

ISPRS Commission VI Mid Term Symposium on

New approaches for Education and Communication

September 16-18, 2002

Convention Center / PROMENADE Enterprise Hotel
São José dos Campos, São Paulo State - Brazil



Technical Commission VI - Education and Communications



ISPRS Commission VI Mid Term Symposium on

New approaches for Education and Communication

Organizers



ISPRS Commission VI Symposium 2002

<http://www.isprs.org>



Brazilian Society of Cartography,
Geodesy, Photogrammetry and
Remote Sensing

<http://www.rio.com.br/sbcgfsr>



National Institute for Space Research
2002

<http://www.inpe.br>



São José dos Campos Municipality

<http://www.sjc.sp.gov.br/>

September 16-18, 2002

Convention Center / PROMENADE
Enterprise Hotel
São José dos Campos, São Paulo state - Brazil

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Message from the ISPRS President



I welcome you to the Symposium of ISPRS Commission VI, planned for September 2002. Technical Commission VI, with the title of "Education and Communications" provides an important input to the activities of ISPRS through its work in education and training, international cooperation and technology transfer, and communications involving the development of ISPRS internet resources and distance learning. Education and training, as well as technology transfer are becoming increasingly important issues in ISPRS as the sciences and technologies of photogrammetry, remote sensing and spatial information sciences grow and take on a more important role in the monitoring and maintenance of the environment. Many countries, especially developing countries are presented with the need to increase the knowledge of their personnel in the fields covered by ISPRS by education and training programs. Modern communications being harnessed by ISPRS enable it to communicate better with its members and hence assist in the processes of education, training and technology transfer.

This Symposium will be held in Brazil, a country that is making great strides in developing education and training programs in the photogrammetry, remote sensing and spatial information sciences. It will be held in Sao Jose dos Campos, the city of the world renown National Institute for Space Research (INPE), which is a leader in research and development in remote sensing and space applications in Latin America. Dr Tania Maria Sausen is a dedicated President of Technical Commission VI and I know that she will provide an excellent program for the Symposium of Commission VI. I want to encourage you to participate in this Symposium, by presenting a paper on one of the topics of the Commission, and by attending the Symposium and contributing to the discussions during the sessions. I am sure that you will find this Symposium interesting and stimulating. I encourage you to take the initiative to participate.

John Trinder
ISPRS President

Message from the President of the ISPRS Technical Commission VI Education and Communications Symposium Coordinator



On behalf of the ISPRS Technical Commission VI – Education and Communications, it is my pleasure to welcome you to the ISPRS/TC VI Mid Term Symposium "**New Approaches for Education and Communication**" in Brazil which will bring together experts from all around the world, representing a concentration of knowledge and experience in education and communication in photogrammetry, remote sensing and spatial information system for the new millenium. You are invited to take part on this Symposium that will be held in São José dos Campos, São Paulo State, Brazil, from September 16 – 18, 2002.

The twenty first century is a new challenge for educators and students. This Symposium will focus on education and communication into the new millenium, on global specific perspectives and experiences, and this will be an ideal opportunity to meet experts and exchange information in this area. The ISPRS/TC VI Mid Term Symposium is organized jointly by the Brazilian Society of Cartography, Geodesy, Photogrammetry and Remote Sensing, National Institute for Space Research and São José dos Campos Municipality.

São José dos Campos is the most important aerospace town in Brazil and Latin America. Do not miss this great opportunity to share with us your experience in education, and to enjoy the pleasant atmosphere of this city and Brazil.

I look forward to seeing you in São José dos Campos.

Tania Maria Sausen
Technical Commission VI President
Symposium Coordinator

Message from the President of the Brazilian Society of Cartography, Geodesy, Photogrammetry and Remote Sensing

On behalf of Brazilian Society of Cartography, Geodesy, Photogrammetry and Remote Sensing (SBC), it is a pleasure to welcome all participants and their accompanying persons to the ISPRSTC VI Mid Term Symposium on New Approaches on Education and Communication that will be held in the Convention Center- Enterprise Promenade Hotel, in São José dos Campos, São Paulo State, Brazil, on September 16-18, 2002.



I would appreciate if you and your accompanying person could take part in some technical visit in São José dos Campos Cachoeira Paulista and Rio de Janeiro cities.

I am looking forward to seeing you in São José dos Campos.

Camillo José Martins Gomes
SBC President

Message from the Director of INPE

It is my pleasure as Director of the National Institute for Space Research to welcome you to the ISPRS Commission VI Mid Term Symposium on "New Approaches for Education and Communication" to be held in São José dos Campos between September 16-18, 2002.

We are doing our best to make sure that you all find a stimulating atmosphere for a fruitful stay here with us. I strongly encourage you to take this opportunity to share with colleagues from all over the world your experience in Education and Communication.

On behalf of the National Institute for Space Research I wish you a good and scientifically profitable stay.

Luiz C. M. Miranda
Director

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The Technical Commission VI is headed by **Dr. Tania Maria Sausen**. Its main objective is to encourage and disseminate the educational and communication activities in photogrammetry, remote sensing and spatial information systems around the world. In this symposium will be involved the following working groups:

- **Working Group VI/1 – Education and Training**

Chair: Dr. Emmanuel Baltsavias – Switzerland

Co-chair: Dr. Theodoros Bouloucos – The Netherlands

- **Working Group VI/2 – Computer Assisted Teaching**

Chair: Dr. Mark Shortis – Australia

Co-chair: Dr. Pierre Grussenmeyer – France

- **Working Group VI/3 – International Cooperation and Technology Transfer**

Chair: Dr. Ulrike Karin Rivett – South Africa

Co-chair: Dr. Tamara Bellone – Italy

- **Working Group VI/4 – Internet Resources and Distance Learning**

Chair: Eng. Sanjay Kumar – India

Co-chair: Eng. Carlos Patillo – Chile

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The main topics of this symposium are:

- **Education and Training**
- **Computer Assisted Teaching**
- **International Cooperation and Technology Transfer**
- **Internet Resources and Distance Learning**

The subtopics are:

- Changes in geomatics curricula of universities;
- Postgraduate opportunities in photogrammetry, remote sensing and GIS;
- Role of regional training centers in capacity building in geomatics;
- Possibilities for financing of education in international and regional organisations;
- Bibliographic and technical databases;
- Computer assisted teaching and learning in modern education and training for remote sensing, photogrammetry and GIS;
- Development, assessment and evaluation of interactive multimedia materials for remote sensing, photogrammetry and GIS;
- Pedagogical transformations of tertiary level curricula for remote sensing, photogrammetry and GIS;
- Distance learning and remote presence for remote sensing, photogrammetry and GIS courses;
- Promotion and Marketing of the Geomatics profession;
- Knowledge Transfer and Improvement of Transfer Infrastructure in the Developing World;
- Collaborations between the Developed and Developing World;
- Possibilities and examples of international cooperation for education, capacity building, projects and research in photogrammetry, remote sensing and GIS;
- Accreditation & Certification in distance learning;
- Potentials of Internet based education;
- Metadata;
- Opportunities in research in Internet resources and distance learning;
- Sources of spatial data and its accessibility through Internet Map server applications.

