

# THIRD POST GRADUATE COURSE IN SATELLITE COMMUNICATIONS

(August 1, 2001 - April 30, 2002)

## MEMOIRS



सत्यमेव जयते

### MESSAGE

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It gives me great pleasure and happiness to note that the third Post Graduate Course on Satellite Communication (SATCOM) of the UN Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP), started on August 1, 2001, is successfully coming to a close.

I understand that the Course attracted 14 participants from 8 different countries and that these scholars have now been exposed to the most recent advances in communication technology. We live in a digital and networked world in which the convergence of technologies would inevitably draw together and create new synergies, new behaviors and new opportunities. The Information and Communication Technology (ICT) and its applications has become a buzzword even as the developing world is gearing itself to face issues related to poverty alleviation and management of the challenges posed by the ongoing globalisation. Today, satellite communication has made the concept of "Global Village" a reality, with satellites with their inherent capability to provide instant connectivity, playing a key role in this revolution. Satellite broadcasting has changed the way the world population is provided with education and entertainment programmes, bringing the events occurring in any part of the world to the world's population and that too in real time. In short, satellite communication and broadcasting has been a major catalyst for the changes taking place in the information society of today and has become a vital part of ICT.

I am confident that these 14 scholars have benefited in many ways from the last 9 months of study at the Centre. Their understanding of Satellite Communication and its applications will lend itself to many national improvement projects or research ideas in their home countries.

I am also glad to see the considerable progress made by CSSTE-AP. Totally, 340 students from 39 different countries in the region have so far been benefited from the CSSTE-AP's educational activities. I am confident that CSSTE-AP, which has already become a vibrant Centre, will continue to grow into an internationally reputed institution, supporting the space technology development in many countries of the region.

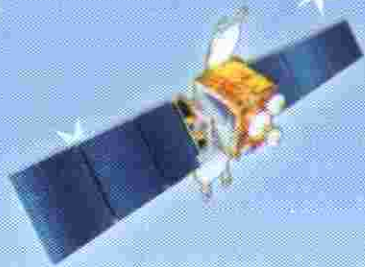
(K Kasturirangan)

Chairman, CSSTEAP GB/Secretary, DOS



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*Pasuguan ng Pilipinas*



*New Delhi*

*Embassy of The Philippines*

### MESSAGE

To the Graduates of the Third CSSTEAP Course in Satellite Communication:

On behalf of the Government of the Philippines, and in my own behalf, I would like to convey my heartfelt congratulations to you, the graduates of the Third Post Graduate Course of the CSSTEAP on Satellite Communication.

Satellite communication is playing an increasingly vital role in the overall development of the region, and the Asia Pacific region in particular can draw heavily from the benefits of these emerging techniques.

Today the CSSTEAP has become one of the best educational centres of the world and as graduates of this prestigious institution, it is incumbent upon all of you to enhance the benefits derived from the course in order that our governments could formulate better strategies for our regions and for the benefit of our people.

I wish all of you success in your future undertakings.

Mabuhay!

JOSE P. DEL ROSARIO, JR.  
Ambassador of the Philippines

*50-N, Nyaya Marg, Chanakya Park, New Delhi-110021, India*

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## MEMOIRS



UNITED NATIONS OFFICE AT VIENNA

OFFICE DES NATIONS UNIES A VIENNE

### OFFICE FOR OUTER SPACE AFFAIRS

VIENNA INTERNATIONAL CENTRE  
P. O. BOX 500. 1400 VIENNA, AUSTRIA  
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**MESSAGE BY MS. MAZALAN OTHMAN  
DIRECTOR, UNITED NATIONS OFFICE FOR OUTER SPACE AFFAIRS  
TO  
THE PARTICIPANTS OF THE THIRD POST GRADUATE COURSE  
ON SATELLITE COMMUNICATION**

Dear Participants,

Greetings from the United Nations Office for Outer Space Affairs.

As you are probably aware, (UN/OOSA) is undertaking a significant effort in support of the Regional Centres for Space Science and Technology Education, including this regional Centre for Asia and Pacific region. One of the latest efforts along with line was a meeting to update educational curricula for the Centres. We have taken the results of a meeting of education experts held at ESRIN in Frascati, Italy, in September 2001 and are updating the education curricula of the Centres in the fields of remote sensing, satellite communications, satellite meteorology and basic space sciences. When finished, the four full curricula will be provided to the regional Centres.

