

## ISPRS Society



### Opening Speech by John Trinder, President of ISPRS 2000-2004

Honourable Minister  
General Ali Fuat Sarac  
Professor Orhan Altan, Congress Director  
Distinguished guests  
Professor Milan Konecny President of the International  
Cartographic Association,  
Professor Holger Magel President of the International  
Federation of Surveyors  
Professor Gehard Beutler President of the International  
Association of Geodesy  
Vice Admiral Alexandros MARATOS, President of the  
International Hydrographic Organisation  
Mr Peter Jolley, President of the International Map Traders  
Association  
Professor Fraser Taylor, Chairman of the International  
Steering Committee on Global Mapping  
Honorary Members, ladies and gentlemen

It is my great pleasure to welcome you to Istanbul, and the 20th Congress of the International Society for Photogrammetry and Remote Sensing. It is marvellous to see that so many people have travelled long distances to

attend this important event for ISPRS. I am sure you will benefit from your efforts in coming here.

The ISPRS mission states that it is devoted to the development of international co-operation for the advancement of knowledge, research, development, education and training in the photogrammetry, remote sensing and spatial information sciences, their integration and applications, to contribute to the well-being of humanity and the sustainability of the environment. The quadrennial ISPRS Congress is the major event in the conference calendar of the Society which contributes to this mission. It brings together more than 2000 people who wish to learn about the latest developments in the technologies with which ISPRS is involved, present details of their work and share knowledge and experiences with their colleagues.

Before we progress further I would like to pause for a period of silence to remember our colleagues who passed away since we last met. I would appreciate if you would stand please.....Thank you.



This Congress is the culmination of 4 years of work of thousands of people who will contribute to its success. Foremost amongst these people are the organising committee in Turkey led by the Congress Director Professor Orhan Altan, the Council, the Technical Commission Presidents and their secretaries and the Working Group officers. There are many people who I cannot recognise because of the shortage of time, but I acknowledge the work of everyone who has made a contribution to the Society since the last Congress.

The Congress comprises many aspects, including the Plenary and Technical Sessions that will be held over the next 10 days, the Commercial Exhibit that will be open next week, the General Assembly, the decision making body of the Society, which will meet in 4 sessions. We will have announcements and inauguration of the newly formed ISPRS Foundation that aims to raise funds over half million dollars over the next 5 years of so, to provide funding for deserving individuals to improve their skills and experience in the areas of ISPRS. We will also have meetings of international groups, social events, technical visits, a youth forum and many more. I also hope that you will be able to find time for some sightseeing in this exciting city of Istanbul. I am sure it will be an exciting and beneficial experience for all of us.

There have been a number of significant advances in the technologies available to individuals in ISPRS, that have impacted on the Society's activities since we last met in 2000. For example, the price/performance of computers, according to Moore's law, has increased by a factor of at least 5. Developments in digital imaging systems have improved significantly. Mature technologies in the fields of photogrammetry, remote sensing and spatial information sciences include direct orientation of imaging systems in flight, high resolution satellites, DPWs, terrain laser scanning, interferometric SAR, polarimetric SAR, hyperspectral sensing, Web based GIS, GIS for decision support systems, precision farming and many more. Launching of Earth observation satellites continues at a pace, to the extent that it is estimated that about 50 satellites for Earth observation will be launched in the next 10 years for measuring many environmental parameters.

Here is just a glimpse of some of the new developments that you can expect to hear about or experience at this Congress.

Commission I will emphasise small and intelligent satellites and global monitoring systems, as well as wide-angle sensors, and laser scanning (LiDAR) systems. It will report on joint project between ISPRS and France's CNES to study the quality of elevations derived from the SPOT HRS sensor. Emphasis will also be placed on the developments in the joint CEOS/ISPRS task force on radiometric and geometric calibration standards.

In Commission II, researchers are facing the challenge to develop increased automation in mobile mapping systems so that it can be accepted in the market place. High accuracy digital terrain data with accuracies of the order of 20cm are now achievable from the increasing number of terrain laser scanners that are available on the market, which now include improved processing software. GIS will be applied to decision support systems, while automated geospatial data production and updating by digital systems will be an important topic.

In Commission III, progress, though slow, in the automation of photogrammetric analysis and extraction of information from images, will be described. Multi-sensor, multi-resolution, multi-spectral, and multi-temporal imagery are essential to this research. The transition from film-based photogrammetry to digital cameras is predicted to cause a paradigm shift in photogrammetry, from the minimisation of the number of images acquired and processed for mapping projects, to acquiring a highly redundant set of images. The debate between film based and digital image acquisition will be followed by many with interest.

In Commission IV a shift towards 3-dimensional and temporal models of spatial data and applications will be observed. We will also see new developments in the modelling and visualisation of spatial and thematic uncertainty of spatial data. There are new approaches in the generalisation of 3D building data and in the continuous data visualisation. Progress will be given on the establishment of global databases to address specific environmental and socio-economic issues.

Commission V will cover the acquisition and visualisation of our cultural heritage, while techniques of scene modelling and virtual reality for displaying and visualisation of buildings, other structures and the landscape will be demonstrated.

In Commission VI, for the third Congress, the researchers will compete for prizes in the CATCON competition for software designed for computer assisted teaching and learning. The important topics of computer assisted and Web based learning for developing countries will be part of this Commission's activities.

In Commission VII scientific papers will cover a wide spectrum of Earth observation applications related to sustainable agriculture, forestry, water resources, geo-science, global change, human settlement analysis, besides disaster monitoring, mitigation and damage assessment.

During the past four years, ISPRS Council reviewed the terms of reference of the Technical Commissions and following a postal vote amongst members in 2003, the General Assembly approved new terms of reference for eight Technical Commissions for the period after this Congress. This is significant step in the scientific activities of the

Society, since it will be the first time that the number of Commissions has been increased since 1952.

The General Assembly, the decision making body of the Society has already met today and decided on a number of important issues, including ISPRS as a not for profit corporation, ratified the formation of ISPRS Foundation and decisions made by Council in the past 4 years. It will determine the location of the next Congress in 2008, appoint the new Council and the persons who will become the Technical Commission Presidents for the coming 4 years, and approve the resolutions of the Congress.

The impact of humankind on many aspects of the environment is alarming. Since we last met in Amsterdam 4 years ago, the human population has increased from approximately 6.08 billion to 6.4 billion, a growth of approximately the population of a large part of Europe. Aspects of the environment, such as biodiversity and the planet's resilience to cope with environmental changes are being increasingly under pressure. The carbon dioxide load on the atmosphere is ever increasing alarmingly and is now said to be 30% more than it was several hundred thousand years ago. This is unprecedented in the living history of the Earth. The consequences of this increased carbon dioxide load have been predicted to cause global warming with the average temperature increasing by a minimum of several degrees. Significant environmental impacts will result, such as rises in sea level, increased storms, flooding, increased drought and desertification. While these changes cannot be

accurately predicted, they must be monitored and assessed. The areas covered by ISPRS in the photogrammetry, remote sensing and spatial information sciences should become increasingly important in this process.

While we are here at the Congress viewing the new developments and sharing knowledge with others I believe we need to ask, why are we doing this work? What is the purpose of developing new mapping systems and data management systems, these new technologies? Of course we are providing important services to our communities. Spatial information is said to be essential for more than 80% of all decision making affecting communities. I would like to think that we could look more broadly at the application of our knowledge, particularly for the benefit of the global community and towards the sustainability of the planet. Are we doing enough to convince decision makers of the essential nature of the information that we are dealing with and its potential applications?

These are some essential aims of our Society and I hope that you will be able to consider how you might contribute to these issues at this Congress and in the future.

I commend these thoughts to you as we enter the next 10 days of this important event for ISPRS. I am sure it will be a memorable experience for all us.

Thank you ladies and gentlemen.



## Speech by Incoming President, Ian Dowman

Members of Council, Technical Commission Presidents,  
Ladies And Gentlemen

I am deeply honoured that the General Assembly has entrusted me with the role of president of our society for the next four years. I thank them for their confidence and look forward to upholding the tradition set by previous presidents. The Society would not be in the position that it is in today were it not for the dedication and foresight of previous presidents. I feel very privileged to be following in the footsteps of my predecessors such as Doyle, Konecny, Torlegard, Murai, Fritz and Trinder.

On a personal note I cannot let this occasion pass without commenting on this chain of office. The chain was presented to the ISP, as it was then, by the Royal Institution of Chartered Surveyors and Photogrammetric Society during the 10th ISPRS Congress in Lisbon in 1964. I feel

very privileged that I should be the first person from the UK to wear this chain. The previous, and only, president from UK was General R Llywellyn Brown, who was Director General of Ordnance Survey, from 1956 – 1960.

My first, and perhaps most important duty is to thank the outgoing Council for the experience of the past four years. I believe that ISPRS has made enormous progress in recent years and this has been largely due to the dedication and hard work of Council. John Trinder and Larry Fritz have been on Council for a combined total of 32 years, and their experience has leadership has been outstanding. The setting up of the ISPRS Foundation, the ISPRS Strategic Plan and Registration of ISPRS have been only some of their achievements. I will not dwell on the activities of the past four years as they have been rehearsed several times already, but I must say that this would not have been possible without John and Larry, sup-

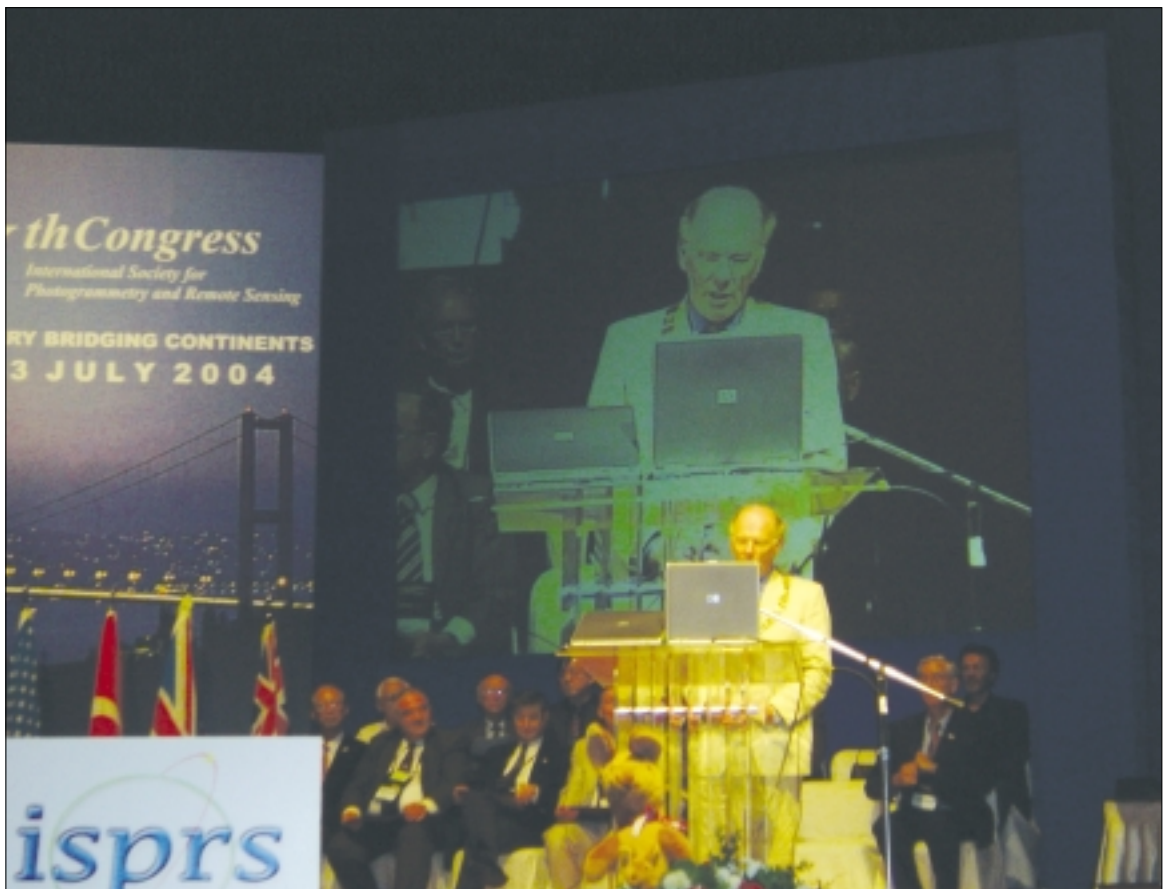
ported by the rest of Council. Treasurer Ammatzia Peled has done much more than manage our accounts; he has chased members for their subscriptions and directed the financial policy of the Society with a sure and steady hand. His contributions to Council meetings is always direct and often idiosyncratic. Gerard Begni has contributed his wisdom and experience, particularly of working with developing regions, and in the francophone countries. I do not need to repeat the outstanding work done by Orhan Altan, our Congress Director; as the fruits of his efforts are here for all to see, and I will return to this later. But Orhan has not only been Congress Director; in all his work on Council he has seen 'bridging continents' as a priority.

