the curriculum for a basic course on space law that could be included in the educational programmes of the Regional Centres on Space and Technology Education affiliated to the United Nations. The debate on the first draft circulated during the session was very useful and helpful for reviewing the draft. The Italian delegation strongly supported the dissemination of the knowledge of space law, especially in developing countries.

Mr. Chairman, the Italian delegation would also express its appreciation to the International Institute of Space Law, IISL, and the European Centre for Space Law, ECSL, for having organized the successful Symposium on the Thirtieth Anniversary of the Moon Agreement: Retrospective and Prospects", held on 23 March, at the beginning of the Legal Subcommittee session. The Italian delegation welcomes the agreement reached by the Subcommittee that both institutions should again be invited to organize a Symposium to be held during the first week of its forty-ninth session. We took note with interest of the proposal made by Brazil to devote such a Workshop to the issues dealing with delimitation and definition of outer space.

Our delegation supports also the work carried out by the Legal Subcommittee as the most appropriate forum to address legal issues arising from the peaceful uses of outer space. It is important in our mind for the Legal Subcommittee to remain attentive to the evolving needs of the space-faring nations, as well as the increasing expectations from nations that do not have active space programmes but need the benefits from space activities.

At the same time, we consider that the strengthening of the security of activities in outer space is an important objective in the context of expanding outer space activities. In this line, Italy supports any initiative aimed at ensuring the safety, security and credibility of outer space activities by codifying best practice and technical norms concerning outer space operations and whose aim is to limit or minimize harmful interferences in outer space.

This is why we welcomed that the Legal Subcommittee address as a single issue item of its agenda the exchange of information on space debris mitigation measures. We support that this item remains in the Legal Subcommittee's agenda.

In conclusion, Mr. Chairman, Italy fully supports the adoption of the report of the Legal Subcommittee on its forty-eighth session. Thank you Mr. Chairman.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): Thank you very much distinguished representative of Italy for your statement.

Next is the statement by the distinguished representative of Iran.

Mr. A. TALEBZADEH (Islamic Republic of Iran): Mr. Chairman, distinguished delegates, first I

would like to take this opportunity to extend my thanks to Professor Vladimir Kopal, the Chairman of the Legal Subcommittee, for this very good report.

Second, considering the role of space law as a prerequisite for international cooperation and activities, we follow up the current developments in this connection, particularly the result of outcomes of the Legal Subcommittee of COPUOS. We are prepared to be involved with this very important issue in this regard and following to the previous _____(?) activity the Iranian Space Agency is finalizing the preparation(?) (participation?) with the Office for Outer Space Affairs concerning holding an International Workshop on Space Law in November 2009 which hopefully the first notice of the Workshop will be announced in the near future.

I would like to take this opportunity to kindly invite you to attend the Workshop and make it more valuable. Thank you.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): I thank the distinguished representative of Iran for your statement.

Next on my list is the distinguished representative of Austria.

Ms. C. REINPRECHT (Austria): Thank you Mr. Chairman. Mr. Chairman, Austria welcomes the adoption of the report of the forty-eighth session of the Legal Subcommittee and the recommendations contained therein.

We would like to express our appreciation for the excellent work done by Professor Kopal of the Czech Republic and the Director of the Office for Outer Space Affairs and her staff during the forty-eighth session of the Legal Subcommittee, as well as for their efforts in drafting this final report.

Mr. Chairman, this year's session of the Subcommittee has seen substantive discussions on various agenda items, such as capacity-building, national legislation on space law, and space debris and mitigation measures, to name just a few of them.

We did have a very interesting discussion during and following the Symposium on the benefits of adherence to the Moon Agreement organized by the International Institute of Space Law and the European Centre for Space Law. Several statements by delegations on the benefits of adherence to the Moon Agreement and detailed questions by some delegations directed towards the Parties of the Moon Agreement indicate a need for a continued discussion of this topic at future meetings of the Subcommittee.

In light of the low number of ratifications of the Moon Agreement reached so far, we would like to remind delegations of the Austrian proposal to organize an informal workshop during the forty-ninth session of the Legal Subcommittee next year. The informal character of this event outside the format of the Legal Subcommittee, will enable us to have a frank and open exchange of views on this matter.

