

**Committee on the Peaceful
Uses of Outer Space***Unedited transcript***559th** Meeting

Tuesday, 13 June 2006, 3 p.m.

Vienna

*Chairman: Mr. G. Brachet (France)**The meeting was called to order at 3.05 p.m.*

The CHAIRMAN (*interpretation from French*): Distinguished delegates, I am opening this session of the Committee on the Peaceful Uses of Outer Space.

Recommendations of the recommendations of UNISPACE III (agenda item 7)

One delegation has asked for the floor this afternoon under agenda item 7, Implementation of the Recommendations of UNISPACE III.

With your permission, I am re-opening the consideration of this agenda item to hear this delegation.

Any objection to re-opening agenda item 7 to hear one more contribution?

I see no objections. Therefore, I call upon the delegation of Nigeria, Mr. J.A.A. Ologun.

Mr. J.A.A. OLOGUN (Nigeria): Mr. Chairman, my delegation wishes to note with satisfaction that appreciable achievement has continued to be recorded by the Committee on this important agenda item, especially as contained in the Report by the Scientific and Technical Subcommittee at its forty-third session to COPUOS. Of particular interest to my delegation are the recommendations in the aforementioned Report concerning a Plan of Action on:

One, developing coordinated, global space capabilities on (a) maximizing the benefits of existing space capabilities for disaster management, and (b)

maximizing the benefits of the use of and applications of global navigation satellite system to support sustainable development; and

Two, enhancing capacity development in space-related activities.

These proposals which are a reflection of the work carried out and indeed due to the efforts progress made by the various Action teams set up to consider the implementation of the UNISPACE III recommendations.

These efforts are sufficient demonstration of the willingness of member States and their commitment to maximize the benefits of the use and the application of space technologies to mitigate natural and man-made disasters and enhance sustainable development through capacity-building to safeguard quality of life on Earth.

Mr. Chairman, another important recommendation made by the Subcommittee is that of establishing a closer link with the Commission on Sustainable Development and in accordance with the agreement of the Committee at its forty-eighth session.

Recalling that Nigeria chaired the Action Team 11 on Sustainable Development, my delegation wishes to recognize the work by the Office for Outer Space Affairs and the Committee regarding the implementation of these recommendations as this will serve the interest of developing countries and in agreement with the resolution of the World Summit on Sustainable Development held in Johannesburg, South Africa.

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

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



Mr. Chairman, my delegation is further in support of the recommendations by the Working Group of the Whole as contained in the Report of the Scientific and Technical Subcommittee that initiatives be undertaken to promote greater participation of young people in the areas of space and engineering and the agreement reached to invite member States and in particular the permanent observers of the Committee to report to the Working Group during the forty-third session of the Subcommittee on their activities relating to the promotion of space science and engineering among young people.

Thank you Mr. Chairman.

The CHAIRMAN (*interpretation from French*): Thank you for your statement on behalf of the Nigerian delegation.

Are there any comments or questions on this statement?

I see none.

Therefore, we are going to move on with this afternoon's session and take up agenda item 11, Space and Society. Then we will move on to agenda item 12, Space and Water. And, time permitting, we will start on agenda item 14, Other Matters.

At the end of this afternoon's session, there will be four technical presentations. The first one on the activities of the Japanese Agency for Aerospace Research by Mr. Hitoshi Yoshino(?) of Japan. And then a presentation on the functioning of the African Centre for Space Science and Technology Education in English language. Then the same for the African Centre for Space Science and Technology Education in French language. And finally, a report on the functioning of the Centre for Space Space and Technology Education for Latin America and the Caribbean.

I would like to inform the delegates that the Working Group on the Use of Nuclear Power Sources in Outer Space of the Scientific and Technical Subcommittee is going on with its intersessional meeting. All interested delegations are invited to attend this in Room C-0713.

I would also like to remind distinguished delegates that they are invited to attend the special ceremony to be held after this meeting is adjourned at the venue of the Permanent Space Exhibition on the Ground Floor between buildings D and E.

Finally, heads of delegations are invited by the Austrian delegation to an evening at a Heurigen. That will start at 1900 hours.

Space and society (agenda item 11)

Distinguished delegates, we are now going to consider agenda item 11, Space and Society, and under this agenda item, we have a statement by the distinguished representative of Hungary, Mr. Ferenc Horvai.

Mr. F. HORVAI (Hungary): Thank you Mr. Chairman. Mr. Chairman, distinguished delegates, my delegation highly appreciates that in accordance with paragraph 49 of General Assembly resolution 60/99, this Committee continues to consider the agenda item entitled "Space and Society". My delegation takes note that, in accordance with the Work Plan adopted by the Committee and approved by the Assembly, the special theme for the focus of discussions for the period 2004-2006 is "Space and Education". I would like to inform the Committee on the recent developments of this issue in Hungary.

As a consequence of our closer and closer cooperation with the European Space Agency, Hungarian students are allowed to participate in ESA's different educational programmes. Since we consider space-related education as a high priority item, we highly appreciate this opportunity, offered by ESA, in the framework of these educational programmes they could and will be able to participate at the International Astronautical Congresses. This year is the first time that a Hungarian team succeeded to be among the 31 selected participants of the students' parabolic flight campaign, so they will carry out a material sciences experiment in the limited duration microgravity. We also took note with satisfaction that three Hungarian teams in the framework of the Student Space Exploration and Technology Initiative, SSETI, can take part in the European students' microsatellite programme, in European Student Earth Orbiter, to be launched in 2008.

Let me inform this Committee about an important initiative by the staff of the Space Research Group of the Eötvös University. After the upgrade of the satellite receiving station of the University, the recorded MODIS images were widely published in four Hungarian language Internet portals. These images cover the whole receiving range of the station from Norway to the Sahara and Arabian Peninsula. Short explanations are also given to the published materials describing the relevant points of the remotely sensed data. The average number of the readers is

around 20,000 per week, but in case of some events, as natural disasters, for example, floods, this number may go up to 30,000 per week. Since the end of 2004, almost 200 images and articles have been published in Hungary. The articles are also available at the largest Hungarian language Internet portal in Romania on a monthly basis, having several thousands of visitors there. We are convinced that the initiative of regularly publishing the so-called "Satellite Image of the Week" successfully contributes to the increase of space awareness and the public knowledge of the importance of remote sensing applications.

Another Hungarian initiative related to the increase of public awareness of space technologies is the following. HUNAGI, the Hungarian Spatial Data Interest Community, containing 112 institutions and organizations in the field of geo-information, made a proposal for the EUROGI, the European umbrella organization for geographic information, to set up an inventory on the largest trees of Europe. The aim is a photo-documented inventory of these oldest living species of Europe, using enhanced methodology including geo-referencing by GNSS, GI/EO and Google. The concept is actually based on the methodology already published in Hungary. The proposal was introduced at the Annual General Assembly of the EUROGI in Brussels on 31 March 2006 and received great attention. As follow-on action, the concept has to be drafted for EUROGI, highlighting the enhanced methodology and a proposed plan for implementation.

Finally, let me report a recent, successful Austrian-Hungarian project, also contributing the increase of awareness of space-related matter. Very recently, as a result of the cooperation of an Austrian and a Hungarian company, the Hungarian version of the European Space Agency's Space Atlas for Schools has been published. The Atlas is a geography atlas, as all delegations could see it in the Austrian edition, based completely on satellite images, so properly answering the educational challenges of the twenty-first century. We are proud that firstly only the German and Hungarian versions appeared. We hope that the English and French versions will appear soon and will be introduced to this Committee by the Austrian publisher company. The project was supported by the Ministry of Informatics and Communications, as well as by the Hungarian Space Office, since both institutions consider space-related education a high priority issue. The experimental version of the Atlas is being distributed among geography teachers, whose opinion could be valuable in order to firmly establish a remote sensing-based education project. We sincerely hope that on the basis

of the experiences in different countries, this satellite image-based, state-of-the-art education tool can be incorporated into the European educational system.

Hungary welcomes the idea that, according to the Work Plan, the Committee is invited to develop specific, concrete action plans and a brief summarizing document on the role of space education. Let me remind the Committee that the Spaceweek International Association and the EURISY Association, both of which have observer status in the Committee, have valuable experiences in space education and awareness of increase of outer space-related matters. Their experience is worth to be used in this activity.

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

The CHAIRMAN (*interpretation from French*): Thank you Mr. Ferenc for your statement which shows that Hungary has been very active in this area, space and society, particularly in the sphere of education and its activities benefit the public at large in a more general, global sense and we thank you for having reported on this and for participating in the project initiated by our Austrian colleagues.

We are moving on to the statement by the delegation of India. Mr. Radhakrishnan has the floor.

Mr. K. RADHAKRISHNAN (India): Thank you Mr. Chairman. In the developing countries, lack of proper education and illiteracy are perennial problems. Identification of space and education as the primary theme under this agenda item is of high relevance and importance to the developing countries. The improvement in education is essential for capacity-building in the developing countries to absorb higher technologies required for effective implementation of space applications programmes. We are of the view that the United Nations Programme on Space Applications should place more emphasis on supporting education and training for capacity-building in developing countries, in particular through the Regional Centres for Space Science and Technology Education.