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Tania Maria Sausen	ISPRS TCVI	Brazil
Emmanuel Baltsavias	ISPRS TCVI/WG1	Switzerland
Mark Shortis	ISPRS TCVI/WG2	Australia
Ulrike Rivett	ISPRS TCVI/WG3	South Africa
Sanjay Kumar	ISPRS TCVI/WG4	India
Theodores Bouloucos	ISPRS TCVI/WG1	The Netherlands
Pierre Grussenmeyer	ISPRS TCVI/WG2	France
Tamara Bellone	ISPRS TCVI/WG3	Italy
Carlos Patillo	ISPRS TCVI/WG4	Chile
Antônio Roberto Formaggio	INPE	Brazil
Hans Peter Baehr	University of Karlsruhe	Germany
Antônio Tomaselli	UNESP	Brazil
Basanta Shrestha	ICIMOD	Nepal
Heinz Ruther	University of Cape Town	South Africa
Mojca Fras	Institute of Geodesy, Cartography and Photogrammetry	Slovenia
Gottfried Konecny	University of Hannover	Germany
William Cartwright	RMIT University	Australia
Shannon Kaya	Canada Center for Remote Sensing	Canada
Nadhir Al-Ansari	Al-al Bayt University/UN Regional Center	Jordan
Walter Humberto Subiza Piña	SBC	Brazil
Alexandre Benevento Marques	SBC	Brazil

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Timetable	Sunday 15/09
15:30-19:00	Registration
Timetable	Monday 16/09
8:00-9:00	Registration
9:00-10:30	Opening Session: cultural activities Welcoming Official ceremony celebration for the beginning of the Regional Centre for Space Science and Technology Education for Latin America and Caribbean activities
10:30-10:50	Coffee break
10:50-12:00	Special Session 1: Satellite Programmes in Latin American
12:00-14:00	Lunch
14:00-15:05	Technical Session 1: Geomatics Curricula and Education
15:05-15:25	Coffee break
15:25-16:30	Technical Session 2: Computer Assisted Transformation of Learning
16:30-17:30	Poster Session
18:30-20:30	Welcoming Cocktail
Timetable	Tuesday 17/09 ***
8:30-10:30	Mini course SPRING There will be some computers and tutors available in the poster session room for the SPRING software demonstration.
10:30-10:50	Coffee break
10:50-12:10	Technical Session 3: International Cooperation and Transfer of Technology
12:10-14:10	Lunch
14:10-15:20	Technical Session 4: Internet Resources and Distance Learning
15:20-15:40	Coffee break
15:40-17:05	Technical Session 5: Geomatics Education Programmes
17:05- 18:30	ISPRS Commission VI Activities- Forum
Timetable	Wednesday 18/09
8:30-10:00	Special Session 2: Training Programmes developed by International Institutions
10:00-10:20	Coffee break
10:20-12:00	Technical Session 6: Practical Examples of Computer Assisted Learning and Teaching
12:00-14:00	Lunch
14:00-15:20	Technical Session 7: Web based on Computer Assisted Learning and Teaching
15:20-15:40	Coffee break
15:40-17:00	Special Session 3: Education for young students and school teachers
17:30-18:30	Closing Ceremony

***** OPTIONAL DINNER**

A dinner will be offered for a price of R\$ 19,90 (US\$ 6.96 - dollar rate: June 26, 2002) per person at Villa D'Aldeia Barbecue Restaurant in São José dos Campos on September 17, 2002 at 19:30. Beverages, desserts and service rate (10%) are not included in the price above.

Final Program

Sunday 15

15:30-19:00 - Registration

Monday 16

8:00-9:00 - Registration

9:00-10:30 - Opening Session: cultural activities

- National Anthem

Welcoming:

- São José dos Campos Mayor
- ISPRS President
- SBC President
- INPE Director

Official ceremony celebration for the beginning of the Regional Centre for Space Science and Technology Education for Latin America and Caribbean activities.

10:30-10:50 - Coffee break

10:50 - 12:00 - Special Session 1: Satellite Programmes in Latin American

Chair: Ian Dowman

Co-Chair: Leonel Fernando Perondi

- The China-Brazil Earth Resources Satellite - CBERS -José Raimundo Braga Coelho- INPE/MECB
- The Dissemination of CBERS Images to Universities in Brazil: Procedures and Results - P. R. Martini-INPE/DSR
- Achievements and results of SAC-C Mission -Fernando Raúl Colomb-CONAE

12:00-14:00 - Lunch

14:00-15:05 - Technical Session 1: Geomatics Curricula and Education

Chair: Jana Niederoest

Co-chair: Fernando Raúl Colomb

- Recent Global Changes in Geomatics Education - Gottfried Konecny-University of Hannover
- Remote Sensing Education Programmes for a new University in French Guiana - Laurent Polidori-ORSTOM
- Remote Sensing in Different Education Levels: A Case Study - Angélica Carvalho Di Maio, Sandra Maria Fonseca da Costa and Gilson dos Anjos Ribeiro-Universidade do Vale do Paraíba
- Geoprocessing's Teachings Applied in Undergraduate Engineering School - José Alberto Quintanilha and Rosângela Leal Santos-Universidade de São Paulo

15:05-15:25 - Coffee break

15:25-16:30 - Technical Session 2: Computer Assisted Transformation of Learning

Chair: Pierre Grussenmeyer

Co-chair: Hans-Peter Bähr

- Enhanced Teaching and Learning in Spatial Science Courses - Mark Shortis-University of Melbourne
- Remote Sensing Education CD-ROM: an Interactive Approach to Technology Transfer Utilizing Real Research Results - Dias, N.W., Batista, G., Mausel, P.W., Novo, E.M.L., Skelton, D.L. and Krug, T. -Indiana State University
- Didactic and Methodological Challenges in New Media Based Teaching and Learning for GIS - Florian Bischoff and Hans-Peter Bähr-University of Karlsruhe
- EDUSPACE - The European Earth Observation Website for Secondary Schools - Juerg Lichtenegger, Peter Brøgger Sørensen, Emanuele Loret and Birgit Strømsholm-ESA/ESRIN

16:30-17:30 - Poster Session

- Urban Imagery Combining Photogrammetric and Remote Sensing Techniques - : a New Training Course at ENSAIS Strasbourg - Tania Neusch and Pierre Grussenmeyer-ENSAIS-MAP
- Training New Talents in Space Science and Technology: INPE at School - Tania Maria Sausen, José Fernando Sanches da Silva and Maria Lígia Moreira do Carmo-INPE/CEP
- Fundamentals in Remote Sensing and Methodologies of Application: A Book - Maurício Alves Moreira-INPE/DSR

18:30-20:30 - Welcoming Cocktail

Tuesday 17

8:30-10:30 - Mini course SPRING

Chair: Gilberto Câmara Neto

Co-Chair: Alexandre Benevento Marques

- The Brazilian Experience Towards Integrating GIS and Remote Sensing - Antônio Miguel V. Monteiro-INPE/DPI
- New Approach on Teaching Geotechnology - Hilcéa S. Ferreira, Leila M. G. Fonseca, Julio C. L.D'Alge, Antônio M. V. Monteiro-INPE/DPI
- Training in the use of SPRING-GIS: Experience in Latin America and the Caribbean Region, Africa and Asia - Eduardo Manuel Banús - IAI
- SPRING software: Tools and Applications - Silvana Amaral Kampel, INPE/DPI

OBS.: There will be some computers and tutors available in the poster session room for the SPRING software demonstration.