Mr. Chairman, during the last forty-eighth session of the Legal Subcommittee, we have experienced remarkable work done on this year's new item, General Exchange of Information on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space. The Working Group was chaired very ably by Professor Irmgard Marboe from the University of Vienna and we would like to express our appreciation for her chairpersonship. A large number of delegations have actively participated in the discussions on this item, exchanging views and informing each other on national space legislation. The work under this item is also contributing to capacity-building in space law as it informs and supports other States, especially developing countries, on how to establish their own national space legislation.

With regard to capacity-building, Austria would like to highlight the large number of contributions that have been made on this subject during the forty-eighth session of the Legal Subcommittee this year.

Many delegations from the governmental as well as from the non-governmental sector have given comprehensive presentations on achievements in this field.

Mr. Chairman, there are still many other important challenges in the field of space law that have been raised during the discussions of the forty-eighth session of the Legal Subcommittee, such as space debris, commercialization of the space sector on nuclear power sources. In order to contribute to legal certainty, there is a need to further address these issues with a few to strengthen existing legal regimes and to discuss the need for new regimes. Austria is convinced that productive work in this sense will be achieved in the upcoming sessions of the Legal Subcommittee.

In conclusion, allow me to emphasize that the Austrian delegation will continue to provide strong support to the work and the deliberations of the Legal

Subcommittee as well as to the Office for Outer Space Affairs. In this spirit, we look forward to productive and rewarding future sessions of the Legal Subcommittee. Thank you Mr. Chairman.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): Thank you very much distinguished representative of Austria.

Now the remaining speakers on the list we would like to move to tomorrow morning.

Technical presentations

Now we come to the time for the technical presentations.

Distinguished delegates, I would now like to give the floor to Mr. Gabriel Platzeck of Argentina who will make a presentation entitled "International Charter – Space and Major Disasters". Thank you.

Mr. G. PLATZECK (Argentina): Thank you Mr. Chairman. I will do a short presentation in the name of the Charter Executive Secretariat _____(?). The content of my presentation will be on the purpose and scope of the Charter, International Charter – Space and Major Disasters is the common name, how it is activated, the organizational and Charter operational loop, a list of activation examples, the Charter and new disaster management initiatives, and then the concluding remarks.

The Charter was initiated 10 years ago by CNES and ESA at the occasion of the UNISPACE III Conference in Vienna. It is an international cooperation effort among space agencies to put available free resources taken by the satellites as images normally and other kind of data.

The Charter is a global mechanism to task satellites in emergency response situations and to provide rush access to Earth observation satellite data in case of natural and manmade disasters.

It is very important to remark that the Charter has the scope on the response, not on early warning, not on post-disaster monitoring, not on vigilance. It provides a unified system of space data acquisition and delivery and services the entire world, any country of the world can request the services of the Charter.

The Charter is open to space agencies and space system operators. The members participate on a voluntary basis and best of all with no exchange of funds. It aims to supply emergency organizations with free and coordinate access to space systems, with acquisition planning without delay, beyond specific data policy restrictions of providers, without administrative or procedural blockage, and during the response phase of disasters.

The mandate is very clear to provide to civil protection that the main organizations that will receive the benefits of this system to civil protection, rescue and security bodies, Earth observation data for emergency response phase in case of natural or man-made major disasters. The major disasters means that there is a criteria to decide if this Charter will be activated or not, taking into account the size and the amount of the damage created by this disaster.

It is not concerned with the prevention or rehabilitation phases, activation only during the emergency phase.

For the most important disasters with huge impacts the beneficiaries of the Chapter are again the Civil Security Service to serve the needs of various end users that could be specialized agencies.

Here are with the limitations on the activations. There are oil spill continuous monitoring operations for visualized operations are not in the scope of the Charter. Ice monitoring operations except for a specific disaster event. The Charter is not for war or armed conflicts. It is not for humanitarian actions not linked to a specific disaster and search and rescue support not linked to a specific disaster.