I would also like personally to thank the Technical Commission Presidents for their work. This has been a particularly strong group, all experts in their field who have initiated an excellent programme of work. The next four years promises to be equally challenging, and I am confident that the new Council and TCPs will be equal to the task, and that we will have a very successful and rewarding four years. We have a balance on Council and the TCPs, with 4 continents being represented, although we still have gaps in representation from Africa and South

America. But once again remote sensing is not well represented and, as John Trinder has mentioned already, we have no women. The new commission structure has ensured that we have a good balance between the different areas covered by ISPRS.

My objectives in the next four years will be to consolidate the science programme of the society, expand the international role of ISPRS and develop education and outreach particularly in Africa and South America, hopefully with assistance from the Foundation. We must harness the expertise within our society in order to help solve global problems, particularly those related to the environment.

I believe that the scientific activities of ISPRS are in very good shape, the papers and activities at this Congress demonstrate the high quality and the breadth of activity. The structure of the Technical Commissions has been reviewed during the past 4 years and this has resulted in new terms of reference which will be used by the new TCPs. Council intends to closely monitor the setting up and operation of the working groups and to work to avoid duplication of effort and of meetings, and, by presenting a planned programme, to make meetings more attractive to the whole photogrammetry, remote sensing and spatial



information science community. We also plan to make ISPRS responsive to new developments and encourage the establishment of working groups at any time to meet specific requirements. For example external initiatives like the International Polar Year or the ICSU health and well-being initiative, or to fulfil the need to encourage activity in a particular region, and to respond to new scientific developments.

It is generally agreed that ISPRS needs to represent remote sensing more effectively. The establishment of a new Commission will help this but we must be seen to cover remote sensing. Our activities through the UN Office of Outer Space Affairs and the Committee on Peaceful Use of Outer Space (COPUOS) and though CEOS are primarily concerned with Earth observation, and these organisations see ISPRS as representing remote sensing. We need to consolidate this by ensuring that the International Committee on Remote Sensing of the Environment (ICORSE), and the Symposium which they organise is fully recognised as an ISPRS activity; and by attracting more members who represent remote sensing either nationally (Associate Members) or regionally. I am hopeful that TCPs will plan their activities to link with regional requirements and interact with each other to promote this. Council also need to consider carefully its links with the computer vision, pattern recognition and cultural heritage communities.

Clearly a major role of an International Society is to represent its members on the International scene and the efforts of previous Councils to gain ISPRS representation onto COPUOS, ICSU (The International Council for Science) and CEOS has undoubtedly raised the profile of ISPRS. We also have relations with many other international bodies. If we decide that we wish to have an active relationship, we must make this effective and have mechanisms to respond quickly to new initiatives and we must be prepared to resource individuals to take part. The organisations in which we are active participants must be carefully selected but we must commit to being active in them.

Another major activity of an international society is education and outreach. The current activities include involvement in the educational activities of the United Nations and CEOS. Technical Commission VI ran a workshop in Africa in 2001 and Council has supported the European student network and the Youth programme at the Congress. We must do more in this area and Council will make every effort through the Commissions, the Foundation, and our international liaisons to make the work of the Society accessible to people in developing countries.

In summary, I will be asking Council and the TCPs to work towards the following goals during the next four years.

- Sustain and develop the scientific programme based on international excellence in research and in collaboration with other international scientific unions;

- Expand the international role of ISPRS by building on our existing links and developing a presence in developing countries;
- Continue the role of ISPRS in education and technology transfer in collaboration with international partners;
- Develop the Foundation and attract \$500 000 of funds by 2008.

All of this is altruistic, as well as for the benefit of our members. ISPRS must play its part in tackling global problems which might range from climate change to food security, and embrace the problems of living in mega cities and the need for data to implement effective homeland security.

No organisation can afford to stand still, we must grow and adapt in response to changing conditions and changing attitudes. As scientists we form conclusions based on evidence from our research, in the Society we must adjust our policies in line with external conditions and the wishes of the majority of the membership, whilst still maintaining our professional integrity. I am confident that Council will follow this approach.

Before concluding I have the responsibility of thank in the Congress Director and his team for organising this Conference. In 2004 he promised a memorable congress on Geoinformation Bridging Continents. He has certainly fulfilled this promise. We have excellent facilities here at the Congress Centre, and unsurpassed technical programme, outstanding organisation by Magister and the Congress team and if this is not enough we have a perfect environment for the Congress and have had the opportunity to explore this to the full through the social programme. We have cruised the Bosphorous, had fun in Kumkapi and had a fabulous experience at the Dolmabahçe Palace. All this has been enjoyed by participants from all continents, truly bridging the divide between people and nations. Orhan. You have kept your promise and we cannot thank you enough.

However this is not the end of the story because behind every good Congress Director is a strong support team. All of Council very much appreciate the support which Orhan's wife Melike has give him, though difficult and not so difficult times. But all of you will appreciate the support given by the Congress Team. Orhan has thanked them and I am will not repeat the names of all individuals: except for one. I would like to thank very sincerely Sevil Zorlu who has supported Orhan in the organisation and running of the Congress.

Finally I thank you all for making this Congress memorable and successful and urge you to return to your home countries and maintain the momentum achieved here in Istanbul. I hope that you will follow the Silk Road to Beijing, and I look forward to seeing you, and many others, in China in 2008.



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## Report on the 2nd General Assembly

By Paul Newby, UK Delegate and Editor of *The Photogrammetric Record*

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After all the excitement and controversy of the first General Assembly, this meeting promised to consist of straightforward but still highly important ISPRS business. First the hosts of the eight Technical Commissions for 2004-2008 nominated on Wednesday were elected unopposed. Certificates were then presented to the runners up for the Helava Prize, Professor Martien Moleenaar and Ms Tao Chang, as well as to Martin Kerschner.

The most entertaining part of the afternoon ensued, with highly professional 20-minute presentations from each of the two candidates to host the ISPRS Congress in 2008. John Fryer and his team outlined the charms and advantages of Melbourne, Australia as well as specific details of the special blend of tradition and innovation which will include a greater variety of information streams and maximum use of internet technology. Chen Jun then described China's aspiration to contribute more and more to ISPRS, with a pre-Olympic Congress in Beijing as the culmination of the steady move eastwards from Washington in 1992. A closing video showed some especially stunning images of Chinese landscapes beyond the Congress Centre. President Trinder made clear that he remains neutral and that Council considers both bids to be extremely strong. It will be a hard task for the General Assembly on Monday, when the decision could ultimately hinge on members' preference for another event in the heat of summer, or a complete change to the reportedly clear skies and moderate temperatures of the Australian winter.

The meeting continued with the lengthy formal reports by the President, Secretary General and Treasurer on their activities and achievements over the past four

years, in relation to goals which were set at, and after, the Amsterdam Congress. These reports will be published in full in due course; sufficient for now to say that enough of the goals were met that the members of ISPRS should feel satisfied with the performance of their Council, and that the Society, in all its diversity, goes forward into the next session in good shape.

Nominations for Council were then reviewed. After some discussion and the generous withdrawal of one candidate, the remaining candidates and positions matched exactly as follows:

*President*

Professor Ian Dowman (United Kingdom)

*Secretary General*

Professor Orhan Altan (Turkey)

*Second Vice President*

Professor Manos Baltasavias (Switzerland)

*Treasurer*

Professor Stanley Morain (USA)

President Trinder then stated that he would announce his own decision on whether to take up his entitlement to the post of First Vice President on Monday.

For the Financial Commission, only two nominations have so far been received, Petros Patias (Greece) and Costas Armenakis (Canada). Therefore one further nomination is required in order to fill these low profile positions which are nevertheless most important in guaranteeing the correct administration of the Society.

The meeting closed with brief discussion of some aspects of the amendments to Statutes and Bylaws on which decisions will be taken at the Monday's General Assembly.

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## Decisions of the General Assembly

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### Ratification of Council Actions

The General Assembly:

- Ratified the actions of Council to register ISPRS as a Not for Profit Corporation in Maryland USA
- Rescinded the postal vote to change bylaws so that ISPRS could register in Switzerland
- Ratified the appointment of the ISPRS Lawyer
- Ratified the establishment of the ISPRS Foundation

### Awards and MoUs

The General Assembly ratified the following:

- Acceptance of the Wang Zhizhuo Award from China

- Revision of Terms of Reference for Awards
- Acceptance of Gifts for Young Authors and CATCon
- Signing Memoranda of Understanding with: SPIE, IEEE-GRSS, UN Office of Outer Space Affairs

### Ratification of Contracts

The General Assembly ratified the following contracts:

- GITC for distributing the Archives
  - ISPRS Marketing Manager
  - GITC for publishing Highlights
  - Elsevier for publishing the ISPRS Journal
  - Swets and Zeitlinger to publish the ISPRS Book Series
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- ISPRS Webmaster
- Congress Director and Magister Tours for the Congress
- Seven Members for hosting Technical Commission Symposia.

### Membership

The General Assembly:

- Admitted a new Regional Member from Kenya – Regional Centre for Mapping of Resources for Development (RCMRD)
- Deceased the category of India from 8 to 6
- Raised the category of Turkey and Israel
- Expelled 14 Ordinary Members for non payment of subscriptions
- Approved expulsion of 6 Ordinary members in 2 years time if subscriptions not paid
- Expelled 3 Associate Members for non payment of subscriptions
- Approved expulsion of 1 Associate Member in 2 years time if subscriptions not paid
- Approved expulsion of 1 Regional Member for non payment of subscriptions

### Elections

The General Assembly elected the Members to Host the Technical Commissions 2004 - 2008:

- **Commission I**  
**France** with Alain Baudoin as Commission President
- **Commission II**  
**Austria** with Dr Wolfgang Kainz as Commission President
- **Commission III**  
**Germany** with Prof. Dr Wolfgang Förstner as Commission President
- **Commission IV**  
**India** with Mr. Shailesh Nayak as Commission President
- **Commission V**  
**Germany** with Prof Dr Hans-Gerd Maas as Commission President

- **Commission VI**  
**Japan** with Dr Kohei Cho as Commission President
- **Commission VII**  
**Netherlands** with Prof. John van Genderen as Commission President
- **Commission VIII**  
**Israel** with Dr Ammatzia Peled as Commission President

### Elections

The General Assembly:

- elected China to host the 2008 Congress.
- elected, ratified or appointed Council for 2004 - 2008:
  - President Ian Dowman, United Kingdom
  - Secretary General Orhan Altan, Turkey
  - Congress Director Chen Jun, China
  - Treasurer Stanley Morain, USA
  - 1st Vice President John Trinder, Australia
  - 2nd Vice President Emmanuel Baltsavias

### Elections

The General Assembly:

- elected the Financial Commission for 2004-2008:
  - Petros Patias (Chair) Greece
  - Costas Armenakis Canada
  - Lena Halounová Czech Republic

### Statutes, Bylaws and Resolutions

The General Assembly:

- Approved changes to the Statutes and Bylaws
- Authorised Council to consider expanding the number of Honorary Members
- Approved the Resolutions for 2004 – 2008
- Agreed not to change the unit of subscription
- Approved the establishment of a new category (E) of Sustaining Member

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## Report from Technical Commission Presidents on XXth ISPRS Congress

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### Commission I, Sensors, Platforms and Imagery by Stan Morain and Amy Budge

Commission I enjoyed a very busy, productive two weeks at the ISPRS XXth Congress in Istanbul. It offered two tutorials, fourteen technical sessions, and five poster sessions in addition to conducting its business meeting and distributing products to Congress attendees.

The first tutorial, titled Capability of High Resolution Earth Observation Systems for Mapping, attracted 36 participants. Specifics included characteristics of digital images and an overview of sensor data suitable for mapping. Scene orientation was detailed, addressing different conditions for available image products. Possibilities and limitations of SRTM C-band DEMs as reference for DEMs from stereoscopic space images was explained, and the relation of vector map scales to image resolution and

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quality was shown. The second tutorial, Performance of High Resolution, Multispectral and Hyperspectral Imaging Systems for Earth Surface Observation, had 29 participants.

The Technical Sessions were extremely well-attended, many of which were standing-room only. A major achievement was the SPOT HRS Scientific Assessment Program. It provided an opportunity for 60 scientists from 17 countries to generate DEMs from HRS stereo pairs, and to evaluate their quality. Results were presented in three sessions, confirming the high accuracy and quality of data from the HRS sensor. Two Special Sessions on the SPOT-5 Application Validation Program presented results on eight different applications for sites around the world.