10:30-10:50 - Coffee break

10:50-12:10 - Technical Session 3: International Cooperation and Transfer of Technology

Chair: Solomon T. Bhunu

Co-chair: Luis Alberto Murgio

- Joint Educational Geomatic Programmes in Brazil and Germany since 1981 Strategies for Sustainable Development - Hans-Peter Bähr, Jorge Silva-Centeno, Carlos Loch, Jorge de Seixas and Günter Seeber - University of Karlsruhe
- A Virtual Receiving Station for Remote Sensing Users in the Caribbean-Amazonian Area - Laurent Polidori, Odete Machado Silveira and Maria-Thereza Prost-ORSTOM
- Non Governmental Organisations (NGOs) in the Promotion of the ISPRS Aspirations in Geoinformation Education in Developing Countries and the EReT-Cameroon Approach to the International MSc Geoinformatics Degree Programmes - Njohjam Peter Naburo-EReT
- Photogrammetry and Remote Sensing Training for Cadastral Staff in Central America - Claire Galpin, Gabriela Juarez, Laurent Polidori and Michel Kasser-FIEF-SOFRECO
- Decentralization Policy of ITC in Latin America - Carlos Valenzuela-ITC

12:10-14:10 - Lunch

14:10-15:20 - Technical Session 4: Internet Resources and Distance Learning

Chair: Sanjay Kumar

Co-chair: Carlos Patillo

- E-governance: Making GIS Local - Sanjay Kumar and Ravi Gupta-CSDMS
- GEOSAT-AR: Technology Transfer Program of ASTER Data, Image Processing and Applications - Graciela Marin - SEGEMAR
- ISPRS and Internet: history, presence and future - Fabio Remondino and Tuan-Chih Chen - ISPRS
- An Internet Course on Remote Sensing - Carlos G. Patillo, María Elena Pezoa and Vinko Vrsalovic-Remote Sensing and GIS Center

15:20-15:40 - Coffee break

15:40-17:05 - Technical Session 5 - Geomatics Education Programmes

Chair: Lawrence W. Fritz

Co-chair: José Carlos Eiphânio

- Remote Sensing and GIS Activities in Asian Institute of Technology: Education, Training and Research - Kiyoshi Honda-AIT
- The Remote Sensing and the Geomatic Teaching in the Masters Degree in the Federal University of Santa Maria - RS - Brazil - Rudiney Soares Pereira, E. Giotto, A. D. Robaina - UFSM
- EU Research and Education Programmes for non-EU Countries - Jana Niederoest and Emmanuel Baltsavias-Swiss Federal Institute of Technology-ETH
- UNESP Graduate Program on Cartographic Sciences - João Francisco Galera Monico and Antonio Maria Garcia Tommaselli-Universidade Estadual Paulista/Presidente Prudente
- The Challenges in Remote Sensing, Photogrammetry and GIS Education in India - R. Sivakumar-CSDMS

17:05-18:30 - ISPRS Commission VI Activities- Forum

Chair: John Trinder

Co-chair: Tania Maria Sausen

20:00 - Dinner at Vila D'Aldeia Barbecue Restaurant - Optional

Wednesday 18

8:30-10:00 - Special Session 2: Training Programmes developed by International Institutions

Chair: Odylio Dennis de Aguiar

Co-Chair: Fernando Raúl Colomb

- UN/OOSA-Sérgio Camacho-ONU/OOSA
- CEOS/WGEdu-Sérgio Camacho, Mauricio Fea-UN/OOSA
- The Education and Training Programme of the European Space Agency to bring space to citizens, decision makers and professionals - Maurizio Fea-ESA
- CCRS Technology Transfer and Training Initiatives in Latin America - Shannon Kaya-CCRS

10:00-10:20 - Coffee break

10:20-12:00 - Technical Session 6: Practical Examples of Computer Assisted Learning and Teaching

Chair: Mark Shortis

Co-chair: Walter Humberto Subiza Piña

- The E-FOTO Project: An Educational Digital Photogrammetric Workstation - Coelho F., Luiz C. T. and Brito, Jorge L. N.e S.-Instituto Militar de Engenharia
- Development of a GIS Supported Interactive "Remote Sensing" Learning Module - H.Weippert, D. Fritsch-University of Stuttgart
- A Educational CD-ROM on Remote Sensing and Geoprocessing Techniques for Biologists - Marisa Dantas Bitencourt-Universidade de São Paulo
- New Possibilities for the Photogrammetry Education in Turkey - Sitki Külür-Istanbul Technical University

12:00-14:00 - Lunch

14:00-15:20 - Technical Session 7: Web based on Computer Assisted Learning and Teaching

Chair: Peter Brogger Sorensen

Co-Chair: Maurizio Fea

- Arpenteur 3.0: Recent Development in Web based Photogrammetry - Pierre Grussenmeyer, Pierre Drap, Gilles Gaillard-ENSAIS
- Data representation for GIS modelling of virtual 3D cities - Solomon T. Bhunu , J. Gain, Heinz Rütther-University of Cape Town
- Remote Sensing and Digital Image Processing Teaching with Virtus - Ana Lúcia Bezerra Candeias-Universidade Federal de Pernambuco
- A View on Digital Geo-Spatial Metadata- Felipe Nievinski-Universidade Federal do Rio Grande do Sul
- Training Brazilian Managers on Geoprocessing and Orbital Image Interpretation for Coastal and Offshore Reef Conservation - Braga, C. Z. F., Gherardi, D. F. M., Prates, A. P. L., Lopes, E. S. S., Renó, V. F.-INPE/DSR

15:20-15:40 - Coffee break

15:40-17:00 - Special Session 3: Education for young students and school teachers

Chair: M. Orhan Altan

Co-chair: Tania Maria Sausen

- Satellite Technology as part of high school syllabus: an innovative educational proposal - Luis Alberto Murgio, María Beatriz Rossa, Mónica Gallino and Stella Maris Prus-Instituto Universitario Aeronáutico
- The Incorporation of the Remote Sensing in the Basic General Education (E.G.B.II, E.G.B.III and a Projection to Polimodal Education) - an Example in Argentina - Graciela S.Salmuni, A. Uruzun, M. Martinelli - CEFOCCA
- Practical Image Interpretation Guide, Brazil Geography Subjects - Vânia Maria Salomon Guaycuru de Carvalho, Carla Bernadete Madureira Cruz, Rafael Silva de Barros, S.P. Rocha, Vinícius da Silva Seabra, Donatilde Rego Batista-Universidade Federal do Rio de Janeiro
- Diffusion of Remote Sensing Techniques in School - Vânia M. N. dos Santos, Teresa Gallotti Florenzano-INPE/DSR
- Cartographic Initiation for Young Students, using Aerial Photographs and Satellite Images - Maria do Carmo Silva Soares, Maria de Lourdes Neves de Oliveira Kurkdjian and Angélica C. Di Maio Mantovani-INPE

17:30-18:30 - Closing Ceremony

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- **General Coordination**

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Eng. Sanjay Kumar

- **Technical Coordination**

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- **Technical visits**

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- **Social Event**

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The ISPRS/TC VI MID TERM SYMPOSIUM is organized by:

- **ISPRS - International Society for Photogrammetry and Remote Sensing (<http://www.isprs.org>)**

The International Society for Photogrammetry and Remote Sensing is a non-governmental organization devoted to development of international cooperation for the advancement of the photogrammetry, remote sensing and spatial information sciences (SIS, GIS and LIS), and their applications.