There is a window, a timeframe for the Charter activation. Normally it is not activated more than 10 days after the start of an actual crisis and the call, the period in which the satellites are tasked to respond to the request are limited to a maximum of 15 days after the activation. A request may be rejected if the scope of the disaster is not compatible with the resolution of the available satellites. It means that they even must be, and even in which the satellite resource has since to be used.

These are the members of the Charter.

This is a summary of the activations. As you can see at the beginning, it was one activation that was here because the Chapter was created in November, 13 in 2001, and going on up to 2008 40 activations per year and during this part of 2009, 16 activations. Up to 26 May it is 217 activations. Solid Earth, weather atmospheric and technological, in which you can see that the activations related where the atmospheric are the main percentage of the total.

This is to show the Charter operational loop, how it works. We can analyze it like some kind of flux there in which at the left the disaster strikes. This is an authorized user, normally a Civil Protection Agency. They are _____ user, of course, an operator that receives the request and preliminary filtering of the request then this operator sends to an Emergency On-call Officer that is rotated weekly, through the agencies listed there. This ECO is really the main person of the system at this point because he must decide which kind of satellites sensors of the satellite should be tasked for this specific scenario of crisis.

You can see there the list of resources that agencies of the Charter put at high level for this system.

When the ECO has planned all the acquisitions that must be done in three hours, more or less, he sends all the request forms to the agencies and normally for all of the agencies, the request has the highest priority.

After the satellite _____ is the most important priority for the planners. The data are sent to a Project Manager. The Project Manager is from the point of view of the processing and the interaction between the end-users and the Civil Protection Agency, is the most important person. He must be an expert in image processing. He must also be an expert in the event in which he is involved with. The Project Manager is designated by the Executive Secretariat. That is a permanent body of the Charter. There is one Executive Secretariat by each agency as well as one Board Member for each agency.

The last part is the value-added re-seller that in some cases existing not but normally in some parts of the world the Project Manager does the value-adding. in other parts of the world the value-added is done by specific mapping systems, and the data are sent as fast as possible to the end-user that has a strong interaction with the authorized users.

This is a map in which we can roughly see which is the distribution of the activations of the different geographical areas of the world, classified by the different kind of emergencies that are shown here.

The authorized users represent the National Civil Protection in addition to two specialized agencies can request activation of the Charter. One is the United Nations Office for Outer Space Affairs and the other is UNITAR/UNOSAT.

The authorized users around the world are on a pre-defined list of user organizations that correspond to 35 countries.

Here we have the three main mechanisms to access the Charter. The first one is the Direct Mode, the Direct Activation Mode that is called Mode 1. The only bodies authorized to directly request the services of the Charter are the authorized users, typically Civil Protection, governmental relief organizations, and authorities with a mandate related to disaster management from the country of a Charter member. This Mode corresponds to 40 per cent.

The second Mode that is a new Mode called "Activation Via Sponsor AU". Under this model, the country that is requesting Charter activations calls an agency that is a member of the Charter and this agency does the request through a Civil Protection Agency associated with it. Then this model have a Bilateral Agreement with an authorized user, the example is Argentina with Regional Project Managers in Latin America, is that 30 per cent of activations over the last two years.

And the third Mode is activation via the United Nations, the third Mode. Users may request assistance via United Nations intermediaries, the United Nations Office for Outer Space Affairs and UNITAR/UNOSAT, two Organizations that have been granted the authority to request activations. That is that 30 per cent of activations over the last two years.

We have here a breakdown of the activations mode divided by Modes 1, 2 and 3 in which you can see the places in which the three Modes, that is the United Nations Office for Outer Space Affairs way, and the others that are mainly in the South American part corresponds to Mode 2. In Europe, it is mainly the Mode 1.

There are four examples I want to show that are very accessible through the webpage of the Charter. They are close to 215 activations. Then there are several examples. These emergencies can be directly downloaded from the Charter webpage. This is an example of the oil spill in front of the Spain Coast on 14 November 2002 in which you can see it, thanks to the SAR images previously processed under the SAR that is shown there. The evolution of the oil spill in two different dates, 17 and 20 of November 2002. The second is the Bolivia fires that are spread along close to 200 kilometres in this image in which we can see also the smoke taken by the Argentine satellite SAC-C and the process under the Charter through specific forestry

Project Managers, especially in for forestry applications.