Two working group sessions on sensor calibration focused on SPOT-5, Orbview-3, ALOS, CBERS, and aerial cameras. Emphasis was on high- and very high-resolution image products, with special note to aspects of geometric calibration. Another highlight in calibration activities was the work of the Joint ISPRS/CEOS WGCV Task Force. It presented an interim report from its workshop in 2003. Recommendations in the report set the agenda for future Task Force activities, calling for an expansion of participation to include EuroSDR and expansion of sensors to include LiDAR, SAR, and INSAR devices.

There was a vigorous program on platform and sensor integration, which included two Technical Sessions, a large Poster Session, a Theme Session, and a Tutorial (already mentioned). Despite the Saturday morning schedule, the Technical Session drew a large audience. Presentations discussing direct georeferencing, the TAG experimental positioning system, orientation of high resolution space images with different mathematical models, and practical results for handling space images with the Z/I Imagestation provided a wealth of information. Highlights included relative kinematic GPS positioning as the limiting factor for direct georeferencing, and a sampling of investigations involving GPS and IMUs in several countries. Platform and sensor integration is a hot topic, as evidenced by the large number and high quality of poster papers.

The session on Airborne Optical Sensor Systems focused on frame and Three Line Sensor (TLS) airborne systems. TLS systems are a dramatic departure from traditional photogrammetric processing, and offer important advances in simultaneous acquisition of high-resolution stereo and multispectral imagery. Frame-based systems represent an evolutionary digital approach that allows rapid ingest of digital imagery into the workflow of traditional photogrammetric processing.

The Special Session on Future Intelligent Earth Observing Satellites attracted a large audience. The word "intelligent" in this context was articulated well. It refers to the ability

of satellite constellations and sensor webs to self-adapt, self-organise, and self-configure with few human commands issued from the ground. Resolution 1.6 for the 2004-2008 term is expected to draw considerable international participation.

As a new initiative, products prepared by the Commission's working groups were on display in the Commission's business office. Business hours were published, inviting colleagues to visit and obtain copies of these materials. This was a tremendous success considering that all of the materials were gone by the fourth day of the technical program. The idea is worth remembering for future Congresses.

Commission I announced the release of volume two in the ISPRS Book Series. This volume, entitled Post-Launch Calibration of Satellite Sensors is the peer-reviewed collection of papers from the workshop on Geometric and Radiometric Calibration held in December 2003.

### **Commission II, Systems for Spatial Data Processing, and Analysis and Representation by Wolfgang Kainz**

Automated updating of geo-spatial databases from images and other collateral sources in the GIS environment was discussed by five technical sessions, two poster sessions and one workshop organised by IC WG II/IV during the Congress. The workshop was organised in conjunction with the International Cartographic Association (ICA). Major topics included an overview of the state-of-the-art of digital aerial cameras to collect suitable input, automated feature extraction algorithms and systems, and database-driven approaches for the updating process. The highlights of the presentations were three invited papers delivered by Helmut Mayer (Bundeswehr-Universität München), Peggy Agouris (University of Maine), and Peter Woodsford (Laserscan, Cambridge/UK and EuroSDR). These three papers demonstrated progress made over the last four years, e.g. the appearance of commercial systems for semi-automated feature extraction, and the increasingly close cooperation between photogrammetry and GIS. They also pointed out the major remaining challenges, namely the development of better automatic algorithms for efficient updating from images by including the user in the updating loop, more advanced statistical modelling and self diagnostics for automatic algorithms, and the exploitation of images directly within a GIS, exploiting the topological data structures for achieving better database consistency.

'Systems for SAR and Lidar Processing was discussed by four presentations. Ian Dowman gave an invited paper with an excellent overview of the technologies. Most papers presented in the poster session were SAR-related, topics ranging from speckle reduction in images to deformation measurements from differential InSAR to stereo measurements from spotlight SAR.



The Web and now also the Grid are the keys that facilitates the information services on Internet or Intranet. The three major components of geospatial services – the data services, the value-added services and the broker services – have been dealt with from different points of view and in relation to various applications and projects. It is obvious that the future will bring many independent geospatial data and service providers. Service chaining where output from one service will be input to the next service are already seen. Standards for this concept are found in the OGC specifications (WMS, WCF, WFS etc.) and are demonstrated in various services. The complexity of geospatial services is growing rapidly and interoperability can only be managed through interface and service standards. The services are moving from dissemination of data through distribution of information to be based on queries formulated from structured knowledge.

A technical session on 'Image data standards', which was held 20th July, gave an insight into the status of work already done in the area of standardisation of geo-spatial production, management and dissemination including the techniques and process required for these activities. It was pointed out that while standards on vector-GIS are almost completed (with comprehensive vector geometry standards and a more general vector visualisation standards), the standards on raster-GIS are still being developed.

The major achievements on design and operation of spatial decision support systems at this congress were the demonstration of novel approaches to spatial decision making, such as rough sets and the integration of raster and vector, which improve the possibilities of spatial decision support systems and are effectively applied in real world problems.

Spatial analysis and visualisation systems were discussed 21 papers by 2 oral and 1 poster sessions. It can be observed that the movement in spatial analysis is to exploratory analysis and relational analysis. In visualisation, the movement is to the integration of image data and 3-D models. Spatial analysis and geo-visualisation meets on web to form web-based exploratory analysis.

### **Commission III, Theory and Algorithms by Franz Leberl**

Commission III deals more with academic topics than other ISPRS commissions. This is encapsulated in the Commission's previous motto: „Theory and Algorithms" of photogrammetry, remote sensing and the spatial information sciences. Naturally then, Commission III is the element of ISPRS that is most affected by the evolution of computer science where computer vision and graphics have become core topics and core subjects in virtually every university's computer science curriculum.

Prior to the current 4-year term of the Congress, some felt that a separate Commission on „Theory and Algorithms" was wrong, and that therefore Commission III should be absorbed into the existing other Commissions. This idea has been invalidated simply by the level of activity in this Commission. There were more papers (180) and attendees (353) from more countries (49) at its Inter-Congress Symposium in 2002 (in Graz, Austria) than ever before, many working groups (9) and I assume that the number of paper submissions to this congress from the ranks of Commission III also reflects its vitality

In 2000 we wanted to make a difference in introducing academically oriented peer review procedures and double blind reviews of full papers for acceptance at a conference. This was very successful and unanimously praised when implemented at the Symposium of the Commission in 2002 (45 oral presentations selected). I assume that such academically oriented conference organisation should be and will be continued under the incoming leadership.

Where we were less successful was to open ourselves up to attendants and participation from computer science and computer engineering. We recruited a few people into the Working Group leadership, but then found that the commitment of those „recruits" to the ISPRS was simply not there. Nonetheless, as computer vision and computer graphics move to centre stage in the computer sciences, ISPRS and its Commission III must continue to attract players from those disciplines. I wish the incoming leadership good luck with this important effort.

Obviously there was a lot of work done and is now also being presented in Istanbul on terrain surface modelling from aerial laser scanning. Another very active topic has been and continues to be the automated image analysis directed towards the extraction of GIS data base content from digital images. Less active, for me with some regret, was the work done on automatically determining camera and platform orientation by triangulation, direct geo-positioning or combinations thereof. This is very important with new technologies and applications, for example in tracking for mixed reality scenarios, or in robotics.

One interesting key-number to describe the vitality of the Commission is the attendance at Tutorials. Three of them were held at the occasion of the Symposium in 2002, and they were all oversubscribed!. Also the tutorials here in Istanbul were very successful. This demonstrates the degree to which people need Commission III.

Somewhat disappointing was the level at which the advent of new sensing technologies were reflected in the Commission's work. New digital aerial cameras have been introduced that can change the prevalent and traditional thinking in photogrammetry, yet the papers do not reflect this opportunity. In robotics, a range of imaging sensors is

becoming popular with very intriguing geometries, such as catadioptric cameras, and yet this does not live in the Commission yet.

I am really happy that a refocusing of the ISPRS commissions has led to a renaming, and hopefully an ensuing reorientation, of the Commission onto the computer science aspects of the field. We do not have an accepted definition of when computer vision (or graphics) are "photogrammetric". In the computer science field, "photogrammetry" is seen as a narrow intersection of the Geo-application with image-based measurements using special cameras. I suggest that we counter this view by defining "Photogrammetric Computer Vision" as that branch of computer science that deals with 3D object models at a verifiable accuracy from sensor data streams. This should be promoted as an internationally "motto". We started in 2002 by labelling our Commission III Symposium as "PCV'02 – Photogrammetric Computer Vision".

#### **Commission IV, Spatial Information Systems and Digital Mapping by Costas Armenakis**

During the XXth ISPRS Congress, Commission IV on Spatial Information Systems and Digital Mapping covered a wide and diverse field of spatial sciences. Commission IV addressed science, technology and applications in the fields of spatial information sciences and systems, geodatabases generation and digital mapping from air- and space-borne sensors, visualisation and web-mapping, integration of remotely sensed imagery with spatial information systems, and extraterrestrial mapping.

The contributions of Commission IV in the technical program of the XXth ISPRS Congress consisted of 21 technical sessions and 14 poster sessions. These also include four Theme Sessions (ThS 1: Integration and fusion of data and models; ThS 9: Uncertainty, consistency and accuracy of data and imagery; ThS 11: Automatic image interpretation in the GIS environment; and ThS 15: Web 3D mapping and visualisation). It also contributed 7 invited papers by: M. Molenaar (Data modelling and semantics), J. Gong et al. (Data sharing standards and technologies), G. Konecny (Mapping from small satellites), T. Schenk (Information and knowledge in the digital mapping era), F. Samadzadegan (Sensor, data and model integration), D.R.F. Taylor (Global mapping and sustainable development), and H. Han et al. (2D/3D Architectures for fast web services). The recent exciting missions to Mars, the NASA's Athena Mars Rover Science and the High Resolution Stereo Camera on ESA's Mars Express Mission, were presented in the Plenary Session III by S. Squyres and G. Neukum, their respective principal investigators. Commission IV in co-operation with the Open GIS Consortium (OGC) organised also a Special Session on the Sensor Web Environment. Two formal Commission IV open business meetings were held.

During the sessions, the developments and progress in the relevant fields of Commission IV were presented and discussed. They are summarised as follows:

Significant advancements were presented in extraterrestrial mapping and contributions the MER and MEX missions to Mars. Approaches for higher levels of automation in database generation and mapping, and GIS-driven approaches were presented. The shift towards 3-dimensional and temporal models and applications is noticeable. We observed the maturing of web-map services, and we are moving towards 3D web applications, location-based services, semantic interoperability, and the sensor web environment. Significant emphasis is being put on data uncertainty and quality and the visualisation of the quality of the data. In image databases the use of image management systems and content-based image retrieval approaches were discussed. We saw new approaches in generalisation for small mobile displays and 3D buildings, while the geospatial data infrastructures expand at regional and global scales to address environmental and socio-economic issues. There was also a renewed interest in mapping due to digital airborne cameras and the upcoming small and other high resolution satellites, as well as in data fusion due to the multi-sensor approaches. Landscape modelling and 3D visualisation become tools for various applications. Finally, it was clear that we are moving towards to "near real-time mapping", "issue-based mapping", "web-based spatial services" and a "spatially aware society and applications". The contributions of Commission IV in the future are expected to be as important as ever.

The contributions of the officers and members of Commission IV were also acknowledged. M. Madden, Chair WG IV/6, was the recipient of the Willem Schermerhorn ISPRS Award. M. Sester, Chair WG IV/3, received the President's Citation. T. Ai with his paper entitled "A Generalization of a contour line based on the extraction and analysis of drainage system", and A. Forberg with her paper entitled "Generalization of 3D building data based on a scale-space approach" were the recipients of Best Young Authors Paper Awards. The two Best Poster Paper Awards went to papers "True 3D visualization of the Martian surface based on lenticular foil technology using HRSC imagery" by M.F. Buchroithner, O. Waelder, B. Koenig, T. Gruendenmann, G. Neukum, K. Habermann, and "A visibility test on SPOT5 images" by A. Hincq, M. Idrissa, V. Lacroix, H. Bruynseels, O. Swatenbroekx, I. Mahamadou.

#### **Commission V, Close range Vision and Techniques by Petros Patias**

The wide spectrum of Commission's thematic interests, as summarised in the Terms of Reference were covered, to a broad extent, by the accomplishments of its groups, during the last 4 years.

