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Highlights

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

ANNUAL REPORT 1996
ISPRS TECHNICAL COMMISSIONS

ISPRS Highlights

INTERNATIONAL SOCIETY FOR PHOTOGRAMMETRY AND REMOTE SENSING
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COVER: *North America as seen by NOAA / AVHRR (prepared by Environmental Research Institutte of Michigan-ERIM, with the cooperation of National Geographic, EROS Data Center, Canada Centre for Remote Sensing and NOAA).*

EDITOR-IN-CHIEF:
Prof. Mauricio Araya F. (Director Editorial SELPER)
Presidente Madero 795 (Ñuñoa). Santiago, Chile.
Tel: (56.2) 696.7583; Fax: (56.2) 698.1474, 698.7194.
E-mail: isprs@inach.cl

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COUNCIL 1996 - 2000

PRESIDENT Lawrence W. Fritz
Lockheed Martin Corporation
14833 Lake Terrace
Rockville, MD 20853-3632, **USA**
Tel: + 1-301-460-9046 or + 1-610-531 3205
Fax: +1-301-460-0021 or +1-610-962-2058
E-mail: LFritz@nva.lmco.com

SECRETARY GENERAL John C. Trinder
School of Geomatic Engineering
University of New South Wales
Sydney, NSW 2052, **AUSTRALIA**
Tel: +61-2-9-385 5308 or 4197
Fax: +61-2-9-313 7493
E-mail: J.Trinder@unsw.edu.au

CONGRESS DIRECTOR Klaas Jan Beek
Land Resources & Urban Sciences
ITC
PO BOX 6
NL-7500 AA Enschede, **THE NETHERLANDS**
Tel: +31-53-4874.214 or 511; Fax: +31-53-4874.200
E-mail: Beek@ITC.NL

1st VICE PRESIDENT Shunji Murai
Institute of Industrial Science
University of Tokyo
7-22-1, Roppongi, Minatoku
Tokyo 106, **JAPAN**
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E-mail: chiwa@shunji.iis.u-tokyo.ac.jp

2nd VICE PRESIDENT Marcio Nogueira Barbosa
General Director, INPE
CP 515
Av. dos Astronautas 1758
12227 - 010 - São José dos Campos, SP, **BRAZIL**
Tel: 55-123-25.6035; Fax: 55-123-22.9285
E-mail: mnbisprs@ltid.inpe.br

TREASURER Heinz Rüther
Dept. of Surveying & Geodetic Eng.
University of Cape Town
Rondebosch 7700, **SOUTH AFRICA**
Tel: +27-21-650 3573
Fax: +27-21-650 3572
E-mail: Ruther@EngFac.UCT.ac.za

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Tel: +36(1)-301-4052; Fax: +36(1)-301-4691
E-mail: gabor.remetey@f-m.x400gw.itb.hu

FINANCIAL COMMISSION CHAIRMAN: Armin Gruen. Chair of Photogrammetry, Institute of Geodesy and Photogrammetry, ETH-Hoenggerberg, CH-8093 Zurich, **Switzerland.** Fax: (41.1) 633.1101. E-mail:agruen@geod.ethz.ch.
ISPRS JOURNAL EDITOR-IN-CHIEF: David A. Tait. Dept. of Geography & Topographic Sciences, University of Glasgow. Glasgow G12 8QQ, **U.K.** Fax: 44-141-330.4894. E-mail: dtait@geog.gla.ac.uk
ISPRS WEBMASTER: André Streilein. Institute of Geodesy and Photogrammetry, ETH-Hoenggerberg. CH-8093 Zürich. **Switzerland.** Fax: (41.1) 633.1101. E-mail:andre@geod.ethz.ch.
ISPRS HIGHLIGHTS EDITOR-IN-CHIEF: Mauricio Araya F. (Director Editorial SELPER). Presidente Madero 795 (Ñuñoa). Santiago, **Chile.** Tel: (56.2) 698.7583; Fax: (56.2) 698.1474 or 698.7194. E-mail: isprs@inach.cl.

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Santiago, Chile. Fax: (56.2) 698.1474,
Tel: (56.2) 696.7583, E-mail: isprs@inach.cl.

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EDITORIAL

Dear Colleagues:

1996 was a year of transition for ISPRS. It began with intensive activity in preparation for the XVIII Congress. This quadrennial Congress was successfully convened during 9 to 19 July in the beautiful city of Vienna. Its objectives were: (a) to provide a summary of scientific and technologic advancements during the previous four years since the 1992 Washington, DC Congress; (b) to convene the General Assembly to select the leadership and set the course of action for the 1996-2000 term; (c) to exhibit the current technology; and (d) to provide an international forum for business and social interaction of the leaders, researchers and practitioners in the profession. As you will see in this Annual Report issue and as previously reported in the October 1996 issue of ***ISPRS Highlights***, all of these objectives were successfully met.

The elections held by the Vienna General Assembly have expanded the base for ISPRS leadership and its scientific activities to all reaches of the globe. It elected a Council Member from each of the six continents. For the 1996-2000 term it chose Asia and Europe to each host three, and North America to host one, of the seven Technical Commissions. The GA also approved the category of Associate Membership to enable **representation of the whole** of photogrammetry, remote sensing and GIS in those Member Nations where one or more of these disciplines was not represented by the Ordinary Member Society. In 1996, our Society admitted six new Ordinary Members, five Associate Members and three new Sustaining Members. All of these decisions have been instrumental in advancing ISPRS as a truly international Society which is representative of all facets of the spatial information sciences.

During the year, Council has vigorously pursued several efforts with a goal to enhance ISPRS communications to our Members and to organizations interested in ISPRS. At the January Council Meeting the ISPRS Home Page (www.geod.ethz.ch/isprs) and Webmaster André Streilein were ratified. Soon after the Vienna Congress, we initiated all necessary actions to begin the publication and worldwide distribution of ***ISPRS Highlights*** with an aim to provide wide dissemination of timely News about our Society and to reach more individuals who are members of our Member Societies. We find that ***ISPRS Highlights*** is providing economic benefits too. It provides a medium for publication of a variety of Society meeting minutes and reports and, starting with this issue, replaces the heretofore separate publication of the ISPRS Annual Report. We also activated negotiations for revising our agreement with RICS Books to make the ***International Archives of Photogrammetry and Remote Sensing*** more widely available after all ISPRS Commission Symposia and Congresses; and we have continued negotiation of a new agreement with Elsevier Publishers for publication of our peer-reviewed ***ISPRS Journal.***

In October Council met with the new Commission Presidents and jointly agreed upon the selection of all Working Groups, WG Terms of Reference and WG Chairpersons for the 1996-2000 term. As a result, 45 Working Groups have been established to address the ISPRS scientific and technologic activities during the next four years. Of these, four are Inter-Commission WG's and one is a Special Interest WG.

The General Assembly resolutions recommended that two task forces be set up to address "Educational Opportunities" and "Information and Communication." 2nd Vice President Marcio Barbosa has agreed to lead the Educational Opportunities group which will seek innovative ways for ISPRS to facilitate and promote grants, fellowships, scholarships, etc. Similarly, Keith Atkinson (Editor of ***The Photogrammetric Record***) has agreed to chair the Information and Communication group to surface issues and address opportunities for the Society to leverage advancements in modern media technology for presentation, distribution and archival availability of Society publications.

In summary, 1996 was a banner year for ISPRS. On behalf of ISPRS Council, I thank the 1992-1996 Commission Presidents and Working Group Chairpersons for their many dedicated hours of time to support the ISPRS community as reflected in their annual reports herein and for their efforts in preparing a successful Congress in Vienna.

Sincerely,

Lawrence W. Fritz,
President of ISPRS

ANNUAL REPORT 1996 - 1997
TECHNICAL COMMISSIONS 1996 - 2000

NOTE OF THE EDITOR-IN-CHIEF: The **Terms of Reference (TOR)** of Technical Commissions (TC) and their related Working Groups (WG) will be included in **ISPRS Highlights of July 1997 (Vol. 2, Nº 3).** In this issue, special pages were prepared only for those Symposia having received on time the graphic matterial and also only the available personal photos were included.

ISPRS TECHNICAL COMMISSION I: "SENSORS, PLATFORMS AND IMAGERY"

President: (left)
George Joseph (India)

Secretaries:
Shri A.K.S. Gopalan (India) and
Shri V. Jayaraman (India)

STATE OF SCIENCE AND TECHNOLOGY OF COMMISSION I TOPICS

Remote sensing data is available from large number of sensors from various International missions. It is necessary to evolve a mechanism to inter-calibrate them, so that data can be used meaningfully.

A large part of the world, do not have adequate coverage of topographical maps. A need for a dedicated satellite for acquiring high resolution remote sensing data in stereo mode for the purpose of generation and updating topographic maps has been felt. Various technological issues need to be resolved.

The role of remote sensing satellites in understanding the earth system is very vital. The emphasis is on studying various earth processes and their role in shaping earth's environment. A variety of new microwave/optical sensors focussing a global observing system will have to be designed.

In this regard important aspects emerging from the Vienna Congress should be mentioned.

- In the last decade, the nature of the primary data changed significantly: platforms on board satellites, new sensors, the different roles of geodesy and cartography opened new horizons and showed new directions to scientists and engineers.
- Fusion and integration of GPS, INS and laser profile data with the imagery from SPOT, SAR (with special regard to its interferometric methods) laser scanning, three line cameras, CCD sensors and photo-scanners and the role of GIS changed not only the nature of the primary data, but also the methodologies to acquire and evaluate them.
- Further developments of techniques and methodologies, involving primary data acquisition and evaluation, definition of standards, data archiving and distribution, become very important for advances in photogrammetry, remote sensing and related sciences, as much for the research as for the applications.

ACCOMPLISHMENTS OF COMMISSION I DURING 1996

The Technical Commission I had six technical sessions, two poster sessions (each of these of about 10 papers) and one keynote at the Vienna 1996 Congress. Total 40 papers were presented and issued in the Int. Archives of Photogrammetry and Remote Sensing, Vol. 31, Part B1. Each session was attended by 60-100 delegates. A full report has been given in Vol. 2, No. 1 of ISPRS Highlights.

A one-day seminar on Recent Advances in Numerical Cartography was organised in February 1996 in Milan (Italy). This seminar has four lectures given by mathematicians, statisticians and computer scientists from Italy and Switzerland (Prof. Carosio, Marazzi , Piccinini, Somalrio).

A paper on Cameras for Indian remote sensing satellite IRS-1C and its applications authored by Dr George Joseph, President, TC-I for term 1996-2000 was circulated at the Seminar on Advanced Technologies in Geoinformation on September 30, 1996 at Tokyo, Japan.

An Invited talk was delivered by Dr George Joseph on ' The Role of Remote Sensing in Resource Management for Arid Region with Special Reference to Western Rajasthan, India» was delivered at the Symposium on Arid ecosystem of the Thar Desert of Western Rajasthan held at Jodhpur, India on November 1, 1996.

A Special session on ISPRS Technical Commission I was organised at the Annual Convention of the Indian Society of Remote Sensing at University of Pune on December 4, 1996, Pune, India. The session was chaired by Dr George Joseph.

Following three papers were presented.

1. Advanced computing in remote sensing data acquisition, pre-processing and dissemination by Vijay P. Bhattar.
2. Earth observation sensors - India's perspective by A.S. Kiran Kumar, V. Jayaraman, George Joseph.
3. Parametric modelling of space borne scanning microwave radiometer imaging geometry and its application to image geocoding.

Dr. George Joseph also chaired the session on Advances in Remote Sensing Technology during the convention. **Following papers were presented.**

1. Overview of SAR interferometry being developed at CSRE, IIT, Bombay by K.S. Rao, Y.S. Rao, G. Venkataraman, M.V. Khire.
2. Radar Shadow map generation by Vinod Gafi and Sangeeta Rijhwani.

COMMISSION I NEWS

The mid term symposium on Earth Observation System for Sustainable Development has been planned at Bangalore, India during February 25-27, 1998.

Two tutorials, one on Electro-optical sensors for remote sensing and another on Image pre-processing will be conducted along with the mid term symposium during 23-24 Feb. 1998.

WORKING GROUP ACTIVITIES DURING 1996

WG I/1 : SENSOR PARAMETER STANDARDISATION AND CALIBRATION

Chairperson: (left)
Dr Manfred Schroeder
(Germany)
Co-Chairman: Dr. Alan Belward
(Italy)
Secretary: Wolfgang Kornus
(Germany)

State of Science and Technology of WG I/1 topics

Since the beginning of satellite remote sensing the number and variety of imaging space sensors has considerably increased. This trend will continue in the next decade. For the task of environmental research and monitoring, data of different sensors types will be available. Multisensor and multitemporal data sets can be used for various disciplines and applications. In most cases the interpretation and processing of these data has the objective to describe environmental situations quantitatively or to derive geophysical parameters. The quality with which scientific results and products can be obtained from remote sensing data depends mainly on the radiometric, spectral and geometric calibration of the sensor. The accuracy of the calibration limits finally the quality of derived products. In the past remote sensing data were delivered where errors and limitations were not always clearly understandable for the users. The standards and terminology used by various groups and communities did not necessarily conform to each other.

It is therefore one of the main objectives of WG I/1 to bring experts together who are involved in sensor calibration to report on the calibration procedures of current and planned sensors and the applied techniques and standards. The aim is to seek a common understanding of the meaning of standards and terms.

The Committee on Earth Observation Satellites (CEOS) has established a Working Group on Calibration and Validation (CEOS-WGCV) some years ago to coordinate calibration and validation activities among the national and international space organisations. It is therefore intended to carry out the activities of WG I/1 in close relation to CEOS-WGCV.

Accomplishments of WG I/1 during 1996

Dr M. Schoreder, Chairman, Dr Hartmut Ziemann, Member and Mr Kiran Kumar, Member, WG-I/1 attended meeting in CEOS-WG on Calibration and Validation at Germany.

WG I/1 News:

A workshop on Calibration of Optoelectronic and Radar Sensors is planned for November 1997 in the Munich area, Germany.

WG I/2 PRE-PROCESSING ARCHIVAL AND DISSEMINATION OF IMAGE DATA

Chairperson: Prof. Dan Rosenholm (Sweden)
Co-Chairman: Dr Joe Thurgood (USA)
Secretary: Mr Dan Klang (Sweden)

WG I/2 News

One workshop in Europe, perhaps Stockholm and a second workshop in the US, Canada or Mexico. The title of the workshop, exact dates and location shall be decided later.

WG I/3: SENSORS AND PLATFORMS FOR TOPOGRAPHIC SURVEY

Chairperson: (left)
Dr K. Jacobsen (Germany)

Co-Chairman:
Dr T. Natarajan (India)

WG I/3 News

An international workshop is planned in September 1997 in Hannover and two years later in India. The title of the workshop, exact dates and location are to be finalised.

SENSORS, PLATFORMS AND IMAGERY
COMMISSION I
1996 - 2000

ISPRS TECHNICAL COMMISSION I SYMPOSIUM

"EARTH OBSERVATION SYSTEM FOR SUSTAINABLE DEVELOPMENT"

BANGALORE, INDIA
FEBRUARY 23 - 27, 1998

ORGANISED BY

- ISPRS Technical Commission I
  Ahmedabad, INDIA
- Indian Society of Remote Sensing
  Dehradun, INDIA

SPONSORED BY

- Indian Space Research Organisation (ISRO)
  Bangalore, INDIA

CALL FOR PAPERS

Papers are invited for presentation at the Symposium. The important dates for the papers are as follows:

• Deadline for abstracts:	June 30, 1997
• Notification of acceptance:	Sept. 30, 1997
• Deadline for complete manuscript:	Nov. 15, 1997

Please send an extended abstract (about 2 A-4 size single spaced pages) to the Symposium Secretariat for evaluation and consideration for presentation at the Symposium. Instructions for authors will be mailed out together with notification of acceptance of the paper. The Proceedings of the Symposium will be published in the Archives Series of the ISPRS.

LANGUAGE

Papers may be presented in any of the three official ISPRS languages: English, French and German. The operating language of the Symposium will be English. Translation services will not be provided.

TECHNICAL SESSIONS

The Technical sessions will be arranged from Wednesday, February 25 to Friday, February 27, 1998. If necessary. sessions may be held in parallel.

TUTORIALS

The following two tutorials will be organised on February 23 and 24, 1998. Both the tutorials will be conducted parallely.

a) Tutorial on Electro-Optical Sensors for Remote Sensing

This tutorial will cover various aspects of Electro-Optical Sensors including evaluation of sensor specifications, calibration techniques, inter-sensor calibration, hardware aspects, relation of sensor parameter and application potential, etc.
Visits to ISRO Satellite Centre, Banagalore will be arranged on February 24, 1998, which will provide a glimpse of the satellites and sensors developmental activities in ISRO.

b) Tutorial on Image Pre-processing

The tutorial will cover pre-processing algorithm, platform modelling, noise removal, radiometric normalisation, data product generation and dissemination, data archival, etc.
Visit to the Regional Remote Sensing Service Centre, Bangalore will be arranged on February 24, 1998, which will provide an overview of pre-processing and image analysis activities.
The final registration form will be mailed in September, 1997 to those who respond by sending the Pre-Registration form.

TOURIST INFORMATION

About Bangalore

Karnataka, in India is a state of charming contrasts with the modern blending harmoniously with the old. Here, bustling industries nestle comfortably with the easy going relaxed pace of life. No where is this seen better, than in Bangalore, the capital city of Karnataka. The beautiful garden city with temperature ranging from 16°C in winter to 32°C in summer, has today emerged as Asia's fastest growing metro. And with a population of 5.2 million and an area of 380 km^2., makes it the fifth largest city in India. Connected as it is to all major cities of India and Singapore by Air, anywhere in the world by Air Cargo and major cities by rail and road. A striking example of perfect balance between modern lifestyle and traditional values.

The city for all seasons

Any time is a good time to be in Bangalore, the city for all seasons. See it in spring when the blooming flowers are at their brilliant best in the many parks and gardens. Enjoy the summer months when the city comes alive to festivals and fairs, races, exhibitions and bargain sales. You will surely fall in love with Bangalore in autumn, when the stately buildings of Bangalore take on a dream-like appearance and the morning mist at Cubbon Park has a mystic quality about it. Winter at Bangalore is like no other place. Not too cold to keep you indoors but cold enough to enjoy the outings in the sun. As the rainfall here is about 92 cm per year, it is all-weatherjoy. You can picnic under the Big Banyan Tree at Ramohalli or have a date with nature at Pearl Valley. Or drive up to Nandi Hills for a breathtaking view from the top. One could take a few days off and enjoy the Marvellous attractions of Mysore, Bellur, Halebeedu or more on to the neighbouring states each one again has a lot of unique attractions of its own. There is never a dull moment when you are at Bangalore.

ADDRESS FOR CORRESPONDENCE AND INQUIRIES TO SYMPOSIUM SECRETARIAT

Mr. V. Jayaraman, Dy. Director, EOS
ISRO HQ, Antariksh Bhavan
New BEL Road, Bangalore 560 094. INDIA
Tel No + 9180 3416358, Fax No. + 9180 3415298
Email vijay@.isro.ernet.in

ISPRS

RESOURCE AND ENVIRONMENTAL MONITORING
COMMISSION VII
1996-2000

ECO BP'98

INTERNATIONAL SYMPOSIUM ON RESOURCE AND ENVIRONMENTAL MONITORING

LOCAL, REGIONAL, GLOBAL

Budapest, 1-4 September 1998

Colour aerial photo of Budapest (fragment) - @ EUROSENSE

SYMPOSIUM TIMETABLE

Deadline for Abstracts	**October 15, 1997**	**Deadline for Originals**	**April 15, 1998**
Notification of Acceptance to Authors	**January 15, 1998**	**Preliminary Program**	**July 15, 1998**

For More Information Please Visit the ISPRS COMMISSION VII Website at http://www.hegyi.com/isprs
or Please Contact the Hungarian Secretariat at

Institute of Geodesy, Cartography and Remote Sensing
(FÖMI) Remote Sensing Centre. Attn.:
Peter. Winkler H-1149 Budapest Bosnyák tér 5, Hungary
Phones: 36 1 363-6669, 36 1 252-7898, Fax: 36 1 252 8282,
E-mail: peter.winkler@rsc.fomi.hu

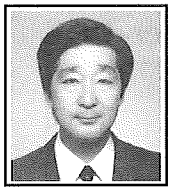
or **Hegyi Geo Technologies International Inc.**
709-170 Laurier Ave. W., Ottawa Ont. K1P 5V5
Tel: +1 613 237 8055,
Fax: +36 1 202-6458,
E-mail: tnemeth@hegyi.com

WG I/4 : MICROWAVE AND OPTICAL SENSORS FOR GEOSPHERE-BIOSPHERE STUDIES

Chairperson: (left)
Jean Louis Fellous
(France)

Co-Chair:
John Miller
(Canada)

WG I/5: ADVANCED PLATFORMS AND SENSORS



Chairperson: (left)
Mr. Takashi Moriyama (Japan)

Co-Chairman:
K. Tyagarajan, (India)

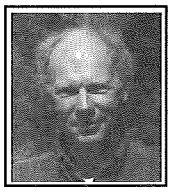
WG I/5 News
Meetings have been planned to discuss following topics:

1. Small satellite for earth observation: complexity of satellite realisation, reliability and cost
2. Platform guidance, navigation and positioning: integration of GPS and orientation system
3. High resolution imaging spectrometer for ocean colour, mineral exploration
4. Review of realisation of new sensors such as smart sensors, polarisation sensors, pollution monitoring, laser altimeter, rain radar

These meetings took place during Jan 23-24, 1997, Yakohama, Japan, and March 11-14, 1997, Tokyo, Japan.

Workshops on 'Advanced platforms and sensors' in India in 1998 and in Japan in 1999 have been planned.

ISPRS TECHNICAL COMMISSION II: "SYSTEMS FOR DATA PROCESSING, ANALYSIS AND REPRESENTATION"



President: (left)
Ian J. Dowman (U.K)

Secretaries:
Ray Harris (U.K.) and
Beverly Adams (U.K.)

STATE OF SCIENCE AND TECHNOLOGY OF COMMISSION TOPICS

Commission II was entrusted to the UK under the presidency of Ian Dowman at the ISPRS Congress in July 1997. During the previous 4 years the commission concentrated on systems which were based on the principles of digital photogrammetry and integration of data with GIS but recognised the increasing importance of wider issues of data handling and SAR. During the next four years the commission will continue with the topics of digital photogrammetry and GIS but will emphasise the integration of different types of data and handling of large volumes of data from satellites. It will in particular encourage the greater use of SAR data within the ISPRS community.

PLANS FOR COMMISSION II FROM 1996-2000

Digital photogrammetric workstations (DPWs) continue to develop at a very rapid pace. Systems are becoming less expensive and easier to use, thus creating a wider range of user, often coming from the GIS and CAD communities. In the next year we will see the advent of powerful PC, Windows NT based DPWs, thus opening up an even greater user community. In the next four years Commission II will therefore concentrate on four aspects of digital systems: developing more automation; integration of data from different sources in photogrammetric systems and GIS; encouraging greater communication between manufacturer and user, and real time systems.

SAR data from satellite and aircraft is becoming increasingly important in mapping applications, particularly for DEM generation using interferometric techniques and more recently, stereoscopic techniques. At the same time SAR is becoming increasingly important as a complementary source of data for a range of applications including agricultural monitoring, hazard prediction and disaster monitoring. For this reason SAR needs to be more understood and integrated with other data. More image processing systems are providing facilities for handling SAR and better algorithms are being developed. Commission II has set itself the objective of extending the use of SAR as a source of geo spatial data, we will organise activities which will remove the mystique from SAR and will extend awareness of the potential of the data and of the tolls available to exploit it. SAR with therefore play an important part in Commission II activities.

Commission II will collaborate with other organisations in the area of making efficient use of the wide range of data types and of the large volumes of data becoming available from satellite sensors and aircraft. We

will encourage the dissemination of such data for a range of applications. The Committee for Earth Observing Systems (CEOS) and the Centre for Earth Observation (CEO) of the European Commission are playing an important part in this activity. CEO by promoting the use of Earth Observation data and encouraging the use of the Internet and other media and CEOS by considering interpretability and formats.

An important activity in the use of this wide range of data is its use to solve specific problems through the design of one off systems. A new working group will be considering this activity and will be considering problems which arise and coordinating development of common tools and expertise.

To deal with these topics the following working groups have been set up.

WG II/1: REAL TIME MAPPING TECHNOLOGIES
Chair: Rongxing Li (U.S.A.)
Co-Chair: Holger Schade (Switzerland)
Secretary: Charles Toth (U.S.A.)

WG II/2: SOFTWARE AND MODELLING ASPECTS FOR INTEGRATED GIS
Chair: Menfred Ehlers (Germany)
Co-Chair: Mark Gahegan (Australia)
Secretary: Magdalena Gelhaus (Germany)

WG II/3: SPATIAL DATA HANDLING TECHNOLOGIES
Chair: Henrik Osterlund (JRC, Italy)
Co-Chair: Wyn Cudlip (U.K.)

WG II/4: SYSTEMS FOR PROCESSING SAR DATA
Chair: Douglas Corr (U.K.)
Co-Chair: David Stanley (Canada)
Secretary: Dawn Williamson (U.K.)

WG II/5: SYSTEMS FOR INTEGRATED GEOINFORMATION PRODUCTION
Chair: Charlotte Gurney (U.K.)

WG II/6: INTEGRATION OF IMAGE UNDERSTANDING INTO CARTOGRAPHIC SYSTEMS
Chair: David McKeown (U.S.A.)
Co-Chair: Olivier Jamet (France)
Secretary: Chris McGlone (U.S.A.)

WG II/7: PRACTICAL AND IMPLEMENTATION ISSUES IN DIGITAL MAPPING
Chair: John Thorpe (U.S.A.)
Co-Chair: Jose Colomer (Spain)
Secretary: Wolfgang Schickler (U.S.A.)

WG II/8: DIGITAL SYSTEMS FOR IMAGE ANALYSIS
Chair: Christian Heipke (Germany)
Co-Chair: Tapani Sarjakoski (Finland)
Secretary: Konrad Eder (Germany)

ACCOMPLISHMENTS

At the end of 1996, 7 of the Commission II Working groups have been established with proposed programmes for the next two years. Amongst the working groups chairs are representatives from CEO and CEOS and from commercial and government organisations who are working in the area of SAR and system design. Several of the working groups have prepared and distributed their first newsletter. It is clear that extensive use is being made of the Internet for communication.

ACTIVITIES

In 1997 the following working group meetings are planned:

WG II/1:

Real Time Mapping Technologies Sessions at International Symposium on Kinematic Systems in Geodesy, Geomatics and Navigation, Banff, June 1997.

WG II/3:

Workshop on Spatial Data and metadata formats and applications involving data integration. September 1997.

WG II/6 and II/8:

Integration of image understanding into cartographic systems Conference on Integrating Photogrammetric techniques with Scene Analysis and Machine Vision III at SPIE Aerosense Symposium, Orlando, Florida, April 1997.

WG II/7:

Meeting at ASPRS Convention, Seattle, April 1997 Seminar in Barcelona, December 1997.

WG II/8:

Workshop on Theoretical an Practical Aspects of Surface Reconstruction and 3D Object Extraction, Haifa, Israel, September 1997.

WG II/6:

Has set up a Joint OEEPE/ISPRS test on performance of tie point extraction in automatic aerial triangulation and this in progress at present.

2000 XIX ISPRS CONGRESS AND EXHIBITION "GEOINFORMATION FOR ALL"

The Netherlands Society for Earth Observation and Geoinformatics (NSEOG) has the honor to organize the 19th ISPRS Congress and Exhibition in the year 2000. For the Netherlands, a densely populated country with high demands on physical and scientific infrastructures, the geoinformation sciences and corresponding industry are vitally important. Early land reclamation dating back to the Tenth Century would not have been possible without a mastery of land surveying techniques. Throughout history, there has been an ever-increasing demand for accurate maps from the maritime user society at large. This earned Dutch cartographers such as Ortelius, Mercator and Blaeu an international reputation during the 16th and 17th century.

The ISPRS Congress was held in the Netherlands in 1948, when Professor Schermerhorn, geodesist and first Prime Minister after World War II, was president of ISPRS. For the Netherlands the important result of this Congress was the establishment of ITC, the International Institute for Aerospace Surveys and Earth Sciences, in 1950 upon the ISP's recommendation. ITC offers training for students mainly from developing countries and plays a leading role in the production of geographical information in these countries. In the year 2000 ITC will celebrate its 50th anniversary. Many of the almost 15,000 alumni of ITC are expected to attend both the ISPRS Congress and the ITC anniversary programme. Hence the motto of the Congress:

GEOINFORMATION FOR ALL

The 19th ISPRS Congress and Exhibition with the theme Geoinformation for All will be organized at the RAI International Exhibition and Congress Center in Amsterdam. Venue dates for the Congress are Sunday, July 16, 2000 until Sunday, July 23, 2000. The main body of the Congress will be preceded by tutorials (to be organized on location) on Friday, July 14, 2000 and Saturday, July 15, 2000 and followed by in-depth workshops starting Monday, July 24, 2000 and ending Wednesday, July 26, 2000. Thus the programme consists of three components: tutorials, the main body of the Congress and in-depth workshops

A) Tutorials are refresher and advanced courses to upgrade knowledge in specific fields.
B) Main body of the Congress is composed of technical and poster sessions, an exhibition, and General Assemblies.
C) The in-depth workshops are held after the Congress and enable in depth discussion by experts on selected themes.

Total number of papers for the ISPRS 2000 Congress are:

700 Poster presentations
304 Papers in Technical sessions of which 76 invited papers
226 Papers in Workshops
4 General Assemblies

A major component of the 19th ISPRS Congress will be the commercial and scientific exhibition that will provide participants insight into up-to-date developments in photogrammetry and remote sensing. Amsterdam RAI has ample space for this exhibition adjacent to the meeting rooms.