- **SBC – Brazilian Society of Cartography, Geodesy, Photogrammetry and Remote Sensing (<http://www.rio.com.br/sbcgfsr/>)**

The SBC is a civilian, non-profit and technical-scientific national society, which headquarters are located in Rio de Janeiro and other Brazilian states. It was established on October 28, 1958 at the 1st Brazilian Consultative Meeting on Cartography. Today there are more than 1,600 members (institutional and individual) all over the country.

The SBC is aimed at promoting the development of the study and research cooperation and integration in the fields of Cartography (Mapping), Geodesy (and Surveying), Photogrammetry, and Remote Sensing. It also seeks to promote the exchange of technical-scientific information among National and Foreign entities and technicians, supporting technical meetings and congresses on the mentioned areas. A main congress is organized every two years, allowing the sharing of experiences of national and international researchers.

On the SBC structure there are eight Technical Commissions, as described below:

- TC I - Hidrography
- TC II - Geodesy, Astronomy, Topography and Land Surveying
- TC III - Cartography
- TC IV - Photogrammetry
- TC V - Remote Sensing and Image Interpretation
- TC VI - Multipurpose Technical Cadastre and Territorial Management
- TC VII - Geographic Information System
- TC VIII - Professional Training, Teaching and Research.

The SBC is also member of the ISPRS (Category V), FIG and ICA.

- **INPE – National Institute for Space Research (<http://www.inpe.br/>)**



The National Institute for Space Research (INPE) is an institute of the Ministry of Science and Technology (MCT).

INPE's main goals lie in fostering scientific research and technological applications and in qualifying personnel in the fields of Education, Documentation and Special Programs, Space and Atmospheric Sciences and Applications, Space Technology and Engineering, Earth Observation, International Space Station Program, Center for Weather Forecast and Climatic Studies and Satellite Integration and Tests Laboratory.

INPE'S main campus is located in São José dos Campos, São Paulo state, Brazil. For additional information take a look at INPE website <http://www.inpe.br/>

- **São José dos Campos Municipality (<http://www.sjc.sp.gov.br/>)**

Welcome to São José dos Campos

The city of São José dos Campos lies in the *Paraíba* River Valley, São Paulo State, besides the *Dutra* highway which connects the two biggest Brazilian cities São Paulo and Rio de Janeiro, the Latin America economic development poles.



The access to São Paulo can be made by the *Ayrton Senna* and the *Carvalho Pinto* or *Dutra* highways. The access to Rio de Janeiro is either made by *Dutra*. The respective driving distances are about 90 km and 320 km.

São José dos Campos has a privileged location. It is only 80 km far from Campos de Jordão and Santo Antonio do Pinhal, tourist cities on the *Serra da Mantiqueira*. The access is made by *Dutra* highway and *Floriano Rodrigues Pinheiro* road. It is possible to arrive to the South of Minas Gerais State by the same highway.

It is also close to the North Coast (Caraguatatuba, Ubatuba and São Sebastião cities) at about 84 km. The access is through the *Tamoios* road (SP-99). From Caraguatatuba it is possible to arrive to Ubatuba (55 km/the *Rio-Santos* road) and to São Sebastião (25 km).

The county total area is 1.102 km². Moreover around 60% of its total area are Environmental Preservation Areas.

Its population is around 500.000 inhabitants. The annual growth rate is around 1,89%; 95,1% of this population live in the urban area and 4,9% live in the countryside.

According to the Municipal Human Development Index from the United Nations, São José dos Campos is among 25 Brazilian cities which has better conditions of life. It is famous for its technological and industrial park, its municipal parks and its sustainable development.

São José dos Campos is the most important economical and industrial city of this region and, its industrial park stands out in the Brazilian scenery for presenting three remarkable companies segments: the automotive, the telecommunications and aerospace and, the defense. It is composed by 720 companies distributed in 677 small companies with more than 90 employees each, 28 medium companies with more than 450 employees and 15 big companies with more than 1000 employees.

Trade and services sectors also followed the industrial development of this city. Nowadays, São José dos Campos stands out as a Business and Services Regional Center in the *Paraíba* River Valley, North Coast of São Paulo State and South of Minas Gerais State attending about 2 million inhabitants.

There are five malls such as *Center Vale Shopping*, *Shopping Colinas*, *Vale Desconto Shopping*, *Shopping Centro* and *Shopping Esplanada* and, many important stores and supermarkets as *Wal Mart*, *Carrefour*, *Madeirense*, *Makro* and *Ciro*.

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INTERNATIONAL SOCIETY FOR PHOTOGRAMMETRY AND REMOTE
SENSING
INTERNATIONALE GESELLSCHAFT FÜR PHOTOGRAMMETRIE UND
FERNERKUNDUNG
SOCIÉTÉ INTERNATIONALE DE PHOTOGRAMMÉTRIE ET DE
TÉLÉDÉTECTION

São José dos Campos, October 18th, 2002.

Report on the ISPRS Commission VI Mid Term Symposium “New Approaches for Education and Communication”

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1. INTRODUCTION

The ISPRS Commission VI Mid Term Symposium “*New Approaches for Education and Communication*” held at the National Institute for Space Research (INPE), São José dos Campos, São Paulo State, Brazil, on September 16-18, 2002, was organized by the ISPRS Commission VI, the Brazilian Society of Cartography, Geodesy, Photogrammetry and Remote Sensing (SBC), the National Institute for Space Research (INPE) and the São José dos Campos Municipality.

This symposium was attended by 68 participants from 14 countries and four continents:

-American participants: Argentina (1), Bolivia (1), Brazil (51), French Guiana (1), United States (2).

-Asian participants: Thailand (1).

-European participants: Austria (1), England (1), France (1), Germany (4), Italy (1), Turkey (1), Switzerland (1).

-Oceanic participants: Australia (1).

The decisive financial support received from the National Institute for Space Research - INPE, the China-Brazil Earth Resources Satellite - CBERS, the Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq, the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - CAPES and the Fundação de Amparo à Pesquisa do Estado de São Paulo - FAPESP enabled the symposium, as well other institutions that provided similar financial support to some participants.

The main topics of the Symposium were:

- Education and Training
- Computer Assisted Teaching
- International Cooperation and Technology Transfer
- Internet Resources and Distance Learning

The Symposium Scientific Committee composed by representatives of 14 countries analyzed the papers submitted and made several critical and constructive proposals regarding content, form and structure of the symposium as well helped to set the symposium technical program.

The 70 authors of the 45 published papers represented 18 countries from 5 continents and the content of these papers focused on Satellite Programmes in Latin America, Geomatics Curricula and Education, Computer Assisted Transformation of Learning, International Cooperation and Transfer of Technology, Internet Resources and Distance Learning, Geomatics Education Programmes, Training Programmes Developed by International Institutions, Practical Examples of Computer Assisted Learning and Teaching, Web Based on Computer Assisted Learning and Teaching and Education for Young Students and School Teachers.

