

**Committee on the Peaceful
Uses of Outer Space***Unedited transcript*593rd Meeting

Wednesday, 18 June 2008, 3 p.m.

Vienna

Chairman: Mr. Ciro Arévalo-Yepes (Colombia)*The meeting was called to order at 3.12 p.m.*

The CHAIRMAN (*interpretation from Spanish*): Good afternoon. I declare open the 593rd meeting on the Committee on the Peaceful Uses of Outer Space.

This afternoon we will continue and hopefully conclude our consideration of agenda item 11, Space and Society, that we suspended this morning, pending presentation by the Office on their Capacity-Building and Education Programme.

We will continue our consideration of agenda items 12, Space and Water, 13, Use of Space-Derived Geo-Spatial Data for Sustainable Development, and 14, Other Matters.

There will be four technical presentations this afternoon. The first one, well I do not think I need to repeat this since I presented them to you this morning. But at the end of this afternoon a main session to be held at the Headquarters of the European Space Policy Institute, at 7.30 p.m. Delegates were given information and invitations to this last week.

The Director of ESPI yesterday told us a little bit more about this. Everybody is cordially invited and delegates will have heard then how to find the venue.

Space and society (agenda item 11)

Now we can continue and conclude our consideration of agenda item 11, Space and Society.

Pursuant to the request of the Committee at the fiftieth session, the Office for Outer Space Affairs,

and it is a pleasure to give its Director the floor on this point at this time.

Ms. M. OTHMAN (Director, Office for Outer Space Affairs): Mr. Chairman, distinguished delegates, I would like to thank the Committee for giving the Office an opportunity to present the work of the Office related to education and capacity-building which is, in fact, one of the most important aspects of our work.

Mr. Chairman, distinguished delegates, as you will recall, the Committee at its fiftieth session has requested for the Office to make a presentation on this Education and Capacity-Building Programme.

I will begin by giving you a brief background on the origin of the Capacity-Building Programme of the Office and then give you the details under the topics of the Programme on Space Applications, the Regional Centres, what we are doing in space law and ICG, UNSPIDER, and finally the outreach and education activities that are continuously going on.

The education and capacity-building elements of our work are based on decisions taken by the Committee on the Peaceful Uses of Outer Space. The bigger driver of these elements emanate from recommendations resulting from United Nations Conferences on the Exploration and Peaceful Uses of Outer, as we today call them UNISPACE Conferences.

Let us look back at UNISPACE I, as we call it today, but it was called UNISPACE '68. The most important outcome of this Conference was the establishment of the Programme on Space Applications and that goes back to 1971.

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.



From UNISPACE '82 came the decision to set up the Regional Centres for Space Science and Technology Education. I will be giving you more information on that.

And UNISPACE III, which was a particularly dynamic, came to the decisions to establish capacity-building in space law and the celebration of World Space Week. Based on the outcomes of the work of Action Teams, you will, of course, recall that there was the Commission of ICG, the International Committee in GNSS, and UNSPIDER which is always very topical.

Let me first go to the Programme on Space Applications.

The activities of the Programme on Space Applications fall into four main categories that you see here, the capacity-building, disseminating and increasing the awareness of knowledge-based themes, providing technical advisory services, and promoting the use and access to space-based technology and information.

So under the capacity-building and training education category of the PSA, the PSA conducts workshops and training courses, expert meetings and symposiums. The Expert gives you a report at the Scientific and Technical Subcommittee every year. The Space Applications Programme also organizes a Fellowship Programme and initiates and supports national regional pilot projects. I will say a bit more on this. And, of course, the Programme supports the Regional Centres. Again, I will say a little bit more on this.

Each year, as you know, the Programme conducts 10 to 12 workshops, training courses, expert meeting and symposiums. Some of the connected areas, this, the emphasis may have changed over the last several decades since 1971 but basically they would cover the areas of natural resources management, environmental monitoring. Recently now we are up to UNISPACE III tele-health and tele-education, disaster management, basic space sciences, again going back more than a decade, space law more recently, and integrated applications of those themes.

The enabling technologies they are emphasized, remote sensing, telecommunications, GNSS, Earth observation, meteorological satellites and now we will try and make this a focus on small satellite technology.

The Programme also supports activities that raise awareness on the benefits of space technology applications to economic and social development and stimulates the growth of indigenous expertise in space applications.

In general, the Programme provides continuous education and training on using space technologies and also in accessing information resources.

The Programme on Space Applications also deals with the award of fellowships. We have a long-standing programme sponsored by Italy, which is in cooperation with the Instituto of Superior Mario Boella(?) and the Polytech of Turino of Italy. As you can see, it began in 2005 and these are nine-month classroom studies which then culminates in a three-month industry project.

More recently, the Programme on Space Applications also awarded fellowships sponsored by Argentina. This began in 2007 and covering a much shorter training period. It is about six weeks.

The Programme on Space Applications is now looking at initiating a fellowship programme on tele-health with the Nelson Mandela School of Medicine of the University of Kwazarunatala(?), South Africa, and this will basically be targeting the African region.

The Programme on Space Applications has also inducted pilot projects specific to capacity-building, training and education, some example of those are awareness-raising projects jointly carried out by Morocco and Nigeria, tele-medicine training now already carried out by Pakistan, India, South Africa and China. We also have a programme on the training of about the _____(?) years sponsored by the European Space Agency. So these are some of the examples of pilot projects carried out by the Programme on Space Applications.

We mentioned the Regional Centres which is the focus of the activities for capacity-building education. Please recall that UNISPACE II called for the establishment of these Regional Centres. The objective of setting up those Regional Centres is to develop indigenous capabilities for research and applications in the core disciplines of remote sensing and GIS, satellite communications, satellite meteorology and global climate, space and atmospheric sciences, as well as data management, and in preparation now, the subjects of space law and GNSS.

For there the United Nations-affiliated Regional Centres for Space Science Technology Education are distributed in this fashion. This is not new information for the members of this Committee. We have two in Latin America. There is the Regional Centre jointly based in Brazil and Mexico. There are two Regional Centres, one for Francophone and one for Anglophone Africa in Nigeria and Morocco respectively. And there is the Centre in India.

Furthermore, the Regional Centres provide postgraduate courses and these are the curriculum based on United Nations expert inputs, with the support of prominent educators, and these educators met, and these people met in 1989, in 1995, and 2001, for each of the topics and the core themes that I mentioned. And you find that there is the curriculum on remote sensing. The publications on these are found for remote sensing, satellite communication, meteorology, space and atmospheric sciences. Those interested in getting those publications, please contact the Office.

There will be a fourth United Nations Expert Meeting in the period of 2009-2010. I am told that the exact date has not yet been decided.

An overview of our postgraduate numbers. You can see there these numbers according to the Centres. Some Centres have been more active than others but probably because they have been innovative longer, such as India. Then, of course, we expect that the rest of the Centres will come up with a full range, comprehensively all the programmes in the near future.

And one last satellite on the Regional Centres is that you can get all this information at this website, because you also have a copy of this paper. Please go to that website for information on the education curriculum. And please, I think we have distributed a copy of the brochure on the Centres at this COPUOS session.

Turning now to capacity-building in space law, we have had the Space Law Workshops in The Netherlands in 2002, the Republic of Korea in 2003, Brazil 2004, Nigeria 2005, Ukraine 2006, and, of course, to be held this year in 2008. In 2007, there was an Expert Group Meeting here in Vienna. And this is my last bullet there where in lieu of a full-fledged workshop, we held an Expert Meeting on Promoting Education in Space Law.

That was held here in Vienna. So as a result of that, the Office is developing a curriculum on space law education for use at the Regional Centres for Space

Science and Technology and the reception from the Regional Centres is very, very positive.

Further on capacity-building and space law, we maintain a space law website. Again, the address is there, and in this website you will find the treaty status, database, as well as national space legislation database, what are the agreements between, would they have been carried out bilaterally and multilaterally. We also have a Directory on Education Opportunities. This was brought up at the last Legal Subcommittee, and as we can manage as well as we can, the space law links.

The Office also prepares a range of space law-related publications and provides technical legal assistance. It endeavours to monitor developments relating to international and national space law and we conduct research and prepare background papers for COPUOS as necessary. And when our resources allow, we participate in various space law-related events.

Next I turn to ICG, the International Committee on Global Navigation Systems. As you know, ICG is an important outcome of the work of the Action Team, on the Action Teams of UNISPACE III. So while ICG focuses on issues like compatibility and interoperability, or interaction with national and international organizations, it does have a programme on information dissemination including education and capacity-building. Under this Work Plan, the ICG intends to set up ICG Information Centres and this will be set up at the United Nations-affiliated Regional Centres and these aim to foster a more structured approach to information exchange in order to fulfil the _____(?) expectations of a network between ICG and the Regional Centres.

The Capacity-Building Programme of ICG will commence in 2008. I have listed for you the activities. Of course, the one coming soon is in Colombia. We will have another one coming up in Greece. We had one in Greece in May. In fact, my colleague, Hans Hubold, is right now in India for that international training course on satellite navigation location-based services at the Regional Centre. And we are hoping that at the COSPAR Meeting in July in Montreal, that the ICG Expert Group will also meet.

For 2009, I understand that there have been no, I mean, they are still at the negotiation stage, but there will be cooperation with regional GNSS reference systems. You can see the list of national and international multi-national organizations that will be involved in this cooperation about GNSS reference systems.

Next is on the UNSPIDER. As you recall, the aspects of capacity-building under the UNSPIDER Programme are covered under Activity 11 of the General Assembly resolution. Activity 11 is as it supports capacity-building. Under this you will see capacity-building frameworks specific to disaster management activities. Under this activity, we will be working with the Regional Centres for Space Science, the same Regional Centres, and other national and regional centres, to train end-users and strengthen their national institutions, vis-à-vis, disaster management. And we expect to see a development of a curriculum on disaster management, and also a compilation of a database containing information relevant to capacity-building opportunities. This is now ongoing.

All of this, of course, have to closely link with the Workshops organized under Activity 4 which is on outreach.

Mr. Chairman, distinguished delegates, I would now like to touch upon the outreach and education activities of the Office as my last slide, World Space Week, as you know, was declared by the United Nations in 1999. It celebrates the contribution of space and space activities, space science and technology to the betterment of the human condition. At the moment we are coordinating World Space Week events, through Space Week International Association, which is a non-governmental organization. Next year, 2009, of course, will be the tenth year of the World Space Week and the Office encourage more countries and more organizations to take part in World Space Week. Please see that website, spaceweek.org, for more information and materials, and there are lots of materials available on this website.