A homepage with information about the 19th ISPRS Congress and Exhibition is presently under construction and presumed operational early 1997. Currently, information is available from the Congress secretariat at isprs@itc.nl e-mail address. For a coherent programme and to ensure a spirit of great international cooperation and solidarity pre- and post-Congress tourists visits as well as exiting social events will be organised.

Members organizing committee for the 19th ISPRS Congress and Exhibition are:

Prof. Dr. K.J. (Klaas-Jan) Beek, Congress Director, ITC; Prof. Dr. M. (Martien) Molenaar, Scientific Director, ITC; Dr. F.D. (Freek) van der Meer, Secretary, ITC; Mrs. S. (Saskia) Tempelman, Secretariat, ITC; Ir. R. (Rob) Neleman, Treasurer, Cadastre; Ir. G.J.A. (Gerard) Nieuwenhuis, Member, DLO-SC

Abstract and manuscript deadlines and other communication scheduled are:

First announcement	January 1998
Exhibition Call Brochure	April 1998
Call for papers	March 1999
Second announcement	July 1999
Deadline for Abstracts	September 1999
Deadline for manuscripts	March 2000
Preliminary Programme	April 2000
Final Programme	July 2000
Exhibition Guidebook	July 2000
List of registrants	July 2000

AMSTERDAM RAI, INTERNATIONAL EXHIBITION AND CONGRESS CENTER

The 19th ISPRS Congress and Exhibition will be held in the Amsterdam RAI International Exhibition and Congress Center which is situated in one of Amsterdam's green and leafy suburbs, only 3 kilometer from the historic city center and 10 kilometers from Amsterdam Schiphol Airport. Over 1000 international meetings lasting anywhere from three days to several weeks have been successfully organized in Amsterdam RAI during the past 30 years. Annually the RAI welcomes over 2.5 million visitors to its exhibitions, trade fairs and congresses and hosts an average of 50 major international congresses and numerous smaller meetings and events. The RAI has 22 conference halls and meeting rooms with a seating capacity of 16 up to 1,750 persons surrounded by spacious lounges, located under one roof. A total of 11 multipurpose exhibition halls of 990 sq m up to 18,000 sq m will be the floor for a technical exhibition. The RAI has its own harbour from which boat trips through Amsterdam's ring of canals can be made.

PROFESSIONAL CONGRESS ORGANIZATION BUREAU

To ensure the best possible preparation and smooth running of the 19th ISPRS Congress, a professional Congress organizer, Holland Organizing Center (HOC), is involved. HOC was founded in 1958 and with a permanent staff of 20 handles 25-30 meetings per year.

AMSTERDAM: HISTORICAL AND CULTURAL CITY

Amsterdam, the capital of the Netherlands and location for the 2000 ISPRS Congress, was once the world capital for the production of maps and globes. Its richness in culture, theaters, museums and restaurants draws huge numbers of visitors from all over the world. The Netherlands is also the gateway to other tourist attractions in Europe. Amsterdam, with its 700,000 inhabitants is a city with a highly individual atmosphere created by its beautiful symmetrical rings of canals with over 1000 bridges, its sense of energy and purpose, and its cultural treasures. The 1987 Cultural Capital of Europe has 42 museums including the Rijksmuseum, the Van Gogh museum and the Municipal ('Stedelijk') museum. It also is home to the famous Royal Concertgebouw Orchestra, the Dutch National Ballet, the Dutch Dance Theater and the Dutch Opera.

Schiphol Amsterdam international airport is a modern airport which has direct scheduled flights to 220 cities in 94 countries by 85 airlines. The RAI Congress center has its own railway station providing direct (8 minute) service to the airport every 15 minutes. All hotels in the city center can be reached by train, tram, bus or metro in less than 20 minutes while several hotels are located in walking distance from the RAI.

MEET IN AMSTERDAM

WELCOME TO THE

XIX CONGRESS OF THE INTERNATIONAL SOCIETY FOR PHOTOGRAMMETRY AND REMOTE SENSING

"GEO-INFORMATION FOR ALL"

AMSTERDAM, THE NETHERLANDS
14TH - 26TH JULY 2000

ISPRS CONGRESS DRECTOR: Prof. Klaas Jan Beek
Land Resources & Urban Sciences, ITC
PO BOX 6. NL-7500 AA Enschede, THE NETHERLANDS
Tel: +31-53-4874.214 or 511; Fax: +31-53-4874.200, E-mail: Beek@ITC.NL

ISPRS TECHNICAL COMMISSION III: "THEORY AND ALGORITHMS"

President: (left)
Toni Schenk (U.S.A.)

Secretaries:
Kim Boyer (U.S.A.) and
Ayman Habib (U.S.A.)

1. INTRODUCTION

This first annual report contains my comments on the report of the Congress submitted by the former TCP of Commission III, Professor Heinrich Ebner. Also indicated are measures we have taken to implement some of the suggestions made by the Commission, as recommended in the Resolutions at the Vienna Congress in July 1996..

2. STRUCTURE OF COMMISSION III

The major change in the structure of Commission III compared to the previous period is the elimination of intercommission working groups. Other changes are due to the resolutions. Every WG is responsible for one or more resolutions endorsed at the Congress. Six (6) Working Groups have been stablished:

WG III/1: INTEGRATED SENSOR CALIBRATION AND ORIENTATION
Chair: Peggy Agouris (U.S.A.)
Co-Chair: Ismael Colomina (Spain)
Secretary: Anthony Stefanidis (U.S.A.)

WG III/2: ALGORITHMS FOR SURFACE RECONSTRUCTION
Chair: Amnon Krupnik (Israel)
Co-Chair: Charles Toth (U.S.A.)
Secretary: Maxim Fradkin (Israel)

WG III/3: FEATURE EXTRACTION AND GROUPING

Chair: (left)
Heinrich Ebner (Germany)
Co-Chair:
Ram Nevatia (U.S.A.)
Secretary:
Helmut Mayer (Germany)

WG III/4: IMAGE UNDERSTANDING / OBJECT RECONGITION
Chair: Wolfgang Eckstein (Germany)
Co-Chair: Eberhard Guelch (Germany)
Secretary: Carsten Steger (Germany)

WG III/5: REMOTE SENSING AND VISION THEORIES FOR AUTOMATIC SCENE INTERPRETATION
Chair: De Liang Wang (U.S.A.)
Co-Chair: Beata Csatho (U.S.A.)
Secretary: Erzsebet Merenyi (U.S.A.)

WG III/6: THEORY AND ALGORITHMS FOR SAR
Chair: Lauren Polidori (France)
Co-Chair: Soren Madsen (Denmark)

2. THEORY AND ALGORITHMS IN PHOTOGRAMMETRY AND REMOTE SENSING AFTER THE CONGRESS

2.1 Integrated sensor calibration and orientation

WGIII/1 is directly responsible for addressing the issues raised in this section. Although GPS is a fact that no longer requires substantial theoretical or algorithmic investigations, one should not overlook the fact that on the sensor integration side, particularly GPS and INS, future theoretical work is necessary. Hopefully, WG III/1 will make contributions in that regard.

Personally, I am quite sceptical with the statement that "The complete direct measurement of all 6 orientation parameters by means of a combination of GPS and INS will finally eliminate aerial triangulation..." This scepticism does not stem from the fact that the attitude information from current systems is inferior to what aerial triangulation delivers, since it may be overcome by future systems. The scepticism is more related to the problem of associating the exterior orientation to the imagery. Again, WG III/1 is charged with clarifying this issue.

2.2 Feature extraction and object recognition

By and large I agree with the assessment and the future direction of Commission III, that it should undertake research in feature extraction and object recognition. In fact, object recognition and image understanding is the central theme of Commission III. Not surprisingly, all WGs (perhaps with the exception of WG III/1) have object recognition and image understanding on their agenda. WG III/4 and WG III/5 are solely dedicated to this problem.

2.3 Digital photogrammetric systems

I fully agree with the statement that the automation of photogrammetric procedures, such as orientation, DEM generation, and mapping must be pursued by Commission III. Considering the WG structure of Commission, one may conclude that these issues are not addressed, for there

is no WG explicitly labelled with studying digital photogrammetric workstations. However, automation is a central theme in all WGs. WG III/1 deals with automatic orientation, including aerial triangulation, WG III/2 with automatic generation of DEMs, WG III/3 with automatic feature extraction, WG III/4 and WG III/5 with automatic object recognition and classification.

2.4 Conceptual aspects of GIS

Some of the conceptual aspects of GIS are addressed by Commission IV during this period. However, those aspects which are common to GIS and object recognition/image understanding, such as, modelling, scale space representation, uncertainty handling, are still actively pursued in Commission III. Future progress in these areas depends much on the cooperation of the respective WGs in Commission III and Commission IV. This can be facilitated by joint workshops, for example.

I like to conclude this first annual report by expressing my thanks to all Commission III officers who took on the charge of organising the WGs and the challenge of working on our exciting scientific agenda.

ISPRS TECHNICAL COMMISSION IV: "MAPPING AND GEOGRAPHIC INFORMATION SYSTEMS"

President: (left)
Dieter Fritsch (Germany)

Secretaries:
Monica Sester (Germany) and
Markus Englich (Germany)

STATE OF SCIENCE AND TECHNOLOGY OF COMMISSION IV TOPICS

The above Terms of Reference (ToR) have been defined after the Vienna Congress in July. It is a well-known fact, that topographic and thematic maps are stored more and more digitally in large databases. This reflects the new structure of Commission IV, which was redefined to take into account especial topics of Geographic Information Systems (GIS). When looking into GIS research and applications, as far as an international scale is concerned, it becomes clear that ISPRS could become the homebase for GIS. No other disciplines have the huge potential to solve topographic data capture, data structuring and data retrieval as efficient as photogrammetry and remote sensing. This widely reflects the work to be done during the next quadrennial.

In the second half of 1996 work was directed to the set-up of the new TC IV structure. Therefore, no highlights of the new WGs can be reported, only the experience and optimism that the new working groups started very enthusiastic and will definitely have success within the oncoming period. It is fascinating for the time being to observe the programmes in high resolution earth observation systems, the set-up of spatial data infrastructures, and the fast growth in information technology. These milestones will have great impact on the scientific work of TC IV. As can be derived from the Terms of Reference of the eight TC IV WGs, we are prepared to highlight new progress in all areas of mapping and GIS in the near future.

COMMISSION IV NEWS CIRCULATION

An initiative has started which circulates all news of Commission IV using an electronic news paper called **"The Mapping and GIS Monthly (MGM)"**. This helps not only to keep all WG Chair, Co-Chair, and WG members informed about the activities of Commission IV, but it intends to announce all relevant information related to the ToR and of general interest.

All details of the Terms of Reference (ToR) of the Working Groups are given in the ISPRS Home Page, and will also be printed in the next edition of ISPRS Highlights.

WORKING GROUPS AFTER THE VIENNA CONGRESS

INTERCOMMISSION WORKING GROUP IV/III.1 GIS Fundamentals and Spatial Databases

Chair: Martien Molenaar (The Netherlands)
Co-Chair: Y.C. Lee (Hong Kong)

IC IV/III.1 News

The Intercommission WG IV/III.1 will organise a **Joint Workshop on Dynamic and Multi-Dimensional GIS, 25-26 August 1997 in Hong Kong.** The joint workshop is supported by further WGs who are co-organizers:

ISPRS WG II/1 (System Integration)
ISPRS WG IV/1 (Database Design and Spatial Data Access)
ISPRS WG IV/3 (Temporal Aspects and Data Revision)
IGU Study Group on Geographical Information Sciences

The following topics will be dealt with during this workshop:

Spatial information theory
Spatio-temporal databases
3D data modelling
Multi-scale and multi-media representation

ISPRS

CLOSE-RANGE TECHNIQUES AND MACHINE VISION

COMMISSION V

1996 - 2000

HAKODATE

International Symposium on

REAL-TIME IMAGING AND DYNAMIC ANALYSIS

Hakodate, Japan, June 2 - 5, 1998

函浪 ROMANTIC HAKODATE 館漫

SYMPOSIUM TIMETABLE

Deadline for Abstracts:	January 15, 1998	Deadline for Full Papers:	April 30, 1998
Notification of Acceptance to Authors:	February 28, 1998	Full Papers Young Author's Award:	Feb. 28, 1998

ISPRS TECHNICAL COMMISSION V: CONTACT ADDRESS

President: Dr. Hirofumi Chikatsu. Dept. of Civil Engineering - Tokyo Denki University, Hatoyama. Saitama. 350-03. JAPAN.
Tel: +81-492-96-2911; Fax: +81-492-96-6501, E-mail: chikatsu@g.dendai.ac.jp.

Secretary ISPRS Commission V: Dr. Eihan Shimizu. Dept. of Civil Engineering, University of Tokyo. Hongo 7-3-1, Bunkyo - ku, Tokyo 113, Japan.
Fax: 81-5689-7290. E-mail for general inquiries: shimizu@planner.t.u-tokyo.ac.jp. E-mail for submission of Abstracts: abstract@planner.t.u-tokyo.ac.jp.

Data revision and database updating
Dynamic data modelling
System integration
Spatial analysis

INTERCOMMISSION WORKING GROUP IV/III.2
Integration of Image Analysis and GIS

Chair: Emanuel Baltsavias (Switzerland)
Co-Chair: Michael Hahn (Germany)
Secretary: Dirk Stallmann (Germany)

IC IV/III.2 News

The Intercommission WG IV/III.2 will organise a **Joint Workshop on 3D Reconstruction and Modelling of Topographic Objects, 17-19 September 1997, Stuttgart, Germany.**

The following ISPRS WGs are co-organizers of this joint workshop:

WG III/4 (Image Understanding/Object Recognition)
WG IV/2 (Digital Terrain Models, Orthoimages and GIS).

The topics to be dealt with are as follows:

- 3D object recognition and extraction
- 3D object models in image analysis and GIS
- Integration of multiple cues and knowledge sources: GIS supported object recognition, and the use of DSMs and orthoimages for object recognition
- 3D GIS database generation and update, with emphasis on urban applications
- Encapsulation, representation, and use of knowledge
- Use of image analysis for extracting height information for 2D geo-databases

WG IV/1
DATABASE DESIGN AND SPATIAL DATA ACCESS

Chair: Lutz Pluemer (Germany)
Co-Chair: Max Egenhofer (USA)

Working Group IV/1 News

WG IV/1 Is co-organizer of the Joint Workshop on Dynamic and Multi-Dimensional GIS, 25-26 August 1997 in Hong Kong (see details IC WG IV/III.1)

WG IV/2: DIGITAL TERRAIN MODELS, ORTHOIMAGES AND 3D GIS

Chair: (left)
Roy Welch (USA)
Co-Chair:
Klaus Tempfli (The Netherlands)
Secretary:
Marguerite Remillard (USA)

State of Science and Technology of WG IV/2 Topics

During the last quadrennial one major development was the increase in performance of personal computers, thus enabling GIS products to be run on small computers, such as MapInfo, Arcview, WINCAD, etc. Another important topic is the automated generation of regional, national and global DTMs, in particular from space (e.g. MOMS02/D2). Furthermore, there is a huge demand for 3D urban modelling and also orthoimages for GIS data revision.

Working Group IV/2 News

Working Group IV/2 is co-organizer of the joint workshop 3D Reconstruction and Modelling of Topographic Objects (see details IC WG IV/III.2).

WG IV/3 - TEMPORAL ASPECTS AND DATA REVISION

Chair: Jun Chen (China)
Co-Chair: Fabio Crosilla (Italy)

Working Group IV/3 News

WG IV.3 - Is co-organizer of the joint workshop on Dynamic and Multi-Dimensional GIS, 25-26 August 1997 in Hong Kong (see details IC WG IV/III.1)

WG IV/4 - MAPPING USING HIGH RESOLUTION SATELLITE IMAGERY

Chairman: (left)
Gottfried Konecny (Germany)

Co-Chair:
Donald L. Light (USA)

State of Science and Technology of WG IV/4 Topics

This working group is strongly affected by the most recent initiatives of mapping from space. It is an interesting point to see, how the satellite systems SPOT, MOMS02/Priroda, IRS-1C, and EARLYBIRD, ORBVIEW and SpaceImageing will have impact on photogrammetric image acquisition.

Working Group IV/4 News

The WG IV/4 will hold a **Joint Workshop on Imaging Sensors and Mapping from Space, 29 Sept.-2 Oct. 1997, in Hannover.** This joint workshop is co-organized by the following ISPRS WGs

WG I/1 (Sensor parameter standardisation and calibration)
WG I/3 (Sensors and platforms for topographic survey)

It will offer the possibility to developers, researchers, and users to review and discuss the topics below and to find recommendations for future developments

- Geometric and radiometric sensors calibration
- Sensors parameter standardisation
- Status of sensors for mapping
- Situation of SAR and laser scanning
- Status and technical definition of High Resolution satellite imagery
- Mapping potential of existing High Res satellite imagery

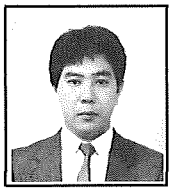
WG IV/5 - EXTRATERRESTRIAL MAPPING
Chair: Jan-Peter Muller (UK)
Co-Chair: Randy Kirk (USA)
Secretary: Karl Mitchell (UK)

WG IV/6 - GLOBAL DATABASES SUPPORTING ENVIRONMENTAL MONITORING
Chair: Ryutaro Tateishi
Co-Chair: David Hastings

ISPRS TECHNICAL COMMISSION V: "CLOSE-RANGE TECHNIQUES AND MACHINE VISION"

President: (left) Hirofumi Chikatsu (Japan)

Secretary: (right) Eihan Shimizu (Japan)



INTRODUCTION

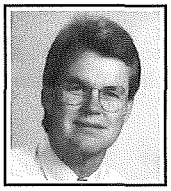
The last four years (1992-1996) have been a period of great change in photogrammetry from analog to digital. Digital photogrammetry based on images recorded in real time is expected to become a useful tool in various fields, eg. industry metrology, machine and robot vision, medical and sports science, archaeology, architecture and construction management. There are still, however, some issues which need to be resolved before real time photogrammetry may become operational. These problems include accuracy, measuring speed, imaging and recording, the handling of large volume of data, integration with multimedia etc.. Especially, integration of virtual reality, computer graphics, computer aided design and animation techniques with digital photogrammetry will become indispensable to development of future Commission V. With this motivation for studies in digital close-range photogrammetry, the Terms of Reference and WGs have been established.

The Working Groups are as follows:

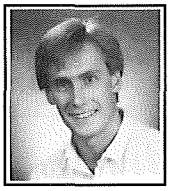
- **WG V/1:** Close-Range Imaging and Metrology
- **WG V/2:** Integration of Photogrammetric System with CAD/CAM
- **WG V/3:** Scene Modelling for Visualization and Virtual Reality
- **WG V/4:** Human Motion and Medical Image Analysis
- **WG V/5:** World Cultural Heritage
- **IC WG:** V/III Image Sequence Analysis
- **Special Interest Group on "Animation"**

We are planning the mid-term **Symposium of Commission V "Real-time Imaging and Dynamic Analysis" in Hakodate, Japan, 2.-5. June, 1998.** We are honored to report that all WGs of Commission V and the Special interest group are actively in development of Commission V through active workshops in 1997 and 1999, participation in related international congresses and setting up of a home page on Internet WWW. We have also updated the WWW home page of Commission V from Dr. Mark R. Shortis who was the former secretary of Commission V. Although we have not completed the setup of new home page due to some troubles on our part, we are planning to open it shortly.

WG V/1: CLOSE-RANGE IMAGING AND METROLOGY



Chair: (left) Clive S. Fraser (Australia)
Co-Chair: (right) Horst Beyer (Switzerland)



State of The Science

With regard to the off-line and on-line systems, there seems to be renewed impetus in the development of multi-sensor, real-time systems capable of high precision (e.g. 1:50,000 and better). Automated orientation, tracking and feature/target identification are current topics receiving research attention. Automated orientation procedures are also being focused upon in research and development into off-line systems.

A conspicuous 'holy-grail' in developments in digital imaging systems is the 'vision engine' which is essentially a single integrated circuit comprising the CCD array and the necessary image processing hardware and software. In the absence of this development, there are efforts in photogrammetry to integrate the computer processor into the camera, as exemplified by the new INCA series of cameras.

Sensor and system calibration, although reasonably mature from a practical applications point of view, still offers some unresolved problems. Aspects such as CCD chip topog-

raphy, the impact of sensor dynamics and more comprehensive modelling of low-cost, off-the-shelf lens systems are receiving research attention, as is the subject of effective calibration strategies for multi-sensor, on-line systems.

Mathematical models and algorithms impact upon the whole photogrammetric process from image capture and processing, through mensuration, system calibration and final exterior orientation and triangulation. Research endeavours into models and algorithms span all areas, with current attention being focussed on image mensuration (including matching), automated sensor orientation determination and sequential estimation procedures for both off-line and on-line systems.

A perennial quest in photogrammetry is improved system accuracy and productivity, and this is very much the case in industrial close-range photogrammetric systems. System performance evaluation continues to attract a lot of industry attention, especially in the context of statistical process control. Finally, new areas of application for vision metrology are continuing to emerge as these systems become more flexible, automated and, to some degree, autonomous.

Future Plans

Plans for the Working Group for 1997 include three principal endeavours:

1. Establish a 'core' group of active members and encourage a free flow of information between members, utilizing the ISPRS web site, for example.
2. Actively participate in the July, 1997 Coordinate Measurement Systems Committee (CMSC) Meeting in Orlando, and endeavour to have a special ISPRS WG V/1 session.
3. A similar active participation is also planned for the Industrial 3-D Measurements Conference scheduled for Zurich in October, 1997. Once again, special ISPRS WG V/1 sessions are envisaged.

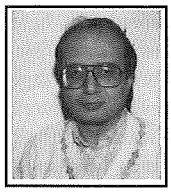
WG V/2 INTEGRATION OF PHOTOGRAMMETRIC SYSTEMS WITH CAD/CAM

Chair: (left)
Juergen Peipe
(Germany)
Co-Chair: (right)
Scott Mason
(South Africa)

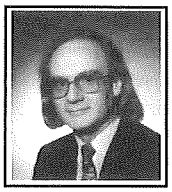
The interrelation between digital close range photogrammetry, or vision metrology, and CAD/CAM becomes evident in many aspects. CAD models contain a priori knowledge of object shape. They deliver input information in planning stages, e.g. for network design, target placement and illumination planning, and support the measurement process itself enhancing the degree of automation, e.g. by providing approximate positions of points to be measured or by guiding the automatic measurement with object-oriented constraints. In the latter case, the human operator is responsible for scene interpretation and modelling approximations of objects in the CAD software, whilst precise object recognition and measurement is carried out automatically based on the approximations (interactive model-based 3-D feature extraction). On the other hand, the results from photogrammetric processing are used to generate object models in a CAD system, e.g. capturing of as-built dimensions for plant documentation, or to compare the data with CAD/CAM engineering design values to determine the degree of conformance. In a broader sense, vision metrology can be seen as a 3-D measurement tool within a CAD environment to provide information for object visualization, manipulation, animation etc..

The future plans include the organization of a workshop and/or technical sessions connected to the Fourth Conference on Optical 3-D Measurement Techniques to be held from September 29 to October 2, 1997 in Zurich, and another workshop to be held in Munich or Cape Town in 1999.

WG V/3 SCENE MODELLING FOR VISUALIZATION AND VIRTUAL REALITY



Chair: (left)
Sabry El-Hakim
(Canada)
Co-Chair: (right)
Wolfgang Förstner
(Germany)



The goal of the working group is to coordinate research and activities that address the terms of reference. In pursuing this goal, the following activities are planned:

- Providing several test data, each consisting of many views (images), of sites and objects to the participants. The objective is to build VR models that allow the viewer to visualize and interact with these model in 3-D. The outcome of the test will be the evaluation of the different procedures used by the individual users and the identification of the problem areas along with any found solutions to these problems.
- Establishing a World Wide Web site for the working group to provide information on; the activities of the working group, technology updates, the activities in the VR research and industry, and links to useful VR sites and data sources. The site will provide the forum for the communication between the working group and its members.
- Organizing technical sessions in the ISPRS Commission V Symposium in Hakodate, Japan in 1998.
- A workshop to address working group related issues and to present and discuss the test results. The date is most likely in summer of 1999.
- Organizing technical sessions in the ISPRS Congress in Amsterdam, Netherlands in 2000.

Overview of the Technology

Virtual environments are defined as the real-time graphics interaction with three-dimensional models, when combined with a display technology that gives the user immersion in the model world and direct manipulation. The technology will radically change the way people interact with computers and allow them to act as if they were in places they are not. Virtual exploring of real places and environments, either for leisure, engineering design, simulations, or tasks in remote hazardous environments, is more effective and useful if geometrical relationships and dimensions in the virtual model are accurate. Also, since in VR the rendering of images must respond immediately to one's movements, the relationship between the viewer's head and hands and the 3-D environment must be continuously and accurately known. This is also true for interacting with and manipulating objects in that environment. The degree of accuracy of the modelling and positioning will widely vary with applications. Even within an application the accuracy requirements may vary. For example, the accuracy of the spatial location and orientation of doors and openings through which the viewer or moving platforms will go, is higher than other details.

The "computer-generated" environment can be a truthful representation of the "real" environment if precise, well-calibrated, sensors or cameras are used to digitize the latter to create the former. However, for several reasons such as availability and cost, most models are built by either using standard geometric primitives, libraries of pre-modelled objects, or manual digitizing of every point. Building such a model graphically for a detailed environment takes enormous efforts and time and may look unrealistic. On the other hand , digitizing the environment with 3-D scanners or camera systems is an excellent alternative to graphically creating the model. It saves time and effort while providing a more realistic model. Real-world 3-D image-based VR can advantageously complement or replace artificially created VR in many endeavors.

There are many different sensor technologies that can be used to generate 3-D data, either directly such as range sensors, or indirectly such as CCD cameras. A single type of sensor usually do not provide sufficient data to completely reconstruct an entire environment. However, the 3-D data captured by the different types of sensor are usually complementary; each can accurately provide data on only certain types of object or scene subsets. For example, range data from a laser scanner can be accurate and complete over a continuous surface but may produce erroneous results on surface discontinuities such as edges. They also usually do not provide good texture images. By contrast, intensity images produced by CCD cameras cannot provide complete or accurate 3-D measurements on continuous surfaces, but can provide high accuracy on edges. Photogrammetric techniques applied to CCD images, particularly bundle adjustment, can be used to give accurate 3-D coordinates for certain features, boundaries or edges, and provide the position and orientation of each image in order to properly use it for texture mapping. Photogrammetry can also be used to assist in the registration of the 3-D images generated by range cameras.

Current Status of the Technology and Applications

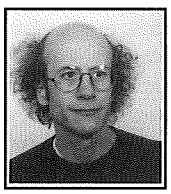
The technology, which started decades ago with flight simulator and has become very popular since the mid 80s, is still in its infancy. It has also offered more promise and hype than practical applications. However, for the few existing applications, the advantages of VR are tremendous and can not be achieved with other technologies. In order for the technology to become more usable, there are problems that must be solved, mainly:

- Unrealistic, low resolution, displays.
- Insufficient speed of hardware, particularly with high resolution modes.
- Building of models for real objects and sites is difficult, particularly because it requires large number of views and the use of multiple types of sensors. The model must also deal with outliers, data gaps, and complex shapes of surfaces.
- Tracking of viewer is inaccurate and suffers from latency thus result in improper display and interaction.

It is the conflict between the requirements that creates the biggest challenge. For example, increasing the level of detail to improve realism conflicts with the real time requirement. In the application side, true VR applications are still limited. Most VR models and programs that are currently available are designed to demonstrate the technology rather than have a real use. They simply allow the user to walk through or navigate in a pre-created environment. True interaction with the environment is limited or avoided all together. Virtual environments should be considered when real environments are not accessible or dangerous or it is too expensive to construct, modify, or manipulate. Examples of VR application areas that are currently available or being exploited are listed below. The list is meant to show only the range of applications and by no means complete.

- Training applications such as flight simulators
- Military applications, which are also mostly training
- Medical applications
- Industrial design and testing of new products - As-built modelling of industrial sites
- Entertainment
- Education
- Urban planning
- Modelling of hazardous or widely inaccessible environments such as nuclear waste, mining, and underwater sites.

WG V/4 HUMAN MOTION AND MEDICAL IMAGE ANALYSIS



Chair: (left) Thomas Leemann (Switzerland)
Co-Chair: (right) Masako Tsuruoka (Japan)

State of Science and Technology of WG

The paper written by Dr. Harvey Mitchell and Dr. Thomas Leemann, the co-chairs of WG5 - Biostereometrics and Medical Imaging - for the period 1992-1996 (now WG4 - Human Motion and Medical Image Analysis), is titled "The state of medical photogrammetry in the digital imaging era" and are the reflections on the effectiveness of photogrammetry in the biomedical world, and on the future directions of medical photogrammetry (copies of the report can be requested through email: tommy@biomed.ee.ethz.ch).

The paper outlines the problems medical photogrammetry has faced in the past - that medical photogrammetry, even though much time and effort has been devoted, has not made any great impact on the medical world, and in the present, where many of the developments in the field are made by non-photogrammetrists, who have computer vision capabilities and have been more successful in implementing their systems. A survey was conducted on the usage of photogrammetry, and the responses are included in the paper. The paper concludes, that despite these difficulties in medical photogrammetry, that there are some photogrammetric applications, for which there are no viable alternatives, and where photogrammetric measurements can effectively and efficiently be applied usage rates may be high.

Medical photogrammetrists still face an uphill battle to see their techniques implemented on a regular basis in the medical environment. Communication with the medical community is seen as vital in this process, to determine areas of need and to fully understand the requirements of the medical field. In this process various groups in the medical community need to be identified, such as International Research Society for Spinal Deformities and the International Society of Biomechanics Technical Group on 3-D Analysis of Human Movement for example, and the channels of communication between the various groups and the medical photogrammetrists improved.