Mr. Chairman, the Space Programme in India is applications-driven and is oriented towards national development. These Application Programmes involve the remote sensing, communication and meteorological satellites. To provide the space-based services related to education, healthcare, weather, land and water resources management, mitigation of impact of natural disasters through a single window delivery mechanism,

ISRO has come up with a concept of Village Resource Centres. This has made sufficient impact in various regions of the country over the last one year and is functioning well.

During the year, the second cluster of nine Village Resource Centres have been set up in Kerala and Tamil Nadu in association with AMRITA Vishwa Vidyapeetham. This cluster has Village Resource Centres located in schools, tsunami relief camps and orphanages.

Sixty-six Village Resource Centres are being set up in cooperation with the Kerala State Planning Board, Mysore Resettlement and Development Agency and the Karuna Trust in Karnataka, MS Swaminathan Research Foundation, the Governments of Andhra Pradesh, Maharashtra, Orissa, Rajasthan and Tamil Nadu States, Kutch Nav Nirman Abhyans of Gujarat and the Self-Employed Women's Association of Ahmedabad.

Some of the interesting outcomes of the establishment of Village Resource Centres have been that it has motivated the farmers towards scientific advisories and expert consultations on natural resources management, enthused the schoolchildren resulting in a reduced number of school drop-outs, provided for better educational and healthcare services, online decision support, weather services, water management and tele-fishery support.

We consider that this concept of Village Resource Centres is quite an appropriate application for other developing countries as well.

Mr. Chairman, the Indian delegation is of the view that the United Nations Programme on Space Applications, while addressing matters related to capacity-building in developing countries, also plays an enhanced role in strengthening the international cooperation. The requirements and the scope to provide distance education through satellites are enormous in India and ISRO will continue to meet these national challenges in education through its space systems and application programmes.

Thank you Mr. Chairman.

The CHAIRMAN (*interpretation from French*): Thank you Mr. Radhakrishnan for your statement on behalf of the Indian delegation. Thank you for the information you have communicated to us on the concept of these Centres that are highly developed in your country and have accumulated exceptional experience in the field of promoting and

disseminating the most state-of-the-art technologies through satellites. I believe that this example posed by India might interest many of the developing countries represented on this Committee.

Now, distinguished delegates, we are going to ask the delegation of Brazil to take the floor. You have the floor Sir.

Mr. C. E. DA CUNHA OLIVEIRA (Brazil):

Thank you Mr. Chairman. Mr. Chairman, the Brazilian Space Agency, also known as AEB, created in 2004 the Programme AEB School. The Programme aims to stimulate amongst students their interest for space science and technology, their applications, as well as activities undertaken under the Brazilian Space Programme.

In 2004, a pilot version of the Programme was initiated in public schools of the Federal Capital, Brasilia. This experience has proved to be highly successful, eliciting the willingness of many other cities and Federal States to host similar projects.

And in response to such widespread interest, the Brazilian Space Agency has put in practice a plan to expand the activities of the Programme. The plan foresees the compilation of best pedagogical practices developed by schools and research institutions in areas such as astronomy, remote sensing, meteorology, satellites, launching vehicles, as well as basic sciences. These experiences are being disseminated to schools through a network of research institutions and scientific societies. A number of scholarships has been offered to students from graduation and post-graduation courses involved in the elaboration of pedagogical tools and materials which associate space-related topics with matters already included on the national educational curricula. A variety of these pedagogical products have been developed so far, including TV documentaries, libraries, planetaria, telescopes, exhibitions and competitions. The institutions involved in the development and the preparation of these materials, I would name the University of São Paulo, the University of Brasilia, the State University of Rio de Janeiro, the Astronomical Museum, the Brazilian Academy of Sciences, the Brazilian National Space Research Institute, the National Secretary for Science, Technology and Social Inclusion and UNESCO.

Mr. Chairman, in my country, in Brazil, there is wide acknowledgement that if we wish to ensure a smooth and consistent implementation of our space activities, we must start to nurture right now, a new wave of science knowledgeable, space knowledgeable

citizens. This is but one of the many challenges that my country, Brazil, will have to deal with in the years to come. Much has been said during the current session about the need to create and disseminate knowledge about space activities, their development and applications. The Programme AEB School is a response to that challenge and my country is committed to continue to enlarge, in a consistent manner, its scope and the number of its beneficiaries.

Thank you.

The CHAIRMAN (*interpretation from French*): Thank you very much for your statement and for the information you have provided to us on this outer(?) (AEB?) school programme. With your permission, I have a question. I am not sure I understood, to what age group is this Programme addressed? Are these students aged 12 to 15 or are there senior students that are preparing for university?

Mr. C. E. DA CUNHA OLIVEIRA (Brazil): Thank you for your question Mr. Chairman. The Programme targets students from primary and secondary schools in Brazil and the pedagogical tools and materials which are being used in the Programme are being developed by students from graduation and post-graduation courses.

Thank you for your question.

The CHAIRMAN (*interpretation from French*): Thank you for this clarification.

Now I am going to ask delegations if they have comments or questions to ask of the three delegations that have spoken under this agenda item.

I see no requests for the floor.

In that case, we are going to move on. We will suspend the consideration of agenda item 11 and we will resume it tomorrow morning.

Space and water (agenda item 12)

And at this point, distinguished delegates, we are going to embark upon the consideration of agenda item 12, Space and Water. Under this item, I would like to remind delegates that at its forty-eighth session last year, the Committee noted with satisfaction that the presentation on the status of a pilot project communicated to the delegates, "The Use of Space-Based Technologies for the Regeneration of the Water Basin of the Republic of Chad" and it was agreed that we were going to invite representatives of the States

involved in this pilot project to update us on its progress at this point. I think this causes great interest.

On my list under this agenda item, the first speaker is Madam Ulrike Butschek of Austria. Madam Butschek, you have the floor.

Ms. U. BUTSCHEK (Austria) (*interpretation from French*): Thank you Mr. Chairman.

(Continued in English) Mr. Chairman, two years ago the General Assembly declared 2006 the International Year of Deserts and Desertification. According to a United Nations study published last week, we are faced with the fact that one third of the Earth's surface is threatened by desertification and the tendency is growing. The consequences affect over one billion people. Safe access to fresh water has always been a basic need for mankind yet it constitutes a daily challenge for many. Each year the lack of water causes an estimated 42 billion in lost agricultural productivity. The result is food insecurity, leading in turn to famine and poverty. Social, economic as well as political tensions may follow.

Mr. Chairman, no consideration of economic, social or environmental development is possible without considering the issue of water. We have sought to incorporate this vital matter in the deliberations of this Committee and we note with satisfaction that we have had a considerable amount of fruitful and interesting exchange on this topic. Space systems and applications can significantly contribute to cost-effective water resource management as well as to prediction and mitigation of water-related emergencies.

In the course of the United Nations/Austria/ESA Symposium in Graz, the most recent series from 2003 to 2005, we have tried to do justice to the importance of the issue by dedicating the thematic focus to the question "how space systems can be used for the protection and restoration of water resources".

The overall objectives of the symposia series were to review progress made in the implementation of pilot projects using space technology for management, protection and restoration of water resources; to identify low-cost space-based solutions affordable by developing countries; to examine the required training for target groups in using space technologies; to identify a functional partnership to promote space technology for addressing water-related challenges; and to enhance the participation of women in decision making.

Each year around 70 decision makers from developing countries actively participated. In the course of the 2004 Symposium, a pilot project for water resource management in the Lake Chad Basin you just mentioned was reviewed. In this context, we will look with interest at the report about the implementation of the Lake Chad pilot project.

Novel low-cost systems were demonstrated and the access to already available remote sensing data by means of space applications was addressed. We hope and believe that by supporting this symposia series, we contributed to the Action Plan laid out by the World Summit on Sustainable Development.

Mr. Chairman, let us work in this Committee towards pooling our efforts and galvanizing action so that space technology can contribute to reversing the trend of desertification as well as the growing frequency of floods and thus set the world on a safer, more sustainable path of development.

Thank you Mr. Chairman.

The CHAIRMAN (*interpretation from French*): I thank Ms. Butschek for her statement. I also thank the Austrian delegation. I thank her for Austria's strong involvement with the Office for Outer Space Affairs in the organization of the Graz Symposium which focuses on the Lake Chad project. So again thank you for your statement.

Would any other delegations wish to take the floor on space and water?

I see none.

We will thus continue consideration of agenda item 12, Space and Water, tomorrow morning.

Other matters (agenda item 14)

Distinguished delegates, I now propose that we address the consideration of agenda item 14, Other Matters. Under this agenda item, which by definition is very broad in scope, the Committee will examine a number of issues. Firstly, the Strategic Framework Project for 2008-2009 for the Peaceful Uses of Outer Space. I would like to draw your attention to Conference Room Paper No. 5 which was distributed last week, on 8 June to be precise. This document is a draft project for the Strategic Framework for 2008-2009 for the Peaceful Uses of Outer Space and delegations are invited to make any comments on this document, proposals of the Office and the Committee and subsidiary bodies for the period 2008-2009.