The third one is related to the hurricane, flooding and landslides in Central America in 5 October 2005 in which they used specific SAR data for this and change detection mapping.

This is now close to this time was on 16 August 2007 in which they used very high resolution the first time in which the Charter used very high resolution images of 60 centimetres and images of panchromatic 2.5 metres in which also we can see at the right side of the slide a classification of damages to buildings over some parts of the affected city of this one.

The last one is the Cyclone Nargis in Myanmar in May 2008 in which they have done damage assessment using also images of 50 centimetres resolution over the affected area in which there were a big amount of life loss.

Speaking about the Charter and the new disaster management initiatives, the recent events around the Charter have shown that there is an increasing recognition of the usefulness of space products and the other emerging space-based initiatives on disaster management. But the conclusion is not to modify the Charter's mandate but rather strengthen its capacity to respond to emergency situations and identify expectations the other initiatives have on the Charter and explore options to strengthen the Charter's effectiveness and relevance.

Speaking about this, the new initiatives are welcomed by the Charter as it makes the space-based solutions to support disaster management more efficient.

These developments require proper coordination between these capacities so they are exploited in synergy. Access to higher resolution system, capacity-building is a key element to improve the use of space technologies by Civil Protection Agencies, end-users and decision-makers to train specifically Project Managers that their people very important for this system to work. More information and training to promote access and use of satellite imagery for disaster response and satellite data given by the Charter to relief agencies but there is a need for end-to-end services, not only satellite imagery. It means rapid mapping services and so on.

Regarding the GEO Charter Universal Access Proposal, the Board of the Charter endorsed the principle of universal access which is sound and necessary for the benefit of all societies worldwide.

The GEO Secretariat requested access to the Charter for all GEO member States and the Charter and the GEO are working together on this proposal to find a new mechanism or a specific mechanism to cope with this request.

The analysis done by the Charter, South America is covered by the Mode DOS(?) of activation of regional network. New agreements for the Asia-Pacific region regarding Sentinel-Asia. There is a new possibility through the MIC/DG-ENV in Europe and the Charter and disaster management stakeholders in other regions should conduct further analysis and consultations to improve data access.

Regarding the access of the Asia-Pacific region, there was a Board decision regarding the Sentinel-Asia. The Charter Board's decision regarding the Sentinel-Asia Initiative will be linked to the Charter through the ADRC, the Asian Disaster Reduction Centre.

The Japanese Agency will implement a coordination to allow channel Sentinel-Asian requests from Asia-Pacific users. The Board is granting the ADRC the privilege to submit requests on behalf of Sentinel-Asia users. After the confirmation by these members of Sentinel-Asia, the Charter procedures will be modified to accommodate for the operational link with Sentinel-Asia. That is an escalation process in which the Charter Board and the Secretariat is involved with now with the JAXA Agency.

The Charter Summary is the following. It is a successful example of international cooperation in the peaceful uses of outer space. It provides a one-stop shop for civil protection and emergency organizations. It is triggered by Civil Protection or Emergency Rescue Services and United Nations specialized organizations. It provides an efficient data delivery mechanism relying on existing resources. It is free of charge to the users. It has improved its resources over the years since 2000(?) to now. New space agencies became Charter partners, there are now nine agencies. New satellite have been progressively integrated into the Charter Constellation. It is activated over all continents for a variety of disasters and deals only with the emergency response phase and it is a unique global capacity.

This is the webpage for somebody if they need to check for any one of the 215 activations around

the world. Thank you very much. Thank you Mr. Chairman.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): Thank you Mr. Platzeck for your presentation.

Are there any questions or comments?

Yes, Belgium. Please.

Mr. J. F. MAYENCE (Belgium) *(interpretation from French)*: Thank you very much Chairman. I would also like to thank the representative of Argentina for his very valuable statement.