Activities/Events and Accomplishments of WG in 1996

Most of the activity of WG5 in the course of 1996 was focused on the discussion, evaluation and preparation of the report paper mentioned in the above section. The survey has been stimulated by the concern that significant effort is expended by photogrammetrists to research and development in the field of medical Photogrammetry, but that this effort has almost no impact on the medical community in general.

A summery of the report entitled "The state of medical photogrammetry in the digital imaging era" was presented to ISPRS by H. L. Mitchell in July during the Vienna 1996 Congress. All participating members of WG5 as well as the relevant ISPRS commissioners received a printed copy by November. Partially because of this activity and the raised awareness of the existence of an ISPRS Working Group which focused attention onto the medical applications, the range of papers at the ISPRS Congress in Vienna was quite wide and covered topics such as human motion, facial soft tissue, orthodontics, eye studies, 3D-microscopy studies of cancer cells, spinal deformities and computerised tomography. The emergence of real-time processing and the need to keep the output of the results in a form which will allow a medical practitioner to rapidly assess them were stressed at the Congress.

The survey paper clearly indicated the need for photogrammetrists to communicate with other communities such as the medical world. As a result the co-chairs think that a major part of the forthcoming activities of WG4 will be to act as a mediator between photogrammetrist, biomedical engineers, scientists and clinicians. How this task is best accomplished is currently discussed in detail by the co-chairs.

WG V/5 WORLD CULTURAL HERITAGE

Chair: (left) Petros Patias (Greece)
Co-Chair: (right) Wenhao Feng

State of Science and Technology of WG Topics

According to Commission V Past President Report, the ISPRS Congress in Vienna portrayed the increased emphasis in WG V/5 topics. The largest number of papers for any Working Group in Commission V concerned those in Architectural and Archaeological Representations. Over 45 authors had interesting examples to report. These ranged from the reconstruction of old monuments and buildings using conventional silver-halide photographs to the use of CAD modelling, video, surface matching, digital-still cameras and digital orthoimages to methodologies for the maintenance of inventories of historic cultural items. A Special Session devoted to CIPA covered international aspects of the preservation of historic sites and monuments and aimed to arouse greater interest and international co-operation in such activities. Again the involvement of more than one sensor was a feature of some of the more outstanding papers and the integration of multiple sensors into a system was a recurring theme. The extremely high standard of the presentation of the poster sessions in this topic area deserves special mention as it represented an outstanding effort on behalf of the authors.

In the last term two WWW pages have been established and worth inspection. The first one concerns The Rock Art Home Page: http://sunspot.sli.unimelb.edu.au/aura/Welcome.html The second one is the CIPA Home Page: http://www.p.igp.ethz.ch/cipa/cipa.html

Activities/Events and Accomplishments of WG

Planned activities until 2000 are :

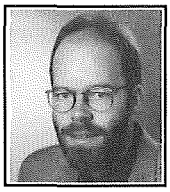
1. Set up the WG V/5 Home page.
2. Technical Sessions during the ISPRS Commission V Inter Congress Symposium in Hakodate/Japan (June 2-5, 1998).

3. A workshop on WG V/5 topics in Thessaloniki/Greece (1999) 4. Technical Sessions during the ISPRS Congress in Amsterdam (2000).

WG Members

The compilation of an e-mail list of potential members has been started. Until the establishment of our Home Page, a short circular letter will be sent to them. After the establishment of the Home Page, all interested persons will be informed through it. A first circular letter will be send out asking for participation.

INTERCOMMISSION WORKING GROUP V/III "IMAGE SEQUENCE ANALYSIS"



Chair: (left) Hans-Gerd Maas (Switzerland)
Co-Chair: (right) Osamu Murakami (Japan)

ISPRS intercommission working group IWG V/III has been established for the period 1996-2000 as a joint working group of ISPRS Commissions V and III

Update information on IWG V/III can be obtained via the new WWW-page

(http://www.geod.ethz.ch/p02/wg_isprs/WG.V_III/WG.V_III.home.html).

Planned activities for 1997 are:

- A workshop on image sequences in 1997 (probably in connection with the 4th Conference on Optical 3-D Measurement Techniques in Zurich, 29.9.-2.10.1997)
- Permanent updates of the IWG V/III WWW-page with links to pages of members and general image sequence related links

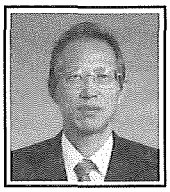
State of the Art in WG topics

Image sequence analysis has been playing an important role in many applications in computer vision, machine vision and robot vision and is also gaining interest in several fields of digital photogrammetry, especially in digital close-range photogrammetry. Examples of the application of image sequence analysis in digital close range photogrammetry are 3-D object tracking, the analysis of dynamic processes, deformation measurements, monocular or stereoscopic mapping of the environment of an autonomous robot, mobile mapping systems, biomedical motion analysis, 3-D data gathering for computer animation, and many others. Image sequence analysis techniques are also gaining interest in aerial photogrammetry in the context of automated triangulation techniques. Sensor fusion and integration is of major importance especially in the field of mobile robots, where the information retrieved from vision systems is combined with data from other sensors like distance meters, odometers, inertial navigation systems or range images acquisition systems, but also plays a role in aerial triangulation, where INS and GPS are used as additional sources of data. The integration of rather different types of sensors requires a careful handling of redundant information and thorough error modelling.

New developments of hardware components are mainly related to the storage of digital image sequences and to the development of highspeed cameras. Digital video systems now coming onto the consumer market at very reasonable prices will considerably simplify the acquisition of monocular image sequences in the near future. The general increase of computer speed will allow realtime solutions for an increasing number of image analysis tasks in the future.

SPECIAL INTEREST GROUP ON "ANIMATION"

Chair: (left) Armin Gruen (Switzerland)
Co-Chair: (right) Shunji Murai (Japan)



The XVIII Congress of the International Society of Photogrammetry and Remote Sensing in Vienna, 9-19 July 1996 has recommended, in its Resolutions, "...[the] development of activities of automatic close-range photogrammetric systems to extract models of objects and sites for applications in visualization and virtual reality" (Resolution V.4) and "...that greater involvement by existing users should be stimulated, and potential users of close-range photogrammetric techniques should be identified and encouraged" (Resolution V.7). Subsequently, a Special Interest Group on "Animation" was formed within ISPRS Commission V.

This group is meant to act as a "study group", being more concerned with the establishment of contacts and the initialization of activities, rather than carrying out concrete projects, tests, etc. The prime goal of this group is the establishment of contacts between the fields of photogrammetry / image analysis / computer vision and animation. As the subjects of our studies we will mainly use objects in motion, e.g. humans and animals. Issues of motion capture, tracking, dynamic surface reconstruction, modelling, etc. will be our focus. It is intended to keep the membership in this group limited to about 15 people. The kernel group has already been set up.

We plan to hold our first two meetings at the Conference "Optical 3-D Measurement Techniques", Zurich, Switzerland, 29.9.-2.10.1997 and at the ISPRS Symposium of Commission V "Real-Time Imaging and Dynamic Analysis" in Hakodate, Japan, 2.-5.6.1998. Other events, like joint meetings with the animation community (e.g. Eurographics group on Animation and Simulation), are already under discussion. Close links to the "Technical Group on the 3-D Analysis of Human Movement" of the International Society of Biomechanics have already been established.

ISPRS TECHNICAL COMMISSION VI: "EDUCATION AND COMMUNICATIONS"

President: (left) Klaas Villanueva (Indonesia)
Secretary: (right) Riadika Mastra, Fahmi Amhar (Indonesia)

State of Science and Technology of Commission Topics

Commission VI was entrusted to Indonesia under the presidency of Klaas Villanueva at the ISPRS Congress in July 1997. During the next four years the commission will concentrate on aspects on education and communication, as well as international cooperation and technology transfer.

Based on the Terms of Reference, four Working Groups have been established:

WG VI/ 1: Education
WG VI/2: Computer Assisted Teaching
WG VI/3: International Cooperation and Technology Transfer
WG VI/4: Internet Resources and Spatial Data Sharing

The Commission's activities are supported by two (2) **Task Forces** which have direct responsibility to the Council, but also provide assistance to the activities of Commission VI. The Task Forces are **"Information and Communications"**, Chaired by **Mr K. Atkinson** of the UK, and **"Educational Opportunities"**, chaired by the Second Vice President **Mr M. Barbosa** from Brazil. Both Task Forces have developed reports for Council on matters related to their work. Mr Atkinson has reported on the implications of publishing the proceedings of the Symposia and the Amsterdam Congress in International Archives for Photogrammetry and Remote Sensing on CDROMs.

Council has determined that the Archives must continue to be published on paper, even though they may also be published on CDROM. Mr Barbosa has developed a blue print for ISPRS sponsored education and training programs in photogrammetry, remote sensing and spatial information systems, and also for a pilot education program in Latin America.

WG VI/1: EDUCATION

Chair: (left) Tania Maria Sausen (Brazil)
Co-Chair: Walter Schuhr (Germany)

WG VI/1 co-organized (INPE, SELPER, ISPRS) the **First Workshop on Education in Remote Sensing Mercosul Wide,** held at Camboriu, SC, Brazil, during May 20 - 23, 1997.

WG VI/2: COMPUTER ASSISTED TEACHING

Chair: K. Cho (Japan)
Co-Chair: J. Hohle (Denmark)

WG VI/2 will arrange a meeting of the WG at the **18th Asian Remote Sensing Conference** in Kuala Lumpur, Malaysia 20-25 October 1997. The WG will produce a CDROM on Computer Aided Teaching (CAT) software for the use of ISPRS members.

WG VI/3: INTERNATIONAL COOPERATION AND TECHNOLOGY TRANSFER

Chair: (left) Luigi Mussio (Italy)
Co-Chair: M. Kosmatin (Slovenia)
Secretary: Bruno Crippa (Italy)

The first meeting of the WG was held in Padua, Italy from February 3-7, 1997 on **"International Cooperation and Technology Transfer".** The meeting was very successful and the Proceedings will be issued in October/ November 1997, as a volume of the **International Archives of Photogrammetry and Remote Sensing** (Vol. 3 1 part 6W 1), containing 36 presented papers (including the papers of the poster session), 6 tutorial lectures, and the report of the opening and closing sessions. The conclusions of the meeting were that it is inappropriate to think that technology transfer could involve the purchase or sale of expensive technologies, or the copying or diffusion of prepared projects. International cooperation requires the mutual development of a generation of scientists, technicians and users within their country of origin; for these reasons, the new term **"technology co-generation"** is preferable to the classical terms **"technology transfer".**

At the ISPRS Technical Commission VI Mid Term Symposium in Bali - Indonesia from August 26-28, 1998, a Tutorial will be held, entitled **"Promote the Growth of Base and Applied Knowledge and its Circulation to Co-Generate Scientists, Technicians and Users Independently of their Country of Origin".** The topic was derived from discussions at the Padua meeting.

Activities of ISPRS WG VI/3 have been organised as follows:

- Bahia Blanca (Argentina), October 27-31, 1997
- Cape Town (South Africa), February 1-5, 1999
- Ljubljana (Slovenia), October 24-29, 1999

The first two meetings aim to repeat the experience of Padua Meeting in different continents, jointly with different Regional Organizations, whilst the task of the third meeting is to prepare the participation of the working group in ISPRS Amsterdam 2000 Congress, concluding positively its four year activities.

WG VI/4: INTERNET RESOURCES AND SPATIAL DATA SHARING

Chair: Tuan-chih Chen (Taiwan)
Co-Chair: John Felkner (USA)

The following is the Program of Activities of the WGVI/4:

- Investigation of the Internet environment for each ISPRS Ordinary Member.
- Promotion of homepages created by each ISPRS Ordinary Member, each Working Group, and each Commission; and linked by the ISPRS main homepage.
- Identification and recommendation of the standards for homepages, especially for Member Reports on the homepage of each Ordinary Member.
- Installation of the ISPRS Virtual Dictionary on Internet.
- Promotion of distributing the ISPRS Highlights via Internet.
- Investigation of the spatial data in each ISPRS Ordinary Member, including format, storage form, accessibility, and sharing policy.
- Promotion, identification, and recommendation of the spatial data sharing on Internet. WG meetings, tutorials, and workshops on the Internet.

Achievements

An Interim Report on WWW coordination in ISPRS has been prepared for Council by WG VI/4, presenting:

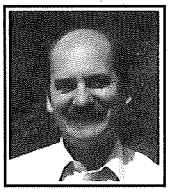
a) guidelines for the development of Web sites by Ordinary Members, Technical Commissions and Working Groups; b) guidelines for E-mail communication within ISPRS; c) protocol for the recognition of addresses collected by others. Ordinary Members, TCPs and WG.

Chairs will be encouraged to develop their own Home Pages, which should be linked to the ISPRS Home Page.

Meetings Planned

- 1997 January: Commission VI Coordination Meeting-Bandung, Indonesia
- 1997 August: WG VI/4 Meeting - Taipei, Taiwan
- 1998 August: Commission VI Symposium & Tutorial/ Workshop - Bali, Indonesia
- 1999 August: WG VI/4 Meeting - California, USA
- 2000 July: ISPRS Congress - Amsterdam, Netherlands

TECHNICAL COMMISSION VII: "RESOURCES AND ENVIRONMENT MONITORING"



President: (left) Gabor Remetey-Fülöpp (Hungary)
Secretary: Peter Winkler (Hungary)
Frank Hegyi (right) (Canada)

State Of Science And Technology Of Commission VII Topics

The significant results and developments in the Commission sessions during the XVIII ISPRS Congress were described by Monica Oliveira, (Secretary Commission VII, 1992-1996) as described in Volume 2 No.1 of ISPRS Highlights.

For the years 1996-2000 new Working Group structure have been proposed as follows:

WG VII/1: Fundamental Physics and Modelling
WG VII/2: Application of Remote Sensing and GIS for Sustainable Development
WG VII/3: Application of High Resolution Satellite Imagery
WG VII/4: Automated Image Interpretation and Analysis
WG VII/5: Global Monitoring
WG VII/6: Radar Applications
WG VII/7: Non-renewal resources and geotechnical applications

Co-operation will be maintained between WG VII/5 and WG IV/4 on large/global dataset management. An Invited Advisory Board members of the Commission VII are serving as rapporteurs:

Sergio Camacho (OOSA, United Nations, AUSTRIA), Simonetta Cheli (ESA, FRANCE), Roberto Pereira da Cunha and Thelma Krug (INPE, BRAZIL), Ake Rosenqvist (NASDA, JAPAN) and Charles T. Wooldridge (NOAA, USA).

Relevant workshops and seminars in the 3rd and 4th quarter of 1996.

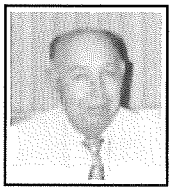
MERA 92 International Workshop on Soil Degradation Assessment with the application of GIS and remote sensing. Budapest, September, 1996. Organised by Pro-

fessor Gyorgy Varallyay, Research Institute for Soil Science and Agricultural Chemistry of the Hungarian Academy of Sciences, this Workshop was attended by scientist of some Central and Eastern European countries as well as representatives of the relevant institutions of the European Union, such as the Space Applications Institute, the Environmental Mapping and Modelling Unit of the Forest and Environment Sector, the European Soil Bureau (all at the Joint Research Centre, Ispra, Italy). Topics discussed were : regional crop/land use inventory; crop yield modelling; forest ecosystem mapping; land degradation assessment and related issues. Scientific topics , relevant structure and forthcoming ISPRS Commission VII activities with special emphasis on the renewable resource and environment monitoring were presented as well.

In frame of an International Seminar Series, a full day session was devoted to "Land use from research to Teaching" held at the Agricultural University, Debrecen Hungary between 9-11 December 1996, organised by Professor Janos Nagy in co-operation with different Hungarian academic institutions. For the selection and implementation of agricultural support schemes, rural development, tax systems (where applicable) all rely upon accurate information concerning land use in the countries in transition. This is the reason, why the seminar has placed so much emphasis on summing up experiences, re considering new tools of data collection, evaluation and visualisation as well as introducing adequate opportunities offered by information technology. Some topics discussed: land use systems and rural development, land use planning and land consolidation, integrated database management and information sources (remote sensing, aerial photo interpretation) for sustainable land use. The distance learning aspects and solutions were also highlighted. Among the participating institutions were academic, governmental, NGOs, and private sector representatives from Ireland to Germany and from Great Britain to the Netherlands.

COMMISSION VII WORKING GROUP ACTIVITIES IN 1996

WG VII/1 - FUNDAMENTAL PHYSICS AND MODELLING



Chair (until 1998):
(left) Gerald Guyot (France)
Co-Chair (until 1998) - Chair (from 1998): Karl Staenz (Canada)
Secretary (Co-Chair from 1998):
Jan Clevers (The Netherlands)
Secretary (from 1998):
Phil Teillet (Canada)

The 7th International Symposium an Physical Measurements and Signatures in Remote Sensing WG VII/1 has been prepared jointly with WG VII/5 (Chairman P. Curran) to take place in Courchevel from 6 to 11 April 1997. It is organized by the French Space Agency (CNES) and the Joint Research Centre (JRC/IRSA) of the European Commission, with the support of: DLR (Deutsche Forschungsanstalt fur Luft- und Raumfahrt), INRA (Institut National de la Recherche Agronomique), NRS (Centre National de la Recherche Scientifique), ESA (European Space Agency), NERC (Natural Environment Research Council), NASA (National Aeronautics and Space Adminstration). The Symposium will also be sponsored by the following scientific societies: European Association of Remote Sensing Laboratories (EARSeL) Association Quebecoise de Teledetection (AQT) Canadian Remote Sensing Society (CRSS), The Remote Sensing Society (RSS) and Societe Francaise de Photogrammetrie et de Teledetection (SPPT).

This symposium is a continuation of the series of 6 symposia organised since 1981 by the Working Group VII/1. It will focus on the following topics: analysis of the relationships between the specific properties of a target (plant canopies, soils, rocks, water bodies, snow, ice) and its spectral characteristics in different spectral domains (from ultraviolet to microwaves), and determination of the factors affecting the spectral response of an object (atmospheric effects), measuring techniques, development of interpretation models. Such research activities are essential for any studies related to remote sensing, and is of interest for any specialist involved in large range of applications: physicists, agronomists, foresters, geologists, hydrologists, oceanologists, meteorologists. Among these applications special attention will be paid to the use of remote sensing for ecosystem monitoring at different scales.

The presentations will cover the following points relative to the whole spectral range covered by remote sensing instruments (short wavelengths, thermal infrared, microwaves):

1 - Data pre-processing: calibration and intercalibration, correction algorithms for instrumental, atmospheric, directional and, topographic effects,
2 - Simulation of space data, physical modelling and sensitivity analysis,
3 - Retrieval of bio-geophysical and chemical parameters: empirical approach (eg. vegetation indices), physical methods,
4 - Use of remote sensing data: assimilation into models, spatial and temporal approaches, synergism between different observation methods.

WG VII/2 - APPLICATION OF REMOTE SENSING AND GIS FOR SUSTAINABLE DEVELOPMENT

Chair:
Dasika Rao
(India)
Co-Chair:
(left) Vernon Singhroy
(Canada)

State of Science and Technology of WG VII/2

The Rio Summit 1992 envisaged that Remote Sensing and GIS have a prominent role in promoting efforts for sustainable development. The agricultural production in the Third World countries is not able to meet the needs of the growing population in these countries. This is because of the advantages acquiring from science and technology are not fully exploited and that a holistic approach for development needs to be exercised. If the development of rural area has to sustain a growing economy and ensure ecological balances, an integrated approach is required to make optimal use of land and water resources. The satellite remote sensing applications for agriculture, soil, water and land management have ample scope to prepare an integrated plan for an action programme for achieving the sustainable development of renewable natural resources. Keeping the aspirations of the local people, an experiment was carried out in India in a major project called Integrated Mission for Sustainable Development (IMSD), where resources information is generated using Remote Sensing and are integrated through GIS to derive local specific activities in consultation with the people and their aspirations. This experiment has yielded very encouraging results. The data from the Indian Remote Sensing Satellite series including the latest IRS-1C which has a state-of-the-art technology has provided valuable information on identification of natural resources at operational scale. It is proposed, that this approach should be further refined, taking into account the need to identify indicators for sustainability. The approach to improve the environmental conditions, monitoring of such improvement through remote sensing and the impact of these activities on the social fabric going into the grass roots level implementation, will have a far reaching impact on acceptability of this technology. In this process, the strengthening of the capacity is an important parameter by building up of scientific capability.

Activities and accomplishments of WG VII/2

During the period, the WG has taken shape with suggestions from some members on the need for conducting short courses on Environment Modelling and GIS and for preparing plans for monitoring land use/landcover. An International Workshop on Sustainable Rural Development using integrated GIS/Remote Sensing, sponsored by UN-ESCAP, was conducted at the National Remote Sensing Agency, Hyderabad from 17-21, September 1996, where participants from 13 developing countries participated. The Workshop unanimously resolved that the holistic approach to rural development using Remote Sen sing and GIS is in the right direction, and that it should be pursued in all developing countries where it is relevant.

News

The Indian Society of Remote Sensing (ISRS), which is a member of ISPRS, during its annual convention on 4th December, 1996 at Puna, India conducted a Special Session on ISPRS WG VII/2 Application of Remote sensing in Sustainable Rural Development Recent Advances in Remote Sensing Technology Data Processing and GIS. Further, at the suggestion of some WG members a short course was conducted on Environmental Modelling and GIS, which addressed the activities requested in the Agenda 21 including: strengthening the basis for sustainable development, building up scientific capacity and capability, improving the analytical and predictive tools required to better understand the environmental impacts of development, and expanding the predictive modelling of the Earth systems.

Preparation of the International Conference on Remote Sensing and GIS/GPS (ICORG-97) by Professor, 18-21 June, 1997 Jawaharlal Nehru Technological University, Hyderabad, India should be mentioned as well. Focal themes are: GIS/GPS for micro level planning; GIS/GPS technology and applications; applied remote sensing for land resources; applied remote sensing for water resources; applied remote sensing for marine resources; integrated surveys for sustainable development, digital image processing; issues of standardisation of data; data formats; business geographics and miscellaneous.

Follow-on activities planed:

The WG VII/2 Chairman Mr.D.P.Rao has started to prepare the 1997 Workshop on "Application of Remote Sensing and GIS for Sustainable Development" to be held in Hyderabad at NRSA, scheduled for 24-25 November 1997. Tutorials will be given on 17-21 November 1997 on Remote Sensing and GIS in Decision Making for Sustainable Rural Development addressing NGOs, administrators and managers.

Spring 1998 - Short Course on Environmental Modelling in GIS under the aegis of ITC (The Netherlands). Venue: Dehra Dun India or Eschede, The Netherlands February 1999 - International Workshop on Integrated Remote Sensing and G IS for Sustainable Rural Development . Venue: Hyderabad or Bangalore, India.

WG VII/3 - THEMATIC APPLICATIONS OF HIGH SPATIAL RESOLUTION SATELLITE IMAGERY

Chair: (left) Bruce Forster (Australia)
Co-Chair: (right) Tina Cary (U.S.A.)

The WG VII/3 was established following the ISPRS Congress held in Vienna, July 1996. This is a new Working Group for Commission VII, and so has no history of previous activities. It was considered that the proposed launch, from 1997 and onwards, of a number of commercially operated satellite systems carrying sensors with

resolutions of less than 1 metre would have a major impact on the spatial information sciences and industries, and it was critical that a new working group address the thematic applications of this new data. This was highlighted at the Congress in a paper by Dr Lawrence Fritz, the now President of ISPRS. According to Fritz (1996) the first of several commercially owned and operated, very high resolution, digital Earth observing satellite systems will be launched into polar orbit in January 1997. He considers that this event will initiate a new era of commercial Earth observation satellites which may well revolutionize the infrastructure, processes and products of the entire photogrammetric/remote sensing/GIS community. It is proposed that "high resolution" should encompass all satellite imagery of 30 metre or less resolution. Resolution is taken to be the picture element (pixel) size and not the IFOV (instantaneous field of view) nor the EIFOV (effective IFOV). The Chairperson of the working group is Professor Bruce Forster (The University of New South Wales, Australia) and the Co-Chairperson is Dr Tina Cary (EOSAT, USA). Currently the terms of reference state that the working group should consider high spatial resolution imagery in terms of its current and potential application in: data integration for urban planning and management; application for improved rural management, including precision farming; and support of local environmental impact studies. It is intended that the working group provide a series of scientific forums to demonstrate the applicability of the data in urban planning, precision farming, rural development and thematic mapping. It is considered that water, forestry and civil engineering applications are also consistent with the terms of reference.

High Resolution Satellite Systems

Currently seven companies; Earth Watch, Space Imaging, Orbital Sciences, GDE, Resource 21 and Israeli Aircraft Industries have imaging systems under development and are establishing international strategic partnerships for reception, value-added processing, distribution and sales. In addition, there are the existing 5 metre resolution Indian IRS-1 system, now providing data in association with EOSAT, Landsat TM (30 metre), SPOTP and XS (10 and 20 metres), and a number of other government proposed high resolution satellite systems planned by China, France, Germany, India, Japan , Russia, South Africa and Spain. The highest resolution systems currently proposed are by Earth Watch and GDE at 0.8 metres.

Future: Proposed Working Group Program

The Chair and Co-Chair of the working group propose to contact a number of interested scientists, users and satellite operators to join the working group, to provide advice on possible research programs, potential applications, and technical advice and launch information. This matter is now being actively progressed. It is also proposed to hold three international seminars in association with planned remote sensing conferences. The first, to be held in Asia, has been approved to run as a special parallel session with the Asian Remote Sensing Conference, in Kuala Lumpur, Malaysia, 28 October to 1 November 1997. The second seminar will be conducted as part of the Commission VII Conference to be held in Hungary in 1998 and the third seminar, not as yet confirmed, is proposed to be held in the United States in 1999 in association with the meeting of the American Society of Photogrammetry and Remote Sensing. It is envisaged that invited representatives of existing and proposed systems would present papers to each of these seminars on the technology, current status and likely or current cost of their high resolution data. Other invited speakers would present a range of papers on current and potential applications. Government and commercial operators would also be invited to support commercial stands.

WG VII/4 - COMPUTER ASSISTED IMAGE INTERPRETATION AND ANALYSIS

Chair: (left)
Barbara Koch
(Germany)
Co- Chair:
Alois Sieber
(EC JRC, Italy)

The main field of interest of the WG VII/4 is the development of data fusion and combination techniques for multi-sensor data analysis and the development of algorithms to analyse spatial structure diversity. With the availability of low to very high spatial resolution satellite data with different spectral characteristics and the disposition of several radar satellites, the use of information from different data types for a certain application becomes more and more attractive. In order to extract the needed information, data fusion and combination techniques will be of increasing importance. The issue will undoubtedly continue to challenge researcher in years to come. Along with the disposition of many very high spatial resolution satellites within the next decade the structure information in satellite data will become most important for many applications. Even though there are some texture algorithms already available, the development in this direct ion is still a challenge, especially for the very high resolution data sets which will have a different statistical behaviour as data with 20m and 30m spatial resolution. The subject provides a wide range of activities to be undertaken in different application fields or interrelated techniques, such as digital photogrammetry.

The main objective of the working group is to coordinate the efforts of researchers and developers in the aforementioned fields, and support the interaction between algorithm developer and the application side. This should be supported by exchanging ideas in form of working group meetings and circular letters. It is also planned to co-ordinate meetings between working groups of different organisation like

EARSeL and IUFRO. The bridge between application and algorithm development is symbolically demonstrated by the working group chair and co-chair. The co-chair is Dr. A. Sieber, scientist at the Joint Research Centre in Ispra, Italy. He has a background in physics and his group proves a comprehensive experience in algorithm development. The chair is represented by Professor Dr B. Koch. Her background is forestry and her group at the University in Freiburg proves long experience in the application of remote sensing in land use with main effort on forestry. Since experts' participation in the WG activities is one of the key components of its successful work, the WG invites them to join the group. This can be done by e-mail, fax or regular mail. When joining the WG, team members will receive further information and updates about the WG activities. A first meeting and WG activity will take place no later than during the International Symposium On Resource And Environmental Monitoring Local, Regional, Global, which is scheduled as an ISPRS mid- term event of Commission VII in September 1-4 1998.

WG VII/5 - GLOBAL MONITORING IN COLLABORATION WITH WG IV/6 (GLOBAL DATABASES)

Chair: (left)
Shintaro Goto
(Japan)
Co- Chair:
Mark Imhoff
(U.S.A.)
Secretary: (right)
Åke Rosenqvist
(Sweden)

Preparation has been started to organise a one-day Workshop on IGBP/Human Dimension programme in Laxemburg/Vienna, Austria in cooperation with IIASA, with participation of the representative of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) Dr.Camacho of Office of Outer Space) scheduled for June, 1997.

WG VII/6 - RADAR APPLICATIONS

Chair:
Toni Milne (Australia)

Co-Chair: (left)
Jürg Lichtenegger
(ESRIN, ESA, Italy)

Objectives

1. Provide information on the suitability of, and assess to the various airborne and satellite radar systems to earth surface analysis.
2. Develop case studies and examples of applications of radar in landcover classification; biomass estimation; forest inventory; wetland mapping; agricultural crop monitoring, urban analysis and sea surface state conditions.
3. Extend radar applications in geological investigations to include interferometric data for mapping topography, identifying landforms and geomorphic processes and soils to undertake landscape evolution modelling and the visualisation of 3-D surfaces.
4. Provide a network for collaboration between researchers involved in developing radar models from radar backscatter information capable of predicting selected geophysical parameters such as soil moisture and biomass.
5. Organise a series of Workshops/Seminars on a regional basis to promote the exchange of ideas and the presentation of results of radar related investigations.

Accomplishments of WG VII/6 during 1996

In October/November 1996 a number of countries in the Asia-Pacific Region collaborated in the NASA-Australia-Asean Pacific Rim AIRSAR Radar Mission. Data, both POLSAR and TOPSAR was collected from nine participating countries in the region.