During this Congress we have seen the current advances in:

*Automation for Vision Metrology Systems and Industrial Applications*

- off-line and on-line systems, digital imaging systems and solutions for metrology and robot vision
- sensor orientation and system calibration
- Sensor fusion and the integration of disparate data types
- Target and feature recognition in multi-image correspondence
- Range image acquisition, localisation and segmentation

*Scene Modelling and Virtual Reality*

- accurate and realistic looking virtual reality (VR) models from real scenes and objects
- Knowledge-assisted 3D scene understanding
- Integration of computer graphics and VR technology

*Medical Image Analysis and Human Motion*

- Development of real-time medical imaging systems
- Dynamic analysis of human motion
- 3D medical imaging for anthropometry and expression analysis
- 3D representation and visualisation and medical VR, including support to tele-medicine

*Image Analysis and Spatial Information Systems for Applications in Cultural Heritage*

- Development and integration of close-range vision techniques and spatial information systems for recording, 3D reconstruction, modelling and visualisation of structures and items of Cultural Heritage
- low-cost and rapid techniques
- Use of Internet and VR techniques

*Image-Quick Response and Distributed Computing for Close Range Applications*

- Integration of close range and air-/space-borne imagery.
- office-to-field solutions for data collection, remote data access, and mobile management

*Visualisation and Animation*

- image-based techniques for integration of live figures and environment generation tasks into the animation process and procedures
- interaction of real and virtual objects

*Image Sequence Analysis*

- temporal analysis, time-constrained solutions and dynamic analysis and tracking.
- Integration of image data with navigation sensor data and multi-sensor information.

During the Congress 195 papers were presented in 16 oral and 7 poster sessions on the topics of: Automation for Vision Metrology Systems and Industrial Applications; Scene Modelling and Virtual Reality; Medical Image Analysis and Human Motion; Image Analysis and Spatial Infor-

mation Systems for Application in Cultural Heritage; Image Sequence Analysis; Metrology and Industrial applications; Close - Range Integrated Mapping Systems/Laser Scanning; CIPA-Low cost systems in recording and managing the cultural heritage and the Hans Foramitti Session - Celebrating CIPA's 35th Anniversary.

**Commission VI, Education and Communication by Manos Balsavias**

Due to various reasons, the Com. President Tania Maria Sausen and Secretary J. Avila, as well as the WG VI/3 Co-chair and the two WG VI/4 Chairs did not participate in the Congress. In spite of these short-notice difficulties, all present WG officers and the new Commission President Kohei Cho (Japan) took care of the Commission activities during the Congress with success.

The activities included 4 Technical Sessions (TS), 2 Poster Sessions (PS), one presentation in a plenary session, Business Meetings, the CatCon 3 competition, decision of Best Poster Awards and the Youth Forum, which although independently organised, belongs topic-wise to and was supported by Com.VI. A Special Session on the Unispace III recommendations had to be cancelled since most session speakers were not present at the Congress.

The 4 TS had a very good participation, by Com.VI standards, with 40-120 persons per session and a total of 300 participants. 19 papers (2 of which invited) were presented with just one no-show, less than the other Commissions average, and lively discussions. In the 2 PS, 33 papers were planned, whereby, as in other PS, the no-shows were significant. Presentations from North America were unfortunately very rare, in spite of significant developments in this region in most topics of Com.VI.

TS and PS topics and highlighted problems, grouped according to the 4 WGs of Com.VI, included:

*1. Education*

- Educational programs and courses at university and country level
- Accreditation was identified as a problem, especially for joint degrees between universities of different countries. Concerns about Geomatics education were expressed (negative developments in many Departments with closing, fusion, splitting etc. and declining number of students) and activities were presented to confront such problems, like PR in high schools (which needs increasing attention) and establishment of PR-oriented WEB portals ([www.geomatics.org.uk](http://www.geomatics.org.uk) reported by J. Mills, UK) in co-operation efforts of academia, industry and public and professional organisations.

## 2. E-Learning

- Models of e-Learning, activities and projects, course material design

E-Learning seems to take off, with increase of investments and significant activities in many developed countries. A highlight was the presentation of the Rector of Stuttgart University, Dieter Fritsch, who presented general models but also a very extensive multi-million project at his institution. However, the common consensus was that personal contact in education and team work are still needed. Open questions regarding e-Learning material include free accessibility, sharing of development and costs, updating and reusability, e.g. by translation in other languages.

- Examples of WEB-based, multimedia, interactive, VR-based and simulation-based tools

Such tools have become more detailed, with more animations and interactivity, self-testing and are based on sophisticated development environments that provide higher consistency in the look-and-feel and navigation

## 3. International co-operation and technology transfer

- Knowledge and technology transfer, training, capacity building in developing countries (and building on capacity)

This topic was covered by many ITC papers. Although other groups are also active in this field, very little was reported by them during the Congress.

- Intercultural project management (multinational projects)

This interesting presentation by A. Mehlbreuer (Hansa Luftbild) made clear that tertiary education should include courses in management, financial aspects, negotiation and presentation skills, conflict management, business English etc., topics that are equally or even more important in professional practice than technical courses. It also stressed the need of practical experiences (preferably in other countries) during education.

## 4. Internet resources

- History of Internet, ISPRS server
- Need of metadata for Internet resources

The increasing ISPRS-related Internet resources (many of which are on the ISPRS and the WG VI/I WEB page) make necessary their short critical description to increase the usefulness of this information and facilitate searching.

- Collection of worldwide up-to-date data on topographic mapping by K. Tempfli (ITC) (current data are outdated; initial results are limited and difficulties to collect them were reported)
- A proposal to establish a multilingual dictionary of Geoinformatics terms (WEB-based) by J. Jachimski (Poland)

The plenary presentation „Capacity Building for the Global Geo-Information Community – An ITC Perspective” by ITC Rector, Martien Molenaar, presented an interesting concept and respective actions on organising education

and training locally in developing countries or through joint programs involving both local courses and decreasingly additional ones at ITC, and making increasing use of local forces, mostly educated previously by ITC.

The CatCon 3 competition, initiated in 1996 by K. Cho (Japan) and generously sponsored by S. Murai (Japan), included 9 software packages and 2 demonstration packages. About 100 persons visited the competition, while a popular vote was taken into account by a 5-member jury which awarded 3 prizes and a special Gold Prize Award to the firm Intermap (Canada) for a tutorial on InSAR.

*The Youth Forum*, an innovation for an ISPRS Congress, was initiated by Congress Director, Orhan Altan, after initial discussions of young researchers at the Com.V Symposium in Corfu, 2002. The respective activities were actively supported by Com.VI and a local Turkish team with main involvement of Rahmi Celik and Ms. Zaide Duran. It was one of the Highlights of the Congress with a full day covering 4 TS, one PS and a panel discussion, as well as social events (an orienteering walk or taxi-drive for the lazy in Istanbul using GPS and maps (ca. 50 participants) and a very affordable post-Congress one-week camp (ca. 40 participants) with rich activities at the sea resort Canakkale in the Dardanelles). The TS and PS (with 20 and 42 planned presentations, respectively) covered all topics of ISPRS, had very few no-shows, presentations and posters were very well presented and prepared, while the scientific level was good, even for undergraduate work. The panel discussion had ca. 80 participants (unfortunately with little participation from L.America and Africa) and was co-ordinated by two students, Jaako Järvinen (Finland) and Esra Erten (Turkey). E. Baltsavias, K. Cho and A. Pearce made some short statements on predefined topics, and discussion was developed around them, especially regarding student activities (parallel to or independent of ISPRS events). It became clear that students need from ISPRS support but also freedom to develop their activities (technical and social), while their organisation could be in the form of a Working Group or Special Interest Group with co-ordinators from ISPRS but governed mainly by the students themselves and based on an extensive student network, if possible in all continents. About 40 students expressed their interest already in Istanbul, while Council appointed two interim student co-ordinators, which will co-operate with K. Cho and E. Baltsavias (contact from the Council). A plan to organise a summer school (probably in Istanbul in July 2005) is already underway. The Youth Forum initiated a great interest and enthusiasm among students and senior participants and has a high potential for bringing new blood and fresh ideas in our Society.

Summarising, the Congress activities have shown a great and increasing interest in education, technology transfer, capacity building and e-learning. Student activities were a Congress innovation and a hope for the future of ISPRS. Many colleagues expressed their readiness to help Com.

VI, but even more than statements, concrete actions and support of the Com.VI activities are needed. For the next period, Com.VI is in very good hands and the new TCP Kohei Cho (kcho@keyaki.cc.u-tokai.ac.jp) and the other WG officers, which will be soon appointed, are waiting for contributions from interested colleagues.

### **Commission VII, Resource and Environmental Monitoring by Rangnath Navalgund**

Technical Commission VII on Resource and Environmental Monitoring organised, in all, twenty-six sessions at the Istanbul Congress. It included ten technical (oral) sessions and seven poster sessions related to scientific themes of its Working Groups and five theme sessions and a poster session on special topics related to hyper-spectral sensing, advanced classifiers, applications of high spatial resolution data and integrated coastal zone management. In addition, two special sessions on ocean colour and sustainable development under the aegis of the International Committee on Remote Sensing of Environment (ICORSE) and one technical session on the theme of the Commission were also organised. About two hundred and twenty-five scientific papers were presented together in oral and poster sessions. The papers covered a wide spectrum of topics pertaining to spectral signature research and advanced classifiers, and applications of earth observation data related to sustainable agriculture and ecosystem, forestry, water resources, geo-sciences, global change, human settlement analysis, etc., besides disaster monitoring, mitigation and damage assessment. Methods of integration of data in GIS environment and inter-comparison and calibration of data across different sensors/platforms and validation received due attention.

The deliberations in the technical sessions showed that data availability from recent satellites such as Landsat 7, Hyperion, MODIS, QUICKBIRD, IKONOS-II, IRS-P6, SPOT-5, CBERS-II, ENVISAT, etc. are opening new vistas in earth resources applications. These space based EO data are being complemented with the data available from airborne hyperspectral, multispectral, SAR and LIDAR instruments. Integration of complementary datasets from different spacecrafts, multiple sensors and at different levels of processing have become important. Some of the directions for future work include development of better algo-

rithms for retrieval of biophysical/geophysical parameters from advanced hyperspectral/microwave sensors, especially with the use of polarimetric signatures of SAR. Major advances in data handling and pre-processing techniques in areas such as radiometric correction, spectral calibration and directional (BRDF) processing were highlighted. Advanced data processing techniques such as wavelet transformation, spectral unmixing, and object-based classification were presented along with case studies. Spatial modelling tools with a goal to generate decision support systems at various scales were discussed. Derivation of sustainability indicators amenable to remote sensing and establishing efficacy of space inputs for cropping systems research and precision farming were dealt with. The advance techniques used towards human impact analysis showed closeness between the technology and its use for local governance. Development of integrated monitoring systems, especially in the fields of coastal ecosystem, ocean colour, land use/ land cover, water resources (both underground and surface) and forests are essential to ensure environmental protection and sustainability. The sessions on disaster monitoring and mitigation addressed new techniques in hazard assessment, geohazards and climate and environmental hazards and also International capacity building programs. Need for better forecast/early warning systems for disasters such as landslides, floods, forest fires, volcanoes, oil spills, snow avalanches and earthquakes and integrated global observation systems was emphasised. Creation of appropriate global data sets and global change models is the need of the hour. Assimilation of satellite-data derived parameters for improving weather forecasts, ocean state forecasting, polar research are some of the areas needing attention.

Continued growing interest in the scientific activities of the commission is manifested through the volume of the proceedings of the Commission, it being the largest.

Considering the vast scope of activities of the current Commission VII and also to attract enhanced participation of global earth observation professionals, two new Commissions viz., Commission VII on Thematic Processing, Modelling and Analysis of Remotely Sensed data, and Commission VIII on RS Applications and Policies are constituted. Resolutions for the two commissions were brought forward, discussed and adopted at the Congress.





## Report of ISPRS President 2000-2004

*Istanbul, Turkey July 2004*

*By John C. Trinder*

Distinguished Delegates, Representatives, Advisors and Guests, Ladies and Gentlemen

It is my pleasure to present the President's report at the 20th Congress of ISPRS. It has been an honour and privilege to have served as President of such a prestigious Society as ISPRS for the past 4 years. While there are many privileges to being President, there are also many demanding responsibilities. The past four years has therefore been a combination of attention to ISPRS and other affairs while at home, and a great deal of travelling from the antipodes. As President, I have been impressed by the high level of respect given to my position by Members and organisations. I take this as recognition of the high status of the Society and not me personally. I would like to pay special tribute to all those people who have provided me as President, with such respect during my many visits. While the Society should be very satisfied with the international respect that it has earned, I believe that we must continue to work hard to maintain and improve on its standing.

I will report to this General Assembly (GA) on the achievements of the Council during the past 4 years, and my assessment of the current status of the Society.

According to the Statutes and Bylaws, the President is responsible for:

- Convening and presiding over the Congress plenary, the General Assembly and meetings of Council
- Co-ordinating the activities of the Commissions, Working Groups and Committees
- Representing the Society with national and international institutions and organisations whose activities are of interest to the Society
- Co-operating with other international organisations
- Communicating with the Members of the Society.