During its session last year, the Committee noted that the Group of States of Western Europe and Others had approved the candidacy of Mr. Filipe Duarte Santos from Portugal as Second Vice-Chairman and Rapporteur for 2008-2009. At its forty-third session this year, the Scientific and Technical Subcommittee noted that the Latin American and Caribbean States had approved the nomination of Mr. Ciro Arévalo Yepes from Colombia as candidate to the chairmanship of the Committee for 2008-2009. The Secretariat has already distributed a letter which was sent with by the representative of Bulgaria as Chairman of the Group of East European States in which the Group approved the candidacy of Mr. Vladimir Kopal from the Czech Republic to chair the Legal Subcommittee for 2008-2009. The Secretariat has also distributed a letter from the Permanent Mission of Kenya to the United Nations in Vienna as Chair, the President of the African Group States, in which the Group approved the candidacy of Mr. Aboubekr Seddik Kedjar from Algeria to chair the Scientific and Technical Subcommittee for 2008-2009.

These communications are all included in Conference Room Paper No. 3 distributed last week on first day of our session. I invite the Group of Asian States to communicate the name of their candidate for First Vice-Chairman of the Committee to ensure that all candidates to the Office are known, in conformity with the Agreement of 2003.

Third item on this agenda, the role and future activities of the Committee. In paragraph 53 of its resolution 60/99, the General Assembly noted with satisfaction that the Committee had decided to, during the course of its session, to consider under its agenda item, Other Matters, the evolutions of space activities and establishment of a long-term plan to improve the role of the Committee in international cooperation for the peaceful uses of outer space. You will note that the Secretariat has distributed a Working Paper on the item, A/AC.105/L.265, which takes into account the informal document presented by the Chairman of the Committee during last year's session "any points of view expressed by the representatives during the course of the forty-eighth session".

Fourth point, a new agenda item. I would like to remind all the representatives that the Brazilian delegation has proposed to include on the agenda of the Committee within the framework of a multi-annual work plan, a new agenda item, "International Cooperation to Promote the Use of Geo-Space Data for Sustainable Development". The Brazilian delegation

will distribute this proposal to all delegations during the course of this week.

Fifthly, Report of the Secretary-General. In paragraph 32 of its resolution 60/99, the General Assembly requested the Secretary-General to, at its sixty-first session, present through the Committee a report on the use of space technologies in reports which he submits to the major conferences and summits organized by the United Nations to address issues of economic, social and cultural developments, as well as all texts which stem from it and obligations undertaken under this resolution.

Sixthly, request for observer status. The Committee has from the Centre of Human Rights and Peace Advocacy(?), a non-governmental organization, a request to be accepted as an observer. The Secretariat will this week distribute a document containing all the information presented by this entity to ensure the Committee will be able to consider this request.

The Committee will perhaps want to address other issues in addition to those which I have just listed.

Following this introduction, I return to the list of speakers on this agenda item and the first speaker on my list is the distinguished representative of Algeria and I give the floor to Algeria.

Mr. A. OUSSEDIK (Algeria) (*interpretation from French*): Thank you Mr. Chairman. Mr. Chairman, this is the first time we have taken the floor during this session. I would like to start by conveying sincere condolences to the delegation of Indonesia and express our solidarity and compassion following the earthquake that struck the south of the Java island.

The Algerian delegation would like to congratulate you, Mr. Chairman, on your election to the presidency of this Committee. We wish you every success in your noble mission. Your long and rich experience and your international fame will definitely contribute to the successful work of this Committee.

We would also like to thank the Office for Outer Space Affairs for its support of the Committee in its deliberations and its support of the various successful activities carried out by member States.

In that regard, I would like to refer to the Seminar on International Space Law held in Algiers in April 2006 with the significant contribution of the

experts appointed by the Office for Outer Space Affairs.

We are also grateful to Mr. Adigun Ade Abiodun, who presided over this Committee with great competence in the past two years. We are convinced that he will continue to share his great experience from which we all benefit.

Mr. Chairman, Algeria has, for a number of years now, been committed to developing national space activities that make a specific contribution towards sustainable development within the framework of the Space Programme up to the year 2020.

Among priority actions within that Programme, I would like to cite the establishment of a system for the prevention and management of natural disasters based on space technologies and systems for rapid treatment and care and assistance and decision-making based on these satellite operators. This action focuses on regional activities, and in conformity with the recommendations issued by the international seminar, held in Algiers in May 2005, again with the support of the United Nations Office for Outer Space Affairs, and a contribution from the European Space Agency, it works towards better management of space technologies in the prevention and management of natural disasters. We looked among the various natural disasters at earthquakes, forest fires, locusts, floods and desertification.

Indeed, the Algerian Space Agency works in close coordination with the Royal Centre for Remote Sensing of Morocco and the Centre for Remote Sensing of the Sudan, on the basis of the decisions of the Algiers Seminar, within the framework of putting together a regional system for preventing and managing natural disasters through the use of space technologies.

Mr. Chairman, Algeria supports the idea of setting up an international entity called DMISCO to coordinate the use of space technologies for the management of disasters and we have taken an active part in the Working Group put together to develop DMISCO. This entity has to be viable and to be viable, it has to rely in its work on regional systems working in harmony with the existing international instruments such as the International Charter for Space and Major Disasters, GEO, GMES and others.

These, in our view, are prerequisites for the success of this entity so that they could contribute in an effective fashion to reducing the risks of natural disasters and their consequences when those are

inevitable. Algeria will support this entity and lend its modest experience, its expertise and the space capabilities that it possesses or will possess in the future.

Finally, we reserve the right to address this matter again at the time of discussing the relevant report. And even though I know my statement does not fit exactly within this agenda item, I hope you will be tolerant because this is the first time Algeria has asked for the floor.

Thank you.

The CHAIRMAN (*interpretation from French*): Thank you Mr. Seddik. Thank you for your statement. Thank you for the information you have shared with us regarding space-related activities which are developing at a rapid clip(?) in your country. It is a bold programme. Your country which has been struck by a natural disaster on numerous occasions, earthquakes and others. So this, of course, explains the interest which you have in space applications, especially as far as preventing and managing disaster situations is concerned. We are pleased to note the active participation of the Algerian delegation in the debates of the Group of Experts which has addressed this issue and we will, of course, in the future continue to listen with great interest to your contributions. So again, thank you for your statement and my best wishes for the future development of your space-related activities.

I wanted to check whether any other delegations wish to take the floor under agenda item 14 this afternoon.

It does not seem to be the case at this stage. It is quite broad in scope and we will, of course, debate it in depth over the coming days. We will continue our consideration of agenda item 14, Other Matters, tomorrow morning.

A request for the floor from Ambassador González of Chile.

Mr. R. GONZÁLEZ ANINAT (Chile) (*interpretation from Spanish*): Thank you Mr. Chairman. I wanted to ask for the floor at an earlier stage but, quite rightly, you first gave the floor to the delegate of Algeria. He was, after all, on the list before me.

My comments were related to two items, new tasks which the Committee will have to deal with. To ensure that there is a non-ambiguity(?) here, we will

have to take into account the fact that I will have to leave the Committee one day before the end of the Committee's work this session. Concerning the future work of the Committee, however, I would like to state quite clearly, quite unambiguously, that my delegation, as a great many others incidentally, is opposed to having this reflected in the creation of a new body, a new entity, an idea contained in a non-paper presented by Professor Caldesh(?). We are not ready to accept this in any way, for the only thing that we would be doing if we did so would be to add a layer of bureaucracy to a task which should be action-driven.

And secondly, the Centre on Human Rights. This seems to us to be an outstanding idea. The request for observer status, an outstanding idea. But I would like to know which Human Rights Centre this is exactly for there are a great many organizations throughout the world which bear the names "Human Rights Centre" and so forth, but we need to know exactly who this organization is. And within the context, the framework in which we discuss this, the Legal Subcommittee, most bodies which have observer status, follow our work quite closely but we do require additional clarifications because human rights is very important to us.

Thank you.

The CHAIRMAN (*interpretation from French*): Thank you distinguished representative of Chile. On the second part of your statement, the request regarding the Human Rights Centre, for now I am not able to bring any additional clarifications on this. I am not informed myself but I do believe that this information will be distributed tomorrow morning and we will be able to discuss this at that juncture.

Another request for the floor? Iran.

Mr. M. N. ASL (Islamic Republic of Iran): Thank you very much Mr. Chairman. I had the same question as proposed by our distinguished colleague from Chile. Actually it is important that we see that at least the minimum information needed for any kind of status we would like to have for those non-governmental organizations. So before any decision, we have to have before us that information and then we proceed on the understanding that how it could contribute to the work of the Committee.

Mr. Chairman, I have another question, also a matter of procedure. It is about CRP.3. I see that, in that CRP.3, Conference Room Paper 3, we are thankful to the Secretariat Office staff provided us with the _____(?) matter of those who are interested as

the Chairman of the Scientific and Technical Subcommittee. However, I think that a little of the Legal Subcommittee is missing there (*sentence not clear*). So is there any opportunity that we see also that _____ (?) of the Chairman which is going to be for the Legal Subcommittee?

Thank you.

The CHAIRMAN (*interpretation from French*): Distinguished delegate, the first part of your statement I want to reassure you immediately. There is no question here of requesting the Committee to make any decision on this before we have all the necessary information in our hands regarding the usefulness of inviting a new entity as an observer. I do believe this information will be available tomorrow.

On the second item, I now turn to the Secretariat.

(*No microphone*) ... Document CRP.3, I believe, was distributed but we did not have information regarding the nomination of Mr. Kopal to chair the Legal Subcommittee but this information is now available. That is why we referred to it earlier on. The chairmanship of the Legal Subcommittee for 2009-2009 has a designated candidate, designated by the States of Eastern Europe, the Eastern European Group, and this is Vladimir Kopal, our good friend.