Tentative Future Work Program and Actions

First PacRim Radar Workshop was held at JPL in 24-28 March 1997 in Monrovia, CA USA. As part of the Workshop, a Seminar was devoted to highlighting JPL's Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) as well as the Thermal Infrared Multispectral Scanner (TIMS) experiments.

1997 Series of Regional Radar Training Workshops in Indonesia, Philippines, Thailand, Malaysia and Australia.

1997-2000 Collaborative research investigations between scientists from the Australian-ASEAN Region in forestry, geology, coastal ecosystems, agriculture and interferometry.

1999 - Significant Results Radar Applications Conference, in Asia (possibly Malaysia).

Activities related to Europe/North America yet to be determined.

WG VII/7 - NON-RENEWABLE RESOURCES AND GEOTECHNICAL APPLICATIONS

Chair:
Tsehaie Woldai
(The Netherlands)

Co-Chair: (left)
James Taranik
(U.S.A.)

The reason for establishing this Working Group.

The geology of a large part of the world (especially in the developing countries) is barely mapped and the application of remotely sensed data for geological mapping is the best alternative in countries where there is no adequate aerial photographs or topographical maps. In the field of mineral and petroleum exploration, image processing and GIS have an important role to play. Data integration and

synergism of various remotely sensed data have become an important element in assessing non-renewable resources. In the field of exploration, the use of other remotely sensed data (eg., geophysical data such as aeromagnetic and gravity data) and the integration of these datasets with images and photos obtained by satellite and airborne means, including high resolution spectral data (from aerial and satellite sensors) and field techniques, is gaining favour among earth scientists worldwide. In the ISPRS Technical Commissions context, only remotely sensed data (eg. MSS, TM, SPOT, RADAR, aerial photographs, etc.) are considered (and not the geophysical datasets). This approach has hindered geotechnical experts and other earth resources scientists specialized in geophysical data handling and processing, from joining into the family of the ISPRS activities. In fact, geophysical data such as aeromagnetic, gravity data etc, are also remotely sensed data which are highly used in geological mapping and in the exploration of minerals and petroleum. The latter involves also image processing, analysis and their integration with other datasets in a GIS.

The use of radar in mineral and petroleum exploration is nothing new. With the coming of the RADARSAT, ERS1/2, JERS, etc. a sudden growth and interest of users in microwave remote sensing is visible. More involvement of the user community in this field for geological applications is necessary in WG VII/7. Emphasis should be laid on its use for non-renewable resources assessment, especially in the tropics where other approaches of obtaining cloud-free remotely sensed data (eg., aerial photographs, satellite remote sensing) have failed.

The active users of radar have shown increased interest in Interferometry for geological and other earth resources surveys. Its use in earthquake hazard mapping, major tectonic and neotectonic activities, etc is suddenly gaining importance. The WG VII/7 should stimulate active participation of such groups in its activities. The selection of case studies of applications of data from the current microwave remote sensing is essential. The most known active environmental disasters for centuries have taken place in geologically recent Quaternary deposits (eg., earthquake in California, Japan, Mexico city, etc.). Less attention is given to these problems in WG VII/7. However, many scientists are actively involved in the neotectonic mapping of such area. The field of Neotectonics should also be considered within the WG VII/7. Geotechnical applications and characterization of rock and soil is also an important element which should be incorporated into the WG VII/7. Engineering Geology involves with the problems of erosion, mass movements, terrain analysis and the mapping of various environmental hazards. Environmental Geology studies for example volcanic, seismic, desertification, slope instability aspects.

Areas of activities

- Application of remote sensing, digital image processing and analysis techniques to mineral and petroleum exploration and to engineering geology.
- Multispectral/multi-polarization radar in geological applications, mineral and petroleum exploration.
- Interferometry in earth sciences and environmental applications.
- High resolution spectral data from aerial and satellite sensors in earth resources surveys with special emphasis to mineral classification and geotechnical characterization of rocks and soil.
- Data integration in geology for mineral, petroleum exploration and geotechnical applications.
- Neotectonic, terrain analysis for the assessment of earthquake hazards Environmental geology
- The impact of mining on the environment (EIA on mining).
- Geophysical image processing and analysis for mineral, petroleum and geotechnical applications.
- GIS and modelling of terrestrial ecosystems to evaluate the integration of remotely sensed data.
- Synergism of various remotely sensed data (active and passive) for geological, mineral and petroleum exploration and geotechnical applications.

Future Tentative Work Program for 1996-2000

1. A Scientific Workshop on "Synergy of Remotely Sensed Data" jointly organised by the European Commission's European Research Network and the ISPRS WG VII/7. Venue: ITC, scheduled for 17-19 February, 1997 with active participation of the Chairperson of the ISPRS WG VII/4.
2. One day Workshop on Seismic hazard and geotechnical applications. Venue: ITC, Enschede, The Netherlands scheduled for April/May 1997.
3. A two day workshop on which RADARSAT various Principal Investigators (from different parts of the world) could present the outcome of their research at ITC. The Workshop is including various interested participants and is organized by the ITC in close cooperation with RADARSAT International.
4. A Conference on the application of remotely sensed data and GIS in environmental and natural resources assessment is planned in Abidjan, Ivory Coast for March, 1998. One of the principal organizers, such as the March 1996 Conference in Harare, is the African Association of Remote Sensing of the Environment (AARSE) in which the WG Chairperson is the Secretary General. The last conference in Harare attracted more than 350 remote sensing and GIS expert from all over the world with more than 20 international companies and organizations displaying their hardware and software. A total of 10 Organizations including the ITC have already pledged to give their full support to the Abidjan conference. As non-renewable resources is one of the main themes in the plan, the Chairman would like to see the involvement of ISPRS-WG VII/7 in this conference.
5. A workshop and seminar are also planned for end 1998 (in South Africa) and the beginning of 1999 (venue still unknown). However, they are still at a preliminary stage, and the main theme of these workshop and seminar have still to be discussed. Main emphasis of the workshop and seminar will be on Environmental Impact Assessment of Mining.

INTERORGANIZATIONAL ACTIVITIES

COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE (COPUOS)

Submitted by: Lawrence W. Fritz, President of ISPRS

GENERAL INFORMATION

In 1959, the United Nations General Assembly set up the COPUOS as its focal point to address its concern that space be used for peaceful purposes and that the benefits from space activities be shared by all nations. To reflect UN interest in both the legal and other aspects of international cooperation regarding outer space, the Committee has a Legal Subcommittee and a Scientific and Technical Subcommittee. Discussions in the Legal Subcommittee have resulted in five outer space treaties and four sets of Principles. The Principles relating to remote sensing of the earth from outer space were adopted in 1986. These Principles state that such activities are to be conducted for the benefit of all countries, in accordance with international law, with respect for the sovereignty of all States and peoples over their own natural resources, and for the rights and interests of other States. Remote sensing is to be used to protect mankind from natural disasters.

In 1990, the ISPRS was given permanent Observer status in COPUOS. Since then ISPRS has participated in the annual sessions of the Scientific and Technical Subcommittee and in the annual sessions of the full Committee. This includes the presentation of a prepared general statement by ISPRS, statements as appropriate on matters related to remote sensing, and the provision of relevant literature, such as the ISPRS Annual Report, to the COPUOS delegates. COPUOS is composed of 61 Member States and is managed by the UN Office for Outer Space Affairs (OOSA) under the direction of N. Jasentuliyana, Deputy to the Director-General; and Director, OOSA.

33rd SESSION OF THE SCIENTIFIC AND TECHNICAL SUBCOMMITTEE

The COPUOS 33rd S&T Subcommittee Session was convened in Vienna during 12-23 February 1996. The ISPRS delegation was led by Secretary General L. W. Fritz supported by Congress Director K. Kraus. The Subcommittee reviewed national and cooperative programs in remote sensing of the earth from satellites, including programs between developed and developing countries and joint initiatives among developing countries. Proposals for consideration included promoting international cooperation in the use of remote sensing satellites through coordination of the operations of ground stations and regular meeting between satellite operators and users. The Subcommittee continued discussion and reached general agreement that a third UNISPACE could be convened by the end of this millennium. The following reports/statements on remote sensing activities were prepared by Members, copies of which are available:

Report on the 5th UN International Training Course on Remote Sensing Education for Educators (2 May to 9 Jun 95, Stockholm and Kiruna, Sweden)

Report on the UN/ESA Training Course on the Use of ERS-1 Data for the Mapping and Inventory of Natural Resources in Africa (15-19 May 95, Libreville, Gabon)

Report of the UN/ESA Workshop on Applications of Space Techniques to Prevent and Combat Natural Disasters (22-26 May 95, Harare, Zimbabwe)

Report of the UN/ESA Symposium on Space Technology for Improving Life on Earth (11-14 Sep 95, Graz, Austria)

Report on the UN/ESA Training Course for Asia and the Pacific Countries on Applications of the European Remote Sensing Satellite Data to Natural Resources, Renewable Sources of Energy and the Environment (13-24 Nov 95, Frascati, Italy)

Report of the UN Expert on Space Applications (13 Dec 95, Dr. A. A. Abiodun)

Use of Remote Sensing Technologies for Environmental Applications, Particularly in Support of the Recommendations of the UN Conference on Environment and Development (10 Jan 96, Report by UN Secretary General)

Overview of FAO Remote Sensing, GIS and Agrometeorological Activities (Feb 96, Dr. M. Bied-Charreton)

Seminars of the UN Programme on Space Applications: Selected Papers on Remote Sensing, Satellite Communications and Space Science, No. 7, 1996.

1996 COOPERATIVE ACTIVITIES WITH OOSA

ISPRS/OOSA discussions were initiated to consider an agreement to collaborate more closely on promotion of activities of mutual interest.

At the 33rd S&T Session, L. Fritz gave a special presentation on "Status of Commercial Remote Sensing Satellites: High Resolution Imaging Systems."

OOSA Director Jasentuliyana represented the UN on the jury for selection of the 1996 Dolezal Award recipients.

The UN/OOSA supported the travel expenses of several participants to the ISPRS Vienna Congress and coordinated two Congress special sessions with ISPRS Commission VII on remote sensing applications.

ISPRS supported the UN/USA International Conference on Spin-off Benefits of Space Technology which convened 9-12 Apr 96 in Colorado Springs, USA by arranging for three speakers to present their current plans for commercial remote sensing systems..

INTERNATIONAL COMMITTEE FOR ARCHITECTURAL PHOTOGRAMMETRY (CIPA)

Professor John Badekas
President of CIPA

This report summarizes the 1996 activities of the CIPA committee in several aspects which can be grouped as follows:

1. COMMUNICATION WITHIN CIPA

Several decisions have been taken which are expected to improve further the communication within CIPA. These decisions are:

- The CIPA committee should elect a Vice - President
- The Secretary General (SG) will act on behalf of CIPA to answer all correspondence addressed to CIPA unless the President (Pr.) indicates he or she will do so.
- All CIPA Committee Members will have their E-mail address.
- SG will organize the CIPA - Postmaster that must always be updated in cooperation with Webmaster. WWW home page will be maintained by a new Web Master

2. COMMUNICATION OF CIPA WITH OTHER BODIES.

CIPA has taken several actions for improving the communication with other bodies as:

a. ICOMOS

CIPA has now much closer ties with ICOMOS, since it has established a permanent communication with Mrs. Jan Domiceji President of the international committees of ICOMOS. In addition, ICOMOS officials participated to a special CIPA session which was organized during the XVIII ISPRS Congress in Vienna and to the CIPA Workshop in Gross Siegharts (Austria).

CIPA will aim to publish information regularly in ICOMOS News Bulletin concerning:

- Marketing of CIPA
- Explanation of aims of CIPA and of its Working-Groups
- Announcement for meetings and symposia
- Announcement the WWW-page address
- Call for interested ICOMOS members to become CIPA Committee Members, National Delegates to CIPA, Corresponding Members of CIPA and/or Members of CIPA Working Groups
- Explanation or the 3X3 Rule of membership of CIPA

There is also a cooperation with Leo van Nispen, Coordinator of Blue-Shield, for active participation and contribution of CIPA to this program, with the possibility of a Working Session during the Gotenburg Symposium.

b. ISPRS and ISPRS / Commission V

CIPA is in constant contact with the Council of ISPRS and with Professor Hirofumi Chikatsu President of Commission V of ISPRS, to ensure that the President of Commission V or his representative participate in the meetings of CIPA Committee.

c. ICCROM

Some problems of coordination still exist between CIPA and ICCROM. It is important to note that from 1993 when the CIPA committee was formed according to the new statutes, the director of ICCROM who is ex-officio member of the committee or his representative, has never participated to the CIPA meetings or to CIPA activities.

In 1996 ICCROM developed a cooperation with CIPA's working group IV for a workshop in Gross Siegharts (Austria) on the documentation outreach programme. This collaboration was a fruitful cooperation between ICCROM and CIPA and may lead to a new period of fruitful contact.

d. UNESCO

In 1996 and during the XVIII ISPRS Congress in Vienna some UNESCO officials have participated to the special CIPA session initiating a closer cooperation between CIPA and UNESCO.

e. Austria Nostra / Europa

For some time cooperation between CIPA (Prof. P.

Waldhausl) and Austria Nostra has been established in the field of training scholars and students in recording architectural heritage by simple methods.

5. MARKETING OF CIPA PUBLICATIONS

Proceedings of CIPA symposia from Sofia (1988) Rome (1989), Krakow (1990) and Delphi (1991) are still available at Antonio Almagro for $ 50 each (Fax: +34-58-224 754)

6. MAIN EVENTS OF 1996

The main events that have taken place during 1996 were:

a. The special CIPA session in the XVIII ISPRS Congress in Vienna.

b. The Gross Siegharts (Austria) workshop of WG. 4 of CIPA on Recording, Documentation and Information Management.

c. The ICOMOS 1996 General Assembly in Sofia Bulgaria.

- The Vienna special session was an "ICOMOS - UNESCO-CIPA" event on Photogrammetry and the Cultural World Heritage.

Four reports were presented:

'Introduction to CIPA' by Professor John Badekas President of CIPA.

'Outreach Plan Towards Integrating Activities' by Robin Letellier Secretary General of CIPA and scientific advisor of ICCROM.

'ICOMOS Views and Needs' by Leo van Nispen lot Zevenaer.

'UNESCO's needs by Minja Yang, UNESCO World Heritage Centre.

A report by Robin Letellier will be published by Professor Peter Waldhausl in Vol A of the ISPRS Congress Proceedings in 1997/98.

- The Outreach Workshop 1 in Gross Siegharts (Austria) has left positive and encouraging opinions. The resulting recommendations reflect an interest and will to pursue with improved methods of communication and activities towards integrating better recording activities to conservation practices at large.

Workshop participants represented a good mix of professional conservationists and cultural resource managers. This mix was essential to provide the meeting with many different constructive points of view. In all 22 people from 16 countries attended the workshop.

It should also be mentioned that the CIPA-ICCROM Five Year Outreach Plan was presented. Another encouraging note is that WG4 members from Italy, Greece, Spain, Israel, Sweden and Poland have offered to translate the ICCROM recording guidelines into their respective languages. Very qualified members of their respective organizations have been appointed to participate in the Outreach Workshop. Marc Laenen, Director General of ICCROM, also supported the development of the "Outreach" concept over the past 2 years, and participated in the promotion of the first CIPA-ICCROM Outreach Workshop in Austria.

This support includes ICCROM's initiative in developing and publishing the "Recording, Documentation and Information Management Guidelines for World Cultural Heritage Sites" which are being used as a Framework for the Five Year Outreach Plan.

Peter Waldhäusl very successfully coordinated the workshop logistics. The choice of Gross Siegharts and the friendly local organizers made this workshop a memorable event for all.

- At the ICOMOS General Assembly in Sofia CIPA has been represented by our Secretary General Robin Letellier, to meet Joan Domiceji, President of Scientific Committees of ICOMOS and report on CIPA activities. He also met with Em. Van Brederode Secretary of the ICOMOS Netherlands Committee and discussed options for their proposed new ICOMOS Survey and Documentation Committee.

7. ANNUAL MEETINGS IN 1996

The annual meeting was held in Gross Siegharts Austria, July 23-24 in connection with the Seminar of W/G IV. It has been attended by the following five committee members.

During the meeting all the activities at CIPA were examined. Minutes of this meeting will be ready soon.

In 1997 the annual meeting will take place in connection with the symposium of CIPA which will take place in October 1997 in Göteborg Sweden.

8. CIPA SYMPOSIA

The symposium in 1995 was planned to take place in Bali Indonesia. Many difficulties have arisen in the organization of that symposium and after two postponements it has been finally cancelled.

For 1997, there is quite good preparation for the Symposium between 1-3 October in Göteborg Sweden. The theme of the symposium is 'Photogrammetry in Architecture, Archeology and Urban Conservation'. Director of the Organising Committee is PhD Jan Rosvall of the Institute of Conservation Göteborg University, and Co-Director Anders Boberg SSFF President.

In 1999, there is a proposal by Eng. Nei Erling President of the "Sociedade Brazileira de Cartografia, Geodesia, Fotogrammetria e Sensoriamento Remoto" to organise the 1999 Symposium in Brazil. The CIPA committee has not made a final decision.

9. PREPARATION FOR THE 1997-2001 CIPA COMMITTEE.

The CIPA committee has ten ordinary and two ex-officio members. The ex-officio members continue to serve at the committee as long as they keep there posts that

is the Presidency of Technical Commission V of ISPRS and the Direction of ICCROM. The ten members must be appointed every four years.

During the 1993-1997 term of the committee three members representing ICOMOS, Ross Dallas Ursua Cocke Francisco and Abdelaziz Doulatli have resigned. One member representing ISPRS has been replaced by Edel Lundemo From Norway.

The committee will take actions to propose to ISPRS Council and to the ICOMOS Executive Committee the CIPA Committee members for 1997-2001 period, so that the ten committee members will be ratified before October 1997 when the CIPA symposium will take place, and when there will be the election of the new President.

10. REVIEW OF CIPA WORKING GROUP ACTIVITIES

a. Working Group I - Control Information
Chair: P. Waldhausl and J. Peipe.
This W/G has concluded his work and a final report was presented to the XVIII Congress of ISPRS in Vienna.

b. Working Group II-Digital Image Processing
Chair: A. Streilein and K. Henke
This working group is continuing A report has been presented to the XVIII Congress of ISPRS in Vienna.

c. Working Group III Simple Methods for Architectural Photogrammetry
Chair: A. Almagro
This working group has presented a report to the XVIII Congress of ISPRS in Vienna.

d. Working Group IV. Recording Documentation and Information Management
Chair: R. Letellier
This W.G. has concluded with the text 'Recording, Documentation, and Information Management Guidelines for World Cultural Heritage Sites'
The W.G also organized the Outreach Workshop 1 in Gross Siegharts (Austria).

e. Working Group V. Archeology and Photogrammetry
Chair: C. Ogleby and M. Doneus.
New quidelines for this WG have been formulated and they will be in the on WWW home page.

f. Working Group VI. Monument Information System.
The work for a proposal is in progress.

g. Working Group VII. Non Professional Cultural Heritage Recorders.
The work for a proposal is in progress.

INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS (ICSU)

Executive Director ICSU
51, Boulevard de Montmorency
75016 Paris
FRANCE
Fax: +33-1-42 88 94 31
Phone: +33-1-45 25 03 29

ICSU is a non-governmental organization, founded in 1931 to bring together natural scientists in international scientific endeavour. Its national membership comprises 95 multidisciplinary bodies (scientific research councils or scientific academies) and 25 international single-discipline Scientific Unions, to provide a wide spectrum of scientific expertise enabling members to address major international, interdisciplinary issues which none could handle alone. ICSU also comprises 28 Associates, including ISPRS.

ISPRS joined the International Council of Scientific Unions in 1994, following the necessary procedures for gaining appropriate recommendations from sponsoring member organisations. It addresses topics such as global problems and sustainable development, and has a publication outlet, ICSU Press. It is the peak scientific body representing the majority of international scientific bodies of the natural sciences.

The General Assembly of ICSU met on 24-27 September 1996 in Washington DC USA. President Lawrence Fritz and Secretary General John Trinder attended the meeting. ISPRS representatives joined the meeting of the Working Group on Earth and Space Sciences, chaired by H.Moritz Earth where President Fritz presented a short description of ISPRS capabilities. In addition to the formal meeting, a Symposium on Science and Human Goals in the 21st Century was held on the 24 September featuring an impressive array of outstanding scientists on topics such as:

- Global Change
- Meeting the Water Needs of the World
- Meeting the Energy Needs of the World
- Health Dimensions of the Next Millennium
- Meeting the Food Needs of the World
- Science for the New Technology

The 1996 General Assembly of ICSU discussed the following issues.

Reports

- Membership, Structure and Statutes
- Finances
- Freedom in the Conduct of Science
- ICSU Press

Common Concerns and Services

- Capacity Building in Science
- Environment
- Ethics
- Science in developing Countries
- Science in FSU and in Central and Eastern Europe

- Data and Information

Proposals on New Scientific Priorities for ICSU action to form General Committee and GA Working Groups in:

- Agriculture and Food Security
- Science and Technology for Earth Management
- Informatics
- Others

Cooperation with Partner Organisations

- Intergovernmental bodies
- NGOs

Information and Outreach

Elections and other administrative matters

Recent publications by ICSU Press include:

- Understanding Our Planet (New Edition)
- Science International: History of the International Council of Scientific Unions

Possible ISPRS Contributions to ICSU

IGBP (International Geosphere Biosphere Program) is a major international research program under the aegis of ICSU. IGBP, together with the World Climate Research Program (WCRP) and the International Dimensions of Global Change Program (IHDP), provide the focused international scientific effort needed to address the uncertainties relating to natural and man-made global changes. The issue of global mapping and studies of global change are the focus of several working groups of ISPRS. Cooperation with members of ICSU in such programs as IGBP and IHDP are also goals of the ISPRS WGs. It would be expected that ISPRS will develop closer liaise with members of ICSU on these programs.

ISPRS can make contributions to ICSU in the following areas:

- **Commission I:** all earth observation systems
- **Commission II:** the Society's technical capacity for data mapping
- **Commission III:** algorithm development
- **Commission IV:** development of databases for global monitoring
- **Commission V:** applications and exploitation of technology
- **Commission VI:** education options
- **Commission VII:** statistics on land cover, annual data for global problems

Cooperation with ICSU in the future will lead to a greater application of the skills of ISPRS researchers in the important programs being undertaken by ISCU on global change.

THE INTERNATIONAL UNION OF SURVEYS AND MAPPING (IUSM)

The Joint Board of the International Union of Surveys and Mapping (IUSM) met during the 18th ISPRS Congress in Vienna. Meetings of the Task Force #1 on Restructuring, and Task Force #2 on a Vision for the Profession were also held.

President of IUSM, Earl James has continued in the office until April with financial support from the current Bureau of FIG, even though his term as President of FIG ended. An election for a new President of IUSM will take place in April. With the resignation of Mr Hugh O'Donnell as the Executive Officer, and the termination of funding of the Executive from April 1997, new sources of financial support must be found to enable ICSU to continue as a body. Members have been asked to seek funding for this support. The Joint Board confirmed the appointment of Mr Doug Selley to replace Mr Hugh O'Donnell as Executive Secretary of IUSM until the Executive Board Meeting in April 1997.

The Joint Board determined that there would be no permanent working groups, but fixed term bodies would be brought together on well defined issues. Working group meetings should be held at Congresses of member bodies with presented papers printed in a volume of proceedings.

The Task Forces were established at the strategy meeting in Boulder where the Vision and Goals of IUSM were redefined.

The Vision statement is as follows:

IUSM is an alliance of international organizations which facilitates scientific and technological developments in the field of geospatial information.

Task Force #1 determined several cooperative activities that would facilitate joint activities, including sharing information of working groups, holding special session at Congresses, organising tutorials, and the establishment of a Home Page. It was agreed that a name change would not take place, but a sub-name would be attached to the name of IUSM as follows:

'INTERNATIONAL UNION OF SURVEYS AND MAPPING - An alliance of geospatial science and technology organisations'

Task Force #2 addressed the issues that impact on the visions of geospatial science and technology organisations.

The Joint Board agreed to form a further Task Group #3, to develop a strategy for the orderly rotation of officers.

Technical sessions of IUSM Working Group sessions were held at the Vienna Congress on topics on GPS, LIS/GIS and ACM (Automated Control Measurement). The LIS/GIS Working Group is chaired by Professor Konecny who represents ISPRS.

Currently ISPRS representatives on the Joint Board members are President Lawrence Fritz and Professor Gottfried Konecny. Council has determined that Professor Konecny will be replaced by Secretary General John Trinder at the next Board meeting in Monaco in April 1997.

Address of IUSM Executive until April 1997
Mr Doug Selley
Geomatics Canada,
Earth Sciences Sector
Natural Resources Canada
481-615 Booth Street
Ottawa, Ontario, K1A 0E9, Canada
Telephone: (613) 995 4776
Fax: (613) 943 8838
E-mail: <selley@emr.ca>

INTERNATIONAL STANDARDS ORGANISATION (ISO)

General Information

The ISO is a worldwide federation of national standards bodies, comprising 118 members (85 Member Bodies, 24 Correspondent Members, 9 Subscribing Members), one from each country. ISO international standards are developed in agreement between Member Bodies. A committee draft is given to an ISO Technical Committee (TC) for discussion. After consensus in the TC, the central secretariat of ISO emits a Draft International Standard (DIS). The drafts include the voting results from all respective countries. Final voting by all ISO Members Bodies and the final version has to be agreed to by at least 75% of the voters.

International Organisations such as ISPRS may be granted liaison status (Category A or B) with an ISO TC, ISO Subcommittee or ISO Working Group. Category 'A' liaison gives right to full participation, whereas 'B' liaison is to be kept for information only.

ISPRS Liaison and Representatives

During 1996, ISPRS has had liaison status on the following ISO committees.

- ISO/TC 20 *'Aircraft and Space Vehicles'*
- ISO/TC/SC14 'Space Systems and Operations'

Category B liaison

- ISPRS Representative - ISPRS Commission I
- ISO/TC20/SC13 'Space Systems and Information Transfer Systems'
- ISPRS Representative Dr H. Ziemann
- ISO/TC 42 *'Photography'*
  - WG 03 Sensitometry, Image Measurement and Viewing'
  - WG 05 'Physical Properties and Image Permanence of Photographic Materials'
  - WG 12 'Lens Quality Characteristics
  - WG 18 'Electronic Still Picture Imaging'

Category A Liaison

ISPRS Representative Dr H. Ziemann and Commission I

- ISO TC/172 *'Optics and Optical Instruments'*
- ISO/TC172/SC9 'Electro optical systems'

Category A Liaison

- ISPRS representative Dr Hartmutt Ziemann and Commission I
- ISO TC/211 *'Geographic Information/Geomatics'*

Category A liaison

- ISPRS representative Professor Dieter Fritsch (Germany), Commission IV President

Reports

- ISO TC/211 Geographic Information Systems/Geomatics
- ISO TC 211 is currently very active in the development of ISO standards for GIS/Geomatics. Secretary General John Trinder represented ISPRS at a Plenary Meeting of the Technical Committee in Sydney in January 1997, and presented a statement on the role of ISPRS in the determination and application os standards.

The Technical Committee is managed by the Norwegian Technology Standards Institution. It is divided into 5 Working Groups as follows:

WG1 - Framework and reference model

Work items include: Reference Model, Overview, Conceptual Schema Language, Terminology, Conformance Testing.

WG2 - Geospatial data models and operators

Work items include: Spatial Subschema, Temporal subschema, Rules for Application Schema, Spatial Operators

WG3 - Geospatial data administration

Work items include: Cataloguing, Geodetic Reference Systems, Indirect Reference Systems, Quality, Quality Evaluation Procedures, Metadata.

WG4 - Geospatial services

Work items include: Positioning Services, Portrayal of Geographic Information, Encoding, Services

WG5 - Profiles and functional standards

Work items include: Profiles

All working groups are well advanced in their developments and a DIS is expected to be available within a year or so. Comprehensive documentation is available.

REGIONAL MEMBER ACTIVITIES

- **AARS**
  Asian Association on Remote Sensing
- **AARSE**
  African Association of Remote Sensing of the Environment
- **EARSeL**
  European Association of Remote Sensing Laboratories
- **OEEPE**
  Organisation Européenne d'Études Photogrammétriques Expérimentales
- **PAIGH**
  Pan American Institute of Geography and Histroy
- **SELPER**
  Sociedad de Especialistas Latinamericanos en Percepción Remota y Sistemas deInformación Espacial

ASIAN ASSOCIATION ON REMOTE SENSING (AARS)

Shunji Murai, General Secretary, AARS
c/o Institute of Industrial Science,
University of Tokyo 7-22-1,
Roppongi, Minatoku,
Tokyo 106 Japan
Tel: +81-3-3042-6231
Fax: +81-3-3479-2762
E-mail: chiwa@shunji.iis.u-tokyo.ac.jp

1. THE 17TH ASIAN CONFERENCE ON REMOTE SENSING (ACRS)

The 17th ACRS was held in Colombo, Sri Lanka from the 4th to the 8th, November 1996, jointly organized by AARS and Survey Department of Sri Lanka. The ACRS was successfully organized with the following results:

- Number of participants: 236 in total including 101 foreign participants from 23 countries and region
- Number of papers presented: 80 papers in 12 technical sessions and 2 special sessions
- Number of workshops: 2 workshops on earth science information network and 1 km land cover database in Asia respectively
- Commercial exhibition: 8 exhibitors displayed 12 commercial booths and 6 exhibitors presented their technical information
- Proceedings: about 500 pages, available at the Survey Department of Sri Lanka (Mr. Sarath Jayatilake, P.O.Box 506, Colombo, Sri Lanka)
- Keynote Speech: Mr. Lawrence W. Fritz, President of ISPRS was invited as Keynote Speaker, who presented a paper on October 1996 Status of Commercial high Resolution Satellites.

In conjunction with the 17th ACRS, two seminars by UN/ESCAP and ITC, The Netherlands were also organized.