As President, my personal goals for this term included:

- Implementation of the actions of the Strategic Plan announced in Amsterdam in 2000
  - Establish registration of the Society in a recognised jurisdiction
  - Establish The ISPRS Foundation
  - Establish contracts with Congress Organising Committee and Symposium organisers to formalise the arrangements with the Society
  - Review the Terms of Reference of the Technical Commissions with a view to their redefinition
  - Improve the marketing of the Society
  - Achieve full Union membership of ICSU

- Pursuit and improvement of performance in the Society's scientific objectives, in particular, improvement of the recognition of ISPRS in the areas of remote sensing and spatial information sciences, especially for environmental monitoring and the application of remote sensing for sustainable development
- Continued improvement of the quality of the ISPRS publications
- Establishment of agreements with appropriate international organisations

### Council Activities

The Council convened formal meetings nine times during this inter-Congress term, on five of these occasions also with the Technical Commission Presidents. Transition meetings were also held by Council and by Council with the Commission Presidents soon after the elections were decided at the Amsterdam Congress in 2000 to review goals, responsibilities, guidelines and future meetings. The details of the Council and Joint Meetings will be reported on by the Secretary General. Minutes of these meetings have been reported in ISPRS Highlights. I want to express my gratitude for the generosity of the hosting Ordinary and Sustaining Members who provided support to convene these meetings.

### Actions from the 2000 Strategic Plan

The Strategic Planning process that was undertaken in 1998 and reported on at the Amsterdam Congress, resulted in a number of actions that were to be completed in this inter-Congress period. The significant actions were:

#### Registration of ISPRS

As presented in the document describing the history of obtaining registration of ISPRS in the General Agenda papers, Council received the following advice from ICSU in 1998 as follows:

*"For purposes of incorporation, a non-governmental organisation (NGO) must submit to the legal regime of one specific nation state. No supra-national legal system exists which can provide a structure for establishing a legal body outside the realm of a national legal territory. An NGO, which has not been thus incorporated, does, to put it bluntly, legally not exist."*

The letter further stated:

- *"ISPRS should, indeed, be incorporated in some chosen country. Unless this happens, ISPRS cannot legally conduct business as a body."*
- *"ISPRS individuals (i.e. Council members) are liable personally for ISPRS activities. The liability exposure of ISPRS officers is ... considerable."*

- "Anyone could easily steal ISPRS rights..." because ISPRS is not a legal entity.
- "ISPRS assets are basically not protected at all. ...", e.g. ISPRS bank accounts!
- "ISPRS cannot claim copyright."
- "Contracts signed with publishing houses could ... create problems. ..."

Apart from the above reasons, Council had signed, or intended to sign further contracts during the inter-Congress period that would have no legal status unless ISPRS became registered at an appropriate location as soon as possible. As well, Council was informed by the Turkish Congress Organising Committee that it required ISPRS to be a formally registered body before repayment of the loan could be made. Registration of ISPRS was therefore considered an urgent priority by the Council. Indeed, considering the legal exposure of the Society, Council would have been irresponsible not to have proceeded with formal registration as soon as possible. The detailed process that was followed has been documented elsewhere and hence will not be repeated. The registration was achieved in April 2002 in Maryland USA. The advantages of the registration, as announced my letter to Members in July 2002 are as follows:

- No changes are required to the Statutes and Bylaws
- English remains the authoritative language in all documentation, and especially the Statutes and Bylaws
- There is no requirement to call a special General Assembly to reconstitute the Society in order to initiate the registration
- ISPRS can have a physical headquarters anywhere in the world without affecting the incorporation.
- ISPRS will be recognised in a court of law as an entity entitled to sign binding contracts
- ISPRS will have the right to sue for infringements on its assets, be they real or copyright, etc
- Registration enables ISPRS to purchase liability insurance for its officers and indemnity insurance for its actions

Registration in Maryland USA provides ISPRS with greater security of its name, contractual arrangements, ISPRS assets and protection from liability for Council and other ISPRS officers. Contracts signed by ISPRS after the registration was achieved, for both the ISPRS Journal and ISPRS Highlights, now have recognised legal status. In addition, the formation of The ISPRS Foundation, an action within the Strategic Plan, was dependent on achieving legal status of ISPRS.

As a consequent of the registration process, Council requested a changed of the fiscal year of the Society to the calendar year by mail vote in 2003. This vote was overwhelmingly passed by Members in September 2003. The change in fiscal year will enable the Treasurer to more easily satisfy the requirements of the submission of financial statement to the taxation authorities in USA.

#### *ISPRS Foundation*

The ISPRS Foundation was established in August 2003 and

the Board of Trustees, comprising prominent professionals in the fields of ISPRS, have been appointed. The ISPRS Foundation has as its aims to improve the ability of ISPRS to satisfy its philanthropic aims and objectives, by administering a broadly-based international program of fund raising to provide grants to qualified individuals and organisations, who are pursuing and/or applying knowledge for advancing the sciences and technologies associated with the disciplines embodied by ISPRS. The areas that are expected to be funded by The ISPRS Foundation include awards, awareness education, distance learning, exchange programs, fellowships, grants, international workshops, internships, preservation and archiving, research initiatives, scholarships, standards projects, tools and literature, and travel grants. It will contribute significantly to the efforts of ISPRS in capacity building, international co-operation and technology transfer.

On 31 March 2004 in Beijing, the inaugural meeting of Board of Trustees of The ISPRS Foundation was held to appoint officer bearers and plan administration procedures. Bank accounts and addresses for receipt of funds have been planned as explained earlier in the General Assembly. A fund raising campaign has been initiated and further funds are expected to be received at the Congress, at the kick-off event.

#### *Contracts for Congress and Symposia*

Council initiated contracts with the Ordinary Members responsible for organising the Congress and Symposia in order to formalise their responsibilities, as well as those of ISPRS. The contracts also include a 10% levy on all full registrations at the Congress and Symposia, and a levy of 2% on the gross exhibition income at the Congress. The levies are intended to raise funds to support ISPRS administration expenses and scientific initiatives. It is worth mentioning that although significant profits have been derived in the past from the organisation of the Congresses and Symposia, ISPRS has received no direct financial benefits. Given that the name of ISPRS has been a major reason for the success of the Congresses and Symposia, Council believes it is appropriate for ISPRS to receive income from ISPRS sponsored meetings.

#### *Review the Terms of Reference of the Technical Commissions*

The inadequacy of the definition of the terms of reference of the Technical Commissions became clear when the responsibilities of the Working Groups were being determined soon after the Amsterdam Congress in 2000. As well, the communities of ISPRS were not adequately defined by the terms of reference. As a consequence, Council believed that ISPRS was not attracting sufficient people who had a strong connection with ISPRS in the fields of remote sensing and spatial information sciences. Some of the problems in the terms of reference were:

- There appeared to be an unwritten understanding (although it is not written in Bylaw XIII) that - C o m - missions I, II, III, IV and VII cover topographic aspects of

photogrammetry and remote sensing, while Commission V covered non-topographic aspects. This meant that Commission III tended not to study theory and algorithms of close-range sensing and machine vision.

- Commission II has evolved without considering the overall structure of the Technical Commissions to deal primarily with spatial data, radar and LiDAR and mobile mapping. Hence, there are overlaps between areas of activity of Commission II and several other Commissions
- Image classification has not been adequately studied in ISPRS and hence ISPRS has been considered primarily covering only applications in the area of remote sensing.
- The theory and applications of GIS have not been adequately defined in ISPRS.

In May 2002, I wrote to Members advising them that Council had decided to review the terms of reference of the Technical Commissions with the intention of defining them more clearly. Council believed that any significant changes to the terms of reference would have to be approved before the Istanbul Congress, otherwise the changes could not be introduced until 2008. The review process was based on extensive publicity and consultation with participants at all Commission Symposia, the International Science Advisory Committee (ISAC) and Members. Draft proposals for the Technical Commissions, including an eighth commission were placed for comment on the ISPRS Home Page in February 2003, and at the same time a request was made to Members as to whether they would object to this issue being determined by mail ballot. No objections were expressed to such a vote. Following the assessment of the comments on the terms of reference received from individuals and Members, a final version was prepared, together with the rationale for the changes, for transmission to Members for a mail vote in June 2003. The Technical Commissions were redefined so that the three areas of photogrammetry, remote sensing and spatial information sciences each are covered by two Commissions. Together with two overarching Commissions, there were eight Technical Commissions in the proposed new terms of reference.

The Statutes state that 'only the General Assembly has authority to amend the Statutes and Bylaws the Statutes'. Because of the urgency of this issue, Council invoked Bylaw XVI.1 to issue the mail ballot of Members of the General Assembly. While this Bylaw does not specify the percentage of votes required to declare the ballot, Council insisted on receiving at least 50% of the total possible votes of all Ordinary Members before the ballot was declared in September 2003. This is effectively a quorum of 50%. The votes were almost unanimously in favour of the revised terms of reference and hence Council declared the ballot at the end of September 2003. Therefore, in October 2003, the Secretary General requested bids from Ordinary Members for Technical Commissions

for the period 2004-2008 based on the new Technical Commissions terms of reference, since they will apply from the end of this Congress.

#### *Marketing Manager*

In 2002 Council contracted Dr Tina Cary of Tina Cary and Associates to act as a Marketing Manager for ISPRS, to improve the visibility of ISPRS by regular Press Releases, attract new Members and other publicity activities. A total of eight Press Releases have been prepared and released to date. While Council believes that the appointment has been successful, it is proposed that the incoming Council should review the Society's requirements in respect of the publicity of its activities.

#### *Achieved Full Union Membership of ICSU*

The successful admission ISPRS as a Full Union Membership of ICSU in September 2002 at the ICSU General Assembly will enable ISPRS to co-operate with other Unions on topics of common interest to ISPRS and ICSU Unions. ISPRS has been included in the initiative on Health and Well-Being and will also be included in the group of GeoUnions. As well, ICSU accepted ISPRS's nomination, Ray Harris who is the Chair of IPAC, as a member of the ICSU Scientific Data and Information Panel. I believe that ISPRS has been well accepted into the ICSU family. This membership has also enabled ISPRS to become a member of COSPAR, which should lead to co-operate between ISPRS and that organisation on related issues.

#### **Scientific Activities**

Despite the fact that not all WGs have performed according to expectations, overall the scientific activities of the Society have been managed in an excellent manner and progress in the science and technological activities have been very satisfactory. In 2003, Council reviewed the performance of the Technical Commissions in addressing the Resolutions approved by the General Assembly in 2000. It was agreed that about 70% of resolutions have been satisfactorily addressed. Council believes that this is a very acceptable level of performance, considering the Society is dependent on the voluntary contributions of individuals.

While guidelines were established in 1994 to support Technical Commission and Working Group science initiatives, few have been supported so far. It is hoped that the incoming Technical Commission Presidents will be able to take advantage of these initiatives more effectively in the coming period.

#### **Contracts for ISPRS Publications**

##### *ISPRS Journal of Photogrammetry and Remote Sensing*

After a long and difficult negotiation period between ISPRS and Elsevier B. V. from The Netherlands, the new contract for the publication of the ISPRS Journal of Photogrammetry and Remote Sensing for the period 2005-2008, was signed in May 2004. I am happy to report that for the first time since Elsevier took over the publication

of the ISPRS Journal in 1965, ISPRS will have full ownership of the title and copyright of the Journal. The new contract states as follows:

*The Society shall be, as between the parties, the owner of the title of, trademark rights and copyright in and for the Journal. Publisher shall place a copyright notice in the following form in each issue of the Journal, title page of each paper in hardcopy and electronic forms, any other derivative products in any form, and all pages of the ScienceDirect or any other scientific dissemination electronic database system used by the Publisher:*

*"Copyright © 20xx, ISPRS. All rights reserved. Published by Elsevier BV."*

It is worth mentioning without the registration of ISPRS, it would not be in a position to enforce the ownership and copyright arrangements that have been achieved. I wish to acknowledge the very substantial contributions made by the Editor-in Chief, Emmanuel (Manos) Baltsavias over the past four years. His receipt of the Schwidofsky Award is a true recognition of his contributions to the Journal. Manos will retire as Editor-in-Chief at the end of 2004 and Council hopes to find a replacement who can be moved into the position before the end of the year. Further details on the Journal will be given by the Editor-in-Chief in his report.

#### *ISPRS Book Series in the Photogrammetry, Remote Sensing and Spatial Information Sciences*

In 2003 Council entered into a contract with Swets & Zeitlinger B.V., from Lisse, the Netherlands for the publication of a peer reviewed Book Series, comprising high quality scientific contributions in the photogrammetry, remote sensing and spatial information sciences, with the aims of promoting the scientific output of ISPRS. Council appointed Maxim Shoshani from Israel as the Book Series Editor.