We have a new request for the floor from Chile. Mr. González.

Mr. R. GONZÁLEZ ANINAT (Chile) (*interpretation from Spanish*): Thank you Mr. Chairman. I think, I believe that Professor Kopal certainly possesses all the qualities which are required to chair this Committee. We certainly have no reservations regarding his nomination. However, and I think this is in line with your train of thought, there could be a debate on this and as we are now referring to these observers, we could examine the statements which are made within the framework of the Committee, they are developing countries and other States which deal with this. A number of States referred to issues concerning education. All States can consider these issues within the framework of their regional conferences. We refer to this in the case of Ecuador, for example, and work in education is extremely important, of course.

However, having said all this, what I believe was lacking here was a more active presence of UNESCO in this field. I think it would be sound, useful if we were able to encourage other bodies,

members of the system, and I think there are inter-institutional meetings where, for example, the Office for Outer Space Affairs, and other specialized agencies can come together and where they can play a role otherwise we would have things back to front. Countries which undertake enormous efforts in the field of education, for example, during the preparations to the Fifth Space Conference of the Americas in Santiago, it was upon the request of the representative of UNESCO that this was a Conference which was inaugurated by a State Minister, by the Director of the Office for Outer Space Affairs and so forth. So the highest United Nations authorities were present but the representative of UNESCO for Latin America was absent. There was a representative of UNESCO who asked us to make a statement and asked us to include the topic of education in the Fifth Conference of the Americas. I think this has been an outstanding opportunity to bring this to the attention of the Committee.

What seems very clear to me in these debates is that the one fundamental topic is that of education. It is of interest to all States. Whatever angle we look at it from, developing States, developed States, all are greatly interested in this. India, for example. India has accomplished a great deal in this field. I am referring to Project Seven which was initiated in 1977, if my memory serves me right. Outstanding work was carried out in this country. However, the United Nations Organization and, tasked with dealing with culture, UNESCO, made no contribution and I think it would be good to note this, to bring it to the attention of the specialized agencies, for, on the one hand, we are opening the door to a great many NGOs who can play the role of observers, a positive thing, I hasten to add. But I do believe that it is somewhat puzzling that the specialized agencies which require the assistance of States must also provide their contribution. There is reciprocity here. You will not get anything for nothing.

And if we look at the last report on the International Conference, as far as contributions are concerned, we see a great deal of money spent on all this but I do believe that we have to look at what we can do at the various levels. But the States, in fact, are forced to spend a great deal more than they get back in terms of services. And I think we have to look at how we can strengthen collaboration and see what we can do in the future.

The CHAIRMAN (*interpretation from French*): Thank you very much Ambassador González. Like you, I regret the absence of a UNESCO representative from this meeting today when

we are talking about the matter of space and society and all related issues. I think the presence of a UNESCO representative would be very important. You are right, it is normal and logical that UNESCO should involve itself to a great extent in these activities and in the discussion of these matters.

We have another request for the floor, the distinguished delegate of Iran.

Mr. M. N. ASL (Islamic Republic of Iran): Sorry, Mr. Chairman, my understanding is correct that maybe there would be an addendum to that CRP? Because as I said, we do not have any opposition to that and we in advance should congratulate that Chairman for that 2008-2009. But as a matter of procedure, because when we sent this _____(?) to the capital, they are interested to see what the background of the chairmanship of the Legal Subcommittee. In advance, we congratulate.

Thank you.

The CHAIRMAN (*interpretation from French*): Yes, distinguished delegate, the Secretariat, the Director of the Office for Outer Space Affairs tells me that an additional document will be prepared and will address the matter of the presidency of the Legal Subcommittee and we hope also that the results of the internal discussion within the Group with regard to the First Vice-President, in particular, will be forthcoming.

If there are no further requests for the floor under this agenda item for this afternoon, we will reprise our consideration of agenda item 14 tomorrow.

Technical presentations

Thus, we can now move on to the technical presentations. There are four this afternoon. I would like to remind delegates that presentations should be no longer than 20 minutes.

The first presentation will be made by Mr. Hitoshi Yoshino of Japan on "JAXA's Activities for Spin-Off".

Mr. Yoshino has the floor.

Mr. H. YOSHINO (Japan): Thank you Mr. Chairman and distinguished delegates. On behalf of the Japan Aerospace Exploration Agency, I am honoured to briefly present the spin-off activities we are currently promoting for space technology we have developed at this session of the COPUOS.

A Centre of Excellence for the development of space aeronautics technology in Japan, we, JAXA, engage in a wide range of activities for the full process(?) covering from basic research to the development and the utilization of those technologies. They include not only development of highly reliable rockets and satellites, contribution to the protection of the global environment and the social security, effectively utilizing satellites, generation of _____ scientific achievements in the space environment but also the establishment of basic platform space aeronautic technologies such as space science and so on.

In parallel with the promotion of research activities for space and aviation technology and other basic research activities, we are now actively promoting the transfer of our research achievements to the private sector for commercialization in non-space areas.

For patents and other intellectual(?) property generated under our research activities, we are actively undertaking licensing activities to the private sector. To increase the number of licensed deals and to generate quality deals having economic impacts, we are also making efforts to increase the number of patents and generate intellectual property carrying commercial barriers(?).

The goal we are aiming for through the productive technology transfer is to contribute towards the improvement of the industrial competitiveness of Japan and also generation of new business opportunities based on our intellectual property and technologies.

In addition to our efforts to increase the number of patents and to generate quality intellectual property, for the purpose of the promotion of our technology transfer process, we are actively collaborating with outside professional organizations and experts who have much experience and expertise in technology transfer activities.

We appointed three experts as business academia collaboration coordinators and they are playing a key role in these activities.

We have also introduced a few schemes which are aimed to help R&D activities financially to overcome gaps and difficulties existing in the commercialization process of these technologies.

Propagation is another activity we are carrying out to promote technology transfer activities.

This includes participation at industrial and commercial seminars and exhibitions and the introduction of our technologies available for transfer on the Internet.

Based on these activities, we hope technology transfer and spin-off activities will go successfully to meet our aim to make contributions to the enforcement of industrial competitiveness and the generation of new business opportunities based on JAXA's IP.

Contributions to betterment of our environment and the lives we lead are key factors in our spin-off activities. As a result of our continuous efforts to promote transfer of our space-borne technologies to non-space areas, a number of spin-offs have been generated in such areas like medical, life enhancement, environment improvement, social infrastructure and so on.

It has passed only a few years since we began the promotion of technology transfer activities actively but we are pleased to tell you that we have already generated a number of successful cases. Please let me provide you with a few real-life examples.

The first case is for insulation materials used in the launch vehicle. The _____(?) (thermal?) insulation material we developed for the fairing of the H-IIA Launch Vehicle has a unique feature to get hardened at room temperature. This has high resistance to the formation withstanding(?) extremely high or low temperature and shaking damage. It will neither crack nor become detached. Furthermore, this thermal insulation material is light and has a high-performance level of heating. This thermal insulation technology has been successfully transferred to the private sector for commercialization and has also been put into the market as a heat insulator for buildings.

We develop technologies to simulate blast waves generated by launch vehicles and the influence it causes to nearby circumstances. This simulation technology has been commercially applied to the design of front carriages for high-speed trains in order to reduce pressure waves in tunnels. Actually, the front carriage of the Japan Bullet Train, the _____(?) 500, and the Linear(?) motor car, the Yamanishi(?) Experimental Magnetic Levitation Train, are designed using this simulation technology.

Technology we have developed basically for the purpose to detect space debris is commercially applied for astronomical objects detection software for amateur astronomers. Also the Stirling Engine we developed as a space generator has been commercially

applied to develop teaching materials for students at schools.

Other than these examples, our technology is successfully transferred to the private sector, including the solar tracking system, airplane jet engine technologies and so on.

It is our intention to continue our efforts, expecting more successful cases.

Thank you for your attention.

The CHAIRMAN (*interpretation from French*): Thank you Mr. Yoshino for your presentation of these various cases, instances of spin-offs for space technology. It is very interesting.

I will now move to the next technical presentation which is by Mr. O. Jegede of the African Regional Centre for Space Science Technology Education in English, a report on the status of the Centre's operation.

Mr. O. O. JEGEDE (African Regional Centre for Space Science Technology Education): Thank you Mr. Chairman. I will briefly present our educational programme of the African Regional Centre for Space Science and Technology Education in English.

The mission for our Centre is capacity-building for application of space science and technology for the benefit of Africans.

The Centre's Mission Statement is to build a high-quality capacity of indigenous educators in English-speaking African countries for application of space science and technology for sustainable national, regional and continental development.

With this set in mind, our history actually done within inauguration of the Centre as one of the Regional Centres for Space Science and Technology Education under the Office for Outer Space Affairs on 24 November 1998. The Centre is hosted by the Government of Nigeria and its location is within the campus of Obafemi Awolowo University, Ile-Ife, in Nigeria. And the arrangement(?) is convenient in the sense that the infrastructure at the University is available to support the educational programme by the Centre.