2. THE GENERAL CONFERENCE OF AARS

During the 17th ACRS, two general conferences were held with participation of delegates from AARS members and non-member observers. The following decision were made by the GC.

- New Ordinary Member: Azerbaijan was admitted as an ordinary member of AARS.

AARS ordinary members are now 22 countries and regions; Australia, Azerbaijan, Bangladesh, China, China Taipei, India, Indonesia, Iran, Japan, Jordan, Korea, Laos, Malaysia, Mongolia, Nepal, New Zealand, Pakistan, Philippines, Singapore, Sri Lanka, Thailand and Vietnam.

- The Host of the 18th ACRS in 1997: Malaysia was elected as the host.

The proposed venue is Kuala Lumpur, the date will be 27 October - 1 November, 1997 and the contact person is Mr. Nik Nasruddin Mahmood, Director, Malaysian Center for Remote Sensing (MACRES), No. 13, Jalan Tun Ismail, 50480 Kuala Lumpur, Malaysia, Fax:+60-3-264-5646

- Publication of Memorial Book: on the occasion of the 20th anniversary of Asian Conference on Remote Sensing to be celebrated in 1999, a memorial book on "The Twenty Years of Asian Association on Remote Sensing" will be published in 1999 by the editorial board of Shunji Murai (chairman), Bruce Forster, Manu Omakupt and M.U.Chaudhury.

3. RECOMMENDATIONS OF THE 17TH ACRS

The following recommendations were approved by the 17th ACRS:

1) Greater availability of satellite data with respect to cost, time and ordering procedure should be fostered
2) Greater opportunities for education and training in-

cluding on-job-training and computer assisted teaching should be developed
3) More efficient network for data exchange, data sharing and technical communication should be developed
4) Greater regional cooperation on multi-lateral projects should be promoted
5) Greater involvement of private sectors in development and use of remote sensing and GIS with view to the establishment of indigenous enterprises should be promoted

4. JSPRS BEST SPEAKER AWARD

Japan Society of Photogrammetry and Remote Sensing (JSPRS) sponsored "Best Speaker Award" that was awarded to the following four winners at the 17th ACRS by the General Secretary, AARS.

(1) Ms. Kumari M. Weerasinghe (Sri Lanka)
(2) Mr. T. Saravanapavan (Sri Lanka)
(3) Ms. Sripen Durongdej (Thailand)
(4) Mr. Mazlan Hashim (Malaysia)

5. OTHER ISSUES

The two volume text book "GIS Work Book" -fundamental course and technical course- were written by Shunji Murai and published by Japan Association of Surveyors at the price of 33 US dollars (volume 1: fundamental course) and 27 US dollars (volume 2: technical course). The book is available for purchase from Shunji Murai by VISA and Master Card.

AFRICAN ASSOCIATION OF REMOTE SENSING OF THE ENVIRONMENT (AARSE)

Peter O. Adeniyi (President, AARSE)

A. GENERAL INFORMATION

The goals of AARSE are to:

(i) Create an enabling environment for the continent of Africa to derive benefits from, and contribute to international space science, technology and application programmes.
(ii) Work together with other initiatives to publicise works in remote sensing and GIS and to create a forum to address issues of common interest through the conduct of conferences, seminars and workshops.
(iii) Promote greater cooperation and coordination of efforts among African countries, institutions and industries in the development of remote sensing, GIS and their applications to natural resources and environmental issues in Africa.
(iv) Develop integrated research agenda in the fields of remote sensing and GIS to address the real problems of African countries and to raise funds for its execution.
(v) Promote capacity development for professionals in Geoinformation in sub-regional, African and international fora; and
(vi) Establish a professional journal for African works in the fields of remote sensing and GIS.

There occurred a modest change in the membership of AARSE during 1996. In December 1995, the individual and institutional members of the Association were 274 and 58 respectively. As at the end of October 1996, the individual and institutional members rose to 320 and 60 respectively. The individual members are from the following countries: Algeria (1), Benin (4), Botswana (2), Burkina Faso (7), Burundi (1), Cameroon (3), Ethiopia (7), Gambia (2), Ghana (17), Kenya (18), Libya (2), Madagascar (3), Mali (3), Malawi (4), Morocco (1), Mozambique (3), Mauritania (1), Niger (10), Nigeria (88), Senegal (28), Sierra Leone (1), South Africa (7), Sudan (4), Tanzania (10), Tchad (6), Togo (1), Tunisia (3), Uganda (1), Zaire (1) Namibia (3), Zimbabwe (8), Austria, Canada (3), France (3), Germany (1), India (1) Italy (1), Jordan (1), Kuwait (1), Netherlands (3), Switzerland (1), Thailand (1), Tokyo (1), Turkey (1), UK (3) and USA (6). Out of the 60 institutional members, 52 are from 25 African countries.

B. REGIONAL MEMBER ACTIVITIES/ ACCOMPLISHMENTS DURING 1996

The activities and the accomplishments of the Association during the year include:

1. The conduct of its first Regional conference under the auspices of the Environment and Remote Sensing Institute (ERSI), Harare, Zimbabwe March 15 - 22, 1996. The main theme of the conference was on the Application of Remotely Sensed Data and GIS in Environment and Natural Resources Assessment in Africa. Over 300 participants from 39 countries registered for the conference. Over 80% of the participants are from African countries. Four pre-conference training workshop and two post-conference scientific excursions were organised. About 25 companies, from Africa, Europe and North America exhibited various remote sensing, photogrammetry and GIS products, hardware devices and software packages.

A thought provoking opening address was delivered by His Excellency, Mr. Robert Mugabe, the President of the Republic of Zimbabwe. Five keynote papers were delivered at plenary sessions in addition to over 90 papers delivered at technical sessions on various sub-themes of the conference including, environmental applications of RS and GIS, land use management, geology, coastal management, natural hazards, desertification and erosion, vegetation mapping and monitoring, forestry, agriculture,

groundwater exploration, climate change, wildlife, urban planning, Research/Technology features in RS/GIS and Database development.

2. The Association was formally presented its certificate as Regional member of ISPRS during the XVIII ISPRS Congress in Vienna, Austria, 9 - 19 July 1996. During the Congress, the Association was privileged to organise a special session (SS10) under the chairmanship of Peter O. Adeniyi. Five papers were presented during the session by Mehdin Hadgu (Ethiopia), Chima Tabitha (Zimbabwe), Ogunlami J (Nigeria), Adeniyi P. O. (Nigeria) and Woldia Tsehaie (Eritrea).

3. The Association collaborated with the steering planning committee of the 9th African Regional Cartographic Conference held under the auspices of the United Nations Economic Commission for Africa (UNECA), Addis Ababa, Nov. 11- 15, 1996. During the conference, the President of ISPRS - Prof. Lawrence W. Fritz - presented a Plaque to AARSE in recognition of its modest accomplishment. I wish to acknowledge, on behalf of all members of AARSE, our deepest appreciation of the encouragement we have received from Prof. Fritz.

4. Two newsletters were published during the year.

C. REGIONAL MEMBER NEWS

The Association plans to publish its maiden Journal titled "African Journal of GIS and Remote Sensing of the Environment" in 1997.

The Association's Newsletters are to be published 4 times as from 1977.

The second Regional Conference of the Association is planned to take place in CNTIG, Cote D'Ivoire during the first quarter of 1998. Contact persons is Dr. M. Fofana, Fax: +225-223529.

A training workshop to be jointly organised by Unilag Consult (University of Lagos), ISPRS Commission VII WG on Education and AARSE is currently being planned against second quarter of 1998.

D. RELATIONSHIPS WITH ISPRS

The relationship of AARSE with ISPRS is just emerging. With the continued encouragement of the leadership of ISPRS, there is greater potential for more rewarding relationship. Currently, the involvement of African professionals in the activities of ISPRS is less encouraging. The Association takes this as an obligated responsibility to improve the situation such that by the year 2000 during the next congress of ISPRS in Amsterdam, Africa will be in a position to host one of the ISPRS Commissions and several of its working groups. We therefore appeal to ISPRS to increase its activities and programmes in Africa through AARSE as this will further provide enhanced opportunity for the legitimisation of Geo-information technology development and application in Africa.

"THE APPLICATION OF REMOTELY SENSED DATA AND GIS IN ENVIRONMENTAL AND NATURAL RESOURCES ASSESSMENT IN AFRICA"

1996 Conference Report by Dr. Dr. Tsehaie Woldai, Secretary General of AARSE. March 3, 1997

The **Conference on "The Application of Remotely Sensed Data and Geographic Information System (GIS) in Environmental and Natural Resources in Africa"** was held in Harare, Zimbabwe from the 15-22 of March 1996. The Conference initiated by the African Association of Remote Sensing of the Environment (AARSE) was organized by the Environment and Remote Sensing Institute (ERSI) - an Institute of the Scientific & Industrial Research and Development Centre (SIRDC) of Zimbabwe, with the support of the following organizations:

- The German Federal Ministry for Economic Cooperation and Development (BIZ)
- The German Agency for Technical Cooperation (GTZ)
- The International Institute for AeroSpace Survey and Earth Sciences (ITC), The Netherlands
- The African Association of Remote Sensing of the Environment (AARSE)
- Directorate General for International Cooperation (DGIS), The Netherlands
- Carl Duisberg Gesellscaft (CDG), Germany
- RADARSAT International, Vancouver, Canada
- GEOSAT International, Wageningen, The Netherlands
- United Nations Food & Agriculture Organization (FAO), Rome, Italy
- The South African Development Community (SADC)
- United Nations Environmental Programme (UNEP), Nairobi, Kenya
- United Nations Educational, Scientific and Cultural Organization (UNESCO), Paris
- Surveying Department, University of Zimbabwe
- Africa Dream Travel (pvt.) Ltd, Harare, Zimbabwe
- Air Zimbabwe
- Air France

OBJECTIVES OF THE CONFERENCE WERE:

- The application of remote sensing and GIS in environmental impact assessment in Africa - case studies.
- The use of RS data and GIS in monitoring desertification, erosion, land degradation, vegetation changes and land use.

- Monitoring and assessment of natural resources using space technology.
- The role of African countries in utilizing remotely sensed data for global and regional change studies.
- The need for education and training in environmental geosciences and management in Africa.

Notwithstanding the main theme of the conference being on the application of geoinformation technology for environmental and natural resources assessment in Africa, the conference provided a unique opportunity to address the fundamental issues under which such applications can be made to lead to beneficial and sustainable development and management of African environmental and natural resources.

The conference, which was held at the Sheraton Hotel in Harare, was extremely successful in terms of attendance, quality of presentations and of the discussions. Out of a total of 389, which formally filled the application form, 363 participants registered and attended the conference. The majority of the participants (about 219) came from the continent and represented 29 African countries while the remaining groups came from 18 overseas countries with major representation from The Netherlands, Germany, Canada and United Kingdom. In addition, 20 major commercial exhibitors from the Netherlands, Canada, USA, Great Britain, Sweden, France, South Africa, Senegal and Zimbabwe displayed their software, hardware and products during the whole period of the conference.

A total of 122 contributions were selected out of 194 papers, of which 5 were key note addresses given by prominent scientists (45 minute each), 12 invited lectures (30 minute plus), 25 selected applications and poster session and 80 (20 minute each) presentation in parallel sessions.

KEY NOTE ADDRESSES:

- Regional Economic cooperation & development. The power of natural resources information (Dr. Y. Katerere - Zimbabwe)
- Geoinformation for managing environment and natural resources for sustainability. The ways forward for Africa (Prof. Dr. P. Adeniyi - Nigeria)
- Environmental hazard & remote sensing for sustainable development (Prof. Dr. H. Verstappen - The Netherlands)
- Can the Brazilian Space Program model be applied to African countries? (Prof. Dr. L.A.V. Dias - INPE, Brazil)
- Education and training of RS and GIS in Africa (Dr. V. Odenyo, Kenya)

PLENARY SESSION (MARCH 17) ON:

- Environmental applications of Remote Sensing and GIS technologies in Africa - Case studies (8 presentations)

TWO PARALLEL SESSIONS (MARCH 18-22) WERE GIVEN ON TOPICS SUCH AS:

- The application of Remote Sensing (RS) and GIS in Land Use, agriculture, forestry, urban planning and environmental management (37 presentations)
- The utilization of RS and GIS in geological applications (12 presentations).
- The impact of mining on the environment (4 presentations)
- The utilization of RS and GIS in coastal management applications (3 presentations)
- The application of RS and GIS in natural hazard mitigation (5 presentations)
- The application of RS and GIS in vegetation monitoring and mapping (7 presentations)
- Institutional Issues related to RS and GIS technologies (7 presentations)
- Research/technological features in RS and GIS and data base development (11 presentations)
- The application of RS and GIS in groundwater exploration and water management (9 presentations)
- Climatic changes in southern Africa (3 presentations)
- The application of RS and GIS in wildlife management (5 presentations)
- Training and education to RS and GIS in Africa (6 presentations)

In his address to the conference delegates, the Director General of the Scientific, Industrial and Research Development Centre (SIRDC), Prof. Dr. C. Chetsanga acknowledged and praised the effort and the support given by various agencies/organizations and institutions to the workshops and conference. Similar appraisals were also given by various key speakers in all the official speeches and keynote lectures on the development of RS and GIS and on education and training in Africa.

The President of the Republic of Zimbabwe, President Robert Mugabe in his opening address to the Conference cited the effect of mining on the environment, the quick depletion of the tropical forest, degradation of the soil, the extinction of the ecologically important plant and animal species (thus reducing biodiversity), the economic impact of siltation, desertification, drought, etc. as the major environmental problems facing his country and Africa. He also stressed that the needs for modern technologies to combat environmental degradation today requires both dedication and cooperation between the north and the south. For Africa to be able to make some meaningful contributions to the control of the global environmental degradation, he emphasized the need to access technologies for remote sensing such as those available in the north. In his last statement he stated "Africa has to increase its capacity in education by, inter alia, offering training in the field of remote sensing and GIS as a deliberate step towards building a pool of expertise in the area. This will complement the effort of the experts within and outside Africa, who are dedicated to developing this continent and who require locally trained personnel to support their efforts." He thanked the Government of the Netherlands, Germany and to other donors for the material and financial support they have rendered to the organization of the conference. Several Embassies were present during the opening ceremony.

Several workshops (covering various topics) preceded the conference. These were given by various overseas

institutions in conjunction with the Surveying Department of the University of Zimbabwe or with the Environment & Remote Sensing Institute (ERSI) in Harare, Zimbabwe. The topics of the workshops were:

- Environmental System Analysis and Impact Assessment
- Synthetic Aperture Radar Systems and Their Application in Natural Resources
- Cartographic Aspects of Using Remotely Sensed Data & the Integration of Such Data with GIS

One important highlight of the conference includes the opening of a permanent exhibition at the Natural Museum of Harare on "Large and small Ancient Meteorite Impact Structures in Zimbabwe." The latter included the work of several investigators attending or organizing the conference and was preceded by the national dancing group from Harare.

The members of the African Association of Remote Sensing of the Environment (AARSE) in their Friday the 22nd of March meeting endorsed the executive and new council members of AARSE and passed several recommendations and resolutions to be carried until the next conference. Five countries competed to organize the next conference in March 1998 and by majority vote Ivory Coast was selected as the next host. Kenya missed the opportunity by only one vote.

The Organizing Committee in its closing ceremony thanked the Government of Zimbabwe, the ERSI and AARSE and wished to see everyone in Ivory Coast on March 1988. Special word of appreciation among all was given to the ITC, the German Government (BMZ and GTZ), the Dutch Government (DGIS) and all other partners for their support and funding.

EUROPEAN ASSOCIATION OF REMOTE SENSING LABORATORIES (EARSeL)

Dr. Roeland Allewijn, Secretary General

GENERAL INFORMATION

In view of the rapid developments taking place in Earth observation programmes and policies within the sponsoring agencies of EARSeL, which are the European Space Agency, the European Commission and the Council of Europe, the Bureau and Council of the Association have been considering how its own strategy and activities should evolve to meet the needs of these agencies and of its members. They have therefore been working on a strategy document: *EARSeL towards 2000: Strategy, Activities and Organisation.*

Two Council meetings have been held, one in January in Paris and the second in Malta on the occasion of the Annual General Assembly and Symposium. It was decided at these meetings that closer links should be established with national remote sensing organisations by inviting their representatives to attend EARSeL Council meetings. EARSeL would also work towards closer co-operation with other Regional members of the ISPRS, such as the OEEPE and SELPER.

EARSeL ACTIVITIES DURING 1996

The EARSeL Annual General Assembly and 16th Symposium was held in Malta from 20-23 May 1996. The Symposium theme was *'Integrated Applications for Risk Assessment and Disaster Prevention for the Mediterranean'*. Following the scientific sessions and round-table discussions a Final Statement was issued in which it was agreed to set up a Task Force to undertake the following:

- To establish Euro-Med networks for information exchange,
- To formulate a long-term programme incorporating remote sensing for risk assessment and disaster prevention in the region, and
- To draw up an action plan based on bilateral and multilateral co-operation seeking a healthier environment and regional sustainability.

As a follow-up to this meeting EARSeL participated in a Workshop on Natural Disaster Reduction in the Mediterranean Region, organised by the International Decade for Natural Disaster Reduction (IDNDR) Office of the United Nations and the Italian Civil Defence Ministry, and contributed to the recommendations which were drawn up. The regional process thus launched will culminate in a final evaluation conference in 1999, which should go beyond the decade and the year 2000.

EARSeL also organised a Special Session within the ISPRS Congress, held in Vienna in July 1996. Four papers were presented, representing an overview of EARSeL activities in the fields of (i) Forest Fires from Space: Considering Spatial and Temporal Resolution, (ii) the Potential and Limitations of Satellite Remote Sensing for Geo-Disaster Reduction, (iii) Land Cover Mapping in Europe, and (iv) Coastal Zone Management.

Activities of the Special Interest Groups

"Landuse Planning and Forestry" - At its meeting in July the group decided to work on "The possible contribution of remote sensing to assess biodiversity" and to undertake a literature review of what is existing on this topic which includes a remote sensing element.

The group "Geological Applications" is holding a joint meeting 16/17 December 1996 with The Remote Sensing Society in the United Kingdom on the theme : "Remote Topographic Mapping for Geoscience".

Following the high-level Workshop on the "Fusion of Earth Data: Merging point measurements, raster maps and remotely-sensed images" , held in Cannes in February

1996, a Special Interest Group on this topic has been established. Another workshop on the topic is planned for the Spring of 1988.

EARSeL publications in 1996

The quarterly *EARSeL Newsletter* appeared regularly.

Two issues of the *EARSeL Journal "Advances in Remote Sensing"* were published, Vol. 4 No. 2, on "Topography from Space", and Vol. 4 No. 4 on "Remote Sensing and GIS Applications for Forest Fire Management".

EARSeL also compiled and published the *Proceedings* of two high-level meetings, which it co-sponsored :

"Photosynthesis and Remote Sensing" (ISBN 2-908885-16-6) organised in collaboration with ISPRS Commission VII Working Group VII/1, Montpellier, August 1995,

"MOMS-02" Symposium Proceedings (ISBN 2-908885-17-4) organised in collaboration with the German Research Establishment DLR.

The *Proceedings of the 1995 EARSeL Symposium* held in Basel, Switzerland, were published by Messrs. Balkema.

The 1996 edition of the *EARSeL Directory*, (ISSN 0257-053X) listing all members, their equipment and their activities was published.

EARSeL MEETINGS PLANNED FOR 1997

Specialist Workshop on "Remote Sensing of Land Ice and Snow" to be held at the University of Freiburg, Germany, 17/18 April 1997.

Annual General Assembly and Symposium on the theme of "Future Trends in Remote Sensing", to be held at the Technical University of Denmark, 17/19 June 1997.

Specialist Workshop on "Lidar Remote Sensing of Land and Sea" to be held in Tallinn, Estonia, 17-19 July 1997.

RELATIONSHIPS WITH ISPRS

As mentioned above, it is the policy of EARSeL to coordinate research efforts and foster the application of remote sensing techniques. We are therefore willing to consider collaborating in the organisation of joint meetings with other remote sensing organisations and in particular with the various Working Groups within the ISPRS Commissions and the other ISPRS Regional members.

ORGANISATION EUROPÉENE D'ETUDES PHOTOGRAMMÉTRIQUES EXPÉRIMENTALES / EUROPEAN ORGANIZATION FOR EXPERIMENTAL PHOTOGRAMMETRIC RESEARCH (OEEPE)

C.M. Paresi, OEEPE Secretary-General

A. GENERAL INFORMATION

The OEEPE is a pan-European organisation established in 1953 in Paris, in accordance with the recommendation passed by the Council of the Organisation for European Economic Cooperation.

The aim of the OEEPE is to improve and promote methods, performance and application of photogrammetry by carrying out in mutual co-operation, investigation and research, in particular of an experimental and application-oriented nature.

The OEEPE research serves the whole European Geoinformatics Community, deals with problems of more than local significance, and is carried out by means of international cooperation. Next to keeping relevance to technological aspects of photogrammetry (experimental problem solving/cost saving technology), the OEEPE has developed a research programme that integrates photogrammetry into systems of wider scope (strategic and technological issues related to the European Geoinformation Infrastructure). Those objectives can only be achieved through strengthening international cooperation between the geoinformation user, producer and research communities.

Spain has become a member of the OEEPE in 1996, bringing the number of European countries which are member of the OEEPE to fourteen.

Very recently, the OEEPE has become a member of the European Federation of the European Networks of Scientific and Technical Co-operation (FER).

In May 1996, Prof.Dr. R. Galetto (Italy) took over the Presidency of the OEEPE from Dipl.-Ing. R. Kilga (Austria), for a term of two years.

B. REGIONAL MEMBER ACTIVITIES/ ACCOMPLISHMENTS DURING 1996

The following research projects have been successfully completed in 1996:

- *Aerial triangulation using digitized images:* assess potentials and limitations of methods for aerial triangulation using digitized images;
- *Digital Landscape Model for Europe:* derive and link data from digital and analogue spaceborne recordings, in order to compile a digital landscape model;
- *Accuracy of digital terrain models for civil engineering purposes:* define rules to indicate parameters of the

source data of a DTM, to ensure economical and efficient data collection;
- *Geocoding of ERS-1 SAR data:* compare methods of geocoding ERS-1 SAR data and evaluate the use of such data for mapping.

The following research projects have been started in 1996:
- *Automatic generation of DEM:* compare the performance of methods and software packages for automatic DEM generation among themselves, and against conventional analytical DEM generation, and demonstrate the potentials of this technology in practice;
- *Maintenance of large scale topographic data by monoplotting:* create an updated version of a large scale digital database using monoplotting technology, and analyze the potentials/limitations of such methodology in a full blown up large scale database maintenance environment;
- *Open system perspective to federate heterogeneous spatial databases:* provide a detailed technical and institutional framework for developing a federated interactive and intuitive data sharing system and mechanism between heterogeneous subsystems, and support the framework by a working prototype;
- *Operations management in geoinformation production:* evaluate redesign options for geoinformation production systems using Business Process Redesign and Operations Management to permit geoinformation production organizations to adjust timely to changing market conditions.
- *Performance of tie point computation in automatic aerial triangulation:* investigate the performance of tie point computation in automatic aerial triangulation by digital image matching (joint project between OEEPE and ISPRS);

The following OEEPE Official Publications have been published in 1996:
- **Nº 31:** Aerial triangulation using digitized images; by T. Sarjakoski and J. Jaakkola;
- **Nº 32:** Geocoding of ERS-1 SAR data; by I. Dowman;
- **Nº 33:** Proceedings of the OEEPE workshop on the application of digital photogrammetric workstations; by O. Kölbl;

Further, two editions of the OEEPE Newsletter have been published in 1996.

Two OEEPE Workshops have been organized in 1996, namely:
- Workshop on the Application of Digital Photogrammetric Workstations, 4-6 March 1996, in Lausanne, Switzerland;
- Workshop on 3D-City Models (in cooperation with EARSeL), 9-10 October 1996, in Bonn, Germany.

C. REGIONAL MEMBER NEWS

In addition to the research projects which have started in 1996, the following research projects will be continued/completed in 1997:
- *Large scale mapping specifications:* compile and compare information on methods for large scale map compilation, and analyze existing specifications for large scale technical and cadastral mapping;
- *Analyses of photoscanners:* elaborate criteria for the analysis of photoscanners, perform a standard test, and derive recommendations for standard test material;
- *Feature extraction from high resolution space imagery:* develop a methodology, and derive standard procedures for the assessment of algorithms for feature extraction from high resolution space imagery;
- *Automatic generalisation:* develop evaluation criteria and measurement tools, and evaluate commercial software packages for automatic generalisation, and some GIS tools;
- *3D City Models:* analyze 3D-GIS user and producer requirements, investigate some 3D-GIS applications and data integration problems, and compare cost-efficiency of different data acquisition techniques;
- *Development of specifications for a digital camera:* develop requirements for the development of a digital camera, in cooperation with users and industry;
- *Airborne kinematic GPS positioning:* investigate the performance of new systems (new dual frequency receiver hardware and new software which has been improved, specially for fast ambiguity solutions), related to obtaining continuous and absolute GPS trajectories;
- *Application of digital photogrammetric workstations:* analyze experiences with digital photogrammetric workstations in practice;

Several OEEPE Workshops are scheduled for 1997, namely:
- Workshop on Analyses of Photoscanners (in cooperation with ISPRS); Autumn 1997;
- Workshop on Automatic generation of DEM; 22-29 April 1997, in Stuttgart, Germany;
- Workshop on Feature extraction from high resolution space imagery; April/May 1997;
- Workshop on Maintenance of large scale topographic data by monoplotting; Spring 1997;

The following OEEPE Official Publications are scheduled for 1997:
- Digital Landscape Model for Europe; by B.S. Schulz;
- Accuracy of digital terrain models for civil engineering purposes; by A. Flotron;
- Large scale mapping specifications; by S. Dequal and L.A. Koen.

An OEEPE Home Page is under preparation on the Internet and should be operational early 1997.

The OEEPE is changing its research perspective; key elements of this change are:
- continue to be concerned with the practical aspects of data collection for GIS at a European level;
- be a provider of technical knowledge to guide others in addressing "softer" issues as eg. standardisation, quality management, data description;
- be a key source of important practical information about GIS in Europe that supports and where necessary tests proposals resulting from other initiatives;

- remain neutral in the role of "expert witness";
- act as a catalyst for assembling consortia;
- develop guide lines of best practice (eg. for standardisation).

Therefore, the OEEPE should strengthen its ability for a multidisciplinary, multi-national pool of experts to communicate both within countries and between countries; this requires reconsideration of the OEEPE operational structure, which is expected to be re-designed in 1997.

Close cooperation with CERCO (Comité Européen des Responsables de la Cartographie Officielle), EARSeL (European Association of Remote Sensing Laboratories), and EUROGI (European Umbrella Organization for Geographical Information) will be continued, and even intensified in 1997 through regular meetings of the Secretary-Generals of the four organizations.

D. RELATIONS WITH ISPRS

The OEEPE has been very visible in the framework of the XVIII ISPRS Congress; it organized a Special Session entitled "OEEPE, a partnership for solving European geoinformation problems"; it had a stand at the member exhibition; the special issue of the OEEPE Newsletter was disseminated to all Congress participants in their Congress bag; and last but not least several OEEPE active members received ISPRS awards and/or official nominations, which in turn honoured the OEEPE.

The changes in the perspective of the OEEPE, which have taken place during the past few years are fully in parallel with those made by the ISPRS and by the photogrammetry/remote sensing community; they are responding to the "paradigm changes of the 1990's". The OEEPE has definitively been encouraged, by the XVIII ISPRS Congress, to continue to actively participate to the development of the Geoinformatics science and technology in the European context, as it has been doing already for more than 40 years.

The OEEPE will continue to closely cooperate with the ISPRS, mainly in the framework of inter-organization Working Groups. The OEEPE will be present at the XIX ISPRS Congress in 2000, in Amsterdam.

THE PUBLICATIONS OF ISPRS

The **publications** of ISPRS in 1996 were in five categories:

1. Volume 31 of the ***International Archives of Photogrammetry and Remote Sensing*** was published in 1996. It comprises 980 papers totalling approximately 5000 pages, being the proceedings and the scientific and technical presentations of the 1996 Congress, edited and distributed by the representatives from the Austrian Society for Surveying and Geoinformation, the Member organization responsible for organising the 1996 Congress.
2. The ***ISPRS Journal of Photogrammetry and Remote Sensing*** is the official publication of the Society, was published in 6 editions in 1996, comprising approximately 300 pages. It contains scientific and technical articles and reviews in the field of photogrammetry and remote sensing, and as such, endeavours to be a primary channel of communication on the scientific activities of ISPRS, for specialists in all countries working in the many disciplines applying photogrammetry and remote sensing. A fuller report of the Journal is given below.
3. This publication of ***ISPRS Highlights*** was a new venture for ISPRS in 1996. It is the official bulletin of the Society, and will be published 4 times per year. If contains such items as the ISPRS Annual Reports, general news of ISPRS activities, event reports of ISPRS sponsored conferences, officers lists, keynote speeches, book, project and technology reviews, minutes of Council and Technical Commission meetings, and calls for papers etc. It was published for the first time in October 1996.
4. The ***ISPRS Organization and Programs 1996-2000*** (Silver Book) and the annual publication ***ISPRS Member List*** (Blue Book) were published to provide Members and interested groups a brief description of the current activities and addresses, and the underlying precepts of the Society.
5. Special circulars and announcements were used to provide information on the Congress and other activities of ISPRS.

REPORT ON ISPRS JOURNAL OF PHOTOGRAMMETRY AND REMOTE SENSING

(The Official Publication of the International Society for Photogrammetry and Remote Sensing)

Editor-in-Chief, David A. Tait.

Continuing the pattern set over the previous three years, once again in 1996 the Journal has been published according to schedule, with no significant delays in delivery. At the end of 1996, there were 9 papers with the publisher awaiting publication and a further 12 in the pipeline . Volume 51 contained only one Theme Issue, which was devoted to aspects of the work of Commission IV. However, three further Theme Issues are in preparation and will be published in 1997.