Mr. Chairman, distinguished delegates, we also have the permanent space exhibit at the VIC which sees thousands of people throughout the year and, of course, we do have events on the margins of COPUOS and the Scientific and Technical Subcommittee and the Legal Subcommittee meetings, and, of course, the General Assembly sessions and this includes exhibits, events, I do not need to name them all. And, of course, I would like to announce, once again, as I announced in my report, in my statement in the beginning of the meeting, that in 2011, we are hoping to celebrate the fiftieth anniversary of the human space flight and we are already talking to the member States for this event but we would welcome everyone to contribute to this event. And, of course, keeping in mind that 2011 is also the fiftieth anniversary of this Committee.

And as part of our outreach and education activities, we do have the Office for Outer Space Affairs publications. I do not think I am going to list them. Niklas is already looking at this to save my time but I think you know what our publications are.

So, Mr. Chairman, distinguished delegates, once again, thank you very much for allowing me to showcase to you the Education and Capacity-Building Programme of the Office, remembering that all of these are built on the shoulders of many colleagues in the past. I mentioned right back to 1968, 1971, and, of course, my present colleagues who are here to answer whatever questions, and we have an ex-colleague who could also answer some questions as needed.

Thank you Mr. Chairman.

The CHAIRMAN (*interpretation from Spanish*): Let me thank the Director for her presentation on capacity-building. A very complete presentation on education and capacity-building, including the geographical position for the Office and how it can bring these two topics to the most remote parts of the world. I am quite sure that her team will continue to perform so excellently.

I have two speakers on this topic. The distinguished delegate from India, Mr. Bhaskaranarayana first.

Mr. A. BHASKARANARAYANA (India): Thank you Mr. Chairman. Mr. Chairman, the use of space-based systems for providing quality education and health services is an important topic which needs to be supported in the developing countries. Effective implementation of these systems will make possible timely access to the best of services available in urban areas to the needy opulence in the far-flung regions. Towards this, the concept of tele-education and tele-medicine has seen that good results in India. Due to the lack of proper education and illiteracy in the majority of developing countries, identification of space and education as a primary theme under this agenda item is of high relevance and importance. The improvement in education is essential for capacity-building in the developing countries to absorb higher technologies required for effective implementation of space application programmes.

We are of the view that the United Nations Programme on Space Applications will place more emphasis on supporting education and training for capacity-building in developing countries, in particular through the Regional Centre on Space Science and Technology Education.

In India, a single window delivery mechanism for a variety of space-based products and services, such as tele-education, tele-medicine, information on natural resources for planning and development at local level, vis-à-vis, land and water resource management, etc., is being created by the mechanism called Village Resource Centres, undertaken by the Indian Space Research(?) Organization.

Today, more than 400 Village Resource Centres have been established across the country to provide valuable inputs to the local community in helping them in addressing a variety of social aspects. We consider that this concept of the Village Resource Centres is quite an appropriate application for other developing countries as well. Some other interesting outcomes of the establishment of the Village Resource Centres have been that it has motivated the farmers towards scientific advisories and expert consultation on natural resources management, ensures the schoolchildren, resulting in a reduction of the number of school drop-outs, provided for a better education and healthcare services, online decision support, weather services, water management and tele-fisheries support.

Mr. Chairman, the Indian delegation is of the view that the United Nations Programme on Space Applications, while addressing matters related to the capacity-building in developing countries, should also play an enhanced role in strengthening international cooperation. The requirements and the scope it provides to send education through satellites were enormous in India and this role will continue to move these national challenges an indication through its space systems and application programmes.

Today, more than 33,000 EDUSAT classrooms have been established in this country and has benefited a majority of students and training institutes, schools, colleges, teachers and professionals.

We are happy to note that the Committee has undertaken specific actions on enhancing education in space sciences and technology and expanding the use of space tools for improving quality of education. Thank you Mr. Chairman.

The CHAIRMAN (*interpretation from Spanish*): Let me thank the representative of India.

I now give the floor to the representative of Canada, Anne-Marie Lan Phan. You have the floor Madam.

Ms. A.-M.L. PHAN (Canada) (*interpretation from French*): Chairman, it is with pleasure that the Canadian delegation presents this statement on agenda item 11 on space and society. I should like to associate myself with a number of delegations who have spoken this morning to this issue, this important issue of education.

Chairman, the men and women who devote their life to space, whether they be scientists, engineers or astronauts, are role models for our children, and it is they who prompt our youth to pursue higher education science and technology. As one of the countries which is amongst those whose population is most developed scientifically and technologically speaking, we believe that Canadians should be made more aware of science, for example, by informing them of Canada's space achievements, and this in a concrete and interesting way. This is why the Canadian Space Agency has developed a strategy for raising awareness regarding space and education as part of which a number of activities were undertaken in 2006-2007. The results were at the year 2008 will be communicated to you next year.

On awareness-raising, it is with a great deal of pleasure that I present to the Committee the achievements accomplished.

Firstly, the Canadian Space Agency's delegates participated in 153 events which took place in 10 provinces and territories and reached some 37,000 people. Some 25,000 individuals were reached by events involving astronauts and 64,000 by recorded video messages. In addition to this, relations with the media and the website of the Canadian Space Agency disseminated information on 23 events. Most of them are missions associated with NASA's Space Shuttle and space exploration missions.

In addition to this, 350,000 products and publications were disseminated to the public to schools and science centres by regular mail, e-mail, and, in fact, through direct distribution in the field.

Finally, some 25,000 individuals were reached within the framework of private(?) public events highlighting astronauts throughout Canada.

In 2007-2008, we have, and will concentrate our efforts on the following activities. An awareness-raising campaign regarding the launch of DEXTER, the last element of Canada's state-of-the-art robotic contribution to the ISS. DEXTER is a two-armed agile manipulator which will facilitate the construction and assembly of the ISS.

The celebration of the tenth anniversary of the ISS and a continuation of the promotion of Canada's key role as a member and contributor of technological and scientific expertise, as well as the development of the necessary space robotics necessary to the construction and maintenance of the Space Station.

We will engage in awareness-raising activities regarding the state-of-the-art Canadian Earth observation satellite, _____ SAMSAT-2.

Finally, an awareness-raising campaign regarding the landing on Mars of the Mars-Phoenix Rover of NASA which includes a scientific instrument and a meteorological station built by Canada.

Chairman, on education, here are the main results and achievements of the year 2006-2007. Firstly, there has been a significant increase in the participation of educators, an increase of 275 per cent, as students in teaching initiatives aimed at encouraging youth to study and to build careers in sciences and engineering.

As a result of the STS-115 Mission, a use of the educational resources of the Canadian Space Agency on space and 20,000 Canadian classes, reaching out to 470,000 primary and secondary school students, an increase of 57 per cent of the requests for educational material on space by non-profit educational institutions.

The promotion of workshops for professional training and the development of educational material such as web-assisted educational opportunities aimed at meeting the needs of educators. Within the Framework of Understanding reached between NASA and the Canadian Space Agency, four Canadian medical students took place in a four-week aerospace course,

And finally, as a result of the research scholarships for science researchers, four Canadian students were able to study in Canada rather than having to move abroad. The Programme has also enabled us to repatriate Canadians who had studied abroad.

Chairman, as you can see, the awareness- and education-raising programmes in Canada were very successful.

By way of conclusion, I should like to inform you that since its creation in 2002, the National Conference for Educators, organized by the Canadian

Space Agency, has been a great success. This is an annual event which brings together over 500 educators from around the country. Their dedication and their personal interest in contributing to professional improvement and training during the summer recess have contributed greatly to the success of this Conference. Thank you Sir.

The CHAIRMAN (*interpretation from Spanish*): I would like to thank the representative of the delegation of Canada for this presentation.

Space and water (agenda item 12)

And we continue with the next theme, space and water, 12.

I have Mr. Radhakrishnan as my next speaker. You have the floor Sir.

Mr. K. RADHAKRISHNAN (India): Thank you Mr. Chairman. Since the inclusion of this agenda item on space and water during the forty-seventh session, it has continued to make good progress. Capacity-building and the use of space applications for water resource management continues to be an important agenda item for discussion during this session.

Mr. Chairman, with the ever-increasing population, the need, however, is to conserve and better utilize the water resources on the planet Earth, to ensure minimum quality of life for every citizen. Hence, it is imperative, not only to develop new water resources, but to conserve, recycle and re-use the water wherever possible.

Earth observation satellites, by virtue of capturing the variability, vulnerability and dynamism of the diverse eco-systems, provide the operational inputs that decision-making bodies, leading to more effective natural resources management. The strength of EO and geographic information systems lies in unfolding the various linkages and the underlying factors that exist between the state of natural resources and the livelihood opportunities of the stakeholders.

Mr. Chairman, in India, the Indian Remote Sensing Satellite Systems, there were calls for major EO applications, have made considerable impact in the areas of natural resources management, particularly in the surface and ground water management. The Dhaji(?) Gandhi National Drinking Water Mission has been quite successful towards effective water resources utilization in the country, enabling the communities and take EO products in terms of maps, lay ground

water prospects as well as recharged sites, are of great _____(?) to embark on rainwater harvesting moments. The generation of natural resources repository for the country, comprising mainly from the remote sensing data, has shown good progress. With this rich experience in water resources information management in the country, India is willing to share its experience and consider providing the necessary assistance for the developing countries, particularly in the African region, with the support of a few like-minded countries.

Several Earth observation-based national missions, such as wasteland mapping, watershed monitoring projects, crop acreage, and production estimation, circulate-based potential fisheries zone assessment, have provided valuable inputs towards developmental planning, monitoring and evaluation.

All these initiatives have paid rich dividends and have made possible optimum utilization of the country's natural resources.

Mr. Chairman, acute water shortages and recurrent floods are a point of major concern in many developing countries. Putting to use the space-borne platforms in a constructive manner for water resources management and handling water-related emergencies is getting more prominence in the international arena.