The meeting of experts held in Frascati also served to discuss issues to strengthening the education programmes of the regional centres. In this enterprise, we joined efforts with the ongoing work of the ad hoc working Group on education of the committee on Earth Observation Satellites. We are now collaborating with the Working Group on establishing a database containing referral information on the availability of scientific literature, case history experiences, lists of experts by field of specialization, software and limited amounts of satellite data for education purposes. This resource should be available on the Internet to the regional Centres, graduates of the Sweden series of courses and, indeed, universally within this year.



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In the area of satellite communications, OOSA and ISRO have just successfully concluded a workshop on disaster communications, Improving use of the COSPAS-SARSAT Satellite Search and Rescue System (SASR) was the key topic of a five-day United Nations/India workshop in Bangalore, beginning on 18 March. Representatives of various governmental institutions and private industry from developed and developing countries from the Asia and Pacific region were briefed on both practical and cost-effective space-based solutions which are currently available from COSPAS-SARSAT satellite system.

The workshop was organized to provide those countries within the footprint of the COSPAS-SARSAT station in Bangalore with an opportunity to gain the necessary knowledge to enable them to lead their national authorities into action and to ensure that their respective countries participate in the COSPAS-SARSAT programme. The Workshop exposed participants to COSPAS-SARSAT operations, including the procedure for distribution of alert signals, once they are received at the Bangalore station.

All these collaborative efforts will serve to strengthen and consolidate the human resource capacity in the Asia-Pacific region. I hope you all will strive towards a productive application of the knowledge you received at the centre in the area of satellite communications.

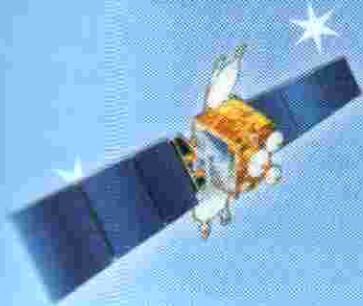
(Mazlan Othman)

Director, United Nations Office for Outer Space Affairs



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## **THIRD POST GRADUATE COURSE IN SATELLITE COMMUNICATIONS**

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# **MEMOIRS**



### **Karl Harmsen**

Former Rector and Professor,  
Environmental Systems Analysis  
International Institute of Geoinformation  
Science and Earth Observation (ITC)  
Enschede, The Netherlands

### **MESSAGE**

#### **MEMOIRS THIRD POST-GRADUATE COURSE IN SATELLITE COMMUNICATIONS**

The Third Post-Graduate Course in Satellite Communication (SATCOM) of the Centre of Space Science and Technology Education in Asia and the Pacific (CSSTEAP) is concluding. It gives me great pleasure to congratulate the participants on the successful completion of the 3<sup>rd</sup> SATCOM course. This course was held at the premises of the Space Applications Centre (SAC) in Ahmedabad, which is India's premier research institution in the field of space applications, including satellite communications. The success of the 3<sup>rd</sup> SATCOM course is in an important measure due to the dedicated efforts and scientific excellence of the technical staff of SAC, whereas the administrative and support staff of SAC contributed to the organization of the course and looked after the well-being of the course participants. Staff of CSSTEAP and of other scientific institutions under the Department of Space (DOS) as well as of foreign research organizations also made major contributions to the 3<sup>rd</sup> SATCOM course.

Satellite communication technology has become increasingly important for many countries in Asia and the Pacific. Some 80% of the land surface worldwide is not covered by terrestrial telecommunications infrastructure and in order to reach such areas, satellite communication technology could play an important role. Most of the terrestrial telecommunications infrastructure is concentrated in the high-income (industrialized) countries and in urban areas of the medium- and low-income countries. The weakest infrastructure is found in the rural areas of the low-income countries. This is a reflection of the information and technology gap that exists between the industrialized countries and the rest of the world. Although major advances in information and communication



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technology are made in some sectors of the medium- and low-income countries, on the whole the information and technology gap appears to be widening and the bridging of this "digital divide" is a major challenge.