The international nature of the Journal has been maintained over the period since the Washington Congress,

with the publication of nearly 100 scientific papers from authors working in 24 different countries. Although the contributors are not spread evenly between these countries, it is encouraging to see an increasing number of papers from countries outside Europe and North America being accepted for publication.

While the number of subscribers has not increased over the last year, the Impact Factor, which is one measure of the use made of the Journal, has continued to increase.

As a result of decisions taken by Council and presented to the Society at the Vienna Congress, a new ISPRS publication, ISPRS Highlights, has been initiated to improve communication with members. A s a consequence, from the end of 1996, ISPRS Journal will be devoted to peer reviewed scientific/technical papers, with the Reports, Reviews and News Sections being discontinued. I therefore wish to extend my thanks to the three Associate Editors (Dorothy Bethel - Reviews, Manos Baltsavias - News and John Trinder - Reports) for their significant contributions to the running of the Journal in it s present form over recent years.

The reviewing of papers submitted for publication is carried out by a hard working and helpful Editorial Board of about 40 members. It is normal procedure to review the membership of the Editorial Board in the year following an ISPRS Congress. The Society does benefit enormously from the dedication of these Board Members and I must also express my gratitude to the Board for their help and advice.

ISPRS Journal has become an important shop window for work being carried out by active members of ISPRS. With more space now becoming available for scientific/technical papers, this role can be extended and I would encourage members to make contributions to the Journal, both in the form of papers for consideration for publication and by making suggestions for potential contributors and topics to be covered.

Scientific and technical manuscripts may be submitted in triplicate to the Editor-in-Chief of ISPRS Journal.

Subscriptions to the ISPRS Journal of Photogrammetry and Remote Sensing (ISSN 0924-2716) may be entered with subscription agents or directly with:

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NEWS FROM ISPRS TECHNICAL COMMISSIONS AND WORKING GROUPS

SUMMARY: WORKSHOP OF THE ISPRS WG VI/3 "INTERNATIONAL COOPERATION AND TECHNOLOGY TRANSFER"

February 3 - 7 1997 in Padua, Italy

Luigi Mussio, WG VI/3 Chairperson
Mojca Kosmatin Fras, WG VI/3 Co-chairperson

The WG VI/3 "International Cooperation and Technology Transfer" held its first meeting of the working group from February 3 - 7 1997 in Padua, University of Padua, Engineering Faculty - Aula Magna. It was organized by Dipartimento del Territorio e Sistemi Agrofestali and Dipartimento di Costruzioni e Trasporti - Sezione Rilevamento. The local host was Prof. Antonio Vettore.

Padua is one of the most important art cities in Italy, with an artistic and cultural heritage well worth discovering. Padua is famous also for its old University in which Galileo Galilei taught for 18 years, around 400 years ago. Furthermore, in 1597 he wrote the first letter to Kepler in favour of Copernican theory. This was not only a fundamental event, but also geodesy and related sciences were born at that time from applied mathematics and astronomy and developed in the following centuries. Although the meeting was small, it honoured the figure of Galileo Galilei with one-day tutorial.

The meeting has 18 participants and 52 correspondents from abroad, involving 30 foreign countries plus

Italy. President of ISPRS Technical Commission VI Prof. Klaas Villanueva from Indonesia and a chairperson of WG VI/1 Dr. Tania Maria Sausen from Brazil were present. The meeting consisted of seven Technical sessions, a one-day Tutorial on Geomatics, and half-day Tutorial on Data Processing and Poster Session. A total of 6 lectures in the framework of tutorials, 23 papers and 11 posters were presented. The main topics of the meeting were: education in survey, geodesy, photogrammetry and GIS, knowledge sharing and technology transfer, and selected themes from geodesy, photogrammetry, remote sensing and GIS. The variety of subjects covered by the meeting clearly underline the intention of the WG VI/3 to bring together experts from various disciplines, eg. scientists, engineers and users in the fields of photogrammetry, remote sensing, astronomy, geodesy, geophysics, electronics and computer science from universities, research institutes, governmental organisations, industries and engineering firms.

The first day began in the afternoon with the opening session and the welcome addresses. The chairperson Prof. Luigi Mussio opened the meeting. He emphasised the Terms of Reference of the WG VI/3 and concluded that cooperation should develop from everyday routines, with the aim to exchange experiences and to positively transfer useful technologies. Welcome addresses were given by the Padua's Academic Authorities, the President of the Italian Society of Surveying and Photogrammetry Prof. Attilio Selvini and the President of ISPRS Technical Commission VI Prof. Klass Villanueva who stressed the importance of the role of the WG on International Cooperation and Technology Transfer. He realised that in the past ISPRS was generally dominated by the developed countries. A part of the Terms of Reference of the WG VI/3 clearly refers to needs of Developing Countries. In implementing these, one has to recognise the cultural differences that exist. Furthermore, with respect to Technology Transfer, cultural background is one critical factor that must be seriously taken into account for its success. Finally, the Assistant Secretary Dr Tamara Bellone welcomed the guests from East Europe in the two Slavic languages, immediately creating an atmosphere of friendship. In addition, L.Mussio gave an overview of different approaches of data processing in photogrammetry and cartography through their history.

Each technical session consisted of maximum four papers what allowed enough time for presentation and discussions. Technical sessions were chaired by the following chairpersons: L. Mussio, T. Bellone, K. Villanueva, L. Pinto, G. Vassena, M. Kosmatin Fras, T. M. Sausen, G. Forlani, B. Crippa.

The first technical session brought some insight into digital photogrammetric research (automatic reconstruction of multiplanar environment by maximum likelihood, automatic mosaicking of planar surface) and the use of GPS for aerial photogrammetry.

The second day was a tutorial on the path from astronomy to geomatics with emphasis on technology transfer and international cooperation. Prof. Armin Gruen, past 2nd Vice president of ISPRS gave a lecture on Spatial Information from Images. Photogrammetry is technology driven and not application driven, which is clear from developments of the main technological eras in photogrammetry, namely graphical, analogue, analytical and digital. A comprehensive overview of the main historical events in photogrammetry was given as well as some new digital approaches were reported (researches in 3D city models, the "snake" method, etc.). From the audience, a detailed explanation of some digital algorithms were requested. The second lecture was given by Prof. F. Sans (1st Vice President of IAG). The aims of research into the measurement of figure of the Earth were explained. For photogrammetrists the "surface" of the Earth is important , which is not equal to its mathematical (geophysical) figure. Then followed two lectures on GIS, A. Carosio on 'GIS - State of Art and Future Trends' and M. Szacherska, 'GIS as a Tool or as a Goal'.

The second and third technical sessions were dedicated to Education in Surveying and Geodesy, Photogrammetry and GIS. For teaching photogrammetry a program written in MatLAB was presented. The author V. Casella is giving the program free to interested persons. A concept of a low cost photogrammetric system for projects of architectural photogrammetry and a hypertext on architectural object GIS of the St. Marcus Basilica in Venice were presented.

From the pursuit of international cooperation, papers from Slovenia, Albania, Russia, Ukraine and Italy were presented. The presentation of training activities of Italian Development Cooperation in the field of remote sensing was of particular interesting. This training was provided for the candidates from developing countries and included also field work. In discussions, there was a question on how to define "technology transfer". The proposal was that "technology co-generation" would be a better term.

The second half-day tutorial was a professional high-level event. Two excellent lectures were given: 'Advanced Kalman Filter Technique for the Dynamic Survey in Digital Photogrammetry' by Professor Fabio Crosilla and Dr Dominico Visintini; and 'Wavelets, an Introduction to Basic Theory and Application in Survey and Mapping Sciences' by Professor Battista Benciolini.

The last two technical sessions dealt with presentation of some projects from deformation monitoring, digital photogrammetry, SAR Interferometry, X-ray photogrammetry and GIS.

The poster session, opened at the beginning of the meeting and the posters were displayed for one week, showing interesting contributions on data processing (eg. the different behaviour of correlated and not correlated data), architecture and archaeological photogrammetry, teaching photogrammetry in developed and developing countries, GIS (eg. 3D topology) and geo-marketing.

In a business meeting of the WG, future activities were discussed and planned. The future plan of WG VI/3 will combine activities in East Europe, Africa and South America with high level contributions to the Mid Term

Symposium and the next Congress. The next meetings are planned to be in:

October 27-30, 1997	Bahia Blanca (Argentina)
February 16-20, 1998	Perugia (Italy) - repetition
August 24-25, 1998	Bali (Indonesia) Advanced tutorial
February 1-5, 1999	Cape Town (South Africa)
February 15-19, 1999	Parma (Italy) - repetition
October, 25-29, 1999	Ljubljana (Slovenia)

In addition to technical program there were also some social events. The participants were invited to visit the Galilean Exhibition of the Astronomical Observatory of Padua. The highlight of the social program was a dinner in a nice restaurant with an authentic atmosphere. The participants enjoyed excellent Italian cuisine and wines and had the opportunity for discussions in a most relaxing atmosphere. The participants agreed that the organisers (local host and the chairman Luigi Mussio and his colleagues) had done a good job. Last but not least, the international cooperation has started well and a technology co-generation is expected to grow as a result of this meeting.

The meeting was closed by the chairmen Prof. Luigi Mussio. The key words of the meeting: hard work, interesting discussions and enjoyable events. The most important result was the following. It is completely wrong to think that technology transfer could involve the purchase or sale of expensive technologies, or the copying or diffusion of prepared projects. International cooperation requires the mutual development of a generation of scientists, technicians and users within their country of origin; for these reasons, the new term "technology co-generation" is preferable to the classical terms "technology transfer".

1997 SPIE/ISPRS CONFERENCE ON "INTEGRATING PHOTOGRAMMETRIC TECHNIQUES WITH SCENE ANALYSIS AND MACHINE VISION III"

21-23 April 1997, Orlando, FL, USA

ISPRS Working Group II/6 and ISPRS Working Group II/8
Report by C. Wiedemann (Munich Germany)

A conference on "Integrating Photogrammetric Techniques with Scene Analysis and Machine Vision III" was held as part of the SPIE AeroSense Symposium during 21-23 April, 1997 in Orlando, Florida. The conference was hosted by SPIE (The International Society for Optical Engineering), in cooperation with the ISPRS Working Groups II/6 and II/8 and was organized by David M. McKeown, J. Chris McGlone (both Carnegie Mellon University, Pittsburgh, USA), and Olivier Jamet (Institut Géographique National, Paris, France), the officers of the ISPRS Working Group II/6 entitled „Integration of Image Understanding into Cartographic Systems". A total of 30 papers was presented in 6 different sessions. Business meetings of ISPRS WG II/6 and ISPRS WG II/8 („Systems for Image Analysis", Cochairs: Christian Heipke, Technical University Munich, Germany and Tapani Sarjakoshi, Finish Geodetic Institute, Finland) were held on the first day of the conference. On the second day a panel discussion entitled „Future of Cartographic Updates: User Requirements and Possibilities for Automation" took place. The three panelists were Bobbi Lenczowski, National Imagery and Mapping Agency, USA, George Lukes, Defense Advanced Research Projects Agency, USA, and Olivier Jamet. There were about 50-70 people attending the sessions. A major feature of this conference was the ample time for questions during the sessions, which made it rather an intensive workshop with interesting discussions. The presentations of the first day focused on digital photogrammetric systems and road extraction from aerial images, on the second day DEM/DTM matching and representation as well as building extraction were covered, the talks on the third day concerned automated registration. In the following a short summary of the results of each session is given.

Photogrammetric Systems

Digital photogrammetric systems are on the verge of being introduced into the daily practice. For a broad acceptance they must offer clear advantages to the user. Meanwhile they are going to not only replace analytical workstations but to provide further possibilities. Through processing of three-line imagery which is digital in the first place the time consuming digitization step can be avoided. Digital processing offers the possibility to simultaneously process whole blocks instead of only models. Computations were carried out for blocks with more than 1000 images. The productivity of map making could be increased by semiautomatic tools for object extraction, whereas the reliability of the results is seen as a critical point for the acceptance of these tools.

Sensor Systems

Different types of sensors are available which were examined according to their potential for cartographic feature extraction. It turned out that for road network extraction for 1:25,000 geospatial databases a pancromatic sensor of higher resolution (less than 5m ground resolution) increases the exhaustivity of the extraction whereas multispectral imagery of even lower resolution increases the reliability. Investigations of hyperspectral imagery of higher ground resolution for cartographic feature extraction are on the way.

Road Detection and Extraction

The extraction of roads from digital imagery has been a research topic for many years. Their varying appearance together with different contextual situations still causes major problems for (semi-)automatic approaches. To increase the reliability of the results a combination of road extraction on different resolutions together with contextual reasoning has been proposed. In the light of updating of cartographic information the dataset to be updated can be introduced as additional information. Semiautomatic approaches combine human ability of road detection with automatic measurement techniques, e.g. by the use of snakes. It is generally accepted that some type of object model must be available, whereas the required degree of modeling concerning the level of detail as well as the amount of contextual information is not yet clear. Also proper handling of road crossings is not solved by the current approaches.

DEM/DTM Matching and DEM Representation

Research is still undertaken in the field of automatic extraction of digital elevation models (DEM). Developments are directed to the use of structural or relational matching techniques which are able to cope with less accurate initial values as do feature based and intensity based techniques. A major drawback of these techniques is their computational expense. Global DEM generation of large areas has been speeded up by program parallelization. The automatic extraction of breaklines has been tackled as well as multi-resolution matching which is unsolved in general but expected to improve the results with respect to first resampling the images to the lowest common resolution. 3D object extraction could improve the DEM generation, but a continuous user control of automated procedures is proposed because of the insufficient reliability of the existing systems. Investigations were undertaken on the potential of triangular irregular networks for real-time visualizations of DTM.

Building Modeling and Extraction

The automatic extraction of buildings has become a major research topic. Whereas the extraction of simple rectangular buildings with flat roofs seems to be possible there is a variety of approaches dealing with more complex types of buildings. Therefore, integration of different data sources like stereo image data, 2D GIS or digitized maps, and height information was proposed. Geometric constraints together with shadow analysis were shown to be useful for validation of hypotheses generated from the image data. Statistical analyzis of building structures was used to derive criteria for the evaluation of extracted buildings. Furthermore the extraction of microstructures of building surfaces was shown which were used for improved visualizations.

Automated Registration

The image-to-image registration and the image-to-map registration (i.e. the determination of the elements of exterior orientation) are major research topics. In case of image-to-image registration generation of many multi-ray conjugate points increases the geometric stability of image blocks. An intelligent point selection avoiding e.g. point measurements on top of trees which includes some degree of object extraction is not yet available. There are two different trends in image-to-map registration, use of template matching and use of features like polygons. Presented template matching techniques rely on ground control information like manhole covers which are signalized in some areas. The extraction step plays a major role within registration techniques relying on features. Up to now special preprocessing seems to be essential if images of different sensor systems are used together. For real time applications with lower accuracy requirements linear algorithms were investigated using object point selection by invariance techniques. Some attention was paid to the distribution of the control points.

Future of Cartographic Updates: User Requirements and Possibilities for Automation (Panel Discussion)

The more new geographic data sets exist the more increases the need for their update. Using the available methods, 10% of changes lead to 40-50% of the costs of initial data capturing. This rate demands for new approaches which may use mixed acquisition techniques (GPS, airborne or spaceborne imagery, etc.). Also the users of geographic data sets can provide update information. This may blur the distinction between producers and customers. A scheme for the integration of these different information sources will heavily depend on the kind of data sets and on the tasks they are used for.

Last but not least we would like to express our thanks to David McKeown, who again was able to bring together a good mix of photogrammetrists and computer vision people, and who in a very efficient, yet lively and hearty way took care of the conference organization. The conference proceedings are available as SPIE Vol. 3072 „Integrating Photogrammetric Techniques with Scene Analysis and Machine Vision III" (D.M. McKeown, J.C. McGlone, O. Jamet, eds.). Orders may be placed at SPIE, P.O. Box 10, Bellingham, Washington 98227-0010, USA, Phone +1 (360) 676-3290, Fax +1 (360) 647-1445 or e-mail <bookorders@spie.org>.

WORKSHOP ON THEORETICAL AND PRACTICAL ASPECTS OF SURFACE RECONSTRUCTION AND 3-D OBJECT EXTRACTION

Haifa, Israel. September 9 - 11, 1997

ISPRS Working Groups III/2, III/3 and II/8

CO-SPONSORED BY:
Israeli Society of Photogrammetry and Remote Sensing
Technion-Israel Institute of Technology
Survey of Israel
Ofek Aerial Photography Ltd.

PLEASE NOTE: This document and other relevant information appears on the Workshop Homepage:
http:llwww.technion.ac.il/people/krupnik/workshop.html

WORKSHOP ORGANIZATION
The workshop is a joint effort of three ISPRS working groups:
ISPRS WG III/2: "Algorithms for Surface Reconstruction"
Co-chairs: A. Krupnik (Israel) and C. Toth (USA)
Secretary: M. Fradkin (Israel)
ISPRS WG III/3: "Feature Extraction and Grouping"
Co-chairs: H. Ebner (Germany) and R. Nevatia (USA)
Secretary: H. Mayer (Germany)
ISPRS WG II/8: "Digital Systems for Image Processing"
Co-chairs: C. Heipke (Germany) and T. Sarjakoski (Finland)
Secretary: K. Eder (Germany)

The intention of the organizers is to provide a stimulating casual workshop environment, rather than a rigid conference climate, in order to promote meaningful discussions beyond the presentations.

WORKSHOP CHAIR
Dr. Amnon Krupnik
Dept. of Civil Engineering
Technion - Israel Institute of Technology
Haifa 32000, Israel
Phone: +972-4829.2661, Fax: +972-4823.4757
E-mail: krupnik@tx.technion.ac.il

WORKSHOP ON: 3D RECONSTRUCTION AND MODELLING OF TOPOGRAPHIC OBJECTS - INTEGRATION OF MULTIPLE INFORMATION SOURCES AND IMAGE UNDERSTANDING

Stuttgart, Germany. 17 - 19 September 1997

ISPRS Working Groups III/4, IV/2, and ICWG IV/III.2

ORGANISING ISPRS WORKING GROUPS:
WG III/4 - Image UnderstandinglObject Recognition
WG IV/2 - Digital Terrain Models, Orthoimages and 3D GIS
Intercommission WG IV/III.2 - Integration of Image Analysis and GIS

COOPERATING ORGANISATIONS:
International Society for Photogrammetry and Remote Sensing (ISPRS)
German Society for Photogrammetry and Remote Sensing (DGPF)
Institute of Photogrammetry, University Stuttgart

WORKSHOP SITE
The workshop will be held in the auditorium 17.02 in the basement of building K2 of Stuttgart University, Keplerstrasse 17, which is conveniently located in downtown Stuttgart and close to the railway station.

TECHNICAL PROGRAMME
The submitted abstracts were evaluated by the chairmen of the three ISPRS Working Groups organising the workshop. Twenty-nine selected papers from 15 different countries will be presented in 9 Technical Sessions. Most technical sessions have only 3 papers, thus allowing plenty of time for intensive discussions and preserving the workshop character of the meeting.
The Proceedings of the Workshop will be published in the series of the International Archives of Photogrammetry and Remote Sensing (IAPRS, Vol. 32, Part 3-4W2) and will be available on-site.
The technical language of the meeting will be English.

CONFERENCE ORGANISATION
The workshop is organised by the following ISPRS Working Groups:

- **WG III/4** - Image Understanding / Object Recognition. **Chairmen:** Wolfgang Eckstein (Germany), Eberhard Guelch (Germany). **http://www.radig.informatik.tu-muenchen.de/ISPRS/wgIII.4.html**

- **WG IV/2** - Digital Terrain Models, Orthoimages and 3D GIS. **Chairmen:** Roy Welch (USA), Klaus Tempfli (Netherlands). **http://www.ifp.uni-stuttgart.de/comm4/wgIV2.html**

- **Intercommission WG IV/III.2** - Integration of Image Analysis and GIS. **Chairmen:** Emmanuel P. Baltsavias (Switzerland), Michael Hahn (Germany). **http://www.ifp.uni-stuttgart.de/comm4/wg4_32.html**

MEMBERS OF THE ORGANISING COMMITTEE:
Dirk Stallmann, Carsten Steger, Marguerite Remillard, Martina Kroma

CONTACT ADDRESS
Dirk Stallmann

Institute of Photogrammetry
University Stuttgart
Geschwister-Scholl-Str. 24
D-70174 Stuttgart, Germany
E-mail: Dirk.Stallmann@ifp.uni-stuttgart.de
Tel.: +49-711-121 338713201, Fax: +49-711-1213297

JOINT WORKSHOP ON: IMAGING SENSORS AND MAPPING FROM SPACE

Hannover, Germany. Sept. 29 - Oct. 2, 1997

ISPRS Working Groups I/l, I/3 and IV/4

WG I/l: Sensor Parameter Standarisation and Calibration
Chairman: Dr. Manfred Schroeder
(DLR, Oberpfaffenhofen, Germany)
WG I/3: Sensors and Platforms for Topographic Survey
Chairman: Dr. Karsten Jacobsen (U. Hannover, Germany)
WG IV/4: Mapping Using High Resolution Satellite Imagery
Chairman: Prof. Dr. Gottfried Konecny
(University Hannover, Germany)

The Objectives of the Workshop are to discuss current trends in the following subjects:

1. Geometric and Radiometric Sensor Calibration
2. Sensor Parameter Standarization
3. Status of Sensors for Mapping
4. Situation of SAR and Laser Scanning
5. Status and Technical Definition of High Resolution Satellite Systems for Topographic and Thematic Mapping
6. Mapping Potential of Existing High Resolution Satellite Imagery

The Workshop event is to offer the possibility to developers, researchers and users to review and discuss the mentioned topics and to find recommendations for future development.

CONTACT ADDRESS:
Institute for Photogrammetry and Engineering Surveys
University of Hannover
Mrs. G. Böttcher
Nienburger Str. 1
D-30167 Hannover
Germany
Tel: 49-511-762.2482
Fax: 49-511-762.2483
E-mail: gesine@ipi.uni-hannover.de

FOURTH CONFERENCE ON: OPTICAL 3-D MEASUREMENT TECHNIQUES

APPLICATIONS IN MANUFACTURING, QUALITY CONTROL, ROBOTICS, NAVIGATION, MEDICAL IMAGING AND ANIMATION
Zurich, Switzerland. September 29 - October 2, 1997

ORGANIZED BY
Prof. A. Grün, Institute of Geodesy and Photogrammetry Swiss Federal Institute of Technology (ETH) Zurich.
Prof. H. Kahmen, Institute of National Survey and Engineering Geodesy, University of Technology Vienna.
Secretary: L. Steinbruckner, ETH Zurich.

COOPERATING ORGANISATIONS
ISPRS Commission V: Close-Range Techniques and Machine Vision (President: Dr. Hirofumi Chikatsu, Japan).
IAG Special Commission SC 4: Application of Geodesy to Engineering.
FIG Commission 6: Engineering Surveys.
ARIDA - Japanese Association for Real-Time Imaging and Dynamic Analysis.
SGPBF - Swiss Society of Photogrammetry, Image Analysis and Remote Sensing.
MEMBERS OF ORGANIZING COMMITTEE:
Dr. E. Baltsavias, Dipl.-Ing. J.-C. Brossard, Dipl.- Ing. Th. Bührer, Dr. H. Li, Dr. H.-G. Maas, Dipl.-Ing. M. Niederöst, Dipl.-Ing. A. Streilein, Dipl.-Ing. A. Terribilini

TUTORIALS (to be held during the Conference):
• *Tutorial A: Robot Techniques and Surveying Systems.* H. Kahmen and A. Wieser, Technical University Vienna.
• *Tutorial B: 3D - Laserscanning. A Tool for Close-Range Digitalization and Airborne Surveying.* A. Wehr, University of Stuttgart.
• *Tutorial C: Digital Photogrammetry for 3-D Measurements in Dynamic Processes - Fundamentals, Potential and Applications.* H. G. Maas, ETH Zurich.

CONTACT ADDRESS:
Conference on Optical 3-D Measurement Techniques
Institute of Geodesy and Photogrammetry
ETH Hoenggerberg. CH-8093 Zurich, Switzerland
Tel.: +41 16333157 - Fax: +41 1 6331101
E-mail: steinbrueckner@geod.ethz.ch

ISPRS EVENTS CALENDAR

1 April 1997 Version
Send Updates to: J. Heckman Fax: +1-610-354-6255
Email: jheckman@pcmsgw.vf.lmco.com

** = New or updated information; C = ISPRS Meeting- Dates Confirmed and approved by Council; F = Facsimile; tbr = ISPRS Proposed Meeting - dates/location to be resolved pending Council approval; E = E-mail*

1997			
DATE	**EVENT**	**SITE**	**CONTACT**
1-3 Apr 97	9th Annual Le Marche Europeen de L'information Geographique - "MARI 97"	Paris, FRANCE	Ortech P: +33-1-45230816/F: 46240181 E: ortech@easynet.fr
1-4 Apr 97 *	1997 National Space Symposium "The Promise of Space"	Colorado Springs, USA	United States Space Foundation P: +1-800-691-4000/F: +719-576-8801
2-4 Apr 97	Virtual Reality Worldwide 97	Santa Clara, USA	AMA Inc. P: +1-619-751-8841/F: 751-8842 E: VRWW@cyberedge.com www.cyberedge.com/VRWW.html
5-9 Apr 97	FIG Com. 7 Annual Meeting and Seminar on "Appropriate Cadastral Systems for Developing Countries"	Penang, MALAYSIA	Adubul Majid bin Mohamed F +60-3-2933616 E: kpup@po.jaring.my
6-9 Apr 97 C	ISPRS Council Meetings	Seattle, USA	Prof. J. Trinder (Secy General) P +61-2-385-5308F: 313-7493 E: j.trinder@unsw.edu.au
7-10 Apr 97	Annual International Interdisciplinary Conference "The Greening of Higher Education: National Innovation and International Cooperation in Environmental Education"	London, UK	Folly Bridge Workshops P: +44-1865-204-244/F: 249-020
7-10 Apr 97	"Geospatial Information Age" -1997 ACSM-ASPRS -Annual Convention & Exhibition -Resource Technology Institute Annual Conference -Auto-Carto 13	Seattle, USA	Denise Calvert P: +1-301-493-0200/F: 493-8245
7-11 Apr 97 C	ISPRS WG VII/1 & WG VII/5 7th International Symposium on "Physical Measurements & Signatures in Remote Sensing"	Courchevel, FRANCE	Corinne Olague P: +33-5-61-71-55-71/F: 71-44-37 www.cnes.fr/actualites/isprs97.html
8-10 Apr 97	Satellite Navigation Technology	Sydney, AUSTRALIA	P: +07-3369-7866/F: 3367-1471 E: oa@bnec.design.net.au
12-18 Apr 97	1st Trans Tasman and 38th Australian Surveyors Congress "Surveying: Positioning the Profession"	Newcastle, AUSTRALIA	Prof. J. G. Fryer P: +61-49-216049/F: 216991 E: cejgf@cc.newcastle.cdu
14-25 Apr 97	15th International Hydrographic Conference (19-21 Apr-IUSM Executive Board meetings)	MONACO	IHO Congress F +33-93-25-20-03 E: ihb@unice.fr
16-18 Apr 97 *	Joint European Conference and Exhibition on Geographical Information	Austria, VIENNA	AKM Congress Service P: +41-61-691-51-11/F: 81-89 E: akm@bluewin.ch www.frw.rww.nl/jecc/
17-18 Apr 97 *	EARSeL Workshop on "Remote Sensing of Land Ice and Snow"	Freiburg, GERMANY	M. Godefroy P: +33-1-45-56-73-60/F: 56-73-61 E: EARSeL@meteo.fr
21-23 Apr 97 C	SPIE Aerosense '97 including: ISPRS WG II/6 "Integrating Photogrammetric Techniques With Scene Analysis and Machine Vision III"	Orlando, USA	David M. McKeown (WG II/6) P: +1-412-268-2626/F: 631-5576 E: dmm@cs.comm.eciu www.cs.cmu.edu/~MAPSlab
21-25 Apr 97	European Symposium on Global Navigation Satellite Systems "GNSS '97"	Munich, GERMANY	DGON P: +49-211-369-909/F: 351-645