2. OPENING SESSION

The symposium was officially opened on September 16th, 2002 by the President of ISPRS Commission 6, Dr. Tania Maria Sausen who welcomed the participants and expressed her appreciation for their attendance and the support she has gotten from INPE, SBC, the São José dos Campos Municipality, and the main financial institutions.



The opening ceremony.

(From left to right: Eng. Camillo J. M. Gomes, Dr. Tania M. Sausen, Dr. John Trinder, Dr. Luiz Carlos M. Miranda)

The ISPRS President, Dr. John Trinder, kindly spoke in Portuguese and English, welcomed all participants and gave a general overview about the ISPRS activities and the importance of Commission VI activities. He expressed as well his appreciation about the symposium organization.



The speech of Dr. John Trinder, the president of ISPRS, in the opening ceremony.

The Director of the National Institute for Space Research, Dr. Luiz Carlos Moura Miranda, and the President of the Brazilian Society of Cartography, Geodesy, Photogrammetry and Remote Sensing (SBC), Eng. Camillo José Martins Gomes, both have welcomed the participants and they expressed their pride in supporting this symposium here in Brazil.

As part of the opening session, a presentation about the UN-Regional Centre for Space Science and Technology Education for Latin America and the Caribbean - CRECTEALC was held by its General Secretary, Dr. José Marques da Costa.

A general history and overview of this Centre as well the main goals was shown as the development of skills and knowledge of university educators and research and applications scientists, through rigorous theory, research, applications, field exercises, and pilot projects in those aspects of space science and technology that can enhance social and economic development in each country; initial programmes shall focus on: remote sensing and geographic information systems, meteorological satellite applications, satellite communications and global-positioning systems atmospheric sciences and the main programs in Brasil and Mexico Campus.

3. TECHNICAL PRESENTATIONS

The 32 presented papers from 73 authors in 14 countries were arranged into seven technical sessions, three special sessions, a poster session, a mini course and a forum.

Some program changes were necessary due to absence of some authors. The Technical Session 4 was cancelled because most of the authors did not come to present their papers. For this reason the Technical Session 5 was anticipated and a visit to INPE Visiting Center, the local host, was made after this session. Presentation time was enough to point out the main topics of each paper, with an open discussion at the end of each presentation.

These presentations brought valuable and detailed information regarding to the main topics of this symposium. More details can be found in the full papers, which are available in the proceedings and on the WEB at <http://www.commission6.isprs.org>.

The proceedings of the symposium include most of the papers. Seven authors, after the papers selection, have cancelled previously their participation in the symposium, due to personal and financial issues. Besides this, eight additional authors, in the last moment, have requested the possibility to present a paper in the symposium or the Symposium Coordinator invited them. These eight papers were presented in replacement of the seven authors who have not attended the meeting.

The papers were published as International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences, Vol. 34, Part 6 and consist of 181 pages. They can be ordered from GITC bv, P.O. Box 112, 8530 AC Lemmer, The Netherlands, tel. +31 514 561854, fax +31 514 563898, e-mail: mailbox@gitc.nl, <http://www.gitc.nl>. The proceedings were also distributed on a CD.

4. PAPERS COMMENTS BY CHAIR AND CO-CHAIR OF TECHNICAL PRESENTATIONS

Special Session 1: Satellite Programmes in Latin America

Chair: Ian Dowman

Co-chair: Leonel Fernando Perondi

- The China-Brazil Earth Resources Satellite – CBERS

Presented by: José Raimundo Braga Coelho

INPE/MECB, Brasil

Comments:

The CBERS program is an example of successful international cooperation in the space area with important results for the Remote Sensing area. Such international cooperation should be highly encouraged. It would be highly desirable that the cooperation in the Application Segment of the program be strengthened. The initiatives regarding the continuity of the program with CBERS 3&4, a family of satellites which will make available higher resolution images, are very much welcome.

- The Dissemination of CBERS Images to Universities in Brazil: Procedures and Results

Presented by: Paulo Roberto Martini

INPE, Brasil

Comments:

Data provided by the CBERS program adds to the databases about the Brazilian territory, contributing to an improved monitoring and assessment of changes in Brazilian natural resources. There is the necessity of defining a policy for the distribution of CBERS images.

Technical Session 1: Geomatics Curricula and Education

Chair: Jana Niederoest

Co-chair: Tania Maria Sausen

- Recent Global Changes in Geomatics Education

Presented by: Gottfried Konecny

University of Hannover, Germany

Comments:

The approach of this presentation was on Geomatics and Geomatics Education in general and in a global way. Some topics on topographic imaging, Geomatics concepts and Education in Geomatics historical were also presented as well as a list of countries where it can be found Geomatics courses. During this presentation a view of the Geomatics teaching and profession in the world and the job market was shown.

- Remote Sensing Education Programmes for a new University in French Guiana

Presented by: Laurent Polidori

ORSTOM, French Guiana

Comments:

This paper discusses on a Remote Sensing Education proposal in French Guiana. The program has been developing in a small University in French Guiana, Guadeloupe and Martinique. It was presented the reasons to set this course, and an Education curriculum was proposed in agreement with the characteristics of the area.

- Remote Sensing in Different Education Levels: A Case Study

Presented by: Sandra Maria Fonseca da Costa

Universidade do Vale do Paraíba, Brasil

Comments:

The lecturer has presented her experience using Education in Remote Sensing in the Geography Graduation Course in different levels at the Universidade do Vale do Paraíba in São José dos Campos, Brazil. Some examples of the using of Remote Sensing in Geography's students monographs, developing projects of educational material for fundamental and high level students were also presented.

Technical Session 2: Computer Assisted Transformation of Learning

Chair: Pierre Grussenmeyer

Co-chair: Hans-Peter Bähr

- Remote Sensing Education CD-ROM: an Interactive Approach to Technology Transfer Utilizing Real Research Results

Presented by: Nelson Wellausen Dias

Indiana State University, United States

Comments:

The lecturer has presented a Brazilian version of a CD from United States, displayed of CD (3) contents, examples of "multiple choice" and statistics database (available for Professor). Also there was a discussion on the availability of this for ISPRS, other activities and products from other sides as NASA, for instance. Two questions to debate: What does it mean learning? Contact to teachers in schools?

- Didactic and Methodological Challenges in New Media Based Teaching and Learning for GIS

Presented by: Florian Bischoff

University of Karlsruhe, Germany

Comments:

He has presented a theory of learning: "As the teacher, the learner is responsible for the success". Animation "laser scanning". The discussion was on games to children (motivation).

Poster Session

- Urban Imagery Combining Photogrammetric and Remote Sensing Techniques: a New Training Course at ENSAIS Strasbourg

*Presented by: Pierre Grussenmeyer
ENSAIS-MAP, France*

This poster was presented by the author and was available for discussion in the hall during all symposium period.

*- Training New Talents in Space Science and Technology: INPE at School
Presented by: Tania Maria Sausen
INPE, Brasil*

This paper was presented by the students from the grammar and high schools that took part in the project.



The Brazilian grammar and high school students showing their experience in the project to Dr. Gottfried Konecny, from University of Hannover, Germany.