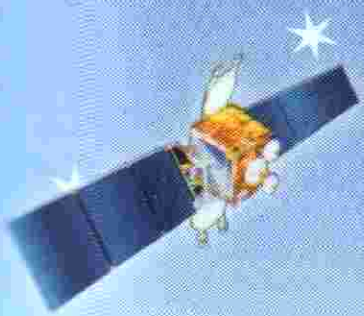
I take this opportunity to wish the course participants much success in contributing to the introduction and implementation of satellite communications in their home countries. I hope that these efforts will contribute to sustainable rural development and to the well-being of the rural populations of the countries of Asia and the Pacific.

Karl Harmsen  
Former Rector and Professor,  
Environmental Systems Analysis  
International Institute of Geoinformation  
Science and Earth Observation (ITC)  
Enschede, The Netherlands



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Date : April 11, 2002

### MESSAGE

On the occasion of successful completion of Phase I of the third Post Graduate Course on Satellite Communication at the Space Application Centre, Ahmedabad, India, I would like to sincerely congratulate to those fourteen candidates for their accomplishment and appreciate to the faculty members for their leadership. Participants should be proud of your accomplishment.

Telecommunication by satellite was one of the first applications of space technology in 1960s.

Since then Communication satellite has now become a routine and vital element of telecommunication network. A tremendous technological advances in micro electronics, transmitter and antenna design, high frequency technique and microprocessor have made rapid growth of satellite communication possible.

Because of these advance, our lives are being characterized by rapid change. Knowledge is becoming obsolete at a more rapid rate. The World of work is requiring the abilities to manage a greater diversity of



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information and relationships with people. Workers need high-level thinking skills as well as the ability to adapt. Educational institutions are challenged to re-invent themselves to provide the environment necessary to meet these new demands.

I am confident that our participants are firmly educated as capable engineers, concerned with the impact of their work on society. I am also certain that our participants will be able to apply their newly acquired knowledge to the benefit of our society.

Once again, I would like to congratulate our participants for successfully completing the course and also appreciate Space Application Centre for their effort conducting such excellent course successfully.

Wishing all the best and continuous success.

Dr. Shin H. Moon  
Space Center, KARI



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सचिव

SECRETARY

सूचना और प्रसारण

INFORMATION & BROADCASTING

भारत सरकार

GOVERNMENT OF INDIA

नई दिल्ली-१, तारीख १९९

Dated New Delhi-1, the April 20, 2002.

I am indeed glad to learn about the successful completion of the third Nine months programme on Satellite Communications at the Space Applications Centre, Ahmedabad, under the Centre for Space Science & Technology Education in Asia and the Pacific (CSSTEAP). I understand that the participants would now take up the one year project in their home countries for completion of the second Phase of the programme.

The CSSTEAP has been rendering a great service for the countries in the Asia Pacific region since its inception in November, 1995 as the first Centre of its kind in the world, set up at the behest of the UN-OOSA. With this passing out function about 354 persons in this region have benefited from its various programs, so far. It is laudable indeed as these persons are expected to provide the multiplier effect by training some other persons in their respective countries and help in enhancement of indigenous capabilities at local level.

The space technology has come up as a great facilitator in today's world for several developmental activities. Rapid advances in satellite communications have revolutionized all facets of every day life. It has helped in reducing the digital divide and the information gap among societies and the countries of the world. Communication is no longer just a medium of inter-personal expression, but is fast becoming a medium to reach out to the world. It is highly suited to tackle different aspects of rural and developmental education, tele-medicine, rural connectivity, etc. The future of SATCOM appears brighter, with possibility of providing Direct to Home (DTH) compressed digital TV channels through dish antennas of the size of about 45 cms, global personal communication systems, e-governance, e-banking, tele-shopping, on line data base service and so on.

The enhancement of indigenous capabilities at local level using space science and technology should lead to accelerated economic, social and cultural growth, since such technologies can help them to "leap-frog" several stages of development.

I hope that the participants returning home will keep themselves updated about the latest developments in their field and help their respective countries in meeting the challenges of development by creating the essential capabilities.

I take this opportunity to congratulate the CSSTEAP, Department of Space and the UN-OOSA for conceiving and successfully implementing the idea of regional Centres and wish all the participants and the Centre a very bright and successful future.

*Pawan Chopra*  
(Pawan Chopra)



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