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DATE	**EVENT**	**SITE**	**CONTACT**
27-30 Apr 97	Fourth Thematic Conference and Exhibition on "Geographic Information Systems (GIS)"	Tehran, IRAN	National Cartographic Center of Iran P +98-21-600-1098/F: 600-1098 E: nccl@dci.iran.com
27-30 Apr 97	Symposium on "Interactive 3D Graphics"	Providence, USA	Lisa Manekofsky P: +1-401-863-7654/F: 863-7657 E: ljm@cs.brown,edu
28-29 Apr 97	GIS in Action '97	Portland, USA	Mr. Thomas L. Pagh P: +1-503-499-0386/F: 223-2701 E: tpagh@attmail.com
29 Apr-1 May *	16th Biennial Workshop on "Color Photography & Videography in Resource Assessment"	Weslaco, USA	ASPRS P: +1-210-969-4824/F: 969-4893 E: j-veritt@tamu.edu
5-9 May 97	International Workshop on "Automatic Extraction of Man-Made Objects from Aerial and Space Images (II)"	Ascona, SWITZERLAND	E.Baltsavias P: +41-1-633-3042/F: 633-1101 E: ascona@geod.eihz.ch www.geod.ethz.ch/p02/events/events. html
11-16 May 97	64th FIG Permanent Committee Meeting	SINGAPORE	FIG P: +65-33-8-8585/F: 225-2453
12-15 May 97	International Conference on "Recent Advances in 3-D Digital Imaging and Modeling"	Ottawa, CANADA	G. Roth P: +1-613-993-1219/F: 952-0215 E: roth@iit.nrc.ca www.nrc.ca/confserv/digital97/welcome.html
12-16 May 97	GIS Brazil 97: III Congress on Geoprocessing	Curitiba, BRAZIL	Sagres Editora (Fator GIS) F: +55-41-264.9807, E: fator.gis@sul.com.br
12-17 May 97	Forestry in a Changing Political Environment "Challenges for the 21st Century"	Victoria Falls, ZIMBABWE	Forestry Commision F: +263-14-497-066
13-15 May 97 *	GIS for Infrastructure Planning and Management	Seoul, KOREA	Stephen McFarland P: +65-323-6373/F: 323-4725
13-16 May 97	Geotechnica	Cologne, GERMANY	Koln Messe P: +49-221-5210
13-16 May 97 *	GPS/GIS '97 "Mapping to Manage"	Annapolis, USA	GPS/GIS '97 P: +1-301-664-8000
18-23 May 97	IS&T 50th Annual Conference	Cambridge, USA	IS&T P: +1-703-642-9090/F: 642-9094 E: info@imaging.org www.imaging.org
19-21 May 97	IEEE Instrumentation and Measurement Technology Conference	Ottawa, CANADA	R. Myers F: +1-301-287-1851 E: bob.myers@ieee.org
20-23 May 97 C	SELPER "1st Workshop on Education in Remote Sensing, Mercosul Wide" ISPRS	Camboriu Beach, BRAZIL	Dr. Tania Sausen-(WG VI/1) P: +55-12-325-6862/F: 325-6460 E: tania@ltid.inpe.br
20-21 May 97 *	Digital Mapping '97	London, UK	Ms Anna Hern T: +44-1932-252-549/F: 252-545
21-23 May 97 *	SMATI '97 Workshop "Semantic Modeling for the Acquisition of Topographic Information from Images and Maps"	Bonn, GERMANY	W. Foerstner E: wf@ifb.uni-bonn.de
24-30 May 97 *	- 9th International Geomatics Conference - 19th Canadian Remote Sensing Symposium - Mid-term RADARSAT ADRO meeting - 4th GlobeSAR Symposium	Ottawa, CANADA	Ms. Rose Barthe P: +1-613-996-2817/F: 947-7059 E: ger97@ccrs.nrcan.gc.ca www.ccrs.nrcan.gc.ca/ger97
26-29 May 97	GIS AM/FM Asia '97 and Geoinformatics '97	Taipei, TAIWAN	Chinese Geographic Information Society P: +886-2-362-1499/F: 362-2911 E: jglay@ccms.ntu.edu.tw
28-29 May 97	10th Annual Towson State University GIS Conference "TSUGIS '97"	Baltimore, USA	Jay Morgan P: +1-410-830-2964/F: 830-3888 E: e7g4mor@toe.towson.edu
28-31 May 97 *	5th IASTED International Conference "Robotics and Manufacturing"	Cancun, MEXICO	IASTED Secretariat - RM '97 P: +1-403-288-1195/F: 247-6851 E: iasted@cadvision.com www.iasted.com

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DATE	**EVENT**	**SITE**	**CONTACT**
1-6 Jun 97	IMEKO/IFAC Congress "New Measurements - Challenges and Visions"	Tampere, FINLAND	XIV IMEDO Secretariat F: +358-9-1451650 E: atufin@ibm.net
2-6 Jun 97	FIG Com. 4/5/6 Symp: "Surveying in Connection with Large Bridges and Tunnel Projects"	Copenhagen, DENMARK	S.K. Johansen F: +45-86-521701
2-6 Jun 97	6th UN Regional Cartographic Conference for the Americas	New York, USA	UN/DDSM F: +1-212-963-1270
3-6 Jun 97 *	International Symposium on Kinematic Systems in Geodesy, Geomatics and Navigation	Banff, CANADA	KIS'97 F: +1-403-284-1980 E: kis97@ensu.ucalgary.ca
9-12 Jun 97 *	International Conference on Neural Networks (ICNN '97)	Houston, USA	Mary Lou Padgett E: m.padgett@iee.org
10-13 Jun 97 *	IEA-AIE - 97 10th International Conference on "Industrial & Engineering Applications of Artificial Intelligence & Expert Systems"	Atlanta, USA	Moonis Ali E: ma04@swt.edu www.ai.uga.edu/conferences/iea97.html
16-19 Jun 97	A/E/C Systems '97	Philadelphia, USA	Ms. Pat Smith P: +1-800-451-1196/F: +610-458-7171 www/aecsystems.com
16-20 Jun 97	Europto Series "Environmental Sensing III"	Munich, GERMANY	SPIE P: +1-360-6763290/F: 6471445 spie@spie.org www.spie.org/
17-19 Jun 97	Planning for Global Radio Navigation	Moscow, RUSSIA	Mr. Norman F. Matthews F: +44-1621-778-295
17-19 Jun 97 *	EARSeL 21st Anniversary General Assembly and Symposium - "Future Trends in Remote Sensing"	Lyngby, DENMARK	M. Godefroy P: +33-1-45-56-73-60/F: 56-73-61 E: EARSeL@meteo.fr
17-19 Jun 97 *	Computer Vision and Pattern Recognition (CVPR)	St. Thomas, US Virgin Islands	D. Huttenlocher E: dph@cs.cornell.edu
23-27 Jun 97	18th International Cartographic Conference "ICC '97"	Stockholm, SWEDEN	Swedish Cartographic Society F: +46-26-653160 www.lm.se/icc97/icc97.html
24-28 Jun 97	Computer Graphics International ' 97	Hasselt-Diepenbeek, BELGIUM	F. van Reeth P: + 32-11-268411/F: 268400 E: CGI97@luc.ac.be http://edm.luc.ac.ba/cgi97
30 Jun - 2 Jul 97	53rd ION "Future of Navigation: Facing the Challenges"	Albuquerque, USA	Dave Gleason P: +1-617-377-5255/F: 377-9950 E: gleason@plh.af.mil
30 Jun - 11 Jul 97	International Seminar on Satellite Image Digital Procesing Applied to Cartography (IGN / Spain, IPGH / PIGH, INEGI / Mexico)	Aguascalientes, AGS, MEXICO	Maria Elena Flores M. (INEGI) F: +52-49-181280, P: +52-49-186237 E: mflores@cap.inegi.gob.mx
5-9 Jul 97 *	The 8th International Conference on Advanced Robotics, ICAR'97	Monterey, USA	Prof. Antti Koiva P: +1-317-494-3436/F: 494-0880 E: koivo@ecn.urdue.edu www.cs.cmu.edu/afs/cs/project/space/www/cira97/
7-10 Jul 97	3rd International Airborne Remote Sensing Conference and Exhibition	Copenhagen, DENMARK	ERIM / Airborne Conference P: +1-313-994-1200 x3234/F: 994-5123 E: wallman@erim.org www.erim.org/CONF/
7-10 Jul 97	IGARSS '97	Cannes, FRANCE	P. Kamoun F: +33-9292-3010 E: khazenic@chrpisis.gstc.nnsa.gov
7-12 Jul 97	International Conference on Forest Products for Sustainable Forestry	Pullman, USA	IUFRO Division 5 Conference F: +1-509-535-0945
8-11 Jul 97 *	Joint Workshop on Metadata Registries	Berkeley, USA	John L. McCarthy P: +510-486-5307/F: 486-7891 E: JLMcCarthy@lbl.gov www.lbl.gov/~olken/EPA/Workshop/ call.html
10-11 Jul 97 *	CIRA '97 "Computational Intelligence in Robotics and Automation"	Monterey, USA	Prof. Antti Koiva P: +1-317-494-3436/F: 494-0880 E: koivo@ecn.urdue.edu www.cs.cmu.edu/afs/cs/project/space/www/cira97/

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DATE	**EVENT**	**SITE**	**CONTACT**
14-17 Jul 97 *	International Conference on "Image Processing and Applications" (IPA '97)	Dublin, IRELAND	IPA '97 Secretariat E: sgriffiths@iee.org.uk
17-19 Jul 97 *	EARSeL Workshop on "Laser Remote Sensing of Land and Sea"	Tallinn, ESTONIA	M. Godefroy P: +33-1-45-56-73-60/F: 56-73-61 E: EARSeL@meteo.fr
20-24 Jul 97	URISA '97	Toronto, ONTARIO	URISA P: +1-202-289-1685/F: 842-1850 E: training@urisa.org
21-23 Jul 97	IFAC Workshop Intelligent Manufacturing Systems	Seoul, KOREA	Hyung Suck Cho F: +82-42-8693210 E: hscho@ica.kalat.ac.kr
25 Jul-1 Aug 97	SPIE's International Symposium on "Optics, Imaging and Instrumentation"	San Diego, USA	SPIE P: +1-360-6763290/F: 6471445 spie@spie.org www.spie.org/
26-30 Jul 97 *	"Softcopy Photogrammetry Applications: Using the Tools"	Arlington, USA	ASPRS P: +1-301-493-0290 www.asprs.org/asprs
3-8 Aug 97 *	IGARSS '97 "Remote Sensing - A Scientific Vision for Sustainable Development"	SINGAPORE	P: +1-713-291-9222/F: 291-9224 E: tstein@phoenix.net www.phoenix.net/~tstein/igarss
3-8 Aug 97 C*	International Symposium on Spectral Sensing Research ISSSR 1997 "Observation to Information" ISPRS	San Diego, USA	P: +1-202-393-1648/F: 628-8498 E: register@issssr.org www.isssr.org
3-8 Aug 97 *	SIGGRAPH '97	Los Angeles, USA	Steve Koppel E: koppel@siggraph.org
10-24 Aug 97 *	GeoInformatics Conference of the International Eurasian Academy of Sciences	Beijing, CHINA	P: +86-10-649-15044/F: 11544
12-29 Aug 97 *	"Physical Processes in the Coastal Zone: Computer Modelling and Remote Sensing"	Dundee, UK	Sheila Newcombe P: +44-1382-344933/F: 345415 E: S.K.Newcombe@dundee.ac.uk
18-22 Aug 97 *	Global Conference on Environmental Education	New Delhi, INDIA	Indian Environmental Society P: +91-11-222-3311 /F: 331-7301
24-28 Aug 97	iKusasa CONSAS '97 "Surveying Tomorrow's Opportunities"	Durban, SOUTH AFRICA	F. vonOettingen P: +27-31-303-2480/F: 239-441 E: candp@global.co.za www.und.ac.z.und/survey/consas/consas
24-29 Aug 97	15th IMACS World Congress	Berlin, GERMANY	V. Pluri P: +39-2-23993806/F: 23993411 E: pluri@elet.pollmt.it
25-26 Aug 97 C*	International Workshop on "Dynamic and Multi-Dimensional GIS" by ISPRS IC WG IV/III.1, WG II/1 WG IV/1, WG IV/3 and IGU GIS Study Group ISPRS	HONG KONG	Organizing Committee, IWDMDGIS F: +852-2330-2994 E: lszlli@polyu.edu.hk
2-4 Sep 97 *	23rd Annual Conference & Exhibition of the Remote Sensing Society - RSS'97 "Observations and Interactions"	Reading, UK	RSS97 Dept. of Geography P: +01734-318733/F: 755865 E: rss97@geography.reading.ac.uk
3-9 Sep 97	- XVIII Brazilian Congress of Cartography, and - Scientific Assembly of the IAG	Rio de Janeiro, BRAZIL	Sociedade Brasileira de Cartografia P: +55-21-240-6901/F: 262-2823
7-14 Sep 97 *	"Unadapted Regions - Their Management, Environmental Protection and Documentation"	Kamtchatka Peninsula, RUSSIA	Dr. Tomas Benes P: +42-202-800163/F: +42-202-803371
8-9 Sep 97	- 9th Session of the UN Group of Experts on Geographical Names - 7th UN Conference on the Standardization of Geographical Names	Teheran, IRAN	S. El-Hakim P: +1-613-991-6381/F: 952-0215 E: Elhakim@iit.nrc.ca
9-11 Sep 97 C*	ISPRS WG III/2, WG III/3 and WG II/8 Workshop on "Theoretical and Practical Aspects of SurfaceReconstruction and 3D Object Extraction" ISPRS	Haifa, ISRAEL	Amnon Krupnik P: +972-4-829-2661/F: 823-4757 E: krupnik@tx.technion.ac.il www.technion.ac.il/people/krupnik/workshop/html

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DATE	**EVENT**	**SITE**	**CONTACT**
9-13 Sep 97 C*	ISPRS Joint Meeting - Council and Technical Commission Presidents	Natal, BRAZIL	Prof. J. Trinder (Secretary General) P +61-2-385-5308 /F: 313-7493 E: j.trinder@unsw.edu.au
14-17 Sep 97 *	ICSPAT - 8th International Conference on Signal Processing Applications and Technology	San Diego, USA	E: DSP@MFI.COM
15-19 Sep 97 *	ISTANBUL - 97	Istanbul, TURKEY	F: +90-212-251-5086 E: gis@gps.ins.itu.edu.tr
16-19 Sep 97 *	ION GPS '97	Kansas City, USA	Dr. Penina Axelrad P: +1-303-492-6872/F: 492-2825 E: axelrad@spot.colorado.edu
17-19 Sep 97 C*	ISPRS Joint Workshop on "3D Reconstruction and Modeling of Topographic Objects" by ISPRS WG III/4, WG IV/2 and IC WG IV/III.2	Stuttgart, GERMANY	Dr. E. Baltsavias (IC WG IV/III.2) P: +41-1-377-3042/F: 372-0438 E: manos@pigp.ethz.ch
22-26 Sep 97	"46th Photogrammetric Week"	Stuttgart, GERMANY	Martina Kroma P: +49-711-121-3201/F: 121-3297 E: martina.kroma@ifp.uni-stuttgart.de
28 Sep-2 Oct 97	"Photonics East"	Philadelphia, USA	SPIE P: +1-360-6763290/F: 6471445 spie@spie.org www.spie.org/
29 Sep-2 Oct 97 C	4th Conference on "Optical 3-D Measurement Techniques" by ISPRS Commission V, FIG Com 6, ARIDA, SGPBF, IAG	Zurich, SWITZERLAND	Liliane Steinbruekner P: +41-1-633-3157/F: 633-1101 E: steinbruekner @geod.ethz.ch
29 Sep-2 Oct 97 C*	ISPRS Joint Workshop on "Imaging Sensors and Mapping from Space" by ISPRS WG I/1, WG I/3, & WG IV/4	Hannover, GERMANY	Dr. Karsten Jacobsen P: +49-511-762-2485/F: 762-2485 E: karsten@ipi.uni-hannover.de
1-3 Oct 97 C	CIPA International Symposium 1997 "Photogrammetry in Architecture Archaeology and Urban Conservation"	Goteborg, SWEDEN	A. Boberg P: +46-8-790-7347/F: 790-7343 E: abg@geomatics.kth.se
6-8 Oct 97	International Workshop on "Neural Networks Identification, Control, Robotics, and Signal/Image Processing"	Hamamatsu, JAPAN	V. Pluri P: +39-2-23993806/F: 23993411 E: pluri@elet.polimt.it
6-10 Oct 97	European Symposium on "Satellite and Airborne Remote Sensing"	Rome, ITALY	Ms. Susan Jones F: +49-30-883-8811
12-19 Oct 97	10th International Congress of Mine Surveying	Perth, AUSTRALIA	ISM
20-25 Oct 97	18th Asian Conference on Remote Sensing	Kuala Lumpur, MALAYSIA	MACRES. E: macres@macres.sains.my P: +60-3-264.5640, F: +60-3-264.5650
26-29 Oct 97 *	International Conference on Image Processing "ICIP-97"	Santa Barbara, USA	B.S. Manjunath E: manj@ece.ucsb.edu
26-30 Oct 97	GIS/LIS 1997	Cincinnati, USA	ASPRS P: +1-301-493-0290/F: 493-0208 www.us.net/asprs/
2-7 Nov 97	VIII Latin American Symposium on Remote Sensing SELPER	Merida, VENEZUELA	Lic. Ramiro Salccdo P: +58-2942-0025/F: 942-0086
3-14 Nov 97	VI Iberoamerican Conference on GIS	Lima, PERU	Alfredo Giraldo V. (Univ. Nac. Mayor San Marcos) F: +51-1-464.7420, E: cisig@unmsm.edu.pe
6-7 Nov 97 *	International Workshop on "Image Analysis and Information Fusion" (IAIF '97)	Adelaide, AUSTRALIA	Pamela Mibus P: +61-8-83025019/F: 83023124 E: pamela.mibus@cssip.edu.au www.cssip.edu.au/Conferences/IAIF/Welcome.html
10-14 Nov 97	III Eurolatinamerican Space Journeys	Mexico D.F., MEXICO	Exequiel Chavez A. (Com. Fed. Telecomunicaciones) F: +52-5-613.6284, E: jroch@cicese.mx
9-12 Nov 97	Intelligent Vehicles Symposium "ITSC '97"	Boston, USA	Prof. U. Ozguener www.ieee.org/itsc/itsc97
13-14 Nov 97 *	5th ACM Workshop on Geographic Information Systems	Las Vegas, USA	Prof. R. Laurini F: +33-4-72-43-88-99 E: Robert.Laurini@if.insa-lyon.fr
16-19 Nov 97	IS&T/SID 5th Color Imaging Conference	Scottsdale, USA	IS&T P: +1-703-642-9090/F: 642-9094 E: info@imaging.org www.imaging.org
17-19 Nov 97	12th International Conference & Workshops on "Applied Geologic Remote Sensing"	Denver, USA	R. Rogers P: +1-313-994-1200/F: 994-5123 E. raeder @erim.org www.erim.org/CONF/

1997			
DATE	**EVENT**	**SITE**	**CONTACT**
19-20 Nov 97 C *	International Symposium "Modern Problems of the Cadastre"	Sofia, BULGARIA	Prof. G. Milev P: +359-2-893-379/F: 879-360 E: Milev@bgearn.acad.bg
24-25 Nov 97 tbr *	ISPRS WG VII/2 & ISRS - Workshop on "Application of Remote Sensing and GIS for Sustainable Development"	Hyderabad, INDIA	National Remote Sensing Agency P: +91-040-278-360/F: 277-210 E: dpr@nrsa-hyd.globemail.com
Nov 97 tbr *	World Conference on "The Role of Earth Observation Data in Forecasting, Managing and Recovering from Natural Disasters"	London, UK	Dr. D. Sloggett P: +44-1483-740-0014/F: 740-231
1-4 Dec 97 *	4th Asia-Pacific Conference on "Multilateral Cooperation in Space Technology and Application"	BAHRAIN	Dr. Waheeb Essa Alnaser P: +973-688381/F: 683278 E: waheeb@sci.uob.bh www.uob.bh/
8-12 Dec 97	IEEE 3rd International Conference on "Algorithms and Architectures for Neural Processing"	Melbourne, AUSTRALIA	V. Plurl P: +39-2-23993606/F: 23993411 E: pluri@elet.polimit.it

1998			
DATE	**EVENT**	**SITE**	**CONTACT**
26-31 Jan 98 *	EARSeL Conference - "Fusion of Earth Data: Merging Point Measurements, Raster Maps and Remotely Sensed Images"	Cote d'Azur, FRANCE	M. Godefroy P: +33-1-45-56-73-60/F: 56-73-61 E: EARSeL@meteo.fr
9-13 Feb 98	WSCG'98: The Fifth International Conference in Central Europe on Computer Graphics and Visualization	Pizen, West Bohemia, CZECH REPUBLIC	Vaclav Skala P: +420-19-2171-188, F:+420-19-7822-578 E: skala@kiv.zcu.cz Subject: WSCG INFO
23-27 Feb 98 C	ISPRS Commission I Symposium - "Sensors, Platforms and Imagery"	Bangalore, INDIA	Dr. George Joseph (President Com I) P: +91-79-642-3956/F 656-8073 E: george@sac.ernet.in
Feb/Mar 98 tbr	ISPRS Council Meeting	tbr	Prof. J. Trinder (Secretary General) P: +61-2-385-5308 /F: 313-7493 E: j.trinder@unsw.edu.au
27-30 April 98	International Conference on Warning and Correction Actions for Seismic, Volcanic and Tsunamis Risks	Santiago, CHILE	IGM, IUGG / Chile P: +56-2-696.8221, F: +56-2-698.8278 E: seisvolc@conf.dgf.uchile.cl
May 98 tbd *	18th EARSeL Symposium "Operationalisation of Remote Sensing - a step further"	Enschede, NETHERLANDS	M. Godefroy P: +33-1-45-56-73-60/F: 56-73-61 E: EARSeL@meteo.fr
2-5 Jun 98 C	ISPRS Commission V Symposium - "Close-Range Techniques and Machine Vision"	Hakodate, JAPAN	Dr. H. Chikatsu (President Com V) P: +81-492-96-2911/F: 96-6501 E: chikatsu@g.dendai.ac.jp
22-26 Jun 98 *	"5th Circumpolar Remote Sensing Symposium"	Dundee, UK	Sheila Newcombe P: +44-0-1382-344933/F: 345415 E: S.K. Newcombe@dundee.ac.uk
6-10 Jul 98 C	ISPRS Commission III Symposium - "Theory and Algorithms"	Columbus, Ohio USA	Dr. Toni Schenk (President Com III) P: +1-614-292-7126/F: 292-2957 E: schenk.2@osu.edu
13-17 Jul 98 C	ISPRS Commission II Symposium - "Systems for Data Processing Analysing and Representation"	Cambridge, UK	Prof. Ian J. Dowman (President Com II) P: +44-171-380-7226/F: 380-0453 E: idowman@ps.ucl.ac.uk
19-23 Jul 98	URISA '98	Charlotte, NC	URISA P: +1-202-289-1685/F: 842-1850
19-26 Jul 98 *	XXI International Congress of Surveyors (FIG '98) (with IUSM Executive Board & Council Meetings)	Brighton, UK	FIG '98 P: +44-0-171-393-4960/F: 872-0045 www.cesgil.city.ac.uk/fig
10-15 Aug 98	"Applications of Remote Sensing Data in Environmental Hazard Zoning and Mapping"	ERITREA	AARSE P: +234-1-820-191/F: 820-191
20-26 Aug 98 *	Sixteenth World Congress of Soil Science	Montpellier, FRANCE	CNEARC F: +33-67-410232
24-26 Aug 98 C	ISPRS Commission VI Symposium - "Education and Communications"	Dempasar Bali, INDONESIA	Prof. K. Villanueva (President Com VI) P: +62-22-250-1116/F: 250-1116 E: klaas@melsa.net.id

1998			
DATE	**EVENT**	**SITE**	**CONTACT**
Sep 98 tbr	ISPRS Joint Meeting - Council and Technical Commission Presidents	tbr, GERMANY	Prof. J. Trinder (Secretary General) P: +61-2-385-5308/F: 313-7493 E: j.trinder@unsw.edu.au
1-4 Sep 98 C	ISPRS Commission VII Symposium "Resource and Environmental Monitoring"	Budapest, HUNGARY	Dr. Gabor Remetey-Fulopp (President Com VII) P: +36-1-331-4130/F: 331-4130 E: gabor.remetey@f-m.x400gw.itb.hu
7-10 Sep 98 C	ISPRS Commission IV Symposium - "Mapping and Geographic Information Systems"	Stuttgart, GERMANY	Prof. Dieter Fritsch (President Com IV) P: +49-711-121-3386/F: 121-3297 E: Dieter.Fritsch@ifp.uni-stuttgart.de

1999			
DATE	**EVENT**	**SITE**	**CONTACT**
1-5 Feb 99 C *	Workshop for WG VI/3	Cape Town, SOUTH AFRICA	Luigi Mussio P: +39-2-2399-6501/F: 2399-6530 E: luigi@ipmtf2.topo.polimi.it
Apr-May 99 tbr	ISPRS Joint Meeting - Council and Technical Commission Presidents	Amsterdam, NETHERLANDS	Prof. J. Trinder (Secretary General) P: +61-2-385-5308/F: 313-7493 E: j.trinder@unsw.edu.au
1-3 Jun 99	Remote Sensing & Forest Monitoring Conference	Warsaw, POLAND	T.Z-Niedzwiecki F: +48-22-491-375 E: tzawila@giswitch.sggw.waw.pl
14-21 Aug 99 *	ICA - Ottawa 1999 "Touch the Past, Visualize the Future"	Ottawa, CANADA	T: +1-613-992-999/F: +995-8737 E: ica1999@ccrs.nrcan.gc.ca www.ccrs.nrcan.gc.ca/ica1999/
Oct 99 tbr	ISPRS Council Meeting	tbr	Prof. J. Trinder (Secretary General) P +61-2-385-5308/F: 313-7493 E: j.trinder@unsw.edu.au
Nov. 1999	IX Latinamerican Symposium on Remote Sensing (SELPER)	BRAZIL	SELPER / Brazil Dr. Roberto Pereira Da Cunha (INPE) F: +55-123-412077, P: +55-123-229816

2000			
DATE	**EVENT**	**SITE**	**CONTACT**
Jan 31-4 Feb 2000 C *	Workshop for WG VI/3	Ljubljana, SLOVENA	Luigi Mussio P: +39-2-2399-6501/F: 2399-6530 E: luigi@ipmtf2.topo.polimi.it
Mar 2000 tbr	ISPRS Joint Meeting - Council and Technical Commission Presidents	tbr, HUNGARY	Prof. J. Trinder (Secretary General) P: +61-2-385-5308/F: 313-7493 E: j.trinder@unsw.edu.au
14-26 Jul 2000 C	XIX Congress of the International Society for Photogrammetry and Remote Sensing "Geo-Information for All"	Amsterdam, NETHERLANDS	Prof. Klaas Jan Beek P: +31-53-48724-214 /F: 4874-200 E: Beek@ITC.NL

Jane Heckman
Fax: +1-610-354-6255
E-mail: jheckman@
pcmsgw.vf.lmco.com

UPDATES ISPRS EVENTS CALENDAR

UPDATED ADDRESS
(26 April '97 - 5 May '99)

Prof. Dr. Shunji Murai (Japan)
1st Vice-President, ISPRS

Chair Professor,
Space Technology Application and Research,
STAR Program, Asian Institute of Technology
P.O.Box 4, Klong Luang, Pathumthani 12120, Thailand
Tel: +66-2-524.5599, Fax: +66-2-524.6147
E-mail: chiwa@shunji.iis.u-tokyo.ac.jp

ACKNOWLEDGEMENTS: ISPRS thanks the very valuable cooperation of **CHILEAN ANTARCTIC INSTITUTE (INACH)** through the improvement of ISPRS Highlights E-mail: **isprs@inach.cl.** Special thanks to **Mr. Oscar Pinochet De La Barra** (Director), **Mr. Antonio Mazzei** (Sub-Director), **Mr. Daniel Torres** (Chief Scientific Department) and the Scientific Staff dealing with our E-mail: **Ms. Patricia Vicuña, Mr. Ricardo Jaña** and **Mr. Gonzalo Benavides.**

REPORT OF VISIT TO SANTIAGO, CHILE TO DISCUSS POLICY ON ISPRS HIGHLIGHTS

2-3 APRIL 1997

BY PRESIDENT LAWRENCE FRITZ AND SECRETARY GENERAL JOHN TRINDER

The visit was partly sponsored by SELPER and Instituto Geografico Militar (IGM).

I. OFFICIAL WELCOME BY ORDINARY MEMBER OF CHILE

Lawrence Fritz and John Trinder were given a very interesting tour (Agenda prepared by Crl. Juan Gutierrez and assisted by May. Patricio Zavala) of the advanced surveying and mapping facilities of IGM, which are based on digitized analogue, analytical and digital stereoplotters for the production of map scales from 1:1,000 to 1: 50,000. The facilities are impressive and demonstrate the advanced level of mapping technology in Chile. Following an official lunch hosted by IGM, we met the Director, General Enrique Gillmore, who was presented with an official ISPRS plaque by President Fritz. Gifts were also exchanged. In the evening we attended a dinner and show, hosted by Director and Sub-Director Crl. Pablo Gran and Crl. Alfredo Gonzalez.

The General Enrique Gillmore and Professor Mauricio Araya were most cordial, and we are indebted to their sponsorship and assistance during our meeting. The welcome demonstrates the high esteem of ISPRS in Chile. We are most appreciative of Professor Araya's contribution to ISPRS through his editing of ISPRS Highlights and we are sure that it will make a major contribution to communications within ISPRS.

II. MEETING ON ISPRS HIGHLIGHTS

A G E N D A

1. Content policy
- Proposals by LF for the annual cycle of content
- Inclusion of keynote papers, book reviews, WG Newsletters
- Conference reports
- Sub-editors
- Editorial page
- Photos of Council and TCP meetings
- Events calendar format review
- News and reports received from others
- Managing number of pages per issue
- Solicitation of photos

2. Communications
- Publication schedule
- Approval of table of contents
- Provision of time for SG to edit
- Alert of potential delay
- Procedure for managing delays
- Editor preferred formats and media

3. Advertisers
- Advertisement policy
- How to increase advertisers
- Management of advertisement funds
- SELPER costs for advertisements

4. Addition of Pages to Trade-off costs of Printing Costs
- Proposal by Araya to include more pages on other Members' news and trade-off of costs
- Other proposals by Araya

5. Finances
- Start-up costs
- Per page cost options
- Postal cost options
- Payment schedules
- Contingencies & Limitations

6. Web page entry of ISPRS Highlights

7. Labels and mailing policy

8. Detailed review of Editor contract

MINUTES

1. CONTENT POLICY

Lawrence Fritz presented his proposed Annual Content Plan, as shown in Attachment A. This plan was endorsed with minor modifications. The April issue will be the largest. There was considerable discussion on the inclusion of keynote papers, with M. Araya suggesting that each edition should include 2 such papers. However, it was concluded by L. Fritz (LF) and J. Trinder (JT) that there was the potential for the ISPRS Highlights to compete with the *ISPRS Journal*, and hence it was concluded that a maximum of one technical paper should be included in ISPRS Highlights covering a range of topics. The selection of this paper should be made following communication with the new Editor-in-Chief of *ISPRS Journal*, Dr. Manos Baltsavias to ensure that ISPRS Highlights does not use papers that are more appropriately printed in *ISPRS Journal*.