In India, we have plans to adopt a two-prong approach for meeting the future challenges of water requirements. One is the short-term approach which would involve conserving water through rainwater harvesting and ground water recharge by putting to use the space-based systems. Other long-term plans could be for transfer of water from water surplus regions to water deficit regions. A space applications programme in India will continue to contribute towards meeting all the national initiatives taken up for water resource management for the benefit of mankind. Thank you Mr. Chairman.

The CHAIRMAN (*interpretation from Spanish*): Let me thank Mr. Radhakrishnan from the Indian delegation for that statement.

And I now give the floor to the representative of Algeria, Azzedine Oussedik. You have the floor Sir.

Mr. A. OUSSEDIK (Algeria) (*interpretation from French*): Thank you Chair. The Algerian delegation wishes to take the floor to deal with these theme, space and water, since we consider that water is an indispensable element for sustainable development and needs ample discussion.

The knowledge and rational management of water is, in fact, one of the priorities of Algeria's sustainable development efforts. Space tools are one of the instruments that can be used to help us reach our objectives in this regard. Indeed, satellite imaging with different spectral resolutions, along with geographical information systems, has become an indispensable instrument and an inimitable part of our National Space Programme carried out by the Algerian Space Agency.

The knowledge and quantification of water resources and its management, in particular arid and semi-arid zone subterranean waters are concerns that we share with other countries. For example, with Tunisia and with Libya, like us with the Albion(?) Water Table underneath the Sahara Desert, in other words, the Sahara Aquifer in the southern part of the Desert, is the subject of a joint programme between the three countries. We are doing mapping and we are trying to identify our subterranean water resources.

The Southern Saharan Aquifer is, as I said, the subject of a regional programme. We are trying to uniform our different geodesic and cartographical efforts here, the idea being to have the optimal conditions for a sustainable exploitation of this resource which is significant but not limitless.

Now, with Tunisia, and working through the Algerian Space Agency and the Syrian Remote Sensing Organization, OSS, we undertook to do some mapping of underground aquifers as well as in the two arid zones of the countries just mentioned, and would like to express special thanks to OSS for its applications in remote sensing, in particular hydrology, an experience which we think will add value to all of our efforts in terms of remote sensing for water resources.

Now, this is going to be something that is applied in each of the countries and images from ALSAT-1, the Algerian satellite, in conjunction with a hyper-spectral radar, will also be useful. Thank you.

The CHAIRMAN (*interpretation from French*): Let me thank the distinguished delegate of Algeria for that statement.

Now we go on to the observers. The first one on my list is Yolanda Berenguer from UNESCO. You have the floor Madam.

Ms. Y. BERENGUER (United Nations Educational, Scientific and Cultural Organization): Thank you Mr. Chairman. Whether information

systems are fundamental for improving water governance, one of the recommendations of the World Summit in Sustainable Development, held in Johannesburg, South Africa, in 2002, namely Article 27, calls for the use of space technology as an approach in assisting developing countries to overcome the problems faced in the collection of water-related geo-information.

The European Space Agency, in support of CEOS, the Committee on Earth Observation Satellites, launched the TIGER Initiative, focusing on the African region, in partnership with UNESCO, being the United Nations specialized agency dealing with hydrological issues in the framework of the International Hydrological Programme, and as the lead agency in the Integrated Water Resources Management Initiative.

Consultative workshops were held in 2003 and 2004 to identify a development model aimed at bridging that technological gap and it has come up with a three-stage approach.

Number one, the research stage. This stage is aimed at supporting the consolidation of a critical mass of technical centres in Africa with the skills and capabilities to derive and disseminate space-based water-relevant information to water authorities. The objective of this stage is to improve knowledge on local and regional water resources in Africa and enhance human technical and institutional capacity to derive and disseminate and use water-relevant information by exploiting the advantages of Earth observation technology.

The second stage is the pre-operational stage which is aimed at developing and demonstrating tailored Earth observation-based information services and systems to support African water authorities in collecting water-relevant information on a regular basis.

These projects represent a test bed to develop sustainable implementation strategies and best practices in preparation for a full operational stage.

All projects involve a component and capacity-building and technology transfer aimed at establishing a solid base to transfer this system and services to African partners in a sustainable manner.

The third stage is towards the operation itself. On the basis of successful development and demonstration results, trans-boundary or national projects led by African water authorities, will be implemented aimed at supporting the transition from a

pre-operational stage to a sustainable operational phase.

With regard to the first research stage, this component has implemented 50 research projects carried out by African and North-South teams involving more than 150 universities, technical centres and water authorities in 28 different geographic areas of interest. Research topics include flood mapping, hydrology, water quality, wetland mapping, land cover and land use mapping. Sixteen countries are involved, namely Algeria, Botswana, Cameroon, Ethiopia, Kenya, Ivory Coast, Madagascar, Morocco, Namibia, Niger, Nigeria, Senegal, South Africa, Sudan, Uganda and Zambia.

Ten countries work closely with these countries, namely, Austria, Belgium, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, United Kingdom and the United States.

At the pre-operational phase, 16 development and demonstration projects have been launched by the European Space Agency and the Canadian Space Agency involving six million Euros. This project is aimed at developing user-tailored water management information services adopted to respond to user needs and systems based on Earth observation technology and demonstrating the real capability in Africa.

At the operational stage, which involves a number of projects led by African water authorities and technical centres, this is aimed now at the full transfer of information systems from a pre-operational to a sustainable operational stage, and this is driven by users and carried out in collaboration with donors, such as the African Development Bank. So far, activities have been carried out in the framework of the Geo-Aquifer Project, led by the African Development Bank and OSS in Tunisia, and the Lake Chad Water and Environment Observatory, carried out in the Lake Chad Basin.

Other projects are on Lake Victoria and on the Zambezi River in collaboration with the Zambian water authorities. Needless to say, UNESCO is the Secretariat of this Programme which is handled by the Nairobi Office.

In terms of capacity-building, 20 training sessions have been organized, focused on the needs of the different TIGER research projects, and since September 2006, a research component of the Programme is supported by the TIGER Capacity-Building Facility, which is led by ITC in The Netherlands. This is responsible for providing further

support to a number of African teams involved in the research stage.

I am pleased to inform you, Mr. President, that a TIGER Training Kit was produced in 2005 to provide African partners with a common baseline in terms of training, education and software tools and these are available on the TIGER website. Moreover, a manual on remote sensing applications for ground water was published in December 2007 and it is available in hard copy and on DVD. I have brought copies and will be distributing them in the pigeonholes of all the COPUOS member States for their use.

In the last years of TIGER, under the leadership of the European Space Agency, the Canadian Space Agency and UNESCO, the TIGER has evolved its collaboration with partners such as the Economic Commission for Africa, the African Ministerial Council on Water, the African Development Bank, and other African international organizations.

In 2006, the African Ministry Council on Water has endorsed TIGER providing the initiative with the political support and guidance required to achieve its targets.

Mr. Chairman, TIGER has ended its first implementation period. It is now looking at coming up with a project document to implement the second TIGER implementation period 2008 and 2009 and is looking forward to further partners, other partners, in terms of stakeholders as well as donor countries, to be able to not only extend this model to other countries in the African region, but also to the other continents of the world. Thank you Mr. Chairman.

The CHAIRMAN (*interpretation from Spanish*): Let me express my special thanks to the representative of UNESCO for that statement.

Now let me turn to delegates and ask whether any representative wishes to make a statement on space and water at this time.

Such seems not to be the case and I believe we have, therefore, concluded our consideration of this agenda item.

Now, distinguished delegates, I would like to continue with number 13, the use of space-derived geo-spatial data for sustainable development.

My first speaker, Nigeria, Ayo Otepolo. You have the floor.

Mr. A. OTEPOLA (Nigeria): Mr. Chairman. The concept of geo-spatial data production, harmonization, standardization, management and dissemination underlies the development of a powerful set of tools, otherwise known as special data infrastructure, SDI, or national geo-spatial data infrastructure, NGDI, for planning and decision support with particular reference to its impact on sustainable livelihood and national development. A functional NGDI will facilitate data-sharing among shareholders, producers and users alike, thereby eliminating data to be _____(?) and seven cost on time spent in producing already existing data. Against this background, the development of NGDI has been a key issue in Nigeria's social economic development efforts. Space technology remains pivotal in spatial data acquisition providing over 80 per cent of geo-information on which the Government's reforms are based, especially in meeting its challenges of food security and in resources as well as environmental and disaster management.

Mr. Chairman, in the Niger Delta of Nigeria, which accounts for over 90 per cent of Nigeria's oil and gas, environmental damages from oil extraction has undermined the potential of deriving livelihoods from agriculture and fishing, due to unsustainable exploration and exploitation. This notwithstanding, solid mineral resources, as well as agricultural resources have huge potentials that have been under-exploited and under-utilized. Realizing the importance of the unsustainable exploitation, Nigeria decided to accelerate the development of its NGDI Programme with the National Space Research and Development Agency, NASRDA, as the coordinating institutions.

To enhance the development of NGDI in Nigeria, NASRDA has facilitated the development of a National Geo-Information Policy to serve as a guide to the development of the NGDI. We have integrated this development into the National Development Strategy and Economic Reforms, otherwise known as the National Economic Empowerment and Development Strategy of the Government needs. The Agency has also made concerted efforts to intensify its collaboration with national and international organizations on space-based projects that are strategic to national development as part of the dividends of space technology development in Nigeria.

Presently, NASRDA is collaborating with Harris Corporation of the United States in the development of its NGDI and also enhancing its efforts at global disaster management through the Disaster Monitoring Constellation, DMC. Nigeria will make a

presentation to highlight some of these efforts during this session. Thank you Sir.

The CHAIRMAN (*interpretation from Spanish*): I would like to thank the distinguished delegate from Nigeria.

And I give the floor to the delegate from Japan, Kazuhiro Miyazaki. You have the floor.

Mr. K. MIYAZAKI (Japan): Thank you Mr. Chairman. Mr. Chairman, distinguished delegates, we believe that the goal of this agenda proposed by the _____(?) Government is to promote the effective use of the Earth observation data not only in technologically advanced countries but also in developing countries. Additionally, the project aims to strengthen(?) human resources of developing countries in the field of Earth observation data used in order to expand the possibility of space use.

The Japanese Aerospace Exploration Agency, JAXA, has again demonstrated its dedication to promoting space education and human resources training of Thailand and Indonesia in the field of Earth observation by conducting aero-_____ (?) pilot projects to utilize data from _____ (?) with authorities of both countries.