You know there is a paradox that we come up against when one engages in promotional efforts for all of these technological applications. People out there tend to think that science will do miracles and solve all their problems overnight, literally. What comes to mind is this tragic catastrophe of the French airliner recently. The Belgian authorities were asked whether there were any mechanisms for triggering a recourse to satellite capacities in this regard to identify the position, the location of this downed aircraft. And I would like to share some of the expertise that we have.

In cases that we are familiar with where there has been air disasters where one has to determine the spatial coordinates of a downed aircraft in very difficult conditions, my question would be would this Charter have any high resolution space determination, real time capacity to enable us to zoom in on the location of such aircraft which could also be used, for example, for more natural disaster-type relief cases. Thank you very much.

Mr. G. PLATZECK (Argentina): Well there is a specific technical matter on this. There was no request on this direction. There are some countries that are trying to get for some lost airplanes that were lost years ago in the middle of an _____(?) area, the use of SAR-specific sensors and it seems that it is very difficult for solid air.

In the case of the sea, you know that there are some kinds of SAR systems that detect metal structures in the sea because it is a specific capability of the SAR systems. And I think that this is not specifically in the scope of the Charter this kind of accident because up to now I think we did not receive any kind of request from this direction, in the schedule of the Charter, on the list of possible emergency events. But it is also a matter of resolution and a matter of frequency to have the capability to locate very small or small debris of a plane over the sea with satellites that have high resolution perhaps picking in fine modes. We are speaking about metres or five metres or 10 metres more or less than, I think, that it seems to need a specific system to process the data and to have a very specific capability to test and to plan very fast the acquisition. I think that is not impossible but it is a new request that surely we will need to analyze inside the Charter. Thank you.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): Thank you very much for your kind explanation.

If there are no more comments or questions, thank you once again Mr. Platzeck for your presentation.

The next presentation, I would like to request Mr. Kedjar(?) of Algeria to make your presentation on the Algerian Response to Flooding in Ghardaia.

Mr. F. BENHAMOUDA (Algeria) *(interpretation from French)*: Thank you very much Mr. Chairman. Thank you for this opportunity given to the Algerian delegation to share our recent experience in using high-resolution satellite images in addressing floods that happened in the Ghardaia region of Algeria in October, specifically 1 October 2008.

I am going to talk about the damage assessment in the post-flood period through the use of satellite imagery of different degrees of resolution. Next about cartography mapping the various levels of flooding, and the post-disaster measures that were completed in December 2008.

So, as I said, this is in the region of Ghardaia. Work was based on satellite imagery of different degrees of resolution including high resolution, geographic information systems and specific tools such as terrain mapping and GPS. The work was carried out with the participation of local services of the Administrative Department which we call 'wilaya', the Department of Ghardaia as well as agricultural rural organizations and the National Heritage Department.

Now analysis of the situation before and after the floods, a detailed analysis of the danger levels in the various flooded areas followed by the relocation of those affected. Now this is an image received before the flood, SPOT-5 satellite image, before and after the flood. You see the dam here and the level of water that the dam has held back. The dam did not exist in 2004. This is new, 5 October 2008, after the flood the dam has limited the damage caused by the flood. This is

plainly visible. You can also see the effects on the surrounding area.

This is an overall view of the palm plantation in the region of Ghardaia. This is the principle agricultural crop here so you see how it was affected, again in this high-resolution satellite image.

This is the way the routes, the motorways were affected, again before and after pictures give us a chance to assess the level of damage caused by the flood.

This is an overall view of the Ghardaia region with an evaluation of the highest risk areas, highest flood risk, again based on high-resolution satellite images and terrain mapping improved by the application of GPS. We measure the level of water at different points on the terrain. We used GPS to be able to define very precise coordinates, geo-referencing on the map, and thus define the various risk areas, different levels of risk, for example, areas below one metre marked in blue, yellow two metres, three to five in orange and the higher water levels in red. Of course, the population is evacuated first as a priority measure from the red zone and then step by step prioritizing these operations based on the risk level as shown by the levels of water obtained through these high resolution satellite imagery.

The Minister in directing the evacuation and relocation operations heavily relied on these images and the analysis based on these images.

This is an overall view of the town of Dhayet Ben Dhahoua in the flooded area.