The length of each Highlights Issue should normally be expected to be in complements of 16 page signatures, e.g. issue lengths will normally be 32, 48, 64, 80, 96 pages. However, at an increase in production cost we can use 8 page signatures which will allow issue lengths of 40, 56, 72, 88 pp.

MA agreed to provide all copy received for Highlights to be sent to JT for content approval before beginning any publication preparations.

Each Working Group report should be limited to 1/2 page as prescribed in the Advertisement Policy Document in Attachment B, prepared by L. Fritz as modified at the meeting. Each WG will be entitled to 2 such reports per year. WG Chairs will be requested to submit a 1/2 page summary for publication in ISPRS Highlights. A WG report editor should be enlisted to generate these summaries. Council will be asked for their views for selection of a suitable summary editor.

News of ISPRS sponsored meetings will be sent to JT for transmission to Mauricio Araya (MA). News of other events received by MA will be sent to JT for approval for inclusion. The general policy is that such reports will not be printed unless they are of special interest to ISPRS. Book reviews will also be included where appropriate. A special editor will be sought with the assistance of Council.

LF with the assistance of Joanne Heckman will be responsible for the Events Calendar. He showed the new format for the calendar to suit the Highlights page size, and while he preferred it not to be changed by MA in its production, because of the PageMaker software being used, it is necessary for it to be reformatted. MA will ensure that no errors are be introduced in the reformatting stage. It was agreed that the first entry in each edition of the calendar will be 1 month after the due date for publication of each Issue of the ISPRS Highlights, in order to avoid publication of out of date entries.

The editorial page will be prepared by Council according to the schedule in Attachment A. The Annual Report will always include an editorial by LF.

Photos of ISPRS CM and JM will be restricted to details of Council and TCPs at work and demonstrations of the sponsorship of the Ordinary Member. Only a limited number of photos will be printed which display social events associated with business meetings.

The matter of management of the number of pages was considered under item 4.

Photos of WG chairs have been solicited and a number have already been sent to MA. They will be printed in the July 1997 issue when the WG ToRs will be printed. JT will remind WG officers of this plan.

It was agreed that regular sections should be established in ISPRS Highlights. These sections would be set out in a distinctive manner in each edition with its own color if possible. **The suggested sections are:**
- Editorial
- Keynote Paper
- News from Commission or WGs (One or the other)
- Reports from Council (minutes and other such items)
- Book Reviews
- Congress News
- Other Events
- Calendar of Events

Items that can be used as 'fillers' are Archives details, RICS Books listings of Archives for sale, and a summary of the Archives availability listing.

Action Item - LF to loan MA a few copies of the *ISPRS Journal* to show how end binding will fit.

Action Item - Council should discuss search strategies to get volunteer editors for (a) WG Newsletter summaries (b) meeting reports (c) calendar.

2. COMMUNICATIONS

The publication schedule was confirmed with the following time lines:

Issue Date	Submission of material	Compilation by MA	Approval of content by JT	Sent to Printer	In Mail
January	1/12	15/12	22/12	3/1	31/1
April	1/3	15/3	22/3	1/4	30/4
July	1/6	15/6	22/6	1/7	31/7
October	1/9	15/9	22/9	1/10	31/10

Since the content has now been well established according to the Content Plan in Attachment A, the publication schedule should be easier to maintain. April 1997 edition should be published by about mid May 1997, while the July edition should be on time, since virtually all the material should already be available.

MA, JT and LF to maintain communication on any possible absences that will require modification of the above schedules to ensure that the publication dates are maintained.

MA indicated that there were no problems in reading different formats and hence preferred formats did not need to be defined.

3. ADVERTISEMENTS

The paying advertisers were discussed and the total advertisement revenue determined as outlined in LF Memo Pr-09-193 to HR dated 4 April 97. The status of advertisements for 1997 Issues is as follows:

Action Item - MA will ask ITC if they wish to pay to advertise. If no, then HR should deduct from MA payments the one page ITC fee ($1,045) for the ad in the 1997 vol. 2, issue #1. If yes, then HR to invoice ITC for 1997 issues.

ESA, DLR, IGM are not expected to purchase ads for 1997. Their ads in Vol. 2, #1 (DLR, IGM and 2 pp. by SELPER) are a trade-off to cover the 16 extra page costs of Vol. 2 #1.

MA agreed that no ads will be placed without prior approval of HR. MA will provide all advertising copy to HR for invoice approval before beginning any publication preparations.

Action Item - MA recommends that ISPRS engage multiple advertisement agencies on a regional basis to secure ads for negotiated fee per ad. Emerson Granneman, Editor of ***Factor GIS*** is interested at 15% fee to solicit in Latin America. Council should discuss and decide how to resolve the issue of increasing advertisement revenue.

4. ADDITION OF PAGES TO TRADE-OFF PRINTING COSTS

The general view of LF and JT was that in-kind trade-off of costs are not appropriate. It transpired that this may not always be the most economic means of operating in all cases due to currency fluctuations. However it was agreed that this should be the general method of operation.

MA wants more than one technical article per issue. LF & JT said only one tech article per issue (even though MA will fund 16 extra page costs via quid pro quo arrangement with SELPER at a rate of 3 SELPER ads for 16 extra pages of content for any issues which include a 2nd tech article).

Action Item - MA should expect to be reimbursed for extra page costs. However, he is to propose to JT in writing if SELPER advertisers are willing to pay for extra page costs in trade-off for ads at rate of one ad per every 500 additional copies. JT will decide acceptance/rejection of these proposals on a case by case basis.

ISPRS will pay for all extra page overruns (greater than 48 pp.) on an issue by issue basis. Any quid pro quo arrangement to cover overrun expenses is to be by prior Council approval.

The issue of printing extra copies:

JT & LF agreed that any extra copy tradeoff policy shall be limited to a maximum of 3 ad pages (color or b & w) by any organizational sponsor per issue for extra copies to be printed. (This means from 500 to 1,500 extra copies to be printed for 1 to 3 pages respectively.)

Action Item - MA is to provide Council with a proposal which outlines extra copy tradeoffs for organizations (OdM's, RgM's, etc.) to consider. The expected basic proposal will be 500 additional copies for each free color page or 500 additional copies for two b & w pages. MA is to provide Council with production cost for units of 500 additional copies for 32, 48, 64 and 80 page issue lengths. Production costs are to include postage and handling fees. HR is to invoice organizations for these extra copies based on costs determined by MA.

5. FINANCES

It is clearly evident that Highlights will cost more than expected with regard to postage. Vol. 1, #1 cost over $8K to airmail (premium DHL); Vol. 2, #1 cost about $5,400 to express mail via DHL. Vol. 2, #1 is about $2,500 US higher postage cost than originally expected. However, it is agreed that we must use express mail. Therefore, we should expect costs per year to be $10K more for postage. A sponsor should be sought to support the costs of postage.

Action Item - MA is to send copy of actual expenses to produce Vol. 1, #1 and Vol. 2, #2 to JT for distribution to Council for evaluation and Highlights strategic planning.

Action Item - Council discussion is needed to develop strategies and opportunities for obtaining permanent sponsorship to underwrite costs of Highlights

Payment schedules to MA are satisfactory.

6. WEB PAGE ENTRY OF ISPRS HIGHLIGHTS

The Web Page entry will be reviewed to avoid duplication with entries already in the Home Page. JT will discuss this issue with Streilein in April. It was agreed that the original plan to ship entire Issues of Highlights for entry on the Web pages should be scrapped. Instead JT will independently provide Council Minutes to André Streilein, similarly LF will provide André with the Events Calendar. No technical/keynote papers will be published on the Web. The Web page is to be structured to have Highlights Sections or hot links to sources of the Highlights Sections (e.g. pointers to the WG Newsletters in their entirety at the WG Web sites).

MA is to be requested to put the WWW address in permanent header pages of Highlights

7. LABELS AND MAILING POLICY

The new method of providing labels to MA is now working satisfactorily.

8. DETAILED REVIEW OF EDITOR CONTRACT

LF to review the contract for modifications in Spring of 1998 before the termination of the first 2 year period.

J. Trinder and L. Fritz
5 April 1997

ATTACHMENTS:

- **Highlights Content Plan**
- **Highlights Advertisement Policy**
- **Highlights Advertisement Prices**

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PHOTO 1: (left to right) Prof. John C. Trinder (ISPRS Secretary General), President ISPRS Lawrence W. Fritz and General Enrique Gillmore, Director Chilean Geographic Institute, receiving the ISPRS Plate.

PHOTO 2: (left to right) President ISPRS, L. W. Fritz; Tcl. A. Gonzalez, IGM; Editor-in-Chief ISPRS Highlights, M. Araya F.; Secretary General ISPRS, J. C. Trinder.

PHOTO 3: Banquet offered by Director and Officers IGM / Chile to ISPRS guests.

ISPRS HIGHLIGHTS 1996-2000 Content Plan

VOLUME	ISSUE	CONTENT THEME	PAGES ESTIMATION	EDITORIAL	OTHER CONTENT
1996	#1 Oct	Congress Summary	70	LF	C & JM Minutes-Vienna
1997	#1 Jan	92-96 TCP Summaries	25	JT	C Minutes-Gumma, Papers: Iceland, El-Hakim
	#2 Apr	Annual Report-1996	50	LF	
	#3 Jul	1996-2000WG's & ToR *Sustaining Mbr (1/2 p ea.)	10 15	SM	C Minutes-Seattle
	#4 Oct	2 Commissions highlighted		MB	
1998	#1 Jan	Pre-Symposia Plan	8	HR	C & JM Minutes-Natal
	#2 Apr	Annual Report - 1997	50	LF	C Minutes-(India??)
	#3 Jul	*Sustaining Members	15	KB	
	#4 Oct	2 Commissions Highlighted		JT	
1999	#1 Jan	Symposia Summaries	20	SM	C & JM Minutes-Stuttgart
	#2 Apr	Annual Report-1998	50	LF	
	#3 Jul	*Sustaining Members	15	MB	C & JM Mins.-Amsterdam
	#4 Oct	2 Commissions Highlighted		HR	
2000	#1 Jan	Pre-Congress Plan	4	KB	C Minutes-(TBD)
	#2 Apr	Annual Report-1999	50	LF	
	#3Jul	*Sustaining Members	15	JT	C & JM Minutes-Hungary
POST CONSGRESS CONTENT PLAN					
2000	#4 Oct	Congress Summary	70	New President	
2001	#1 Jan	2000-2004 WG's & ToR 1996-2000 TCP Summaries	12 25	New Secretary General	C Minutes

** There will not be a Sustaining Members issue. Instead each Sustaining Member profile will be printed in any issue of the year as selected by the Editor.*

Repetitive content items

Header pages = 4 pp.
Council Editorial = 1 pp.
Calendar = 6-7 pp.
Advertisements = 12 pp.
WG Newsletter summaries
News, reports, book reviews
Photographs

Notes:

a) Annual report includes the Regional Member reports
b) Limit to one technical paper/review/speech per issue.

C = Council
LF = Lawrence Fritz (ISPRS President)
JT = John Trinder (ISPRS Secretary General)
SM = Shunji Murai (ISPRS 1st Vice-President)
MB = Marcio Barbosa (ISPRS 2nd Vice-President)
HR = Heinz Rüther (ISPRS Treasurer)
KB = Klaas Beek (ISPRS Congress Director)

ISPRS HIGHLIGHTS Advertisement Policy

1. No advertisements shall be placed until cleared and approved by Treasurer H. Ruther.
2. For every Issue, the list of all advertisements, their type (events or other topics - see Publication Entitlements table below) and the addresses to which the invoices are to be sent shall be submitted by Editor M. Araya to Treasurer H. Ruther 30 days before printing of the Issue.
3. The definition of what qualifies for an international or regional event must be pre-approved by Council consensus. Multi-year approvals are limited to a Council term basis.
4. The Congress is entitled to receive 4 full page ads free per year.
5. Each ISPRS Commission Symposium is entitled to place a total of 5 free full page ads (only one per Issue).
6. Each Sustaining Member is entitled to receive a free 1/2 page each year to summarize its capabilities.
7. Each Regional Member and Ordinary Member is entitled to receive a 1/2 page free each year for promotion of an international event. (Per Council approval as noted above.)
8. Each Ordinary Member is entitled to receive 1/4 page free per year for any promotion of their choice.
9. Each Working Group is entitled to receive 2 separate (must be in different Issues) free 1/2 page ads per year.
10. Scientific Societies shall pay 50% of commercial fee for advertisements. E.g. SPIE, ICA, FIG, etc.
11. On an Issue by Issue basis the Secretary General will consider trade off of free ad space (maximum 3 ads per Issue) for payment of all costs incurred (printing and postage) for extra copies of Highlights (in units of 500 copies).
12. All other quid pro quo arrangements must be pre-approved by Council consensus.
13. The advertisement statistics will be maintained and reported semi-annually by the Treasurer.

PUBLICATION ENTITLEMENTS

Submitting Group	Advertisement or Publication Fees	Free Publication Entitlements (pp./year)	
		Events	OtherToPics
Ordinary Member	50 % Sustaining Mbr. Rate	1/2 page	1/4 page
Regional Member	Negotiable with Council	1/2 page	Annual Report
Sustaining Member	Sustaining Member Rate	1/4 page (3)	1/2 page
Other Scientific Societies	50 % Non-Members Rate	—	—
Commercial Organizations	Non-Members Rate	—	—
Congress	Negotiablewith Council	4 pp.	Annual Report
Commission	Negotiable with Council	5 pp./Sym (1)	Annual Report
Working Group	Negotiable with Council	2 x 1/2 page (2)	Annual Report & Newsletter summaries

(1) 5 pages total per Commission Symposium (not 5 pp. per year); (2) WG's may combine their page allotments to get larger ads for Joint WG events; (3) Free 1/4 page advertisement if received before end of calendar year 1997

ISPRS HIGHLIGHTS ADVERTISEMENT PRICES

# PAGES AVAILABLE	PLACEMENT	SUSTAINING MEMBERS		NON-MEMBERS	
		SINGLE ISSUE	4 ISSUES FULL YEAR	SINGLE ISSUE	4 ISSUES FULL YEAR
1	Back Cover	$ 1,800	$ 6,000	$ 1,980	$ 6,600
2	Inside Cover	$ 1,450	$ 4,850	$ 1,595	$ 5,335
2	Last page or Back of Table of Contents	$ 1,200	$ 4,000	$ 1,320	$ 4,400
n	Inside pages	$ 950	$ 3,200	$ 1,045	$ 3,520
n	Inside 1/2 pages	$ 570	$ 1,920	$ 625	$ 2,110
n	Inside 1/4 pages	$ 335	$ 1,120	$ 365	$ 1,230

Payments should be arranged with ISPRS Treasurer: **Prof. Dr. Heinz Rüther.** Dept. of Surveying & Geodetic Eng., Univ. of Cape Town, Rondebosch 7700, SOUTH AFRICA. Tel: (27) 21-650.3573, Fax: (27) 21-650.3572. Email: Rüther@EngFac.UCT.ac.za

Agreements to reserve advertisement spaces in different issues and mailing of material, should be arranged with ISPRS Highlights Editor: **Prof. Mauricio Araya F.** SELPER Ediciones, Santiago, Chile. Tel: 56.2-696.7583, Fax: 56.2-698.1474 or 698.7194, E-mail: isprs@inach.cl

REPORT ON ASIA PACIFIC (APEC) SEMINAR ON EARTH OBSERVATION FOR USERS

Tokyo, Japan. 3 - 5 March 1997

by Mauricio Araya F., Editor-in-Chief, ISPRS Highlights

TECHNICAL PROGRAMME

DAY 1 (MARCH 3) GENERAL SESSION

Registration

1. WELCOME ADDRESS

Mr. Toshio Ochiai *(Director General, Research and Development Bureau, STA, Japan)*

2. KEYNOTE SPEECH

Earth Observation Data for Users in Next Generation.
Prof. Toshibumi Sakata *(President, TRIC, Japan) (President and Chief Executive Officer, ESTO, Japan)*

3. GENERAL SESSION

3.1 USE OF EARTH OBSERVATION DATA IN APEC REGION

(1) Marine Environment Observation by ADEOS.
Mr. Takashi Moriyama (NASDA, Japan).
(2) Use of Remote Sensing Data for Disaster Monitoring.
Prof. Epifanio D. Lopez *(University of the Philippine, The Philippines)*
(3) Global Mapping with Remote Sensing Data.
Dr. Hiromichi Maruyama *(GSI, Japan)*
(4) Earth Observation Data for Climate Change Research. ***Dr. Masato Sugi*** *(MRI, Japan)*
(5) Main Space Activities in Chile and Latin America and Potential Cooperation through SELPER.
Prof. Mauricio F. Araya *(SELPER, Latin America)*

3.2 EARTH OBSERVATION DATA NETWORK

(1) EOSDIS and Earth Science Network
Dr. Richard des Jardins *(NASA, USA)*
(2) Ocean Observation and Data Analysis Systems
Dr. Kiyoshi Ohtsuka *(JAMSTEC, Japan)*
(3) CEONET, Canadian Spatial Data Infrastructure
Dr. Robert O'Neil *(CCRS, Canada)*
(4) Australia Earth Science Data Network
Dr. Michael Clarke *(CSIRO, Australia)*
(5) Use of Earth Observation Data Network in Asia
Mr. Hiroshi Kikuchi *(NASDA, Japan)*
(6) Use of Earth Observation Data Network for Ocean and Climate Activities in APEC Economies.
Dr. John Withrow *(IOC/UNESCO, France)*

4. INTRODUCTION OF ADEOS DATA

Mr. Tasuku Tanaka *(NASDA, Japan)*

5. CLOSING ADDRESS: *STA, Japan*

Reception: Room "Sakura", 2nd Floor, Main Bldg.

DAY 2 (MARCH 4) SYMPOSIUM ON PRACTICAL USE OF REMOTE SENSING DATA

Registration

1. OPENING REMARKS

Takao Kuramochi *(Director, Space Utilization Division, Research and Development Bureau, STA, Japan)*

2. KEYNOTE SPEECH

Present Status and its Problems of Operationalization of Remote Sensing Data in Asia and the Pacific Region
Prof. Shunji Murai *(University of Tokyo, Japan)*

3. APEC ECONOMIES' APPROACHES ON PRACTICAL USE OF REMOTE SENSING DATA

(1) Japanese Approach on Practical Use of Remote Sensing Data. ***Mr. Junkichi Ohtao*** *(NASDA, Japan)*
(2) Canadian Approach on Applications and Usages of RADARSAT Data. ***Dr. Surendra Parashar*** *(CSA, Canada)*
(3) Development of a User-Oriented Remote Sensing Ground Station Facility. ***Prof. Lim Hock*** *(Singapore University, Singapore)*

4. PRESENT STATUS AND SUBJECTS ON PRACTICAL USE OF REMOTE SENSING DATA IN THE VARIOUS FIELDS

(1) Marine Environmental Monitoring in Australia
Mr. William Skirving *(AIMS, Australia)*
(2) Forest Monitoring in Indonesia
Dr. Riadika Mastra (BAKOSURTANAL, Indonesia)
(3) Applicational Use of Remote Sensing Data in Agriculture in USA. ***Dr. Robert Clemons*** *(EOSAT, USA)*
(4) Use of Remote Sensing Data in Various Fields in Thailand.
Dr. Suvit Vibulsresth *(NRCT, Thailand)*

5. PANEL DISCUSSION

Present and Future Practical Use of Remote Sensing Data
Coordinator: ***Prof. Shunji Murai*** *(University of Tokyo, Japan)*
Panelists: Mr. Junkichi Ohtao (NASDA, Japan)
Dr. Lizhong Zheng (SSTCC/NRSC, China)
Dr. Surendra Parashar (CSA, Canada)
Dr. Ir. Paul Suharto (BAKOSURTANAL, Indonesia)
Prof. Epifanio D. Lopez (University of the Philippines)

6. CLOSING ADDRESS

Takao Kuramochi *(Director, Space Utilization Division, Research and Development Bureau, STA, Japan)*

DAY 3 (MARCH S) EARTH OBSERVATION INFORMATION NETWORK (EOIN) SEMINAR

Registration

1. OPENING ADDRESS

Mr. Osamu Takasawa *(Director for Earth Science and Technology, Ocean and Earth Division, STA, Japan)*

2. GENERAL SESSION

2.1 INTERNATIONAL PARTNERSHIP AND DATA NETWORK

(1) GOIN Implementation Approach
Dr. Lawrence Enomoto *(NOAA, USA)*
(2) Status of GCOS Data and Information System
Dr. Lawrence Enomoto *(NOAA, USA)*
(3) Activities of CEOS/WGISS and Application Strategy to Asian Networks t ***Mr. Hiroshi Kikuchi*** *(NASDA, Japan)*
(4) Concept Study for the Asia-Pacific Network Cooperation.
Mr. Sohsuke Gotoh *(NASDA, Japan)*
(5) Data Distribution System at EORC/NASDA
Mr. Kazuo Yoshida *(NASDA, Japan)*

2.2 DATASETS AND ACCESS CAPABILITY OF ASIA PACIFIC COUNTRIES

(1) GRNS Activities. ***Dr. Tamotsu Igarashi*** *(NASDA, Japan)*
(2) People's Republic of China. ***Dr. Jianmin Xu*** *(NSMC)*
(3) Republic of the Philippines. ***Mr. Virgilio S. Santos*** *(NAMRIA)*
(4) Malaysia. ***Mr. Nik Nasruddin Mahmood*** *(MACRES)*
(S) Republic of Korea. ***Dr. Kyoung Yoon Park*** *(SERI)*
(6) Commonwealth of Australia. ***Dr. Michael Clarke*** *(CSIRO)*

3. PANEL DISCUSSION

Moderator: ***Prof. Kouhei Arai*** *(Saga University, Japan)*
Panelists: Lawrence Enomoto (NOAA, USA)
Mr. Sohsuke Gotoh (NASDA, Japan)
Dr. Kyoung Yoon Park (SERI)
Dr. Michael Clarke (CSIRO)
Dr. Richard des Jardins (NASA, USA)
Mr. Virgilio S. Santos (NAMRIA)
Dr. Jianmin Xu (NSMC)

4. CLOSING ADDRESS

Mr. Osamu Takasawa *(Director for Earth Science and Technology, Ocean and Earth Division, STA, Japan)*

The Seminar was hosted by Japanese Government, such as they announced in the APEC Industrial and Technology Working Group Meeting in Canberra, last October 1996. The Science and Technology Agency (STA), the National Space Development Agency (NASDA) and the Remote Sensing Technology Center (RESTEC) of Japan, brightly organized this Seminar.

The Technical Program was extremely interesting and wide, covering several key topics to promote international cooperation in this very wide zone of the Earth. About 30 Techical Presentations and two Panel Discussions were developed in these three days. In spite of the intensive program, the organization and the topics selected were so brightly conducted, that always the attendance reached about 100%.

It was very impressive the great activity of Satellite Data Receiving/Processing Centers in Asia and also the different communication means. The Panel Discussion conducted by Dr. Shunji Murai made emphasis in the obtention of a more flexible communication and lower price policy to reach more users. Many interesting presentations showed the progress in this sense. The Panel Discussion conducted by Prof. Kouhei Arai made emphasis in the creation of mechanisms to facilitate information interchange. In this sense, the mean conclusion was the requirement to develop the concept of "Earth Observation Information Network (EOIN) community" to realize "easier access to the earth observation data in Asia-Pacific Region".

The Japanese Authorities and Organizing Committee were extremely kind and a very positive atmosphere was obtained along all the Seminar and surely good results will be seen in the next future. Special thanks are expressed to Dr. Takao Kuramochi and Mr. Kazuhiro Tanaka (STA); Ms. Hideko Kasahara and Mr. Shuji Tanaka (RESTEC); Ms. Yumiko Wada and Mr. Masanobu Tsuji -who spoke a surprising excellent spanish, specially useful to promote cooperation with Latinamerican region- from ESTO (Earth and Technolgy Organization of Japan); Ms. Chiwako Fujino and Mr. Masato Ozaki.

Extra copies of ISPRS Highlights (and also SELPER publications) were distributed to all the participants. Additional copies of this issue (including this Report) will be sent to be kindly mailed by RESTEC to all the attendants. Dr. Shunji Murai kindly hosted a dinner to promote cooperation links among Asia/Latinamerica through AARS (Asian Association for Remote Sensing), SELPER (Latinamerican Society for Remote Sensing) and ISPRS (International Society for Photogrammetry and Remote Sensing). Also, Dr. Hirofumi Chikatsu, President of ISPRS Technical Commission V, together with Mr. Kunihiko Ono (Chuo Mapping Co. Ltd.) kindly offered a dinner to promote cooperation and also to better know the future plans of Technical Commission V and ISPRS Highlights.

The Concluding Remark is that ISPRS could help very much in promoting cooperation in the Asia-Pacific Region, not only amongst the APEC countries and their very solid economy but also including other ISPRS Members. So, a solid approach to develop joint activities ISPRS/APEC is strongly recommended. This conclusion is also valid for SELPER: because Chile is the only APEC Member (besides Mexico, who is more representative of NAFTA) in Latinamerica, interesting actions could be developed through SELPER, a Regional Member of ISPRS.

For more details on this APEC Seminar, please contact: Mr. Shuji Tanaka or Mrs. Hideko Kasahara (RESTEC, Fax: 81.3-5561.9541) or Dr. Takao Kuramochi (STA, Fax: 81.3-501.3683).

VIII SIMPOSIO LATINOAMERICANO DE PERCEPCION REMOTA

VIII LATIN AMERICAN SYMPOSIUM ON REMOTE SENSING

XVII REUNION PLENARIA SELPER / XVII SELPER PLENARY MEETING

MERIDA - VENEZUELA

2 - 7 DE NOVIEMBRE DE 1997 / 2 - 7 NOVEMBER 1997

LAGUNA NEGRA - *BLACK LAGOON*

PICO BOLIVAR - *BOLIVAR MOUNTAIN*

PAISAJE MERIDEÑO - *MERIDA SCENE*

Fotografía - *Photography*: C. Sevcik, R. Salcedo

CONTACT ADDRESS: COMITE ORGANIZADOR SELPER - VENEZUELA

Apartado Postal 40200 / 1040 - A, Caracas, Venezuela. Tel: (582) 942.0025, 942.0045.

Fax: (582) 942.0445, 942.0086. E-Mail: fii@conicit.ve

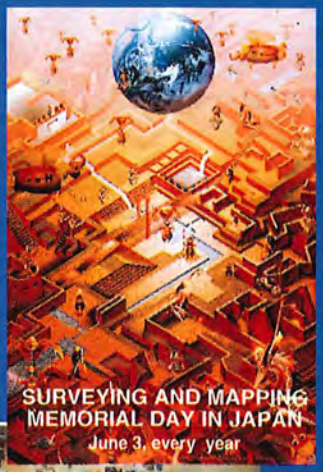
IMPRESOS UNIVERSITARIA S.A.

JAPANESE ASSOCIATION OF SURVEYORS (JAS)

社団法人 日本測量協会

HEAD OFFICE: 1-3-4 KOISHIKAWA, BUNKYO-KU, TOKYO 112, JAPAN - TEL: +81-3-3815-5751 - FAX:+8 1-3-3816-6870

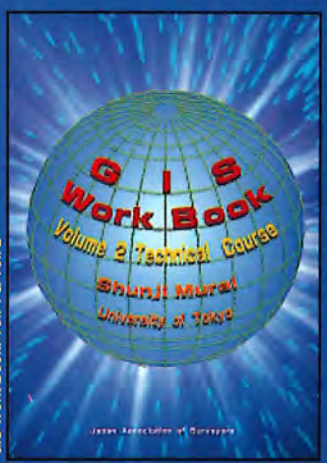
- WHAT IS JAS?: Japanese Association of surveyors (JAS), founded in 1951 is a non-profit organization to devote to the advancement of surveying technologies and the promotion of education and training in geoinformatics.
- JAS MEMBERSHIP: As of April 1st, 1997, JAS has 10,298 Ordinary Members, 1,732 Student Members and 3,146 Sustaining Members.
- ORGANIZATION: The Council Members are as follows:
  President: Dr. Naomi FUJITA
  Vice President: Prof. Dr. Ichiro NAKAGAWA
  Secretary General: Dr. Hiroyuki TAKEDA
- MAIN ACTIVITIES: The main activities of JAS are as follows.
  a. *GENERAL CONFERENCE:* All ordinary members are eligible to attend annual General Conference for final decision and approval.
  b. *PUBLICATIONS:* Monthly journal, namely "SOKURYO" (in Japanese) with 170 pages is distributed to all members (about 16,000 copies). Editor in Chief is Prof. Dr. Shunji Murai.
  Many technical books have been published and usually 2 or 3 books are to be published every year. Most recent published book was "GIS Work Book" written by Dr. Shunji Murai in English and also Japanese.
  c. *ANNUAL CONVENTION:* Annual Convention is held once a year around the end of June for 3 days. Symposia, poster sessions and commercial exhibitions with about 60 exhibitors are organized. Total participants and visitors are about 17,000 every year.
  d. *SHORT COURSES TRAINING:* More than 60 courses on geodetic surveying, GPS, photogrammetry, digital mapping, engineering survey, are implemented, totalizing 200 days in a year.
  e. *CONSULTING:* Consulting services are offered to JAS members and public sectors concerning advanced and conventional mapping and surveying technologies and projects.
  f. *CALIBRATION TEST OF SURVEY INSTRUMENTS:* All survey instruments used for public surveying projects should be tested and approved by JAS.
- CONTACT PERSON: Further information is available from Dr. Hiroyuki TAKEDA, Secretary General, JAS.



Illustrated Remote Sensing (in Japanese)

TECHNICAL BOOKS & TRAINING COURSES

THE MONTHLY JOURNAL OF SURVEY (JAS)



GIS Work Book: Vol. 1 & Vol. 2

TECHNICAL BOOKS & TRAINING COURSES