In addition, JAXA, in cooperation with the Asia Institute of Technology, AIT, has implemented a training programme on Earth observation data and rising technology in the Asia-Pacific region.

More than 1,200 specialists from 30 countries in the Asia-Pacific region have completed the programme.

This issue is high on the agenda of the Asia-Pacific Regional Space Agency Forum, APRSAF, jointly held by Japan and pertinent countries every year and we hope that the use of space-derived geo-spatial data from sustainable development will be promoted to international cooperation. Thank you for your attention.

The CHAIRMAN (*interpretation from Spanish*): I would like to thank the representative of Japan for that statement. Thank you very much Mr. Miyazaki.

Well, we have finished today's treatment of item 13, Use of Space-Derived Geo-Spatial Data for Sustainable Development.

Other matters (agenda item 14)

Distinguished delegates, I would now ask that we turn to item 14, Other Matters.

Now under this agenda item, the Committee will consider several matters. We have already considered and agreed on the proposed Strategic Framework for the Programme on the Peaceful Uses of Outer Space for the period 2010-2011. The other issues to be considered under this agenda item include composition of the Bureaux of the Committee and its subsidiary bodies for the period 2010-2011, the future role and activities of the Committee, proposal for new items on the agenda of the Committee, and observer status.

The Committee may also wish to discuss matters others than those that I have just listed afterwards.

Now, we will take these up one by one.

The composition of the Bureaux of the Committee and its subsidiary bodies for the period 2010-2011. I would like to remind delegates that in paragraph 11 of resolution 58/89 of 9 December 2003, the General Assembly endorsed the agreement reached by the Committee on the future composition of the Bureaux of the Committee and its subsidiary bodies, on the basis of the measures relating to the working methods of the Committee and its subsidiary bodies, which had been endorsed by the Assembly in its resolution 52/56 of 10 December 1997. In accordance with the measures relating to the future composition of the Bureaux of the Committee and its subsidiary bodies, the Committee at its fifty-first session should reach agreement on all the officers of the Bureaux of the Committee and its subsidiary bodies for the years 2010-2011, in other words, that term of office.

For that purpose, the five regional groups should reach consensus on this and transfer the name of their agreed candidate to the Committee.

I would like to inform delegates that the Asian Group of States, as well as the Group of Latin America and Caribbean Countries, as well as WEOG have already submitted proposals on their respective candidates, and these are in Conference Room Papers 9 and 10, distributed to delegates' pigeonholes today.

I would now like to invite the Chairman of the Asian Group of States, the distinguished representative of Iran, to present his nominations. You have the floor Sir.

Mr. A. TALEBZADEH (Islamic Republic of Iran): I thank you Mr. Chairman. The delegation of the Islamic Republic of Iran, in its capacity as the Chair of the Group of Asian States, has the honour to present the candidature of Mr. Ahmed Talebzadeh, the President of the Iranian Space Agency, ISA, to take the office of the Chairman of the Legal Subcommittee for the period of 2010-2011.

His candidature for the office of the Chairman of the Legal Subcommittee has been endorsed by the Group of Asian States.

Mr. Chairman, for the past two decades, Mr. Ahmed Talebzadeh has been deeply involved in the space-related activities, both at national and international levels, after having been graduated from the University of Tennessee Space Institute, the United States, an MSc Degree in aerospace engineering. He began his career in the Ministry of Communication and Information Technology of Iran as an expert on remote sensing and geographical information systems.

He was the Vice President of the Iranian Space Agency, ISA, in the application of space technology, since the establishment of ISA in 2003. Afterwards, Mr. Talebzadeh took the office of the Presidency of this Agency in October 2005. At the same time, he carried out numerous academic and scientific researches in the field of space technology and space law.

And Mr. Talebzadeh also actively contributed in the work of the Committee on the Peaceful Uses of Outer Space and its subsidiary bodies over the last decade. He is a frequent participant in the COPUOS sessions and accords his considerable experiences.

In addition, Mr. Talebzadeh attended numerous other international fora on the peaceful uses of outer space. In his capacity as the President of the ISA, he also managed several regional and international fora which were held on utilization and application of space technology.

Mr. Chairman, distinguished delegates, we believe that Mr. Talebzadeh has demonstrated his commitment to enhance the regional and international cooperation on the peaceful uses of outer space and his dedication to increase awareness on the relevance and importance of space applications to the betterment of the human condition. I thank you Mr. Chairman.

The CHAIRMAN (*interpretation from Spanish*): I would like to thank the distinguished

representative of the Islamic Republic of Iran for that nomination.

I now invite the Group of Western European and Other States to present their nominations. I was informed that the distinguished representative of Switzerland, who is the incoming Chair, will be the one to present the nominations. You have the floor for WEOG.

Ms. N. ARCHINARD (Switzerland) (*interpretation from French*): Chairman, thank you. As this is the first time I take the floor during this session of the Committee, the Swiss delegation wishes to voice its pleasure in seeing you leading the work of the Committee. And, of course, convey our gratitude to all the delegations who, in the meeting and outside the meeting, welcomed Switzerland as a new member of the Committee.

Chairman, indeed it is on behalf of the Group of Western European and Other States, chaired by Switzerland from 1 July 2008, and as the Swedish Chair is not present here today, the Swiss delegation has the honour of presenting the candidacy of Mr. Ulrich Huth from the German Aerospace Centre, DLR, and member of the delegation of the Republic of Germany from 2004 onwards to the Vice-Chairmanship of the Scientific and Technical Subcommittee from 2010-2011. Thank you Sir.

The CHAIRMAN (*interpretation from Spanish*): I would like to thank the representative of Switzerland for the nomination.

We now need to hear from GRULAC and let me give the floor to the distinguished representative of Argentina, who, in fact, is not here. So let me make the presentation myself of the nomination.

In order to do so, let me avail myself of the Note Verbale that the Argentine delegation and representation to the Office for Outer Space Affairs sent me. I am pleased to say that, on an unanimous basis, GRULAC has decided to nominate Ambassador Raimundo González from Chile as its candidate for the First Vice-Chair. The Argentine Mission has annexed the CV of Raimundo González Aninat which, in my opinion, not necessary in view of the qualities, the service, the dedication that our friend, Ambassador González, has shown, amply shown in many aspects, not just on a regional basis, but even more globally. And in his ex-capacity as ex-President and many other offices here, I think we have ample evidence of his capacity.

So it is my honour to present these three nominations to the Committee for its endorsement, hoping that the other regional groups will act as quickly as possible here. Before we conclude this session, we really want to have all of this finalized.

So if there are no objections from the floor, we endorse these nominations.

That was the first item under Other Matters, and there is more than just one, there are five in all, two of them already dealt with, the third is the future role and activities of the Committee.

Now, in paragraph 53 of resolution 62/217, the General Assembly noted with satisfaction that the Committee would consider at its fiftieth session, under Other Matters, the issue of the future role and activities of the Committee and agreed that the consideration of the future role and activities of the Committee should be continued at the fifty-first session of the Committee and in the margin of the forty-fifth session of the Scientific and Technical Subcommittee and the forty-seventh session of the Legal Subcommittee.

At its fiftieth session, the Committee considered a Working Paper submitted by the Chairman of the Committee entitled "Future Role and Activities of the Committee on the Peaceful Uses of Outer Space". And this is document A/AC.105/L.268/Corr.1.

The Committee at its current fifty-first session also has before it a Working Paper submitted by the Czech delegation. This has the serial number A/AC.105/L.272.

So we have these two documents before us.

Would any delegation wish to take the floor at this time on this agenda item?

I have the distinguished representative of France, Gérard Brachet, who has the floor.

Mr. G. BRACHET (France) (*interpretation from French*): Thank you Chairman. Chairman, under this agenda item, falling under agenda item 14, Other Matters, France would like to make two statements, but each time wearing a different hat.

First, a statement on both the topic of the future activities of the Committee as well as on the proposal which France had started to make last February regarding including a new agenda item on our agenda. Tomorrow morning our Ambassador will

make a statement on item 14 under future activities and this time he will do this on behalf of the European Union.

And the second statement, as I have said, will take place tomorrow. This because he is not available here today and he will be present tomorrow.

So the statement which I wish to make now Sir is on this overlapping topic which overlaps the future role of the Committee and the possible inclusion of a new item on our agenda.

Sir, the French delegation wishes to keep the Committee on the Peaceful Uses of Outer Space informed regarding progress in the work started at the beginning of this year during a meeting of an Informal Working Group organized by France, in Paris, on 7 and 8 February, a meeting which brought together the representatives of close to 20 States of the European Union, ESA, four of the most significant commercial telecommunications satellite operators, as well as, of course, the Office for Outer Space Affairs represented by its Director, who assisted in this meeting as an observer.

The topic considered during the meeting of this Informal Working Group was that of the long-term viability of space activities, a topic which you well know was touched on in Section D of the document you have just referred to. I am referring, of course, to A/AC.105/L.268 on the Role and Future Activities of the Committee, which it was my great honour or to present as Chair of the Committee during its fifty-first session in June 2007, fiftieth session, and the reason I say fiftieth is because in my text it states fifty-first. It is a mistake. I was Chair during the fiftieth session.

The French delegation has already had the opportunity to inform delegations regarding the setting up of this Informal Working Group during the forty-fifth session of the Scientific and Technical Subcommittee last February.

Chairman, this Informal Working Group is continuing its work, work which initially consists in developing a technical document addressing the various issues related to the safe use of outer space in the long term.

This document will be considered during the course of the second meeting of the Informal Working Group on the long-term viability of space activities which is scheduled to take place at the beginning of October in Glasgow, in the United Kingdom, on the margins of the International Astronautical Congress,

which you well know, will meet from 29 September to 3 October 2008.

Delegations interested in receiving additional or more information on this Informal Working Group or perhaps wish to contribute actively in its work, are invited to contact one of the members of the French delegation.

Chairman, the French delegation hopes that this very important question of the long-term viability of space activities be included on the Committee's agenda in the future, as had already been announced last February during the session of the Scientific and Technical Subcommittee.

We believe, however, that that in-depth preparatory technical work must be carried out prior to any debate on this issue within the Committee. Therefore, the French delegation wishes to put off to 2009 its proposal to include this issue as a new item on our agenda within a multi-annual plan. Thank you Sir.