This is a view of the town of Berriane and the town of Metlili.

All these towns are in the area that was the most heavily flooded.

This is an overall view of the town of Guerra here.

Now in the context of using satellite imagery for the evacuation and relocation of the public, we took special images which you see here illustrating various phases in the relocation process. First, on 14 priority sites, images were taken every step of the way through the installation of platforms, evacuation, relocation. The operation was completed by December 2008 and following that operation and its completion, another high-resolution image, a series of high-resolution images were taken to illustrate the effectiveness of the building of temporary housing and the relocation of the population in the region of Ghardaia. Three phases basically. The first phase right after the flood, evaluate the damage, establish priorities, forecast the movement of water. The next phase, the second phase, evaluate risk levels and establish a well-defined procedure for re-populating and relocating the public. And third, establishing temporary housing and relocation.

And by the way, the first image that we obtained, the first high-resolution image, was obtained after we invoked the International Charter Space and Major Disasters. So this is a very good example of how that Charter is triggered in a real-life emergency situation and within a matter of hours the images were obtained and even after two days and more days, they were still of great value.

Now I am going to show a film which would illustrate what happened in the region of Ghardaia. We cannot se it apparently.

You see the effects of the flood. This palm plantation and populated area, you see the damage caused by the flood. Many palm trees uprooted, many houses destroyed as well as roads.

This is about 30 metres. It is a phenomenon that could not have been predicted especially the aftermaths. This is the town of Ben Isgan(?). It was not affected because it is located on higher ground. So clearly there is a big difference in the way different sites were affected, depending on their altitude and location. The town of Buriti(?) was affected but again on higher ground there are areas that were not damaged.

Right now, with the regional authorities of Ghardaia, we are developing a standard plan of relocation so that people are not merely relocated but that preventive measures are taken to minimize the risk level in case such disasters happen at a future time.

You see again damage to the plantation and the housing because of the dynamic of the flood. The town of Atafay has been seriously affected. Thanks to these images, these high-resolution images, we have been able to assess damage not only town by town but practically house by house and we were able to take decisions in a very thorough minute way in terms of the most effective relocation programme. Again, the farms, a lot of the area has been destroyed, trees uprooted. Thank you very much for your attention.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): Thank you very much Mr. Kedjar(?) for your presentation, very interesting.

Are there any questions or comments on this presentation?

I see none.

So may I now call upon the next presentation to be given by Mr. Giovanni Rum, the representative of the Group on Earth Observation entitled "GEOS: Approaching a Time for International Decision".

Mr. G. RUM (Group on Earth Observation): Thank you Mr. Chairman, distinguished delegates, it is always a pleasure for me to give you a presentation on current activities and achievements that have been done with this Group on Earth Observation and to build up our global Earth Observation System of Systems and to provide data information for climate-related applications.

The concept of GEOSS is quite simple. The Organization has been put in place to implement the system to serve the so-called societal benefit areas through this Global Earth Observation System of Systems.

As my talk today will be on climate, of course, I will just guide you through what are our activities and what redeeming(?) achievements we have made.

In this slide you see our objectives so what GEOSS would deliver in the so-called climate societal benefit area and it will deliver understanding, assessing, predicting, helping to mitigate and to adapt to climate variability and change. It is clear that the work of Group on Earth Observation is based on a number of very human, very important keywords. One of these is the word "cross-cutting" in nature. That means that we must recognize that there are a lot of interrelation among all the societal benefit areas I just described and climate is really a good example on how the Group on Earth Observation tries to approach the problem.

Of course, to cope with this climate change, if I may call so, demands as the basis a good scientific understanding and, of course, reliable and I will also add sustained observations. So we expect that the outcomes of our work, that is the implementation of GEOSS, will enhance the capacity to model, to mitigate and to adapt to climate change and viability. Of course, as I said before this aspect of climate has impacts on all, I would say, human lives.

So this quite a synthesis of expected benefits that range from a scientific point of view, that means that the integrated observations and related information we are going to provide will strongly support and probably make a better life of the scientific community but also it would serve a numerous range of, I may call them, end-users and in this the United Nations and all the framework conventions are a good example. Here is mentioned the United Nations Framework Convention on Climate Change. That is, of course, directly affected associated to the IPCC but also other conventions like the one on biodiversity and the one to combat desertification and will take a lot of benefits in their implementation from this climate-related dataset we are going to produce.