Mini Course SPRING

Chair: Gilberto Câmara Neto

Co-chair: Alexandre Benevento Marques

*- The Brazilian Experience Towards Integrating GIS and Remote Sensing
Presented by: Antônio Miguel Vieira Monteiro
INPE, Brasil*

Comments:

The main topics presented were: historical context on “Appropriate Technology” for developing countries, ways of representing (digital environment) the geographical space, an evaluation of Image Processing Division/INPE for the development of SPRING and TerraLib, the obstacles for the development of Brazilian Technology in a global economy. Main discussions in audience: Brazil is a partially developing country and a partially developed country? The 25.000 SPRING users represent a remarkable fact.

*- Training in the use of SPRING–GIS: Experience in Latin America and the Caribbean Region, Africa and Asia
Presented by: Eduardo Manuel Banús
IAI, Brasil*

Comments:

The main topics presented were: 15 American countries involved with an IAI project and other Institutions, and the use of the SPRING Program as platform to GIS. The demand for training courses in this program by the involved countries was bigger than planned in the beginning of the project besides countries in other continents as Africa and Asia interested in taking part of it.



The presentation "*Training in the use of SPRING–GIS: Experience in Latin America and the Caribbean Region, Africa and Asia*" by Eduardo Manuel Banús, from the Inter-American Institute for Global Changes – IAI, Brasil

- *SPRING software: Tools and Applications*
Presented by: *Silvana Amaral Kampel*
INPE, Brasil

Comments:

The main topics presented were: a conceptual introduction of the SPRING Geoprocessing Program, v.3.6, followed by a 10 minutes presentation of this program. It was discussed in audience the capacity of SPRING to geocode and it is confirmed it. A UN representative affirmed that this program has improved a lot since the last training course organized by DPI and UN in 1997.

- *New Approach on Teaching Geotechnology*
Presented by: *Hilcéa Santos Ferreira*
INPE, Brasil

Comments:

The main topics presented were: E-learning – Internet training course, a presentation of the TelEduc tool to use E-learning, a prototype project on Introduction to the Geoprocessing has been developing.

Technical Session 3: International Cooperation and Transfer of Technology

Chair: Luis Alberto Murgio
Co-chair: Eduardo Manuel Banús

- *Joint Educational Geomatic Programmes in Brazil and Germany since 1981 Strategies for Sustainable Development*
Presented by: *Hans-Peter Bähr*
University of Karlsruhe, Germany

Comments:

The projects implemented between Brazil and Germany was summarized during the presentation. Special remarks were focused on: sustainable education in long term, the role of the political support (formal agreement), joint teaching and research, interaction (Institutions, scientists and teachers), languages. Conclusion: 20 years of bilateral cooperation, 20 PhD in Geodetic, quick success should not be expected.

- *A Virtual Receiving Station for Remote Sensing Users in the Caribbean-Amazonian Area*
Presented by: *Laurent Polidori*
ORSTOM, French Guiana

Comments:

The use of a local implemented ground station for the reception of NOAA AVHRR and Sea Wifs in Cayenne was described. Using this initiative a network called ECOLAB (Cayenne/Belém/Macapá) was implemented using internet facilities with free access.

- *Photogrammetry and Remote Sensing Training for Cadastral Staff in Central America*

*Presented by: Laurent Polidori
FIEF-SOFRECO, French Guiana*

Comments:

Since that Central America consider "Land Administration" as a priority of six governments of this area, they are looking for training in photogrammetry and remote sensing for cadastral purpose. During the presentation different approaches to solve the problem were described. In order to have an idea of the volume of business involved, the government of Guatemala received US\$ 100,000,000.00 for cadastral/register modernization – the World Bank, USAID and some European governments are related.

*- Decentralization Policy of ITC in Latin America
Presented by: Carlos Valenzuela
ITC, Bolivia*

Comments:

The speaker presented the new regional strategies of the ITC from The Netherlands. During the presentation a resume of different activities were done, like remarks more than 14.000 students and 160 meetings from 1950 to 2000. Finally ITC is trying to send Dutch specialist to South America in order to install new associated center.

Technical Session 4 – Internet Resources and Distance Learning

The Technical Session 4 was cancelled because most of the authors did not attend the meeting. For this reason the Technical Session 5 was anticipated and a visit to the INPE Visiting Centre was made after this session.

Technical Session 5 - Geomatics Education Programmes

Chair: Lawrence W. Fritz
Co-chair: José Carlos Neves Epiphânio

*- Remote Sensing and GIS Activities in Asian Institute of Technology: Education, Training and Research
Presented by: Kiyoshi Honda
AIT, Thailand*

Comments:

Dr. Honda presented the activities of the Asian Institute of Technology (AIT). AIT is an international graduate institution of higher learning with a mission to develop highly qualified and committed professionals who will play a leading role in the sustainable development of the region and its integration into the global economy. One of its centers is the School of Advanced Technologies, which has a Space Technology Applications and Research (STAR) branch. STAR program is composed of three main units including STAR academics for teaching, ACRORS (Asian Center for Research on Remote Sensing) for research, and GAC (GIS Application Center) for training. People could have a very overview of the activities, projects, and products carried out in the AIT.

*- Evolution of Teaching of Remote Sensing, a Geoprocessing and Geomatic in the Federal University of Santa Maria, RS.
Rudiney Soares Pereira/ Presented by: Tania Maria Sausen
Universidade Federal de Santa Maria, Brazil*

Comments:

Dr. Sausen made the presentation instead of Dr. Rudiney, because he has to leave unexpectedly the symposium due personal issues. It was shown the main history of the Graduate Program in Geomatics at the University of Santa Maria. One of the concentration areas is Remote Sensing, which has five main research lines. The program can be accomplished in three levels: specialization, master and doctor.

*- EU Research and Education Programmes for non-EU Countries
Presented by: Jana Niederoest
Swiss Federal Institute of Technology - ETH, Switzerland*

Comments:

Dr. Niederoest presented the efforts of the European Union towards the research and education for non-EU countries in the field of Geomatics. It was shown that there are various programs in this direction. The framework programs are planned for four years. Each particular program is specific to a target group of

non-EU countries. The possibilities for participating were explained, including the kinds of cooperation, application and evaluation procedures, and organizational and financial aspects. It was shown that there are broad opportunities for developing countries to participate in the programs. It was stressed that cooperation is a prerequisite for applications

- *UNESP Graduate Program on Cartographic Sciences*
Presented by: Antonio Maria Garcia Tommaselli
UNESP/Presidente Prudente, Brasil

Comments:

Dr. Tommaselli presented the University of São Paulo State, its various *campi*, and in particular, the Presidente Prudente *campus*, which held the Cartographic Sciences Program. The program encompasses several Geomatic fields, including GIS, Geodetic positioning and Image Computing. The structure of the Program, the infrastructure available, the research projects being carried out and the perspectives for the near future were presented.

ISPRS Commission VI Activities - Forum

Chair: John Trinder, ISPRS President - Australia

Co-chair: Tania Maria Sausen, Commission 6 President - Brazil

Comments:

Dr. Trinder opened the forum and presented the main topics discussed, as follows:

- Redefinitions of Technical Commissions (TCs);
- Presentation of the current 7 TCs titles;
- A brief of TCs role (emphasized professional aspects);
- A brief of Remote Sensing history, some bibliography;
- Highlighted the TCs structural problems (Inoverlapping between areas of TC 2 and several other TCs, ISPRS is seen by many as primarily a photogrammetry society, the status of ISPRS should be improved in Remote Sensing, ISPRS does not attract people can innovate);

Issues to be considered:

- Is it adequate for the next 20 years?
- Redefine or not?
- What changes should be made?
- What is the basis of new structure?
- How to improve the ISPRS recognition in Remote Sensing by redefining TCs?