The CHAIRMAN (*interpretation from Spanish*): I would like to thank Gérard Brachet for his statement and for his clear cut position on postponing this topic to next year. This, of course, has to necessitate further reflection.

I open discussion on this.

I think Colombia has asked for the floor. You have the floor.

Mr. _____(?) (Colombia) (*interpretation from Spanish*): We would also like to postpone our intervention.

The CHAIRMAN (*interpretation from Spanish*): Thank you. Now I have Chile and the Czech Republic.

Mr. R. GONZÁLEZ ANINAT (Chile) (*interpretation from Spanish*): Thank you very much Chair. First of all, we thank the representative of France for presenting this document which was the subject of a debate and discussion in an unofficial group that we did not hear about. We would like to express our interest in participating in any deliberations on this document in the future. I think we have the necessary credentials as representative of a region that is now working very intensively here and in also working on the future agenda of the space activities. I am thinking of in particular the Space Conference of the Americas. Action Plans which already began in the Third Conference in Puente del Este(?) but which later

was beefed up by me in Colombia. A lot of this had to do with sustainability. And this is in particular this document, the L.272, which was also mentioned here that have to do with long-term or future activities.

In any case, when talking about these documents, we have seen mainly the scientific and technical aspects that are highlighted and the topic of sustainability is something that is very much debated in legal circles, already coming from the 1972 Conference on Habitat. Since then, we have tried to strike a balance between economic growth and defending or preserving the environment.

Moreover, this has to be linked to the fundamental precepts of the 1957 Space Treaty. How can we interpret this in a context of sustainability? We are talking about equitable growth, growth with positive discrimination, taking into account the interests of the developing countries, and, in my opinion, this does not come through clearly in this document. The fact that the legal aspect was emphasized here, well, it is something that we have taken note of but we are interested in participating here in this with France and you understand that we are all invited to participate in this informal group. We do not want to be put before a *fait accompli*, of course. So this informal group could lead to a more broad-based group and unless I am wrong, in this we would very much like to participate and to make our own substantive contribution here.

But Chair the key to all of this is coming up with the definition of sustainability in this context. Sustainability cannot be defined here and prejudice to the interests of developing countries. For example, an excess of economic growth and its impact on the environment or excessive commercialization and untimely commercialization that does not take into account basic elements in preserving biodiversity. How are we going to take food security aspects and all of these threats? There is so much concern in the national sphere at this time.

So I think we have got to try to reach certain areas of understanding here and try to make progress.

Now, this document does have some elements which give food for thought for future reflection. There is something here about sustainable development but I think this needs to be much more precise and taking into account the developing countries situation here.

With the appropriate information Sir, we can fight the famine that is profiling on the horizon of the

world. This is what I mean when we talk about sustainability in ensuring that. So there are several elements here that I think we need to do some collective thinking on because I think, for the time being, there is too much slanted towards countries that have the technological capacity and so on and much remains to be done.

What is important here is that we are ready to go along this road. We will do this on an equal footing and we have to make sure that our voice is heard and heard very attentively and that we be not characterized and when we take the floor as being emotional Latin Americans. No, no, no, we are pretty serious people and we are just as serious as any other continent represented here. We are all serious representatives and some are not more serious than others. There is a principle of equality between States and unlike the Security Council where there are some that seem to be more important than others. That is a fact.

But we really observe here that this document here offers some good basis for discussion and thinking but we find the legal aspect, the legal thing absent, even though we wish to start with the definition of sustainability. This is the starting point. And if we look from the viewpoint of the doctrine that inspired the initial resolutions of the United Nations that led to the Space Committee, referring to the peaceful uses of outer space. Obviously all of these kind of lead up to an area of sustainable development within a legal framework, it is not just a scientific and technical matter, because if it were only that, we would find ourselves in a very difficult situation. At least this concerns my country. We have no capacity to compete with scientifically and technically with the majority of countries that have boundless means at their disposal. So this is the context that we share with the vast majority of countries here.

It is one thing for a small group of countries to have the means and it is another thing for that same small group of countries which, of course, it is their interest, to divulge these means to other countries so that we can all use these and that we can all produce and share knowledge for the sake of our different peoples, peoples who are facing, as I said, very difficult and complex situations now. So there are a whole series of elements here that are not really clear or clearly reflected in this document.

I am not going to go into too much on the other aspects here, for example, passenger space transport, because here obviously space tourism clearly, if we do not have the means in the vast majority of countries, how are we going to have

passenger space transport? That is all for now. Thank you.

The CHAIRMAN (*interpretation from Spanish*): I thank the distinguished Ambassador for Chile, Raimundo González.

And I give the floor at this time to the representative of the Czech Republic.

Mr. V. KOPAL (Czech Republic) (*interpretation from French*): Thank you very much Chair. Chair, the delegation of the Czech Republic has listened very closely to the remarks from our distinguished colleague, the representative of France, and the ex-Chairman of our Committee. As we have already indicated during the exchange of views at the beginning of this session, our position is very favourable in considering space activities viability. And we would accept having on a future agenda of the Committee's work having this issue included.

We listened very closely to the information given on the first steps made here by the Informal Working Group and we will also follow its work during the Congress of the International Astronautical Federation in Glasgow next October.

My delegation would be ready to support the inclusion of this item on the agenda of the Committee when it is officially proposed at the next meeting. Thank you.

The CHAIRMAN (*interpretation from French/Spanish*): Thank you very much Professor Kopal. So I understand that you also are supporting the process here. And then let me thank the French delegation for that presentation, as well as the Ambassador from Chile for the constructive remarks he has made.

Colombia has the floor at this time.

Ms. _____(?) (Colombia) (*interpretation from Spanish*): Thank you Chair. We believe that it is a very timely moment to include this one the work list of this Committee. Hence, we would support having this topic be considered, taking into account the interests of all countries, in particular the interests of the developing countries, as we have said several times already, not just the partial activities but activities having to do with the development of different countries as well.

The CHAIRMAN (*interpretation from Spanish*): I thank the delegate from Colombia.

And I give the floor to the Russian Federation.
You have the floor.

Mr. S. SHESTAKOV (Russian Federation) (*interpretation from Russian*): Chairman, thank you. The Russian delegation, as other delegations, has, with a great deal of interest, listened to the information presented by Mr. Brachet, considering the inclusion into the fifty-first session of the Committee of an item on the long-term viability of space activities. We share the view that consideration of this item is in line with the proposals presented by Mr. Brachet in his capacity as Chair of the Committee in the Working Document "The Future Role and Activities of COPUOS".

In this respect, the response and reaction of the Russian delegation to this initiative is a positive one on the whole.

At the same time, a number of basic elements of this proposal require additional clarification and discussion.

Firstly, we, in no way, would like to pre-judge the work of the Committee on this topic, but as far as we understand it, the outcome of this planned work, at the very least, as seems to be presented in the document presented by the French delegation at the forty-fifth of the Scientific and Technical Subcommittee, and I am referring to document A/AC.105/C.1/2008/CRP.11. The outcome of the work is viewed in a format of a recommendation or guiding principles, guidelines on the best way in which to carry out space activities. Ensuring the viability of space activities in the long term is a very complex and a comprehensive task. This is why a number of issues arise regarding which elements it is intended to cover and by future best practice guidelines.

At this present stage, we cannot judge this because key elements have been defined in too general terms, in excessively general terms. Within the framework of such generic topics, and here I would like to draw your attention to the document presented by France during the course of the forty-fifth session of the Scientific and Technical Subcommittee, such generic topics as space debris, international cooperation on monitoring outer space, current and future challenges of space activities in near-Earth and geostationary orbit, or within these frameworks, in principle, one can discuss any topic, any problem relating to ensuring viability of space activities.

At the same time, we believe that the task at hand is to determine concrete problems which are of

concern to the international community as far as ensuring sustainability and viability of space activities concerned but they can only be effectively resolved by the mainstreaming in cooperation of best practices.

Another element which is closely related to the first and I would like to draw your attention to this, is, as far as we can judge from the informal consultations during the work of the so-called Informal Working Group in February, this year, in Paris, amongst other topics, there was discussion of space debris in near-Earth and geostationary orbits. A question arises here. Should the Committee deal with the same problem under different agenda items? Furthermore, how useful is it to raise a question of the need to, by 2011, prepare a set of best practices on the problem of space debris, taking into account the adoption last year by the Committee of Guidelines to prevent the generation of space debris, whose implementation at national levels is something which the Committee will have to assess over the coming years.

In this respect, the Russian delegation believes that there is a need, and I will repeat myself here, that if this question is to be included on the agenda of the Committee, and a corresponding Working Group of the Committee is created to consider it, if all this happens, there is a need to clearly define and determine the mandate of this Working Group to ensure that we avoid any possible unwanted and unuseful duplication within the framework of the Committee. Thank you.

The CHAIRMAN (*interpretation from Spanish*): Let me thank the representative of the Russian Federation for those remarks.

I turn to the house to ask whether anyone else wishes to take the floor?

The United States.

Mr. K. HODGKINS (United States of America): Thank you Mr. Chairman. Mr. Chairman, my delegation welcomes the initiative taken by France by their former Chair, Gérard Brachet, as contained in document L.26, and we also welcome the consultations that France has led concerning the sustainability of space activities. My delegation is prepared to participate actively in any informal work that might be undertaken.

There are a number of points that we would like to make just generally about the desirability of looking at this question of the sustainability of space.

The first one is this seems to be a topic of great interest, not only among members of the Committee, but also among the private satellite operators and we have to realize that today there is more commercial activity in space than there is government activity in space. And we owe it to the space community in general to look at issues that are of interest and to respond when the space community suggests that perhaps that this Committee could play a useful role in solving or in addressing an issue that they see as being a problem in the future. So, to that extent, we are quite encouraged by the interest shown by some of the private operators such as INTELSAT and INMARSAT in this activity. I think we should take that as a positive reflection on the Committee.

The second point that I would like to make is that there a number of things that the Scientific and Technical Subcommittee has or will be taking up that relate to this whole idea of sustainability of space activities and one of those is the question of space weather, because as the presentation that was made last Friday demonstrated that naturally occurring phenomena will have an impact on our space systems and systems on the ground. And this directly impacts the sustainability of our activities in space and it is something that we cannot control but we do have to understand and monitor it and forecast it. So we would see the length between perhaps the Subcommittee doing some work in the areas of space weather and through that cooperation among States link it with the general concept of sustainability of activities in space. Thank you Mr. Chairman.