So as I said before, and probably now is better understood the diagram. The climate change adaptation is really the cross-cutting dimension of all the Global Earth Observation System of Systems we try to put in place.

So just a few pictures here. Of course, it is the case for fighting emerging disease in which you may well see that weather, climate, biodiversity are factors contribution. It is also the case to define energy policy in which even more societal benefit areas are interrelated to arrive to proper decisions. Securing food is another example of practically tying together everything from water to health, climate eco-systems. And also important reducing the impact of disasters. So these are a few examples that try to describe the nature of what we are doing with climate but also to give an indication(?) of how we approach the implementation of the Global Earth Observation System of Systems.

Going into a little bit more detail what is in our Work Plan. Now we have in force a Work Plan that covers from 2009 to 2011 so we have four major tasks, so-called tasks. The first one is about to build a climate record for assessing variability and change. So in year 1 of the keywords is re-processing and re-analysis of climate data to just reconstruct and include a more reliable climate dataset until the observation we have will allow us to go. Then we this cross-cutting dimension that is simplified in the environmental information for decision-making, risk management and adaptation in the different societal benefit _____(?) that I mentioned.

Then we have a specific task for global carbon observation and analysis systems that we expect will

provide really the key basis also for post-Kyoto negotiations in terms of global carbon observations, forest carbon tracking and also global monitoring of greenhouse gases from space. Set from space, of course, we have also the important component but as of today really work the hardest space-based observation that are making possible this real improvements in modelling and prediction that we are looking in the last two years.

And then but not a less important point, to ensure a continuous flow of data, ensuring sustainability and continuity to the observing system. Without this, really it would be impossible to go a step further not on scientific not even on the end-user point of view.

Here I have some more details and description on each of the tasks that I will skip and I will let you read in the presentation that will be distributed. So each task is structured in a number of sub-tasks that while keeping a certain homogeneity to a certain action with the task, it gives also a certain kind of flexibility to really use our major mechanism to have this task brought forward, that is voluntary contributions from our members and the participating organizations. So each of the tasks I mentioned before has a certain number of sub-tasks. You will find in your presentation.

So now I would like to move to, be just reminded that, in fact, in the last years in Japan, there was a clear commitment from the G8 countries to really accelerate the development of the Global Earth Observation System of Systems and, in fact, the priorities were put, as you may read there on climate change, water resource and management and, of course, through the strengthening of observation prediction and data sharing.

Here for your consideration is a list of 2009 key climate events. Of course, we are about in the middle so we are looking forward for the Third World Climate Conference on 31 August to 4 September that will be held in Geneva. That probably will be the key event of this year on climate and we expect renewed commitment and the Group on Earth Observation will be there to support scientists and countries. And then a number of probably more specific _____(?) and at the end of the year, the Conference of the Party of the Kyoto Protocol in December in Copenhagen.

So now a few nice pictures that try to show some achievements. Of course, when I talk of achievements, they are achievements of our members and participating organizations that are working together within the framework that is provided by our Group. So, for instance, and here is about one of the tasks that was mentioned before mainly is this re-analysis and re-processing so this is about ozone climate data record. For each of these achievements, the slide identified the relevance, I mean in this case to determine ozone trends and variability.

Then this specific one on the International Polar Year that, in fact, is lasting about three years now. That is fine. And there is a series of coordinated observations mainly from satellites but not only to characterize and provide data for meteorological and climatological studies and, of course, we have a task in our Plan that will pick up when the International Polar Year will end and try to ensure continuity to observation and associated assessments.

This also is an important is the re-processing of surface radiation products for the coverage in the Indian Ocean that is really feeding a data gap in observation before the instrument MODIS was put in orbit so some of you may know what MODIS is and this was based on the European meteorological satellite, this gap closure.

Then this is another example of an extend long-term series for this other instrument that has great significance in term of the longest record for clouds, aerosols and surface temperature that are the essential variables for climate studies.