The Centre is maintained, is funded by the National Space Research and Development Agency, which is the _____ (*not clear*) of the

Nigerian Federal Ministry of Science and Technology, which covers essentially the personnel, overhead and capital budget of the Centre. So solely, the Centre is funded from the Nigerian Government's funds. Though we get some limited support, as travel grants, through the Office for Outer Space Affairs, to cover travel for the foreign visitors, the participants that are coming into the Post-Graduate Diploma Programme at the Centre.

Presently, the Centre does not have a functioning Governing Board and this is a problem that the Centre is engaging stakeholders, member States, trying to find a political solution, trying to bring them into the running of the Centre.

Presently, the Centre is managed by the Director and a team, under a Scientific Steering Committee, comprising of renowned and eminent scholars in the different areas of space science and technology application. So it is the responsibility of this team to guide the Director in programme valuation, implementation and delivery and to plan ahead for expansion of its activities.

Presently, the Centre has the four key programmes on space science and technology application. We have, since 1999, offered the Remote Sensing/GIS Course. We began Satellite Communication model in 2000, Satellite Meteorology in 2001 and very recently we began the Basis Space and Atmospheric Science in the year 2005. The curricula we use, those that are approved and developed by the Programme on Space Applications.

Essentially, the Post-Graduate Programme at the Centre is composed of both academic, field exercises, workshops, seminars and study projects. We have lectures, tutorials and practicals. At the end of each model, there are written and practical examinations for the student participants undertaking the Post-Graduate Diploma Programme in those four key areas. And the students have in the Programme exposure to field and practical assignments and the Centre organizes workshops also to involve the students. And at an appointed time, they undertake independent projects as part of the course requirements.

To support this Programme, the facilities at the Centre, we have adequate facilities to ensure positive teaching environment. The Centre has available full Internet activity so all students have access to computers and they can actually be up-to-date with the developments of the field.

Now the problem the Centre had had before was that we had little or no involvement of other member States in our programmes and this is because there was no funding. We were not able to bring in students. But we, in 2005, offered scholarships to the students from all member States and the response was overwhelming. From zero foreign student participants, we had applications of about 87 foreign students willing to come into our Diploma Programmes. Of course, we did (not?) resources or capability to take on this number so we had to pull down drastically to a number that we could cope with. Of course, these scholarships offered, included tuition free, tuition for students, accommodation in the University Hall of Residence. We also had some stipends for their daily expenses and social and medical adaptation for their upkeeps.

Then the Centre has another pilot programme which is an out reach programme which is also to promote space education for the benefits of the participants.

Now the course of Remote Sensing/GIS, which is fully subscribed this current academic year, has a class size of 29, out of which 20 are from 11, from 10(?), African countries and all these participants are supported by the Nigerian Government's scholarship which is generously provided by the National Space Research and Development Agency, as a part of an initiative to promote regional capacity-building. And the students are of mixed areas of specialization so it is a very vibrant group and ages ranging from between 23 and in one case, there was somebody above 40, which was deliberate(?).

We covered from the distribution, on that screen, we covered the spread that our mandates supposed to have in our programmes. So we eventually covered the region that we have mandates to cater for and we are gender sensitive so we have admitted some female students to come into the Programme as well.

Now this is just a picture showing the frontage to the Centre which one of our student participants is posing there. There is the entrance to the Centre.

Now our calendar for the international class. The foreign students that were admitted, 20 of them, came in the week of 21 to 24 January and after registration, lectures commenced 6 February, dealing with Module 1 which was fundamentals of remote sensing and GIS. And this dovetailed into the beginning of Module II, applications, in May. So they are currently on their Module II and which would end

by August when they start their projects. And we are envisaging that by the end of October this year, then they will have completed the nine-months teaching programme for the remote sensing/GIS programme.

This next picture shows the opening ceremony for the course which was on 20 February this year. And we have participants for the Post-Graduate Course, at the opening ceremony. A participant with some of the invited dignitaries, Deans of Faculties, Heads of Department, that joined in the picture for the opening ceremony.

This picture shows some of the resources that we have in our teaching programmes and the top left panel shows the participants attending the workshop which was sponsored for the participants. The picture here shows the participants that are taking on a huge exercise as part of their programme during this remote sensing/GIS course.

Apart from the one I just discussed, the Centre currently is mounting programmes on satellite communication which began in October 2005, which has a class size of 14, all Nigerians. And another course on basic space and atmospheric science, with a class size of four. That also started in October 2005. So these three different courses are all on at the moment.

Apart from the long-term training, we have co-organized an International Stakeholders Workshop which the students had the opportunity of partaking in that programme for their exposure, for their programme. So there was a Workshop held at Abuja in March this year and they took part.

In July this year, students will also join in the Schools Workshop on Space Education, which is for students at the junior levels, so which is also to expand the benefits of catching them young, that is, we have an engaging programme on outreach which is extended to school students in the junior schools.

The foreign students that came into the Programme because this is the first time that we are able to bring in foreign participation so we have tried as much as possible to also include our Programme acclimatization so as to ensure the Programme will be completed, both in the academic and cultural and social adaptation. This was just on a trip outside the normal kind of work for the participants, the foreign students who are taking a day out into the nature.

Apart from the Diploma Programme, there are some other activities, research projects that the Centre

is engaged. We have a Mesoscale Experiment which focuses on _____(?) and _____(?) investigation which is a project that involves three universities in Nigeria and also the University of Bayreuth in Germany and the International Programmes in the Physical Sciences. This Programme is located at the Centre so we are also engaged in this area in such activity. And also in _____(?) restrictive capacity, the Centre is also involved in another support programme on monitoring deforestation and its implications for biodiversity in Nigeria using the NigeriaSat-1 and other satellites data.

So these are some of ongoing research activities that the Centre is also relating to.

Finally, I just want to talk on the outreach, which is also, because the Centre, our Centre, is an activity Centre of the National Space Research and Development Agency. So we have mandates to popularize space education, bring awareness to the schools. So we organize periodically workshops, bringing in students in the junior schools on space education and some of these also include going on the media to sensitize the general public on the benefits the space science and technology affords the Nigerian people. And particularly, since the Nigerian Government has invested heavily recently in a position of satellite technology, we are also entrusted with the responsibility of promoting to the Nigerian public the gains that this resource brings to the national development. And also we are all involved, as part of our schools programme, the fabrication of mock-ups for satellites and rockets just to bring awareness to schoolchildren. And as part of the outreach programme as well, we have interested in working with the Federal Ministry of Education, the National Space Research and Development Agency and UNESCO on a space education curriculum development.

I will end this narration by just pointing out that we are in an evolutionary process. The Centre is still acquiring resources expertise and we appreciate at forums like _____(?) our likely donors who identify with our aspirations so that we could increase our resource base to be able to effectively deliver so we would like to form partnerships with relevant donors, space agencies that we could get data or some outside donation of equipment or inclusion in our training programmes, of course, would be a donation of hardware or software as support. And the third one is actually implemented right now because, this is the Office for Outer Space Affairs website, there is a link that transfers us to the data(?), the Office for Outer Space Affairs website that transfers our own remote

server in the University so we will appreciate that we have these continually maintained so that we can get more people visiting and learn more about our programmes.

Incidentally, at the start of our recruitment for the foreign students, many of the students that have applied were able to know more about our activities because the Office for Outer Space Affairs helps to advertise our own Programme, the Diploma Programme, so it has been very useful for us. So we would like to maintain these facilities.

And some misconception actually from one lesson of the foreign students is that they believe that the United Nations is footing the bill for all our programmes, which is not so. So the _____(?) basis of _____(?) we know is just to promote, for us to be able to reach out for possible donors to come in and to supporting our programmes. But, at this time, we recognize that even if we are not getting the funding directly from the Office for Outer Space Affairs, maybe our Diploma will get some form of endorsement, that is the students actually see that, yes, the certificates are carrying appropriately the leader(?) of the signatures of the Office.

Thank you very much.

The CHAIRMAN (*interpretation from French*): Thank you Professor Jegede for your very exhaustive presentation on the Regional Centre on Education Training of Outer Space Technology in Ile-Ife in Nigeria.

We will now move on swiftly to the next presentation. It is a similar topic. And I will ask Mr. Touzani to present the report on the activities of the African Regional Centre for Space Science and Technology in French language.

Mr. A. TOUZANI (Regional Centre for Space Science and Technology Education) (*interpretation from French*): Thank you Mr. Chairman. Allow me at the outset to convey my gratitude to the Office for Outer Space Affairs for having invited me here to make a presentation on the activities of the Centre which is situated in Rabat in Morocco.

The Regional Training Science Technology Centres to enable the implementation of training programmes, information, experience and skills-sharing and it takes account of General Assembly resolution and the Regional African Centre on Space Technology, was one of five Centres established in

Rabat in 1998 and is hosted by the Mohammed V University.

This Conference for the creation of this Centre, with a participation of 13 African States, and they are all founding members. Amongst the missions are increasing knowledge in space science and technology fields to assist countries in the region to develop indigenous capacities in the field of science and technology, to consolidate national regional capacities, to promote cooperation between developed States and the member States, as well as between these States, to develop expertise in remote sensing and GIS, satellite telecommunications, satellite meteorology and global climate and space atmospheric sciences, as well as to provide advisory services to the member States and regional institutions which request it.

And finally, one of the missions is to collect and disseminate information related to space and space technologies.