The CHAIRMAN (*interpretation from Spanish*): I thank the distinguished representative of the United States for his statement on this item.

Let me ask the delegate of France if he wants to react to any of the remarks of the proposals the Chair made or at least, it seemed that some of the topics in the paper have already been dealt with under the regular agenda of the Committee or in the two Subcommittees. There is also a proposal for the setting of a working group set up by the Committee. Anyway, several questions have been raised. Do you wish to take the floor at this time or shall we continue this tomorrow Sir? You have the floor.

Mr. G. BRACHET (France) (*interpretation from French*): Thank you Chair. Well briefly, let me answer the main questions raised by the speakers and let me thank them first of all the interest they show in this.

First of all, all of the interventions do indeed confirm that we need to better prepare and do further

thinking on how the Committee can deal with this long-term viability issue and in the best possible conditions. Let me thank delegations that have expressed their interest on the preparatory stages this year and, of course, I invite you all to participate in the second Informal Working Group in Glasgow in October.

To be more specific in answering the Russian Federation, the questions he raised explained to a great extent why in fact we want to take some more time on this because it is better to delimit the scope of work and also, as he pointed out, we would have to avoid duplication of effort, effort already underway, for example, he cited guidelines and limits of space and so on. We do not need to redo what has already been done, what has already been undertaken and worked on for several years now, prevention and generation of space debris.

Let me thank the others who have shown their interest in this process. France will return to the Committee next year with a more structured proposal and the fairly detailed explanatory document which will answer at least a majority of questions that were already raised.

The CHAIRMAN (*interpretation from Spanish*): Let me thank Mr. Brachet for his presentation and his intent to streamline the approach to these important questions.

Now we are going to continue with our programme. The next issue has to do with new items for the Committee. We have not very much time left. I am just going to look at the proposals made for new topics.

One has to do with what corresponds to what France has been saying, long-term sustainability of space activities. The Scientific and Technical Subcommittee has already taken note of this proposal at its forty-fifth session this year.

Secondly, there is a proposal by India on space and climate change and this was supported by Chile and Nigeria.

Third, we have the United States proposal concerning inter-agency coordination on space-related activities of the United Nations entities, a title not defined.

So tomorrow we will continue our work on this item, Proposal for New Items.

And now we move on to the technical presentations. We have Nam-mi Choi of the Republic of Korea who will present the Astronauts Programme for that country. You have the floor Madam.

Ms. N. CHOI (Republic of Korea): Mr. Chairman and distinguished delegates, in this presentation, I would like to introduce the First Korean Astronaut Project and ensure the serving result showing change of public interest in space.

The First Korean Astronaut Project is technically to increase public interest in space as a _____(?) spectral. The public have participated in the Korean Astronaut Project as 36,000 people applied for the astronaut candidate. Largely, the elementary and middle school students proposed the science experimental for astronaut and they supported the first Korean woman in space as seen on TV in April this year.

I will briefly introduce the Korean candidate selection process which is broadcasted in TV in real time. Thirty-six thousand people, including 29,000 men and 7,000 women applied for the astronaut candidate respond to vote posting. One third of the Asian applicants were 3.5 kilometres long.

And 30 candidates passed the psychological testing and general interview and 10 candidates were selected for a medical exam, situation origin testing and teamwork test.

From 10 candidates, only two astronaut candidates were located through a space adaptation test in the Governing Space Training Centre. They are Yi So Yung(?) and Go Sun(?).

Two Korean astronaut candidates were trained in the Governing Space Training Centre for one year. Finally, Yun So Yung(?) was the first Korean to go into space and she _____(?) Asia on 8 April. The whole process of the launch service was broadcasted in real time in Korea.

_____ (?) from the Asian Science and Experiment Model of ISS, 13 basic science experiments were proposed from research institutes and universities and five science experiments were proposed from elementary and middle school students.

This video shows Yun So Yung(?) science experiments during staying at the ISS for eight days.

This shows the facial changes using ... and in this picture, she shared the Korean chair with the

Russian astronauts. And she performed the basic dynamic experiments proposed by the elementary school students.

The next slide. Soon after Yun So Yung(?) had safely come back from the ISS. A public survey was performed to investigate the change of interest in science and technology. Several questions were asked to 500 others and 500 to a variety(?) and middle and high school.

To the question asking how we are on the use of Korean astronaut to fly to the ISS, 98 per cent of the others and 99 per cent of the students said they know a Korean astronaut flight and 96 per cent of juveniles said they know the Korean astronauts name, while 76 per cent of others no. Therefore, it shows that juveniles are more aware of the Korean Astronaut Project than others. Eighty-one per cent of others and 83 per cent of juveniles said their interest in space increased due to the Korean Astronaut Project, while about 75 per cent(?) respondents said their interest in science and technology increased due to the Korean Astronaut Project. Eight-six per cent of the others and 79 per cent of juveniles answered that the Korean Astronaut Project contributes towards juveniles to achieve science and technological study and 60 per cent of the juveniles answered this project will affect to change the science and **The CHAIRMAN** (*interpretation from Spanish*): technology major in universities and to pursue a career in science and technology. This data current juveniles show a tendency to avoid science and technology majors but the Korean Astronaut Project contributes to an increased juvenile interest in science and technology to encourage others.

The First Korean Project to become a milestone in Korean space development history as the first Korean woman in space enjoyed a change of public interest in space and science but this brief can be successful done with our cooperation with ROSCOSMOS in the process of training, flight using _____ (?) and Russian model. Now science opportunities already on sleeping pattern tests and _____ (?) servicing imaging downing. I would like to thank ROSCOSMOS, NASA and JAXA for their support in the First Korean Astronaut Project. Thank you for your attention.

The CHAIRMAN (*interpretation from Spanish*): I would like to thank you for this presentation on the Astronaut Programme, the Republic of Korea. Congratulations for the outstanding way in which your Programme is operating.

We will now move on to Mr. Joseph Akinyede of Nigeria who will make a presentation entitled "National and International Collaboration in Geo-Spatial Data Utilization for Sustainable Development in Nigeria". You have the floor Dr. Akinyede.

Mr. J. O. AKINYEDE (Nigeria): Thank you Mr. Chairman. The title of the presentation is "National and International Collaboration on Geo-Spatial Data Utilization for Sustainable Development in Nigeria" and we present the paper under the following outline, introduction, Nigeria's social and economic development challenges, Nigeria's satellite programmes as catalyst, key objectives of Nigeria's Space Programme, Space Programme Implementation Strategy, space-derived data utilization, development of Nigeria's National Geo-Spatial Data Infrastructure, and then conclusion.

The requisite for sustainable development includes the management of resources and environment and Earth observation satellites play a major role for a concession of the relevant geo-spatial data in a timely manner as geo-information that pays planning and decision-making in any development in sustainable development efforts. In this regard, Nigeria taking cognizance of this launched satellite, the NIGERIASAT-1 in September 2003 as a follow-up to the Sustainable Development Summit in South Africa, with all the sustainable development challenges in mind, and during the Disaster Monitoring Constellation with all the benefits accruable from partnerships and international cooperation and to maximize the benefit of the launch and justify governance investment on the projects, NIGERIASAT-1, now has developed Satellite Data Policy towards meeting these challenges, resources and environmental challenges in particular.

And the Strategy includes provision of image, free of charge, for research and academic work in Nigeria's social(?) institutions, identification of satellite-based proposals which are strategic to national development for funding support and collaborative efforts. And the success from this also encouraged Nigeria to move forward in other space development programmes.

Nigeria's social and economic development challenges, Nigeria, with a population of 140 million people, rich agricultural and mineral resources, potencies(?) and a number of _____ potencies(?) but with a number of environmental and social problems, such as deep gullies, migrated sand dunes, these advocate from these advocacy, road and coast line or

regulate solid and liquid waste site in major cities, bush fires, soil screens with associated polluted environment, heavily depleted and degraded forests among eco-systems, with laws about diversity, floods and so on. _____(?) are very worrisome phenomena.

These are some of the issues mentioned, flooding, Niger detaridium(?) some of the villages, lake inward strikes, most of member countries are aware of the volcanic eruption about 1986 in some parts of Cameroon, which should cover in the _____ and killed so many people. And the lake that evolved as a result of that is the crater lake, is Lake Illus(?) which helps us a number of carbon dioxide and the lake is held in space by a natural dam. The fear that this dam when it collapsed would spill over water that will flood an area downstream of the lake and the need for(?) drainage area is _____(?) Lake Basin which is a Nigerian site with a lot of settlements and villages at the Basin in the watershed of that river basin.

So we also look at the problem that might occur as a result of flooding if that dam should collapse.

Also the area of subsistent cultivation of cassava will become a major issue in the government economic reforms, production of cassava. We also have problems of gulley rushing water resources, gas flare in the Niger Delta and the mangrove eco-systems. These are some of the problems facing us and you can see some of the very bad gulley sites. The south-eastern part of Nigeria, for example, is almost completely eaten up by these kind of gullies. And so many other areas that the Space Agency looked at as potential areas for the application of space technology, particularly with the launch of NIGERIASAT-1.

Now the Nigerian Satellite Programmes are scattered. These are just _____(?) forms of the road map to Nigeria's Space Mission.

The satellite, NIGERIASAT-1, which has been launched, the MICOMSAT-1 launched also, the NIGERIASAT-2 which is coming up with a 2.5 metre panchromatic and five metre multispectral. Nigeria is also looking at possible NIGERIASAT-3 that would carry its intended capacity the payload. At the same time, part of the Road Mission, Nigeria is looking at the possibility of sending an astronaut into space and in future Nigeria also would wish to achieve capability in all aspects of space science and technology development with all satellite in development in the nation and be launched also in the nation at the launching site in Nigeria. These are part of Nigeria's

Space Mission which is to be achieved by the latest by 2030.

And key objectives of the Nigeria Space Programme. A study of basic space science, attainment of space capability in all aspects of space science and development, establishment of Earth observation ground station, provision of efficient telecommunications services, development of Earth observation satellites, including meteorological satellites for its environment monitoring, as well as participating in the Global Observatory for Earth Movement, that is in the area of the installation of seismograph global positioning systems satellite, lesser _____(?) and so on.