Dr. Sausen questioned the reason of no mention to TC 6. She is sure that TC 6 needs to improve in many aspects. Changes could be started by the name of the TC6. Nobody knows what means "Communication". She suggests the word "Dissemination" instead. She stressed the importance of having a better interaction among TCs and suggested Joint Seminar to disseminate the subjects and activities among them. This occurs in many other similar societies as part of a special session.

Another way of disseminating the ISPRS activities is to present it to Universities, in a Remote Sensing Congress (small session about RS and GIS).

RS is relatively new compared to the photogrammetry area; we are facing a kind of transition. Dr. Dowman showed that this process is different between developing and developed countries. So, how to enhance these activities in developing countries?

Dr. Sausen said that the answer to this is to disseminate them in graduation courses, to convince people, mainly teachers to teach classes about it (in Brazil) and young students that RS is important, though difficult, gradual task, and through lectures in RS Symposium (one or two days seminar, it is more effective and it works!).

She said this could be done for example in November in the SELPER meeting in Bolivia. Thus, people all over the world can bring some innovation.

Dr. Konecny commented that it is not necessary to invest much money to reach good results and mentioned that in India the scientific community could motivate people to use it through these short seminars.

Dr. Sausen reminded all with optimism the importance of the UN Regional Center for Education to example of ITC in Bolivia as being a good center for the dissemination of these activities. Dr. Sausen also

commented that the language (English) has been a real obstacle in the meetings in not English speaking countries. She has suggested meetings in double language, as has held in the TCVI WG 1 and 3 in the Brazilian Cartography Congress in Porto Alegre, Brazil. In this seminar most of the presentations were done in Portuguese or Spanish, and the transparencies and power point files were written in English. The doubled language would be highly appreciated in the next meetings.

Dr. Trinder commented his successful experience in a Seminar with simultaneous translation. Another way, it could be preparing transparencies in English or other language and the oral presentation be in Portuguese or Spanish. He also mentioned the Seminar in Porto Alegre.

Dr. Haubold from UN enthusiastically invited ISPRS to cooperate with UN in order to solve some of its problems. He showed the possibility of co-organizing meetings until 10 in a year if it is necessary. Dr. Haubold proposed to talk to Dr. Trinder more details about this cooperation at the same time that mentioned the UN cooperation with several Space Agencies to provide the organization of meetings and speakers.

In addition, Dr. Konecny agreed with Dr. Sausen that there should be more Joint Meetings in Latin America.

Dr. Sausen said that she could invite Dr. Costa from the Universidade do Vale do Paraíba to present about three lectures in a Special Session in Education and Environment in a meeting in Cochabamba in November 11, 2002.

Dr. Fritz is favorable to ISPRS to join efforts and Dr. Honda thinks that AIT can cooperate with ISPRS.

Dr. Sausen concluded emphasizing the importance of changing the title of TC 6 to Education and Dissemination and commented the importance of the experience of Dr. Erling to teach Cartography to children. She added that this kind of activities could be provided to children and young students in a Shopping Center for instance, showing them the importance of Space Area in order to motivate them during a week. This could be done in several cities or in an International Congress.

After that, Dr. Trinder closed the forum.

Special Session 2: Training Programmes developed by International Institutions

Chair: Odylio Denys de Aguiar

Co-chair: Tania Maria Sausen

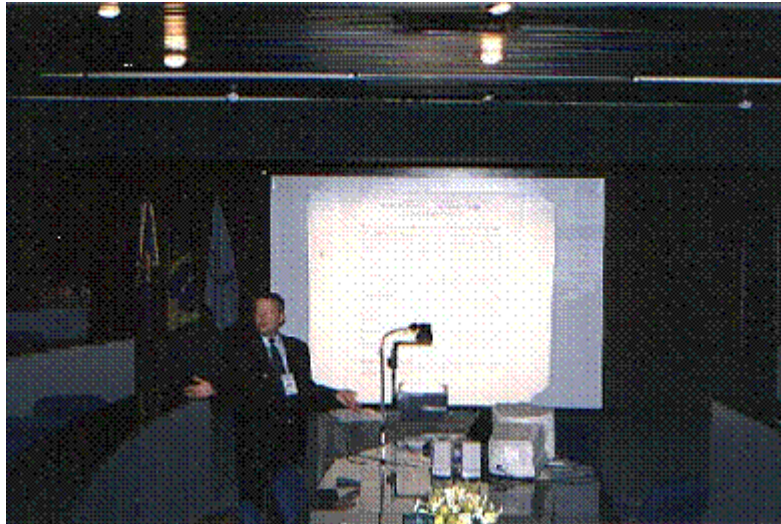
- Education Curricula in Space Science and Technology

Presented by: Hans Joachim Haubold

UN, Austria

Comments:

This presentation was on a general view about the OOSA activities in Education area: RS, meteorological satellites, communication satellites, Space Science and Atmosphere. An explanation was given on workshops dynamic and how they are organized in different countries like the workshops in astronomy. It was also described how these workshops can be organized in developing countries and the educational material. It was shown the Centers program and the current situation of each one in relation to the basic curricula. At the end, the speaker has distributed the basic curricula to the participants.



The presentation *Education Curricula in Space Science and Technology* by Dr. Hans Haubold, from UN, Austria.

- *The Education and Training Programme of the European Space Agency to bring space to citizens, decision makers and professionals*
 Presented by: Juerg Lichtenegger
 ESA/ESRIN, Italy

Comments:

An introduction about ESA and its activities was made as well the Centers and developed. Satellites. A general view of the ESA Education and Training activities, how to access these activities and courses was shown as well a presentation of the EDUSPACE project dedicated to high school students, and some case studies. The educational material for this program was also shown and its dissemination to the Latin America.

Technical Session 6: Practical Examples of Computer Assisted Learning and Teaching

Chair: Walter Humberto Subiza Piña
 Co-chair: João Ávila

- *The E-FOTO Project: An Educational Digital Photogrammetric Workstation*
 Presented by: Luiz Carlos T. Coelho Filho
 Instituto Militar de Engenharia, Brasil

Comments:

The speaker presented the Military Institute of Engineering (IME) in Brazil, its history and courses. He presented the use of Photogrammetry in Cartography and the difficulties of the IME to get the plotters. Digital Photogrammetry depends on 3 elements: people, programming in Portuguese and knowledge. IME resources are limited and the objective of this project is to develop digital photogrammetry software as part of an educational package. The most difficult challenge is the students understand the photogrammetry language. The programming language is C++ and self-learning and previous knowledge are not required. But close attentions to the routines/steps of this software are strongly recommended. The end-user is the student that will be able to develop his own software. This project has been tested for 4 years in digital photogrammetry students. The website is <http://e-foto.sourceforge.net>. Some demonstrations of this software/binaries were made and the configuration of the camera was shown.