The structure of the Centre. There is an Administrative Board, a Scientific Board and a human resources management team of three individuals. So we have the Director, the Assistant Director and the Scientific Administrator. The financial resources are mostly provided by the member States. We have had a number of grants from the Office for Outer Space Affairs, which helps us to bring over to pay for the transport of the students which we train. We also enjoy the support of a number of international institutions.

The Centre, as far as its training is concerned, bases itself on a network of experts, experts which stem from national, regional and international institutions.

The areas of competence. We have remote sensing and GIS, satellite communications, satellite meteorology and global climate, space atmospheric sciences.

The Centre provides a Post-Graduate-level Diploma Course, continuous training and scientific presentations. It provides advisory services to the member States and regional institutions and it collects and disseminates information related to space activities.

The target public is academics, researchers, engineers, administrators and planners from universities, research centres and public and private institutions.

Every training session takes place in two phases. Phase I is nine-months long in the Centre and the second stage is 12 to 15 months long and which enables the students to prepare a personal research project which he will present at the Centre in front of a jury of research scientists.

The details on our programmes can be found on the Office for Outer Space Affairs website.

For the implementation of the training programmes, it is based on a network of regional skills and expertise, creation and consultation of a regional training space on research and cooperation for development in the region. It also enables us to stem the loss of African professionals for valorization of their knowledge, of their skills, and ensuring them mobility and involvement in regional development actions.

It is also based on international expertise, partner institutions such as ESA, CNES, the Canadian Space Agency, the ITU and EUMETSAT.

The programmes implemented by the Centre. We have RS and SIG. The Centre has organized four training sessions on this which were launched in April 2000. And you can see that every session was attended by 13 students at the first session, 15 at the second one, 14 at the third, and 22 at the very last session which is currently still ongoing. Unfortunately we were not able to accept all individual wishing to participate. We could accept only 20 students. We accepted 22 in this case and unfortunately we had to turn down a number of students from other member States for two reasons: our ability to host them and then providing them with airplane tickets which, in Africa, are quite expensive, to enable them to travel to Morocco. As I said, the tickets are very expensive and unfortunately we were forced to turn down a number of students, for example, from the DRC. A return ticket can cost up to \$6,000.

Two training sessions on satellite telecommunications were organized. As I said, satellite telecommunications with 13 students in the first session and 13 in the second one.

Two training sessions on satellite meteorology and global climate. Seven students. This was the smallest group we trained at the Centre. And for the second student, we had 11 participants.

And the Centre was able to host students from non-member States. So during the last session of geographical remote sensing is currently ongoing.

In addition to long-term training, the Centre hosts presentations, conferences. It has organized 13 scientific events, four major ones. The first is an International Workshop on the Management of the Frequency Spectrum for Satellite Telecommunication, in cooperation with the ITU.

The second was an International Conference on Tele-Medicine Using Space Applications, with the assistance of ESA, the Canadian Space Agency, CNES. There were 120 participants, 30 of which were international participants.

The third international event, upon the request of NOAA from the United States on Internet Connections Using Satellites, 30 participants from African countries were present.

The fourth international event was on Global Data Collection and Utilizing LANDSAT Data. The Centre has become a site which is able to disseminate and distribute LANDSAT archived data to the whole of French-speaking Africa.

The first major event organized in the Centre in November 2005 on Space Information and Sustainable Development, with 120 communications, 150 participants from 30 countries.

Future activities. We have the training of Arab engineer in collaboration with the Arab Organization for the Mining Industry. We initiated(?) a remote sensing training course through a GIS training course in 2006. We will organize a seminar on space science and adapting to climate change in Africa which will be held in Algiers and the use of radar data.

A few of the interesting topics which are developed at this Centre for our students and which are part and parcel of the research topics promoted by the Centre. The use of high-resolution imagery, such as IKONOS, the contribution of remote sensing for tele-mapping, the use of space technology for risk reduction in the field of space telecommunications. We wish to develop the use of state-of-the-art technologies in the use of VSAT or microsatellites. The use of NASA's GOCART models as a contribution to the study of monthly variations of sand phenomena in the Algerian Sahara which will then be expanded to the whole of the desert region in Africa.

The contribution to the impact of desertification for the decision-making model integrating space applications and the effective use of natural resources characterizing forest fires.

The Centre is also participating in other activities such as creating a unified geodesic reference space for North Africa. It is also participating in the development of a Regional Action Plan for Central and Western Africa, to wit, project nine, capacity building in the field of the use of space data.

Through these efforts, the Centre was able to train over 100 students and has enabled more than 600 experts to participate in its workshops and conferences. It also provides for the emergence of a regional expert network in the field of space tools and their application and it intends to continue training in this field.

It also enables us to promote and present the benefits of space technologies to show that the cost benefit ratio is a sound one, especially as compared to the use of traditional technologies. It also enables us to organize training courses for experts and it intends to develop long-term training courses as well as short ones, three to four weeks long, which is intended to show the use of space technologies through realistic examples. Capacity-building through multi-form action, for example, online courses.

By way of conclusion, the Centre was able to train over 100 long-term trainees and has enabled the participation of over 600 experts in events organized by the Centre. And the prerequisites are consolidation of partnerships and mobilization of financing. The Centre is fully committed to implement the objectives entrusted to it by the member States and it wishes to see the consolidation of all these activities.

A few pictures here. For example, we had the closing ceremony of one of the training courses, the organizing of workshops.

And I thank you for your attention. Thank you.

The CHAIRMAN (*interpretation from French*): I thank you Professor Touzani for your presentation on the activities of the African Regional Centre on Outer Space Science and Technology in French. Perhaps we should leave our questions until after the third(?) presentation, the Regional Centre for Latin America and the Caribbean.

And I, therefore, give the floor to Mr. José Marques da Costa who will present the report on the status of operation of the Centre for Space Science Technology and Education for Latin America and the Caribbean.

Mr. J. MARQUES DA COSTA (Regional Centre for Space Science Technology and Education): Mr. Chairman, I am going to give a brief about CRECTEALC and taking into account what we have done in these last 12 months.

CRECTEALC, as you know, is part of the set of Regional Centres that the United Nations promotes. The main objective of CRECTEALC is the development of skills and knowledge of university educators and researchers and the application scientists at those aspects of space science and technology that can enhance social and economic development in countries of the region of Latin America and the Caribbean.

The specific objectives are the improvement of skills and knowledge of university educators, environmental research scientists and project personnel in the design and development in the application of remote sensing, satellite meteorology and related technologies for subsequent use in national and regional development in environment management programmes, including biodiversity protection.

Also development of skills on satellite communications, including those that are associated with rural development, long distance education, delivery of health services, disaster mitigation, air and marine navigation and network linkages of the region's professionals and scientists, government establishments and industries in order to facilitate the exchange of new ideas, data and experience.

The initial programmes of CRECTEALC is remote sensing and geographic information systems, meteorological satellite applications, satellite communications and global position systems, is space and atmospheric science.

The educational curricular follow what have been designed by when the Office for Outer Space Affairs in 1996 and 2001.

The history of CRECTEALC starts in March 1997 when Brazil and Mexico signed the Agreement to establish the Centre for Space Science and Technology Education for Latin America and the Caribbean.

In September 2000, CRECTEALC signed an Agreement of Headquarters with the Government of Brazil. In October 2002, there was signed an Operational Agreement with the Government of Mexico.

In June 2003, there was signed the Affiliation Agreement with the United Nations Office for Outer Space Affairs.

The structure of CRECTEALC has a Governing Board, Advisory Committee, Secretariat and the Campuses

The Governing Board is the principal policy-making organ of the Centre. It is represented today by one world representative of Brazil, one representative of Mexico and one representative of each country of the region or from other interested countries which have signed an Agreement of Cooperation with the Centre.

The Governing Board was established in October 1999.

The Secretariat is the main executive organ of the Centre. It coordinates the activities of the Campuses represent the Centre at national and international institutions. It is headed by the Secretary-General, who is the first administrative authority of the Centre.

The Advisory Committee is composed by permanent representatives of national governments, private industry and academic and research communities.

The Campuses. The Campuses are responsible for the planning, the organization, the implementation and the administration of education programmes in the areas concerning the competence of the Centre. At the moment, there are Campus Brazil and Campus Mexico.

The host institutions are the National Space Research Institute, INPE, in Brazil, and the National Institute for Astro-Physics, Optics(?) and Electronics in Hawaii(?), in Pueblo, Mexico.

The Campus Brazil is headed by Dr. Taina(?) Maria Sausen, who works also at INPE. The Campus Brazil offers specialized courses of nine-months long graduate course that the student has to work on a pilot project, developed at the student's country. Short- and middle-term course, seminars and workshops.

A similar programme is also held at Campus Mexico. The Director of Campus Mexico is Dr. José Guichard Romero.

The International Course of Remote Sensing/GIS in Campus Brazil had about 1,300 hours.

This international course has already formed this number of people that come from several countries of South America and also from Mexico and the Caribbean area.

Previously the inauguration of the Centre, the National Space Research Institute of Brazil, INPE, used to have a similar course of seven months that they offered since 1985 up to 2002 when the CRECTEALC started to offer.

From 1985 to 2002, the course had a seven-month duration and was promoted under the responsibility of the National Institute of Space Research, INPE, of the Ministry of Science and Technology of Brazil. And from 2003 to 2005, 36 students have already been graduated on this course on the coordination of CRECTEALC, country is Brazil. This year 70 students should be graduating and the _____(?) 43 students.