Now, the Space Programme Implementation Strategy put in place includes six departments of NASDA at the Earth Courthouse (Clearinghouse?) in Abuja and six centres located all around the country. The departments as follows in that diagram and the centres include the Centre for Basic Space Science, the National Centre for Remote Sensing, the Centre for Satellite Technology Development, the Centre for Space Transport and Propulsion, the Centre for Space Science and Technology Education, and the Centre for Geodesy and Geo-Dynamics. These are operational centres to carry out the Space Programme.

Now, going back to the area of application, to showcase some examples of space technology applications to government in order to facilitate funding and sustainability of the Programme and also to remove critics from media, as we heard yesterday, to show the great paths and benefits in some areas. So Nigeria joined the Earth Collaboration with some agencies, international and local institutions, in some areas, and some of the projects that they carried out already, they are in benefit such as this one, development of a Fodema(?) land information management system to boost rice production in Nigeria. This project has been implemented in collaboration with the Satellite Application Centre, South Africa. And this project is to do to determine the national extent of Fodema(?) wetland and the Fodema(?) is the local language for the wetland. The extent of the Fodema wetland available for rice production in Nigeria and then also to determine the yield potential of these Fodemans that will limit the extent of cultivation of rice in Nigeria.

Also in the area of cassava, the view of the Government's policy on boosting cassava production. Nigeria's Space Agency also is collaborating with the International Institute for Tropical Agriculture using

remote sensing and GIS and a food spectrometer to look at the area of improving the yield of cassava.

Also in the area of water resources, the Lake Chad, Nigeria is carrying out a PAD using one of its staff to look at the integration of softness and ground water with all climate change and hydrological model to see what has happened in the course of the regression of Lake Chad throughout the years and see what can be done to redress these problems.

Areas of legal(?) mining also. A number of illegal(?) mining. The Agency is using its satellite data, GPS, to locate all these illegal mining in order to produce a little industrial mine maps so that these mines can be done properly with all environmental management implications put in place. Areas of groundwater and geological maps formation also. The area of deforestation and application of biodiversity, the depletion of forestry, and the development of geo-information-based, system-based forest management in Nigeria to address this area, in collaboration with some universities, particularly the _____(?) University in Neuleven(?).

Also with the satellite, we have been able to carry out settlements on major roads mapping and water bodies and these settlement maps are played in major roles in the transformation of Nigeria's railway system, that the maps produced by using the NIGERIASAT-1 is now being used to transform, to revise the railway systems and then look at the possibility of the totality of routes to develop a proper rail transportation system for Nigeria.

In the area of dams and water resources management also, as you will see in this particular picture. The satellite data is good for management at various depths of water. This is the Chiroro(?) Dam, one of the hydro-powered generation projects in Nigeria which cause flooding annually.

And then another dam is the Kandi(?) Dam that is assisted to most of the regions of West Africa, the countries of West Africa also. We can also images and waters up and to the Abandi(?) Lake, particularly with recently annual flooding and a lot of families and communities have been displaced. The satellite is now being used to try to find solutions to these problems in the area of fire disasters. And then also for yield shedding for a 3D perspective for terrain trafficability. And the Niger Delta, as I said earlier, the image is being used in the satellite-based environmental change result, as you will see in these images on the resource of mangrove eco-systems, degradation over the years of oil exploration and exploitation in the area. Then a

gully erosion, mapping projects, in south-eastern Nigeria, these are the five States of the result(?) in eastern Nigeria, and the shaded brown or red portions are the areas already affected, moderately or severely by gully erosion which is becoming a national problem and the satellites being used to see how it can be used to manage. And the Lake Illus(?) problem, the catchment area, in the case of flooding. Erupting from lake, we are also looking at the catchment draining developing from the lake and to model that and to see the vulnerability of the settlements around the area.

Four major impacts were actually made from these satellite-based research collaborations. One is the development of an infrastructure for Nigerian tertiary(?) institutions to carry out remote sensing and GIS-based research and then to support the capacity-building in their various institutions because most of this research work are funded by NASDA, and also the results of the research works are then made public with grassroots application of the results.

On the international scene with the DMC, Nigeria has made enormous potential, I mean the progress in that area of the use of NIGERIASAT-1. These are archival data of the DMC data over the globe. And then we have the recent monitoring of deforestation in Namisin(?). Nigeria is carrying out a campaign for Brazil, for the Amazon Forest. And then also land cover imaging of Europe, NIGERIASAT-1 is part of the DMC satellite that is being used for this, and at the moment, also will be used to look at the problem of Lake Chad because of the trans-boundary ecological mapping issues involved in Lake Chad.

And then in Dafor(?), we have shown this before, this is a normalized vegetative index map which has been used to locate areas for firewood for the refugees in the camps. And then the Asian tsunami, Nigeria is part of the satellites used for that mapping, and Katrina, flooding as a result of, flooding of Katrina, we can see NIGERIASAT-1, New Orleans, being used because of the flooding that resulted from the Hurricane Katrina. And recently in Myanmar, also NIGERIASAT-1 was able to capture the image of that area and the areas of flows have been looked and _____(?).

And recently also, Nigeria has organized some regional workshops, two in particular, one originally home space infrastructure for disaster management, and the second is UNSPIDER, with participation from about 10 countries in the West Africa sub-region, and then support from the Office for Outer Space Affairs.

And with these achievements, Nigeria has been encouraged to continue the development of NIGERIASAT-2 with this payload. We have mentioned this in our statement, and the target launch date will be about the last quarter of next year or the early quarter of 2010. And then Nigeria's communications satellite also which is in space is being used at the moment for tele-medicine, this is a pilot project on tele-medicine, for health, facility in Nigeria, in collaboration with the Ministry of Health. It is a mobile unit, both for land and for the water.

And also tele-education, also we have a pilot project with the Nigerian Open University, in collaboration with the Nigerian Open University, with the Earth Courthouse (Clearinghouse?) in Lagos. And also the development of the National Geo-Spatial Data Infrastructure. The mission is to enhance the use of geo-spatial information as a critical resource for sustainable national development for alleviation of poverty and improvement of the quality of life of our people. The concept is to facilitate harmonization and the utilization(?) of geo-spatial production, management and dissemination, provision of platforms for data-sharing, thereby eliminating data duplication and conservation of cost and time spending in producing the already existing data and also to promote greater awareness and public access to standard and coordinated geo-spatial data for all sectoral institutions which link it to the private sector.

At the moment, Nigeria has developed a National Geo-Information Policy which has been approved by the Government to serve as a roadmap for the development of the National Geo-Spatial Data Infrastructure. And also established a National Committee and Subcommittees on Geo-Spatial Datasets clearly now on meta-data standards, legal sustainability and funding and capacity-building subcommittees and have organized national stakeholders and awareness, and also a workshop for that.

And this is the model of the National Geo-Spatial Data Infrastructure, with NASDA also coming in and producing a space data as part of the resources that come into the Clearinghouse and then the nodes agencies also with all their various datasets.

And then the National Geo-Spatial Data Organizational Framework also, with all the stakeholders and National Committee and NASDA as the Coordinating Agency.

And the future of the development of the NGDI comprises immediate results. These purposes,

the Programme Definition Office. This development is being done in collaboration with the Harris Corporation in the United States of America. The creation of the NGDI Clearinghouse as the next phase and then the development of NGDI Nodes and _____(?) Organizations and also to continue the expansion of the NGDI communication network in the near future with training and capacity-building.

With all this, in conclusion, Mr. Chairman, Nigeria realizes that it is a society that faced with invest in the future has no future at all. The need for resource information and mapping in the developing world, particularly in Africa, is enormous. For future development, Nigeria has committed itself to the development and growth of the information economy which is presently being driven by science and technology, with particular attention given to space technology development. Greater priority is given to the development and transfer of knowledge and skills to capacity-building, joint participation and knowledge-sharing and bilateral and international cooperation. Thank you all for your attention. Thank you Mr. Chairman.

The CHAIRMAN (*interpretation from Spanish*): Yes, thank you very much to Dr. Akinyede from the delegation of Nigeria. Thank you for your presentation and your conclusions which are that if we do not invest in the future, we run the risk of there not being a future. And this is the very crux of international cooperation. So thank you.

The third presentation will be that of Mr. Agus Santoso of Indonesia, who will make a presentation entitled, or rather will be on the experience acquired in Indonesia regarding acceleration of the establishment of an Indonesian Geo-Spatial Data Infrastructure.

Mr. A. SANTOSO (Indonesia): Thank you Mr. Chairman, distinguished delegates, we would like the Indonesian delegation to present their experience of the establishment of an appropriate national infrastructure for geo-spatial data collection, processing and application. And our experience in establishing the Indonesian Geo-Spatial Data Infrastructure is presented here by the National Coordinating Agency for Survey or Mapping or _____(?) and this Institute's main function is to coordinate the mapping activities and also to facilitate the communication and data-sharing on geo-spatial.

Let me introduce the Indonesian. Indonesia is one of the articulated(?) States that one set of the statutory(?) SDRC and it is from this configuration that

we have some difficulties, what I mean, what I say here is that this map is also held as the lot of informed in space-based technologies in order as to source the problem we have. First, we have international boundaries here. We have 10 countries that have their boundaries with Indonesia and most of the boundaries are in maritime boundaries and we see here that according to the _____(?), we have to establish the best point for the _____(?) countries. And the contribution of the space technology is the GPS technology. We established more than 100 peace points surrounding the Indonesian _____(?) and we draw from this land. And from this land, we can draw also the ZDE(?) line.

And then this picture also tells us about the more contribution of space technology, especially in the satellite images, whether it is optical images or more importantly, the radar images. Since our country is located around the Equator, then we have a lot of cloud cover and the technology of radar images help us a lot.

And the objective of the Geo-Spatial Data Infrastructure establishment is to facilitate the geo-spatial analysis for the institution who in the management of resources in Indonesia. And we already convinced the Government, the top Government officials and also the _____(?) that the geo-spatial is very important data to solve the problem.

We established the National Geo-Spatial Information System as a tool to support the good governance of the Indonesian Government in planning, execution and monitoring of national programmes. The establishment of national institutions distributed geo-spatial database network with geo-spatial data-sharing. This is about 14 central institutions and more than 400 local governments are told to communicate and sharing of geo-spatial data and we are, our President, published a Decree with this President Decree in 2007 and it is a good step for us to accelerate the establishment of this system.