Then GlobCarbon and Globcolour is the creation of datasets about the global carbon trends and the global ocean colour that is also essential for climate studies.

Then this is not yet an achievement, it is something that is going on concerning the forest carbon monitoring for which we expect to have some good outputs by the end of the year in time for the event that I mentioned before in trying to demonstrate reliability, accessibility of data and associated processing, interoperability among different space observations both on an optical and radar point of view. We will try to link this remote sensing-derived information with emissions estimation, that means to the eco-systems models on the ground. And then we will also try to validate a number of, at the beginning, very basic and robust products that then we plan to improve and to increase the information content.

So we have already made a first step, that is really important for this Committee that was a commitment made by this Space Agency, I would say, through the CEOS, that is the Committee on Earth

Observation Satellites, and so they agreed to support the first and initial demonstration phase that would probably last one year from now and then to study of the measures to put in place a systematic observation strategy to ensure yearly information products on forests.

This is just the few, one or two images we got from our Japanese colleague from the GOSAT satellite recently launched in February this year from which we really expect a great improvement in direct space measurements of greenhouse gases. So these are some initial products released but that they still need calibration and further assessment. But this to say that a new important resource is now available in this field.

I have just finished the presentation. I would just like to thank for the opportunity that was given and also recall that probably the most important achievements we had beyond the technical ones is the fact that we have created a common framework for all the main climate players around the world to work together to share data and products and, of course, to improve the decision that our community will probably have to make in the near future. Thank you.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): Thank you Mr. Rum for your presentation.

Are there any questions or comments?

Mr. F. DUARTE SANTOS (Portugal) (Second Vice-Chairman): I would just like to say that it is a very important initiative. It is a very broad spectrum and very ambitious in its scope and it will certainly provide a very diversified basis of information. My question is regarding one of the items on environmental information for decision-making and especially concerning adaptation which is something which is very relevant to countries which are particularly vulnerable and also within the context of the United Nations Framework on Climate Change there is an initiative on adaptation. To what extent are the products that are obtained within the context of GEOSS made available on a sort of an operational basis or in collaboration with other organizations of the United Nations system?

Mr. G. RUM (Group on Earth Observation): Thank you. First of all let me resize that. In fact, we are rather new as an organization. We are operational since 2006 so what I am showing here is just some initial, let us say, achievements and we plan to be, let us say, fully operational in 2010. Nevertheless, on this specific point of adaptation, of course, there are these products that I have shown that are directly available to countries because this principle of data free, data sharing is at the basis of our action, but also we have ongoing contact with the IPCC in order to organize with them how we can support the next assessment report, in particular for mitigation and adaptation.

Mr. S. VIBULSRESTH (Thailand) (First Vice-Chairman): Thank you very much.

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

We will convene promptly at 10.00 a.m. At that time, we will continue our consideration of agenda item 8, Report of the Legal Subcommittee on its Forty-Eighth Session. We will also begin our consideration of agenda item 9, Spin-Off Benefits of Space Technology: Review of Current Status. We will begin agenda item 12, Space and Climate Change, and item 13, Use of Space Technology in the United Nations System. Time permitting, we will also begin our consideration of agenda item 14, Use of Space-Derived Geo-Spatial Data for Sustainable Development.

There will be four technical presentations tomorrow morning. The first one by a representative of the DLR, Germany, entitled “DLR’s Earth Observation Activities for Risk and Vulnerability Assessment”. The second one by a representative of Japan entitled “IBUKI”. The third presentation will be by a representative of India entitled “Space Technology for Climate Change Studies: Indian Perspective”. And the final presentation will be by a representative of the United States of America entitled “International Activities of the American Institute of Aeronautics and Astronautics”.

Are there any questions or comments on this proposed schedule?

I see none.

I invite delegates to attend the Roundtable “New Perspectives for Latin America/European Cooperation in Space” at 19.00 hours, followed by a Reception hosted by ESPI. Delegates have already received their invitation in their pigeonholes.

The meeting is now adjourned until 10.00 a.m. tomorrow morning.

The meeting closed at 6.07 p.m.