#### *ISPRS Highlights*

After seeking expressions of interest to publish the Society's bulletin, ISPRS Highlights, Council has renewed its contract with GITC in the Netherlands for the publication of four editions per year. Further information will be provided by the Secretary General.

#### **Co-operation with International Organisations**

While details of co-operation with international organisations will be presented separately by the Secretary General, I will report on agreements signed:

- Office of Outer Space Affairs - The MoU originally signed by Lawrence Fritz in the previous period was renewed in June 2002 with the current Director, Dr Sergio Comacho to ensure collaboration between ISPRS and OOSA.
- IEEE-GRSS. An MoU was signed in 2002 between the Presidents of ISPRS and IEEE-GRSS to collaborate in research and development and hold joint sessions at their respective conferences.

- SPIE. An MoU was signed between ISPRS and SPIE for collaboration in meetings organised by the two Societies.
- The Joint Board of Geospatial Information Societies (JBGIS) was formed by a heads of agreement letter in Durban South Africa in August 2003. The parties to the Board are primarily the members of the former IUSM that was disbanded in 1999, as follows: ICA, FIG, IHO, IAG, and ISPRS, together with other invited members such as IGU, IMTA (International Map Traders Association) and International Steering Committee for Global Mapping (ISCGM). Formation of the Board was announced to the UN in January 2004. The intention is not to recreate another IUSM, but to provide a contact point with international agencies from the geospatial information bodies.

#### **Administration and Operational Matters**

##### *Headquarters*

The administration of the Society has been efficiently managed by the Secretary General with the Headquarters in UCL in London. In order to improve the management of the database of ISPRS Membership, for the use of all Council, and to provide greater flexibility in the access to addresses of Members, a database has been developed and will be maintained for the future four years, by the Treasurer Ammatzia Peled and his wife, Rachel. This is a major improvement on the past status of the ISPRS database, and will be a valuable resource for the management of the Society in future. The Society expresses its sincere appreciation to Ammatzia and Rachel Peled for this major contribution to ISPRS administration.

##### *Representation of the Society*

Over the four years of my term, I have made an attempt to visit as many Members, ISPRS sponsored conferences and workshops, as well as meetings of organisations with which ISPRS collaborates. As ISPRS President, I had the pleasure to visit about 30 countries of Ordinary Member Societies, some being visited more than once. My apologies to those which I did not have the opportunity to meet. Full details of my visits have been reported elsewhere, either in ISPRS Highlights or in reports to the Council Meetings. In all cases, I was welcomed very cordially and offered very generous hospitality, for which I am very appreciative. While the standard of equipment and facilities varies across the world, the performance of Members reveals the overall strength of the fields of photogrammetry, remote sensing and spatial information sciences.

#### **Recognition of Contributions of the Council and ISPRS Officers**

In conclusion, I wish to stress that achieving success as President is dependent on the co-operation of a large team of individuals who work for ISPRS in a voluntary capacity. I have been very fortunate to have such a dedicated Council from diverse parts of the world who have supported me in my presidential activities. Without their support I am sure that we would not have been able to achieve adequate progress. I wish to identify and acknowledge those people

who have contributed so much to ISPRS over this term. Secretary General, Ian Dowman, has done an excellent job in maintaining the headquarters of the Society and continuing correspondence with Members and international organisations. Ammatzia Peled has been a very dedicated Treasurer, not only diligently seeking the outstanding subscription fees from Members, but also seeking the best location for the investment of ISPRS funds. Lawrence Fritz was ever conscientious in ensuring that Council followed recognised procedures and has made the major efforts in developing the ISPRS Foundation. Gerard Begni has provided an important contact with the Francophone world, especially in Africa and has excellent contacts in the remote sensing community, which have been very valuable to Council. Orhan Altan has done an outstanding job in organising the Congress. When one takes on such a task, problems can be expected but never be anticipated. Orhan has had his share of problems, including threats to his health and of terrorism in Turkey, but he has weathered these problems to produce, together with his enthusiastic and dedicated team, an excellent Congress.

Many hundreds of hours of personal as well as employer time have been spent by all of the Council in undertaking their duties. The Society should be very grateful for having such a totally committed Council. I acknowledge the contributions of the Technical Commission Presidents and their secretaries who were all very committed to their task, their WGs chairs, co-chairs and secretaries, the Financial Commission, the publication editors, chairs and members of ISPRS permanent commit-

tees, IPAC, ISAC, ICORSE and CIPA. I cannot name all of these people, but the work of ISPRS has been team effort. I also wish to acknowledge the contributions from my employer, the University of New South Wales, which provided facilities and staff to assist me in my work as President. As well, Geoscience Australia (formerly AUSLIG) provided financial assistance to support the operations of the President.

### Summary of Status of the Society

While progress has not been outstanding in all aspects of its activities, I believe that the Society is in excellent shape as the new Council takes over for the forthcoming period. The development of new technologies for the areas of interests of ISPRS is increasing and hence ISPRS has many new aspects of the photogrammetry, remote sensing and spatial information science to study in the future. The newly defined Technical Commissions will have more focussed terms of reference for their activities, and their Working Groups should look forward to attracting more people to work with them. The financial position and legal status of the Society are very secure. The ISPRS Foundation will enable the Society to more effectively perform its philanthropic aims. The mission of ISPRS 'is devoted to the development of international co-operation'. I believe that the Society is in an excellent position to fulfil that mission. I encourage Members from all over the world to work with the Society. It is your Society and your co-operation will improve its effectiveness.

John Trinder, President



## Report of ISPRS Secretary General 2000-2004

*Istanbul, Turkey, July 2004*

*By Ian Dowman*

Distinguished Delegates, Ladies and Gentlemen,

It is my great pleasure to present my report on the activities of the Secretary General since the last Congress in Amsterdam.

The past four years have been busy and rewarding. The Society has consolidating its role as the international society for photogrammetry and remote sensing and has made continuing progress towards acceptance as an international representative of the science. As Secretary General I am responsible for the day to day running of the Society, and in particular for acting as secretary for the meetings of Council the General Assembly and for co-ordinating the activities of the Technical Commissions. I am also responsible for managing the publications of the Society, this includes the Archives, Highlights and the web pages, and the ad hoc publications

such as the Silver Book and Blue Book. The Secretary General also attends meetings on behalf of the Society and represents the Society on occasions in place of the President. In carrying out these tasks I am highly dependent on the co-operation of many people and I would like to thank all members of the Society and the supporting organisations who have assisted me so willingly during the past four years, and without whom I could not carry out the job properly.

### Correspondence

Most of the correspondence is now carried out by email. This makes the running of a Society easier than when every thing had to be done on paper. Correspondence covers all aspects of the work of the Society and includes member records, approving meetings and publications and dealing with the many organisations with which we have dealings. Although email makes life much easier, all members do not



Comm	Venue	Dates	Total Attendance	Total papers	Partners
I	Denver	10-14 Nov	980	64	ASPRS USGS Transportation Research Board
II	Xi'an	20-23 Aug	150	119	
III	Graz	10-12 Sept	271 plus 82 EWV	141 plus 65 EWV	Parallel mtgs with AAPR, and East West Vision
IV	Ottawa	9-12 July	502	154	CIG, SDH
V	Corfu	3-6 Sept	243	116	CIPA
VI	San Jose dos Campos	16-18 Sept	68	31 presented, 45 published	
VII	Hyderabad	3-6 Dec	584	298	ISRS

Table 1: Summary of Technical Commission symposia.

use email, or have not informed me of their email address, it would help future Secretaries General enormously if all correspondence with members could be done by email.

**Technical Commissions**

The Technical Commissions (TCs) have been particularly active during the past four years. All seven TCs held very successful symposia in 2002, nearly 3000 delegates were registered, this includes participants in combined meetings, particularly of TCs I, III, IV and VII. This practice has helped to extend ISPRS influence amongst cognate sciences. Table I gives a full record of the symposia.

In addition to the symposia, there have been over 46 meetings of Working Groups in 18 different countries. Although some Working Groups have not been active in this area, most have held at least one workshop, often meetings have been joint between two or more working groups. Working Groups have also conducted international tests, sometimes in collaboration with other organisations such as EuroSDR and EARSeL, and have contributed to the development of an

ISO standard. Two collaborations are particularly worthy of mention: the joint CEOS/ISPRS task Force on Radiometric and Geometric Calibration, led by Commission I, and the SPOT Assessment Project, sponsored by CNES.

It is the responsibility of the Secretary General to approve Working Group meetings and to ensure that there are no clashes on dates or topics. This is quite difficult as I do not want to restrict the enthusiasm and efforts of Working Group chairs, but neither do I want members complaining of having an overlap of meetings. It is therefore important that Working Group chairs, with the help of TCPs, get together to plan meetings to ensure a comprehensive and co-ordinated programme of meetings. Council will be seeking to direct TCPs more in planning their programmes in the next four years.

The terms of reference of the Technical Commissions have been thoroughly reviewed and discussed, leading to new ToRs and an eighth TC, approved by postal ballot in 2003.

The following members have changed their name or their affiliating organisations:

Member	Old name	New name
Australia	Remote Sensing and Photogrammetry Association of Australia	Spatial Sciences Institute
Cyprus	Cyprus Photogrammetric and Cartographic Association	Cyprus Department of Land and Surveys
Denmark	Danish Society of Photogrammetry and Remote Sensing	GeoForum Danmark
Korea	National Geographic Institute	National Geographic Information Institute
Netherlands	Netherlands Society for Earth Observation and Geo-informatics	Geo Information Netherlands
Sudan	Sudan Survey Department	Sudan National Survey Corporation
Sweden	Swedish Society for Photogrammetry and Remote Sensing	Swedish Cartographic Society Photogrammetry and
United Kingdom	UK National Committee on Photogrammetry and Remote Sensing	Remote Sensing and Photogrammetry Society

## Membership

### Ordinary Members

The number of Ordinary members has remained unchanged at 103 since the Amsterdam Congress. Not all members have kept up to date with their subscriptions and this issue will be dealt with at this General Assembly.

Turkey has changed its category from 2 to 4, and Israel from 2 to 3; India has applied to change category from 8 to 6 (approved under agenda item 7).

### Associate Members

Two new Associate Members have been approved by postal ballot since the Amsterdam Congress these are National Institute of Aeronautics and Space, Remote Sensing Technology and Application Center, Division of Natural Resources and Environmental Monitoring, (LAPAN), from Indonesia and Centre Royale Télédétection from Morocco. LAPAN has not been admitted as an Associate member, because no subscriptions have been paid.

The following Associate Members have been eliminated due to non payment of subscriptions:

- Iran Jahar/JTC/KN Toosi Joint Education Programme (JIK)

- Iranian Remote Sensing Center
- Queensland Department of Natural Resources

The National Research Council of Thailand has changed its name to Geo-informatics and Space Technology Development Agency (GISDA)

There are currently 10 Associate Members.

### Regional Members

Three new Regional members have been approved by postal ballot:

- Centre for Space Science and Technology Education in Asia and the Pacific, (CSSEAP)
- Centre Régional de Télédétection des Etats de l'Afrique du Nord (CRTEAN)
- Regional Centre for Training in Aerospace Surveys (RECTAS)

There are currently 12 Regional Members.

### Sustaining Members

The following Sustaining Members have been admitted since the Amsterdam Congress:

Vol No	Title	Comm/WG
XXXIV-1	Integrating Remote Sensing at the Global, Regional and Local Scale	Comm I Symposium
XXXIV-2	Integrating Systems for Spatial Data Production, Custodian and Decision Support	Comm II Symposium
XXXIV-3	Photogrammetric Computer Vision (2 vols)	Comm III Symposium
XXXIV-4	Geospatial Theory, Processing and Applications	Comm IV Symposium
XXXIV-5	Close Range Imaging, Long Range Vision	Comm V Symposium
XXXIV-6	New Approaches to Education and Communication	Comm VI Symposium
XXXIV-7	Resource and Environmental Monitoring (2 vols)	Comm VII Symposium
XXXIV-5/W1	Recreating the Past, Visualisation and Animation of Cultural Heritage	WG V/6
XXXIV-2/W2	Dynamic and Multi-dimension GIS	WGs II/3, II/5, II/6, IV/1, IV/2
XXXIV-5/W3	Visualization and Animation	WG V/6
XXXIV-3/W4	Land Surface Mapping and Characterization Using Laser Altimetry	WGs III/3, III/6
XXXIV-6/W6	Developments and Technology Transfer in Geomatics for Environmental and Resource Management	WGs VI/1, VI/3
XXXIV-5/C7	XVIIIth International Symposium of CIPA	CIPA Symposium
XXXIV-3/W8	Photogrammetric Image Analysis	WGs IC II/IV, III/4, III/5, III/6
XXXIV-7/W9	Remote Sensing Of Urban Areas 2003	WG VII/4
XXXIV-5/W10	Visualization and Animation of Reality-based 3D Models	WG V/6
XXXIV-6/W11	Geoinformation for Practice	WG VI/3
XXXIV-5/W12	Vision Techniques for Digital Architectural and Archaeological Archives	WG V/4
XXXIV-3/W13	3-D Reconstruction from Airborne Laserscanner and InSAR data'	WG III/3
XXXIV-7/W14	Monitoring and Modeling of Global Environmental Change	WG VII/6
XXXIV-5/C15	XIXth International Symposium of CIPA	CIPA Symposium
XXXIV-5/W16	Panoramic Photogrammetry	WG V/1

Table 2: Issues of The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences.