This is the scheme of the development of a National Information Spatial Information System, and under the _____(?) of a central, national spatial system and it is the application and our institute is coordinating the management and also the establishment of the system.

This configuration of the network of the distributed geo-spatial database that in the central we have 14 and _____(?) Tunnel(?) on the national mapping here is one of the main note _____(?).

And this year, we have planned and also would like to implement this data spatial distribution and dissemination using web mapping service. From this scheme that here the whole geo-spatial data and consisting of geographic, marine and coastal thematics, border, land thematic, this distributed at, carried out the inventory of the national resource, and the stakeholder here is the fourteenth institution. And the technology of the aerospace takes the main area, especially for the communications system and also the fuel(?) observation satellite images.

By this system, we are not only serve for the Indonesian Government but we are also contributing to the national(?) and also international communities. We are also in for in the global map and maybe in the USDI map as here. This is fortitudinal(?) and _____(?), this is for the Asia-Pacific region. And we also enforce in collaboration for establishing the Indian Tsunami Early Warning System.

And this is the Indonesian from the GEO, this is the geo-spatial of Indonesia from space and this is from RSTM(?).

What the Government or the President would like also to stress is the importance of the Indonesian geo-spatial infrastructure because by this system, the system can provide and facilitate the communication and data-sharing in spatial analysis using the IS system. For example, here it is for natural disaster mitigation, environment, spatial planning, national spatial planning and for the marine and coastal planning, etc.

We will conclude with some examples of the implementation of the datas, for example, purchased for the _____(?) road map and the second one is for maritime Surfarian(?) system, a system that, an integration of the system existing, subterranean(?) system in Indonesia. And the third one is implementation in the compilation and upgrading of the navigational charting system and the inventory and certification of islands in Indonesia, Indonesia has thousands of islands that we have to have it _____(?) all geographical names.

This example of the ASAP(?) map for evacuation. This is for flat and also landsliding and for inundation map in the coastal areas. And this example is for the larger scale for the landslide and also the flood in central Java and this one is also for the implementation for the technology for compiling the evacuation(?) map for tsunamis. This is processed from one of the images that resulted from TUPSAT(?)

image and combined with existing topographical maps on this area, we have an area here, for example, this settlement road, a sort of distance to the evacuation place.

This activity being done by the LAPAN(?) and also the other institutions including the universities and it is also to give the update for preparedness awareness when the tsunami happened.

This is so the road of the evacuation. This area or the patterned area is the area that next to the other area that happened before the tsunami in 2004.

And the other implementation is in the maritime Sufarian(?) system here. This is an integration of the Sufarian(?) system in Indonesia where there in the land, in the air and in the sea. And from this system, we use a lot of space technology, especially for the radar images, communications and also the ICT panellist(?).

This _____(?) here is for vessel traffic and monitoring and tracking, to monitor the environment, for example, oil spill, marine safety information broadcasts, for example, recently we had an ocean wave warning, and the last one is for maritime safety and rescue.

This is the implementation of the GNSS, satellite communications, RADARSAT, TUPSAT(?) technology, etc. And this is for compilation and getting the _____(?) agriculture(?) of Indonesia.

And this is another application for monitoring the environment of the airports.

These are images that resulted from the TUPSAT(?) that was launched last year and we can use it as an updating tools.

So our conclusion is that, one, space-derived geo-spatial data of the availability and integration of Indonesian-based spatial data. And from there, with other space-based technologies, the Asia integrated geo-spatial communication and sharing for sustainable development become closer to their reality. We have an international cooperation here and thank you for your kind attention. Thank you Mr. Chairman.

The CHAIRMAN (*interpretation from Spanish*): Thank you very much Mr. Santoso for that very interesting presentation which shows how we can deal with the characteristics of the very singular Indonesian configuration in that equatorial zone with, as you said, extensive cloud cover. Thank you.

My last speaker is Dr. Nasr Abdulhamid Al-Sahhaf from the Prince Sultan Bin Abdulaziz International Prize for Water. He will be talking to us about his Organization. You have the floor Sir.

Mr. N. A. AL-SAHHAH (Prince Sultan Bin Abdulaziz International Prize for Water) (*interpretation from Arabic*): Thank you very much Chair. I will be making my presentation in English.

(*Continued in English*) The Prince Sultan Bin Abdulaziz International Prize for Water was first started in October of 2002 and the Head of the Prize is His Royal Highness the Prince Sultan Bin Abdulaziz, he is the Crown Prince, Deputy Prime Minister, Minister of Defence and Aviation, and Inspector-General of the Kingdom.

The goals of the Prize. This Prize aims to give recognition to the efforts that scientists, innovators and organizations around the globe are making in water-related fields. The Prize was established to acknowledge exceptional and innovative scientific work which contribute to the sustainable availability of potable water and the alleviation of water scarcity, particularly in arid regions.

The Headquarters of the Prize is at the King Saudi University in Riyadh, Saudi Arabia.

The Prince Sultan Bin Abdulaziz International Prize for Water is an international award bestowed in five branches and awarded every two years. The Creativity Prize of one million Saudi Riyals, approximately US\$266,000 and four specialized branch prizes of half a million Riyals each, about US\$133,000.

The Prize is bestowed with a gold medallion, a trophy and a certificate of authenticity.

The branches of the Prize. The creativity branch and then we have four specialized branches. The Creativity Prize is awarded to an innovator for pioneering work that can rightly be considered a breakthrough in any water-related field. The work may be an invention, a research paper, a new technology or a developmental project. It can relate to any branch of any water-related discipline. Moreover, this work should be practical and cost-effective while providing a useful solution to society. It should also contribute to social prosperity and considered environmentally friendly.

The Creativity Prize is not just strictly to specific topics. Its criteria are defined by general guidelines to allow coverage of a broad range of water-related subjects, including space technology applications.

The specialized branch prizes. The topic for each of the four specialized branches of the Prize will carry with each award. As a rule, the topics are selected for each round in consideration of the most pressing water-related issues faced anywhere in the world. More emphasis, however, is placed on the concerns of arid regions, since problems in these areas are more serious and widespread.

The Prize places emphasis on the use of space technology, due to the importance of this technology for water exploration, as well as for the management and conservation of water resources. Therefore, space technology applications will be announced as the topic of one of the specialized branch prizes in the fourth round of the Prize in 2008 through 2010.

The evaluation process. All nominated works are evaluated by a panel of internationally distinguished scientists via three specialized committees, the preliminary Evaluation Committee, a Referee Committee, and a Selection Committee. The next award ceremony being this year in November of 2008.

As we said before, space technology applications, is one of the major activities of the Prize.

The Prize supports research programmes of the Prince Sultan Research Centre for Environment, Water and Desert at the King Saudi University. The most important of these programmes is the King Fiyad Project for Rain and Floodwater Harvesting and Storage in the Kingdom, where space imagery are used extensively.

The Prize undertakes the establishment of the world's most complete international water portal.

The General Secretariat of the Prize has its Headquarters at the Prince Sultan Research Centre for Environment, Water and Desert. It has access to the Centre's Remote Sensing Unit with a full range of geographical information systems and the most advanced programmes for satellite image processing. The space image actors of the Kingdom was produced by this Unit.

The Prize provides financial support for its Chair, for water research located at the Prince Sultan

Research Centre for Environment, Water and Desert. The Chair in turn supports a number of graduate students of various nationalities engaging in programmes of research covering rain and floodwater harvesting and applying remote sensing GIS and space technologies.

In conjunction with the King Saudi University and the Saudi Ministry of Water and Electricity, the Prize organizes a bi-annual international conference that is held concurrently with the Prize Awards Ceremony. The Programme of the International Conference on Water Resources and Arid Environments addresses six main topics. These are: water resources, water conservation, climate change and its impact on water resources, utilization of new technologies, remote sensing, GIS, GPS, and the study of arid environments and their natural resources.

Finally, advancement of Arab Water Policy towards the development and management of water crises in the Arab world.

The Prize, in conjunction with the United Nations, UNESCO, and the King Abdulaziz City for Science and Technology, participated in organizing an International Conference on the Uses of Space Technology for Water Management, held in Riyadh in April of this year.

The Prize also is a gold-level sponsor of a number of international conferences and exhibitions around the world, sponsoring at least 10 to 15 different conferences and exhibitions during each round of the Prize. Space technology applications in water-related fields is a major topic of interest for the Prize to support.

Prize calendar for this year. The fourth round, 2008 through 2010, in October of this year, a call for nominations to the Prize. There will be an open online application form for the Award.

31 January 2010 is the deadline for receiving nominations and the close of nominations. February through September of 2010 is the evaluation process and October 2010, the Prize Council announces the winners of the Award and calls for nominations for the next round. November 2010 would be the Award Ceremony.

Here is the website for the Prince Sultan International Prize for Water. Feel free to visit that for more information. And, of course, for further information, contact the General Secretariat of the

Prize at the following addresses. Thank you for your time.

The CHAIRMAN (*interpretation from Spanish*): On behalf of all the members of the Committee, I would like to express my appreciation to Nasr Abdulhamid Al-Sahhaf for his presentation on the Prince Sultan Bin Abdulaziz International Prize for Water. As we said earlier, this is a non-governmental organization.

We have a little less than five minutes to the hour for any remarks on the presentations.

I see no one. I think we can conclude, expressing our gratitude to all of the technical presenters, and particularly the representative of Saudi Arabia, which is, I think, a measure that is a great incentive and encouragement to efforts in the field of space and water and I think indeed one which could take into account its use of space technology as applied to water, one of the flagship themes of this Committee.

If there are no further remarks, I am going to conclude the session for today. Let me just inform delegates about tomorrow morning's schedule.

We reconvene promptly at 10.00 a.m. At that time, we will continue our consideration of agenda item number 13, Use of Space-Derived Geo-Spatial Data for Sustainable Development, as well as agenda item number 14 entitled Other Matters.

If there are no further observations on tomorrow's schedule of work, I will adjourn the meeting. Let me just remind you that this evening at 7.30 p.m., we are cordially invited to the European Space Policy Institute's Offices for a Reception.

Thank you.

The meeting closed at 5.58 p.m.