- *Development of a GIS Supported Interactive "Remote Sensing" Learning Module*
 Presented by: Heike Weippert
 University of Stuttgart, Germany

Comments:

The speaker presented the development of a GIS module of interactive learning called GIMOLUS. It is a multidisciplinary module with several GIS exercises. There are 8 Institutions involved with GIMOLUS. It was tested by German Universities in the courses of Psychology in Education and approved by its excellent didactic. Since 1998 about 1600 students have already used this learning module. The speaker also showed the software platform for the students learning, its architecture and the technology used. This package is accessible with 11 units and 31 learning module. Modules are small with animation and

specific text image. There are courses as RS basic physics, sensors, integrated RS data in GIS, applications in RS and exercises.

The speaker demonstrated the electromagnetic spectrum where the student is able to find a Landsat 7 Satellite band and associate it with the test site, combining different bands. The exercises steps: band combination, digitized or screen, polynomial attribution etc. At the end, the speaker added that e-learning can be integrated to other computational technologies. This prototype allows creating an integrated and interdisciplinary virtual environment during the exercises. It is destined to master courses in developing countries, geographers etc. The project phases can be assessed continuously and animates the student to learn more and more. The website presented by the speaker was <http://www.gimolus.de>.

*- A Educational CD-ROM on Remote Sensing and Geoprocessing Techniques for Biologists
Presented by: Marisa Dantas Bitencourt
Universidade de São Paulo, Brasil*

Comments:

The speaker presented the difficulties of Biologists to learn Geoprocessing as reason of the development this educational material through website. This is an educational material in CD that motivates biologists to learn Geoprocessing in their rhythm, in appropriate language and can be distributed to whole country. It contains practical exercises, which enable students to use RS and solve ecological problems. There are 4 research lines: conservation and sustainable development, environmental Ecology, environmental epidemiology and basic research on RS in Ecology. Main points in RS and Geoprocessing in Ecology:

- Land cover distribution and quality,
- Water bodies distribution,
- Human footprints left over vegetation,
- Topographic simulations,
- Compare natural and disturbed effects of human being actions.

Development of a CD with 3 data series: an introductory text, examples in text and screen and PDF files.

Discussion:

- Optimization of the process of learning,
- DEM – Simulate environmental conditions (Ex. indicate mosquitoes habitat diversity)

Conclusion:

- Many examples can motivate students,
- Use of NDVI, map algebra and better use of satellite images in ecologic studies.

The speaker finished her presentation showing the website of the Universidade de São Paulo, Remote Sensing and Geoprocessing in Ecology.

Technical Session 7: Web based on Computer Assisted Learning and Teaching

Chair: Juerg Lichtenegger

Co-chair: Tania Maria Sausen

- Arpenteur 3.0: Recent Development in Web based Photogrammetry

Presented by: Pierre Grussenmeyer

ENSAIS-MAP, France

Comments:

The speaker presented the evolution of Arpenteur project; current possibilities and limits; the software synoptic outline; developments since 2000; advantages and disadvantages; XML structure.

- ISPRS and Internet: history, presence and future

Fabio Remondino, Tuan-chih Chen / Presented by: Ian Dowman

ISPRS, Taiwan

Comments:

The speaker outstand the following points during his presentation: a brief history of the work; users and number of access to the web page; available web pages of ISPRS TC; WG and members; ISPRS Event Calendar; Educational Resources and opportunities.

- Training Brazilian Managers on Geoprocessing and Orbital Image Interpretation for Coastal and Offshore Reef Conservation

Presented by: Douglas Gherardi

INPE, Brasil

Comments:

The objective of this training was to train professionals to use Remote Sensing and GIS in order to make based reef maps. Some points were outstanding as course design and structure, information about tutorial, pilot research area, methodology used to prepare maps, data results and integration, workshops.

Special Session 3: Education for young students and school teachers

Chair: Orhan Altan

Co-chair: Tania Maria Sausen

- *Satellite Technology as part of high school syllabus: an innovative educational proposal*

Presented by: Luis Alberto Murgio

Instituto Universitário Aeronáutico, Argentina

Comments:

A view of the uSat-2 satellite, the project objectives and how high school students can use this satellite data was shown. Lecturers were given in high schools and the success of this project motivated its continuity according to the rules of MCE of Argentina. The speaker emphasized the use of small ground station in high schools in order to receive satellite data directly and informed the specialists who took part in this project.

- *Cartographic Initiation for Young Students, using Aerial Photographs and Satellite Images*

Presented by: Maria do Carmo Silva Soares

INPE, Brasil

Comments:

This paper is about the Cartographic Initiation, which became a book for students who need to use aerial photographs and satellite images. It was shown the methodology of this work; the chapters of this book as well as a small introduction of each chapter. Also it was presented some examples of cartographic features in images and maps.

5. SOCIAL ACTIVITIES

As part of the Symposium Programme a Welcoming Cocktail was served on Monday 16th, 2002. The cocktail was kindly organized by the *Fundação Hélio Augusto de Souza*, a São José dos Campos Municipality Foundation dedicated to learn poor students in cooking and bakery profession.

During the cocktail the *Fundação Cultural Cassiano Ricardo*, a Cultural Foundation from São José dos Campos Municipality, performed regional folkloric songs by the *Piraquara* singers group and the *Chorinho* music, performed by the *Chorinho Group*.



The performance of the *Chorinho Group* during the cocktail.



The ISPRS Council Members in the Welcoming Cocktail.
(From left to right: Dr. Ian Dowman, Dr. John Trinder, Dr. Tania M. Sausen, Dr. Lawrence Fritz and Dr. Orhan Altan)



The ISPRS Commission 6 members and a symposium participant of French Guiana
(From left to right: Dr. Jana Niederoest, Dr. Tania M. Sausen, Dr. Pierre Grussenmeyer and Dr. Laurent Polidori)

6. SYMPOSIUM FINAL REMARKS

- Since the beginning of the organization of this symposium, the main concern was somehow to join experts from all around the world, representing a concentration of knowledge and experience in education and communication in Commission 6 issues, and this goal was reached;
- During the three days all participants have the opportunity to attend several presentations about papers focused on education and communication in photogrammetry, remote sensing and spatial information systems. All these presentations and papers represented a worthwhile collection of information about new methodologies, technologies and opportunities, accessible worldwide.
- To organize a symposium like this it is not an easy task, mainly if we consider the enormous difficulties the organizing committee has faced to get financial support, in this special moment in the Brazilian economy and politic transition. Despite these difficulties, the committee always had the unconditional support from the symposium organizers and sponsor.



The closing ceremony.

(Dr. John Trinder, the ISPRS President, Dr. Tania M. Sausen, the ISPRS Commission 6 President, Dr. Walter Humberto S. Piña, the representative of the SBC President, Dr. Gilberto Câmara Neto, the representative of the INPE Director and Dr. Orhan Altan, the ISPRS Congress Director)



The participants of the ISPRS Commission 6 Mid Term Symposium
New Approaches for Education and Communication

7. ACKNOWLEDGEMENTS

The Symposium Coordinator would like to thank:

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These three days Symposium were really meaningful for all participants and for ISPRS Commission 6, because we stepped to the future on education and communication in photogrammetry, remote sensing and spatial information systems; we started our journey into the new millennium, but most of all we met colleagues and made friends, that together will care about improving and making available the education and communication to all society.

In this Symposium, Commission 6 could show that it is possible to do important and useful activities in education all over the world. We just need motivation, dedication, support from main institutions involved with this subject and mainly courage to face the new challenges.

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