AeroSysteme  
e-HD  
Geoinformatics  
Infomap  
Hansa Luftbild  
ImageSat International  
Istanbul Technical University  
NASA  
ScanEx  
Seagate  
Supresoft  
Universiti Teknologi Malaysia  
Yildez Technical University

The following members have been removed because of non-payment of subscriptions:

ERIM  
Galileo Siscam  
SDS  
Storage Tek  
Aerofilms has resigned and Earthwatch has changed its name to Digital Globe.

There are currently 54 Sustaining Members.

**Publications**

*ISPRS Journal of Photogrammetry and Remote Sensing.*

The ISPRS Journal is the premier publication in this area and has continued to maintain high standards during the four year period under the editorship of Manos Baltsavias. 19 issues have been published between July 2000 and June 2004, this includes 6 double issues. A new four year contract has been signed with Elsevier and we look forward to continued and improved support. A full report by the editor will be presented to the General Assembly.

*International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*

Table 2 lists the volumes approved for publication. This includes the proceedings of 7 symposia, 13 workshops and 2 conferences of CIPA, jointly published with ICOMOS.

In addition Volume XXXIII A, the Proceedings and Results of the Amsterdam Congress, has been published.

Many of the meetings held have had proceedings published in both hard copy and on CDs, others have only used a CD and ISPRS has acquired an ISSN for CDs and DVDs. Publication on CDs is a growing trend and is emphasised by the inclusion of the papers from many meeting on the ISPRS website. ISPRS has signed a contract with GITC to distribute the Archives and this has been aggressively publicised in Highlights.

In addition a number of workshop proceedings have been published outside of the Archives, some proceedings have only been produced on CDs.

*ISPRS Highlights*

ISPRS Highlights have been published by GITC, who have served the Society very well in producing a high quality bulletin which has been distributed on time to all ISPRS members and to individuals associated with ISPRS. For the past 4 years Highlights has been efficiently edited by Lucas Janssen. 16 issues have been produced, including five 64 page issues containing the Annual Reports for 2000, 2001, 2002 and 2003, and a report of the 2000 Congress. Lucas has been supported by Tuan Chih Chen as Calendar Editor and Ian Harley as Book Review Editor. Council has decided to continue Highlights in its present form but to change the distribution policy to ensure more efficiency in the distribution and to make sure that as many people as possible receive a copy. A new contract has been signed with GITC to publish Highlights for a further 4 years. A full report on Highlights will be presented to the General Assembly by the editor and GITC.

Venue	Dates	Host(s)	Attendees
Albuquerque, USA	17-21st October 2000	Commission IA UMN, NAS	Joint meeting with TCPs
Bangkok, Thailand	22-24th May 2001	Japan Society	Council
London, UK	8-13th September 2001	UCL, UKNCPRS	Joint Meeting with TCPs
Buenos Aires, Argentina	7-11th April 2003	ICORSE	Council
Hyderabad, India	7-11th December 2002	Commission VII, IRSS	Joint Meeting with TCPs
Sydney, Australia	28-30th April 2003	UNSW, Australian Soc	Council
Istanbul, Turkey	16-23rd August 2003	Congress	Joint Meeting with TCPs and International Advisory Committee
Beijing, China	30th March – 4th April 2004	Chinese Society of Geodesy, Photogrammetry and Cartography	Joint Meeting with TCPs
Bursa, Turkey		Congress	Council

Table 3: Council meetings.

### *ISPRS Book Series*

A new venture, starting in 2003, has been the ISPRS Book Series. This is to contain peer reviewed papers, either on a theme, or from a conference or workshop, and will be published by Swets & Zeitinger, who own Balkema, under whose imprint the series is published, Swets is now part of Taylor and Francis. Maxim Shoshani from Israel is the first editor and already 2 books have been published. A report from the editor will be presented to the General Assembly.

### *ISPRS Web pages*

Fabio Remondino, at ETH Zürich, has been the ISPRS webmaster for the past 4 years and has efficiently and enthusiastically managed the ISPRS website. The amount of material has increased enormously and it is now easy to navigate around the website and find all necessary information on ISPRS organisation and activities. In addition Fabio has put many of the proceedings of meetings on the website and has set up a separate site for the ISPRS Foundation. ISPRS is very grateful for the support from ETH for this activity. A separate report will be presented to the general Assembly by the webmaster.

### *ISPRS Database*

In 2000 it was decided that an efficient database should be set up for use of ISPRS officers and to allow good communications between Council and members. Initially it was intended that GITC should maintain this as part of the management of Highlights, however it became apparent that this would be better done by the Secretary General's office. The software to serve ISPRS needs was written in Microsoft Access by Rachel Peled, who has done an outstanding job in setting up a highly practical system, and the database is now established and in use.

### *Ad Hoc Publications*

The following publications have also been produced:

- ISPRS Organisation and Programme 2000-2004, (Silver Book)
- ISPRS Members List (Blue Book), 2001, 2003.
- ISPRS Manual of Operations for ISPRS Technical Commissions and Working Groups, 2001 and 2004.
- ISPRS Brochure
- ISPRS Awards Brochure
- ISPRS Foundation Brochure
- ISPRS Display Panels (General and Congress)

In addition the Congress Director has published material for the Congress.

### **Council Meetings**

Council has met formally on 9 occasions, as set out in Table 3.

Council is very grateful to all the organisations which have assisted in organising the meetings of Council and sponsored the costs involved.

Members of Council have also met at international meetings, particularly the ISPRS Symposia, and held ad hoc meetings.

### **Headquarters Management**

The headquarters of ISPRS has been at University College London (UCL), UK. The Secretary General has been assisted by Kate Barber, who acted as secretary to the SG from September 2000 to February 2004, from then until the Congress this role was taken by Dr Chris Doll. The day to day support has some from UCL, but printing has been carried out by various people and organisations, including the Congress Director (Brochures), GITC (Blue Book 2001) and Treasurer (Blue Book 2003). The job of promoting ISPRS through press releases and other publicity has been carried out in part by the Marketing Manager, appointed by Council. Funding has come from ISPRS and the UKNCPRS, now RSPSoc.

The major task carried out by the SG have been:

- Prepare Papers and Minutes for Council meetings.
- Revise and prepare database for distribution.
- Prepare ballots for change of ToRs Bylaws and admission of new members.
- Liaison with Editor of Highlights.
- Communications with TCPs and WG chairs regarding symposia, workshops, publications, terms of reference etc..
- Communications with members on activities and contact details.
- Prepare Silver Book.
- Prepare and Revise Orange Book (Manual of Operations for ISPRS Technical Commissions and Working Groups, 2001 and 2004).
- Prepare draft of Green Book (Manual of Operations for ISPRS Council).
- Preparation of documentation, and discussions, on Registration of ISPRS.
- Preparation of documentation, and discussions, on setting up the ISPRS Foundation.

I have been assisted by part time personnel during the past 4 years; there assistance has made the job much easier. I believe however that Council must again address the issue of more substantial and permanent help in running the ISPRS Headquarters. It is by no means certain that ISPRS can attract Secretaries General in the future who can dedicate the time required to run ISPRS in an efficient and professional manner.

### **ISPRS Committees**

ISPRS has 4 permanent Committees. Two of these were set up by Council to advise on Policy and Science: The International Policy Advisory Committee (IPAC) is chaired by Ray Harris (UK) and The International Science Advisory Committee (ISAC) is chaired by Armin Gruen (Switzerland). These two Committees have been active in provid-

ing advice to Council. CIPA is The ICOMOS & ISPRS Committee On Documentation Of Cultural Heritage, ISPRS is represented on the CIPA Board and President Trinder has attended CIPA meetings. The International Committee on Remote Sensing of Environment (ICORSE) was established at the Amsterdam Congress and has organised two Symposia, in 2002 and 2003. The interaction between ISPRS Council and ICORSE has not been as strong as is desirable and efforts must be made to bridge that gap in the coming years in order for the remote sensing community to recognise that ISPRS has a genuine involvement in all aspects of Remote Sensing..

#### International Activities of the Secretary General

Apart from attending Council Meetings and all of the Commission Symposia in 2002, the Secretary general has attended many international meetings to represent ISPRS, these include the Committee and Plenary sessions ICORSE, COPUOS, ICSU, CEOS (Plenary and WGCV), Joint Board; International Conferences, FIG, ACRS. The Secretary General has also met with members, contract-

ing companies and individuals and individual working for ISPRS in 19 countries, often on more than one occasion.

#### Acknowledgements

I would like to acknowledge support from many people during my time as Secretary General, most particularly from UCL: my colleagues in the Department of Geomatic Engineering, and Kate Barber and Chris Doll. I have also had excellent moral and financial support from the UK National Committee, now transformed into the ISPRS Committee of the Remote Sensing and Photogrammetry Society. I would like to thank everybody within ISPRS who has efficiently interacted with me particularly TCPs and WG chairs and of course Council, with whom it has been a real pleasure working. There is a lot of effort involved in the job of Secretary General but the rewards from working with such a dedicated and stimulating group of people make it all worthwhile. Finally I would like to thank my wife, Jan, without whose tolerance and support, I would not have been able to serve the Society as Secretary General.



## Report of ISPRS Treasurer 2000-2004

*Istanbul, Turkey July 2004*

*By Ammatzia Peled*

Distinguished Delegates, Representatives, Advisors and Guests, Ladies and Gentlemen, Dear Friends,

It has been both my honour and privilege to serve on Council as Treasurer of ISPRS for the past 4 years and it gives me much pleasure to present the Treasurer's report at the 20th Congress of ISPRS, here in Beautiful Istanbul.

The past four years have been busy and quite an educational experience. Between the "dry" digits of the financial reports and the tiresome handling of the credits and debits, I've re-discovered the importance of the individual and collective contribution of Member Organisations and the personal support extended to me and to the Society during my four years in office. The interaction with these individuals that, together, are interlacing into the fine texture we call ISPRS, was most rewarding and I thank them for that.

Bylaw XI ( Council), paragraph 10, specifies that the Treasurer shall:

- (a) complete the accounts for hand over to the new Treasurer within two months of the end of the Congress. The new Treasurer shall replace the outgoing Treasurer on receipt of the final accounts;
- (b) issue annual invoices one month before the upcoming

fiscal year in which the fee is due to Ordinary Members, Associate Members, Regional Members, and Sustaining Members and inform them of the proper procedures for remittance of subscription fees. The Treasurer shall send periodic reminders to those in arrears;

- (c) collect the funds of the Society and administer them in accordance with the decisions of the General Assembly and the instructions of the Council;
- (d) keep account of all financial transactions and submit a statement of accounts at the end of each fiscal year to the Financial Commission for audit;
- (e) assemble the complete accounts of the Society for the four-year term at the end of the fiscal year prior to the Congress and submit them to the Financial Commission for audit;
- (f) submit to the Secretary General prior to the meeting of the General Assembly a list of Ordinary Members, Associate Members and Regional Members that have not yet paid their annual subscription fee up to and including the year prior to the General Assembly;
- (g) submit a financial statement to each Council meeting and a summary financial report to the General Assembly.

I will report to this General Assembly (GA) on the Financial status of our Society, my projection of financial activities for the next four years and my activities during the



	2004	2005	2006	2007	2008	TOTAL
	[SWF]	[SWF]	[SWF]	[SWF]	[SWF]	[SWF]
OPENING BALANCE	647,800	665,000	629,200	624,200	585,400	647,800
<i>INCOME</i>						
Subscriptions	124,500	118,300	118,500	119,100	120,300	600,700
Ordinary Members	74,000	65,000	65,000	65,000	65,000	
Sustaining Members	47,000	50,000	50,700	51,300	52,000	
Regional Members	1,000	1,000	1,000	1,000	1,000	
Associate Members	2,500	2,300	1,800	1,800	2,300	
Congress/Symposia	70,000	-	46,000	-	70,000	186,000
Dividend & Interest	9,700	9,000	9,500	10,000	11,000	49,200
Royalties	9,500	11,000	11,200	11,400	11,800	54,900
Donations	12,500	-	-	-	15,000	27,500
Other						
TOTAL INCOME	226,200	138,300	185,200	140,500	228,100	918,300

Five-year financial perspective (2004 – 2008) [INCOME].