Up to December 2006, the course will form 189 specialists from Algeria, Argentina, Bolivia, Brazil, Burkina Faso, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Ethiopia, Ghana, Honduras, Kenya, Mexico, Panama, Paraguay, Peru, Nigeria, Senegal, Uruguay and Venezuela.

Besides the remote sensing course, the nine-month course, we also promote seminars, that are really short courses. We had promoted the first seminar for information dissemination of CRECTEALC that was held in Mexico City in December 2003. The Seventh Latin American Conference on Space Geo-Physics that we collaborated with the Latin American Conference that was already used to promote these Conferences and we helped them to promote, the seventh one.

Also we promoted the first Seminar on Education and Environment in Latin America with the emphasis on the use of remote sensing to study global and regional climate changes. It was done under collaboration with CONAE from Argentina and it was held at Cordoba from 26 to 29 October 2004. Several participants from also several countries.

And there was also the first Seminar on Meteorological Satellite Applications and the Global Climate in Latin America, that was held in Brazil, for 25 participants from Argentina, Brazil, Colombia, Costa Rica, Cuba, Panama, Dominican Republic, Venezuela and Uruguay.

Besides that, we also held a Seminar on GNSS in Latin America: Present and Future Perspectives, that was held last year from 20 to 22 July.

And we also held the first Seminar on the Application of Remote Sensing for Coastal Eco-Systems Studies in Belem, Para(?), in April this year.

The first Seminar for Information Dissemination of CRECTEALC, ...

The future of the Centre. We wish to increase the number of member countries in the Governing Board of the Centre. We are going to hold by November this year the seventh Governing Board meeting. We are going to hold the first meeting of the Advisory Committee and we are going to emphasize, of course, the promotion of capacity-building on space science and technology education through training courses, seminars, workshops and research networks.

We are going to promote distance learning activities taking the advantage of the rapid development of Internet-based technologies. We are also going to promote education of programmes for high school students on relevant topics of space science and technology.

I emphasized here the Memorandum of Understanding we wrote with the IAI, that is the international organization that takes care of global change and research for the Americas. We also have a cooperation with the Latin American Institute of Educational Communication, ILCE. We have cooperation with the Latin American Cooperation of Advanced Networks, CLARA, and cooperation with the Organization of the American States, the OAS.

The support that we are having comes from the Foreign Relations Ministry of Brazil, the Foreign Relations Secretary of Mexico, the Brazilian Space Agency, the National Institute for Space Research, INPE, of Brazil, the National Institute of Astrophysics, Optics and Electronics of Mexico, the National Council for Science and Technology of Mexico, the National Council for Scientific and Technological Development of CNPq/MCT of Brazil, the University of the United Nations, ONU, the Office for Outer Space Affairs of the United Nations – UN OOSA, and the Organization of the American States – OOS.

Here I highlight the signature of the Agreement with the Secretary-General of the Organization of American States last December.

This is a part of our installation is São José de Campus, São Paulo, Brazil.

This is one of the Governing Board meetings. Here is one of two classes of this in Campus Brazil.

One of the Symposiums that were held in Argentina. This was in Argentina.

And this is an installation that the Government of Mexico is constructing on the top of Verde(?) Top(?) Mountain, a mount, and that is going to be used by CRECTEALC in the near future for astro-physics in the space science course.

Thank you very much.

The CHAIRMAN (*interpretation from French*): Thank you Mr. José Marques da Costa for this presentation about the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean. It has been a very comprehensive presentation about the Centre's activities of the two campuses in Mexico and in Brazil.

I am going to put the same question to each of the three speakers so I am posing the question at the same time.

What is the methodology that you used for selecting the students or the interns that attended courses at your Centres? You need to get a more or less homogenous level of knowledge and it is usually a problem.

Thank you Mr. Touzani.

Mr. A. TOUZANI (Regional Centre for Space Science and Technology Education) (*interpretation from French*): Thank you Mr. Chairman. I did not want to go into that in my presentation. The Regional Centre in Rabat has Ministers as members of the Board of Directors so it is a very high level. And the leadership of the Centre is in direct relationship with the member States at Ministerial level. And that is the requirements. These people need to be engineers, about five years after receiving their Baccalaureate Degree or equivalent, Dr. Young(?) University Professor, with at least two or three years of professional experience in their respective areas. The countries propose candidates based on these requirements but the problem of heterogeneity of an even level of knowledge or experience exists obviously. And the Diploma may be there, the required Diploma, but it may not be at the same level of education so we need to spend two or

three months to prepare them to make sure that they reach the same level in terms of their knowledge of physics, mathematics, computer programming and so on and so forth so that the remaining time could be spent more productively. The Moroccan Government provides all the scholarships for 10 months usually. It is a substantial stipend for each foreign student. It is provided by the Minister of Foreign Affairs of Morocco and it is twice or three times the scholarship that a normal university student receives.

Thank you.

The CHAIRMAN (*interpretation from French*): Thank you for this clarification. And to Mr. Jegede, the same question with regard to your Centre.

Mr. O. O. JEGEDE (Regional Centre for Space Science Technology and Education): With regards to the selection of students into our programmes, basically a good first degree is the baseline prerequisite. And also we expect that they belong to organizations where they will have acquired some working experiences in the relevant areas. And what we did, especially with this geographical widespread of students was to look at the regional balance, that is we found out that some countries had applied keenly while some had two applications but we decided to spread it out so that the mandate of the Centre can actually be first(?) across the continents.

Then also we look at gender issues because we had very few female applicants so we accommodated that as well and they are also supported by the scholarship provided to the Nigerian National Space Agency.

So that is it.

The CHAIRMAN (*interpretation from French*): Thank you Mr. Jegede. Maybe I could put the same question to Mr. Marques da Costa?

Mr. J. MARQUES DA COSTA (Regional Centre for Space Science Technology and Education): The selection is done looking upon the regional distribution and, of course, on the qualifications of the candidate for that course. But we try to make a regional balance in order that we could provide a vacancy for each country.

The CHAIRMAN (*interpretation from French*): This concern for a balanced equitable distribution is something entirely understandable but obviously the various types of education, the various educational systems, the various levels of preparations

should also be taken into account and they create certain challenges, I am sure. There is a certain heterogeneity, at least at the start I am sure.

Mr. J. MARQUES DA COSTA (Regional Centre for Space Science Technology and Education): This aspect is taken into account and usually what we ask is that the student get in contact with his advisor or her advisor previously.

The CHAIRMAN (*interpretation from French*): And is the same problem encountered at the Centre of Dehradun?

Mr. V. K. DADHWAL (Regional Centre for Space Science Technology and Education): Sir, at the Centre for Dehradun, we adopt a slightly different policy. We find that there are students who do not have a good command over the English language. So when the students are selected, we post to them all the lecture material in CD form and also an audio tape containing the lecture and what type of accent the teachers will use. When the students join at the Centre, they go through a one week of orientation, followed by that two months in the evening we have English classes. The course themselves are structured like that, that there is a wide difference in the uptake of the students, we try to bring them to some basic level of physics, software and computer use so that when they are doing practicals and assigned work, they are nearly at _____(?) level. And at the end of the course, this difference is visible while some of the students only end up doing the PG Diploma, about 25 per cent of them do Mtech also.

Thank you Sir.

The CHAIRMAN (*interpretation from French*): Thank you for these clarifications, explanations for the additional information you have provided on this issue of selecting students at a more or less even level of knowledge to avoid difficulties in the training process.

On the same item, Professor? Microphone please.

Mr. A. TOUZANI (Regional Centre for Space Science Technology and Education) (*interpretation from French*): Thank you for giving me the floor. I wanted to address the same matter of uneven preparation. It is a real problem. We have observed the following situation. In the first phase of training, the students or the interns, usually these are the students, when they prepare projects based on the knowledge they have received, they come back to the

Centre periodically to keep up and to update their knowledge. And I have to say that the training they receive at the Centre does play certain requirements because there is an evaluation, there is an assessment, there are exams, tests to be taken, projects to be completed. So those who come back to defend these projects or these theses, acquire an advanced degree and this is a real advancement for them. This is a major step. So this is the type of training that lasts for more than 1,000 hours of courses and practice.

Thank you.

The CHAIRMAN (*interpretation from French*): Thank you very much for this additional information. Dr. Gashut of Libya wanted to speak on this item.

Mr. E. M. GASHUT (Libya) (*interpretation from Arabic*): Thank you Mr. Chairman. First of all, I would like to thank all speakers and express my appreciation to those colleagues who have taken upon themselves to establish these Centres in terms of administrative challenges, educational challenges, this is a huge job. And even though these are young Centres, they have already gone a long way to setting up infrastructures for the respective regions.

I have a question. With regard to the students or interns, is there an exchange among these different Centres, and if not, why not establish such a system? Furthermore, these Centres need to work together to develop a shared or a common scientific approach to the issues highlighted in these programmes. So I think these Centres should coordinate the work among themselves and between the Centres and the various universities, including the Space University. Through presentations, such as Mr. Touzani's presentation in particular, we have learned that these Centres are under enormous pressure in terms of accepting more students and also to ensure a regional balance, equitable representation and so on and so forth. Has any thought been given to establishing branches or affiliates of these Centres in other States?

Thank you.

The CHAIRMAN (*interpretation from French*): Thank you for your question. I do not know if the Secretariat may be willing to respond on the question regarding coordination and exchanges among Centres. I think Madam Lee, who is in charge of Space Applications at the Office for Outer Space Affairs, is in a position to reply and maybe we are going to ask her to come up with such a response tomorrow morning when we resume our session.

Dr. Touzani, do you have things to say in terms of responding to the question, the number of candidates, the pressure you are under?

Mr. A. TOUZANI (Regional Centre for Space Science Technology and Education) (*interpretation from French*): With your permission, I wanted to address the matter of exchanges as well. The exchanges among Regional Centres are not currently underway for a number of reasons. The Centres are fairly close to each other in geographical terms and also at Rabat, all training is in the French language, so we are only interested in experts who can provide education in the French language. This is a very important part of what we do. However, this does not mean to say that representatives of other Francophone countries, French-speaking countries cannot attend or be involved. But everything that happens at Rabat is based on regional experience. Regional experts from Algeria, Tunisia, Senegal and experts coming from the North, from Europe or Canada are involved and exchanges happen among all of those States. Yes. Because we need experts from all over the world who can provide this kind of education in the French language.

As to the other question, are we thinking about setting up branches? We are thinking about decentralizing our activities, making them more local in nature. For example, we are working with the Algerian Space Agency in terms of localizing work on climate change and space technology related to working with climate change. And if other countries suggest ways of using a programme developed by the Centre, we accept, but obviously there are financial constraints. If countries express the wish to be involved in this decentralized work, if they are member States of the Centre, obviously this happens. The idea is to promote space science and technology everywhere, throughout the world.

Thank you Mr. Chairman.

The CHAIRMAN (*interpretation from French*): Thank you for this additional comment.

Are the Directors of other Regional Centres willing to add something on these issues?

Maybe the Director of the Dehradun Centre?

Mr. V. K. DADHWAL (Regional Centre for Space Science Technology and Education): Thank you Sir. It would be very nice if we could exchange educational material. We had prepared a full set of

lecture notes which we had circulated to all the Centres. So my suggestion is the student gives his work, the research undertaken, the course material and other educational material be exchanged first. Exchanging of the student, if they are in the same language, it would be easier as has been pointed out by the Director from _____(?).

Thank you.

The CHAIRMAN (*interpretation from French*): Thank you. Mr. Marques da Costa?

Mr. J. MARQUES DA COSTA (Regional Centre for Space Science Technology and Education): We intended to give emphasis to distance education because I think it costs less for us. This is the strategy that we think that could work for Latin America and the Caribbean region.

The CHAIRMAN (*interpretation from French*): Thank you Mr. da Costa for this clarification.

I think this concludes the technical presentations part.

No, sorry, the distinguished representative of Brazil would like to take the floor.

Mr. C. E. DA CUNHA OLIVEIRA (Brazil): Thank you once again Mr. Chairman. And I thank you all the Directors of the Regional Centres for their presentations this afternoon. I would like to address a question to the Director of the Asian Centre. There is a part in the course of his presentation that caught my attention and this is to do with the establishment of a follow-up course for those students who benefit from the activities of the Centre, from the long-term training activities of this Centre. And I would just like to know what has motivated the creation of these follow-up courses which seem to be a particularly interesting approach in order to give, to guarantee a continuation of the process or capacity during human resources training that had been initiated during the regular course. It is my impression that some students might benefit from these courses but once they go back to their countries they might face some difficulties to put these experiences into practice and I wonder if the creation of these follow-up courses was a response to these kind of difficulties.

Thank you.

The CHAIRMAN (*interpretation from French*): Thank you for your question. Maybe you have a response Dr.

Mr. V. KI. DADHWAL (Regional Centre for Space Science Technology and Education): Thank you Sir. The follow-up courses are under planning. The areas what we are specifically looking at is something like SAR interferometry(?), GIS-based multi-criteria decision taking and spatial decisions support system. These are some of the topics which are not covered in the basic PG Diploma course. Similarly, for satellite communication and meteorology, the resource scale modelling and how to use the module forecast for local weather prediction. So each of the courses, we are trying to identify those areas where the students can put it in their own regular use some advanced techniques.

The CHAIRMAN (*interpretation from French*): Thank you very much for this reply. I would now ask Professor Jegede, would you like to respond also.

Mr. . O. JEGEDE (Regional Centre for Space Science Technology and Education): Thank you very much. Our Centre is relatively young in the enterprise of having a full participation of these participants from other countries. Now we know that there is future in having e-learning programmes to be able to reach out to these other countries. So the first effort we are making now is to be able to put together this crop of participants at our Centre and impact in them our own home-grown programmes and our follow-up stage would be to kind of expand on distance learning for these courses.

Now about the logistics for exchange between the Centres. Incidentally, I have had the opportunity of visiting the Centre in Morocco and we found a lot of opportunities for us to share data and some other resources and we have that boot positively disposed towards this.

The CHAIRMAN (*interpretation from French*): Thank you very much for this additional piece of information and for the training you provide and for the exchanges envisaged with the Centre at Rabat.

I see no further requests for the floor. Mr. Abiodun, maybe?

Mr. A. A. ABIODUN (Nigeria): Thank you very much Mr. Chairman. Probably many people do not or are not aware of the history of these Centres. The justification for the Centres came out of UNISPACE II in 1982 and it took us about seven years

to put these Centres together, beginning with the Centre in India.

I have no question but principally just to congratulate all the Centres and a profound gratitude goes to India for demonstrating that the concept can work thus encouraging the evolution of other Centres in other parts of the world.

Why did we come up with the idea of the Centres? The United Nations Space Applications Programme, as originally formulated, was to advise member States about the relevance of space science and technology in their social and economic development. The Programmes articulated in those days focused mainly on short-term training courses and workshops. But after UNISPACE '82 and upon the recommendation of that Conference, it was further appropriate that we needed to look beyond short-term activities and to put something on a long-term basis on the ground, particularly in the developing countries themselves, bearing in mind that evolution of space knowledge constituted itself in the industrial world and, therefore, anyone who wanted an education in space had to go overseas. And as a result, there was a lot of limitation in the dissemination of space knowledge. So that was the justification.

But as we listened today, three things come out of the presentations for me personally. One, I am particularly pleased about the initiatives being demonstrated by individual Centres, beyond what we call the curriculum that is why initially developed for these Centres. Some of them are coming up with other initiatives of their own, to enhance the quality of what they are giving to the local communities they are serving.

Secondly, as you yourself, Mr. Chairman, as you have indicated, is there any collaboration between the Centres? There should be. There ought to be. And in my hope, and the hope of the Committee I am sure, that there will be. So that the Centres themselves do not need the Office for Outer Space Affairs to engineer collaboration among themselves. The leaders of the Centres are mature people. They are dealing with mature governments so they should see this as a way of advancing their activities.

Finally, in developing the Centres, we developed the Centres on the concept of voluntary contributions and that is unfortunate for the Centres because the United Nations provides no budgetary allocation to support the activities of the Centres, the scholarships from the Office for Outer Space Affairs notwithstanding.

My appeal is particularly to the countries that are the beneficiaries of the activities of the Centres, to see it as their obligation, no one needs to tell them but if they want us to tell them, we will. Their obligation to support these Centres because you want to come to dinner, you pay for it, it is as simple as that. And space programmes are not cheap.

So in conclusion, through you, Mr. Chairman, I would like to convey my personal gratitude to those who are fully involved with the Centres. I see the Centres as probably in terms of the Space Application Programmes, one of the most important activities of this Committee. So I thank all the Directors. I thank all the governments and I thank all the institutions, beyond the Centres that are giving the Centres the support they need.

Thank you very much.

The CHAIRMAN (*interpretation from French*): I thank you for your statement which reminds us of the raison d'être or the origin of these Regional Training Centres and craving your indulgence, I personally would like to congratulate the Directors of the four Regional Centres who have just informed us of the situation. So on behalf of the whole Committee, we wish to convey our gratitude to all four of them.

I see no further questions stemming from these technical presentations but I certainly welcome the high quality of the exchanges we have engaged in. I will soon adjourn this meeting but before I do so, I would like to inform you of our schedule of work for tomorrow morning.

We will reconvene promptly at 10.00 a.m. tomorrow. At that time, we will continue our consideration of agenda items 8, Scientific and Technical Subcommittee, of agenda item 11, Space and Society, item 12, Space and Water, and 14, Other Matters.

There will also at the end of tomorrow morning's meeting be three technical presentations by the representatives of South Africa, Italy and Japan.

I would also like to inform delegates that the Working Group on the Use of Nuclear Power Sources in Outer Space of the Scientific and Technical Subcommittee will hold its intersessional meeting tomorrow morning in Room C-0713, starting at 10.00 a.m. All interested delegations are, of course, welcome to attend this meeting.

Are there any questions or any comments on this proposed schedule for tomorrow morning?

I see none.

I would like to again remind delegates that they are in 25 minutes invited to a special flag unveiling ceremony which will be held at the United Nations Permanent Space Exhibit on the Ground Floor, between buildings D and E. This ceremony will start at 6.00 p.m.

I will remind you not just the heads of delegations but all members of delegations have been invited by the Austrian delegation to attend a Heurigen function. This will start at 7.00 p.m.

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

The meeting closed at 5.26 p.m.