	2004	2005	2006	2007	2008	TOTAL
<i>LESS: EXPENSES</i>						
COUNCIL ACTIVITIES	81,000	96,000	106,000	101,000	111,000	495,000
Administrative	15,000	35,000	35,000	35,000	35,000	
Travel	60,000	55,000	65,000	60,000	70,000	
CM&JM	1,000	1,000	1,000	1,000	1,000	
Advisors (Financial., Legal, other)	5,000	5,000	5,000	5,000	5,000	
<i>SOCIETY ACTIVITIES</i>						
Marketing & PR	5,000	5,000	5,000	5,000	5,000	
Web master	5,000	5,000	5,000	5,000	6,000	
Membership	4,000	4,000	4,000	4,000	4,000	
Scientific Initiatives	30,000	30,000	30,000	30,000	30,000	
Other	3,000	3,000	3,000	3,000	3,000	
PUBLICATIONS	39,000	39,000	45,000	39,000	45,000	207,000
Highlights	35,000	35,000	40,000	35,000	40,000	
Booklets & Brochures	2,000	2,000	3,000	2,000	3,000	
Other	2,000	2,000	2,000	2,000	2,000	
BANK CHARGES	2,000	2,100	2,200	2,300	2,400	11,000
AWARDS	30,000				30,000	60,000
CONTINGENCIES	10,000	10,000	10,000	10,000	10,000	50,000
<i>TOTAL EXPENSES</i>						
TOTAL EXPENSES	209,000	194,100	210,200	199,300	246,400	1,059,000
TOTAL INCOME	226,200	138,300	185,200	140,500	228,100	918,300
(Deficit)/Surplus	17,200	(55,800)	(25,000)	(58,800)	(18,300)	(140,700)
<i>CLOSING BALANCE</i>						
CLOSING BALANCE	665,000	609,200	584,200	525,400	507,100	507,100

Five-year financial perspective (2004 – 2008) (Expenditure).

past 4 years, I will end with two issues, seeking your advise and after the discussion we will be able to translate your views into changes in the bylaws, according to the results of the discussion.

## **I. Financial Report**

### *1.1 Financial Status*

A balance of SWF656,180 on 30th June 2004, reflects the sound financial status of ISPRS. It reflects also much effort in diversifying the investments and the transition from only one (SWF) account in Lugano into a three currency accounts (SWF, USD and Euro). This transition started by the former Treasurer, Prof. Heinz Ruther and was further intensified by myself. One must recognise that the values are representing a brief moment, at the end of the Fiscal years. The deterioration of the Exchange rate between the US Dollar and the Swiss Franc, as reflected in the end of FY2002, was recognised by me earlier and the transition to other investments in US Dollar and Euro, stopped the degradation of our assets and assisted with a solid recovery. Yet, it is important to view these investments for the long run. As such, our assets are diversified and will enable a stable platform for our future activities. This is reassured by the fact that ISPRS Council was willing to raise the funds for 'Scientific Activities' from the SWF10,000 as I've introduced for the FY2001 budget to the SWF30,000 level in FY2004 and the deficit budgets I've projected to 2004-2008 budgets.

### *1.2 Financial Activity (2000 – 2004)*

The accounts show a surplus in every year since 2000. Any Member Organisation who wishes to follow the financial status and activities of the Society may approach the Secretary General who will forward a copy of the accounts. Also, one should note that the FY2003 was only a 9 months year as my suggestion to transit from the 1 April – March 31 Fiscal year to January 1 – December 31 FY, was approved by the Members in a postal Ballot.

### *1.3 Five Year Projected Balance (2004 – 2008)*

The table below, depicts the projected budgets for the remainder of FY2004 and for the next four year term (2004 – 2008). This instrument was first introduced by Prof. Heinz Ruther in Amsterdam. As I've found the 5-year budgets as an important tool when starting my term as the Treasurer, I leave hereby such a tool for the next Treasurer as well, hoping this will become one of the regular chores of ISPRS Treasurer. These projected budgets are conservative in the sense that income was undervalued and expenses were overvalued. This should provide the next Council with a safer basis to evaluate the projected balance. As the presented figures are conservative, I allowed myself, again, to setup deficit budgets. This is also a sign and benefit of our Society's excellent financial standing.

## **2. Defaulting Members**

### *2.1 Re-establish Connections*

One of the major tasks I've taken upon myself, was to re-establish the connection with long-term defaulting Mem-

bers. At the first invoice reminders generation I've found that there are many Members with over due payments. Some were overdue for four, six, eight end even ten years of arrears. During the year 2000 already and on other occasions, with the active support of other Council members, I've used many venues of communications in order to reactivate the connection between ISPRS and these defaulting Members.

During the four years in term I've succeeded in bringing back to the Society and re-establishing the communication with Countries like Libya, Venezuela, Belgium and Cyprus, to name some of the long-term over due Countries. In addition, contacts were made with other over-due Countries to re-establish the communication with them before we loose last trace of our communication channels with them.

The final effort included sending letters to the ambassadors of the defaulting Members. I've prepared such letters for all Council members and they have signed and posted them, each, to the ambassadors of the defaulting Members in their Country. This effort made quite an impact with many Countries and assisted with finding new contacts for two Countries, and expedited payment with about seven other members who have not paid for the last two and even five years.

### *2.2 Ordinary, Associate and Regional Members Who Have Not Paid Their Annual Subscription Fees*

In addition to the annual financial report, submitted to Council and the Financial Committee, I've compiled a report on Members-in-Arrears. This report was submitted to the ISPRS Council, twice a year in relation to the Council and Joint meetings. The list submitted before you contains the members that have not paid yet the annual subscription fee up to and including 2003. The years specified by each member include also 2004.

## **3. Annual Financial Reports**

During the last four years I've kept account of all transactions and have submitted a statement of the accounts (Yearly financial report) to the members and Chairman of the Financial Committee, for audit. These included the bank information forms, receipts, invoices and the Treasurer summary documents for each recipient.

As part of the transfer of office I will send the final report to the Chairman of the Financial Committee. This was decided for October 1st. This date was approved by Council as the day of transfer the responsibility from me as the outgoing Treasurer to the new Treasurer to be elected by the GA at the XX ISPRS Congress in Istanbul.

## **4. Invoices and Money Collection**

I collected the funds of the society and paid to the Suppliers to the Society with the same resolution and sincerity. During the four years term I've added an account in Euro to oblige also those members who will find it easier

to use their own currency as many countries have and will join shortly the EU monetary system. In addition, I've decided to channel all checks through my address and not directly to the UBS bank in Zurich. This caused me some little extra effort but it was worth while as the problem of untraced deposits was totally eliminated. Also, I've issued a new form of invoices where the instructions are separated from the invoice itself. This expedited the issue of invoices and allowed me to be more elaborate with the instructions.

Invoices were issued once a year to all members. Invoice reminders were sent to over due Members up to three times a year. In some cases of the Sustaining Members that have not been in contact for several years, Rather than expel them I've negotiated with the new management or some time the new contact, how to resolve the over due subscriptions. In some cases were I've suspected that our point of contact was out of date. I issued the invoices directly to the president or CEO. Again, this method worked quite fine. I apologise if some of you were annoyed by my repeated invoice-reminders.

### 5. Hand-over to the New Treasurer

The hand over to the new Treasurer was set to 30 September 2004. I've prepared all bank information forms, invoices and receipts for 2004. I've decided to give the originals to the new Treasurer, as he is responsible for the 2004 report. It seems that it is important he will keep these original copies. Also, the new Treasurer will be given the copies of the Treasurer's Module of the ISPRS Data Base software and the payments and banks control files in Excel. Until September 30th, the new treasurer will have the opportunity to follow after the transactions and to experience first hand how to continue with the Treasurer's work as of October 1st 2004.

### 6. Other Treasure's Chores

1. **Correspondence.** 1785 "official" letters and invoices were issued. Unfortunately, most of them in hard copy. In addition some 300 more, unregistered e-mails were sent as well.
2. **Change of fiscal year.** After much debate and discussion, I've succeeded in changing the fiscal year to correspond with the calendar year. This caused for a short (9 months) year for FY2003 and allowed the new Treasurer to start his reports from 1.1.2004.
3. **Registration.** As financial reports are to be submitted for audit. I had to produce two additional reports for the Calendar years 2002 and 2003. Again, here, new Treasurers will not suffer from the phase between the old ISPRS fiscal year and the calendar Year and will be able to submit the annual financial report, AS IS.
4. **Financial Report.** A new format of the financial report was designed and is used now. This was done with the assistance of the First Vice President, Lawrence W. Fritz, and the Chairman of the Financial Committee, Heinz Ruther. Council was quite con-

structive in planning the new ACTIVITY table (#2) of the financial report. This table, signed separately by the Treasurer and by the Chairman of the Financial Committee is available to all ISPRS members. This table reflects all the activities of ISPRS in terms of fiscal accumulated transactions.

5. **Flags for Sustaining Members.** As a courtesy to our Sustaining members, I've suggested to offer them with an ISPRS annual flag. Council approved and I've sent the first flags for 2003. I've produced also the flags for 2004. These will be given to all Sustaining members participating at the Istanbul Congress Exhibition. The rest will be given to the new Treasurer who will send them later in the year with the 2005 invoices.

### 7. ISPRS Database

Trying to assist with the Treasurer's accounting I was blessed with the assistance of my spouse Rachel Pelled who has started her "journey" to establish an ISPRS Database. As the time passed by, Rachel recognised she needs first to accommodate other ISPRS activities before attending to the Treasurer Module. Today, the Database software, in MS Access is most instrumental in keeping many of the day to day chores of ISPRS Council members as well as a vessel to save our history. On December 2003 I was finally able to issue the invoices, automatically, through the database. Rachel will continue her work through the next term to enhance the SG and TR modules so the DB will contain also procedure to manage GA delegations and voting as well as the Bank accounting and suppliers management for the TR.

### 8. Representing ISPRS

I've represented ISPRS in some international events such as the ICA Congress 2001 in Beijing China, ICA Congress 2003 in Durban, South Africa and DIGITAL EARTH 2003 Brno. Czech Republic. In addition I've met with many Ordinary and Sustaining Members through my efforts to bring them back as active members and during various scientific meetings, in their Countries and other venues.

### 9. Co-operation with ICA

Through my work as Co-Chair of ISPRS ICWG II/IV and as Chair of the ICA commission on: "Incremental Updating and versioning of Spatial Data Bases", I was able to launch a set of annual Workshops as of ISPRS Congress in Amsterdam through ICA congresses as well. In addition, EuroGeographics joined also and it seems that this small effort of co-operation will link our societies even better. This co-operation was enabled with the assistance of Antony Cooper (South Africa) who chairs with me the ICA Commission on IU&V and Prof. Dietmar Grunereich, Director IKG, (Germany).

### 10. Scientific Initiatives

I've offered to re-establish the funding for Scientific Initiatives, updated the guidelines and managed the incoming

proposals for Council resolutions. Council was most generous to start with a SWF10,000 fund at the first year and SWF30,000 for FY2004 and the next four years term.

### 11. GA Advice

1. Add new Category for Sustaining Members Category E – for Education. This will be offered to Universities only and the annual subscription will be set at the SWF 250 only.
2. Have all members pay their annual subscription for the Congress year; before the Congress as we have now 6 months from the beginning of the new Fiscal year.
3. Penalise all members who fail to pay their dues, annually as the bylaws call for.

### Acknowledgements

I would like to acknowledge support from many people during my time as Treasurer, most particularly from the University of Haifa, the Rector Prof. A. Ben-Zeev and Deans of the Social Sciences Faculty, Prof. A. Melnik and Prof. A. Ratner. Also to my students Michael Gilichinski,

Keren Polack and Dina Weissman who were most helpful in arranging and posting the never ending invoices, as they referred to their job at hand.

I would like to thank everybody within ISPRS who has efficiently interacted with me particularly the member's 'contacts'. Treasurers and officials with whom I've corresponded many times during the past four years. Also I should thank Prof. Heinz Ruther, Chairman of the Financial Committee for his prompt audit, good advise and much understanding to my belated reports. Special thanks to our First Vice President, Lawrence W. Fritz, for going through my reports and finding, always, the missing nickels and dimes and for his good advise on the new structure of the financial report and annual budgets. Many thanks to my student, Dr. Basheer Haj-Yehia for generating the Excell forms for managing the Bank accounting and payments of the Members.

Finally I would like to thank my wife, Rachel, who have devised such a great Data Base package and agreed to serve four more years as the DB Master in order to maintain and upgrade the software.

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## Approved Resolutions of the XXth ISPRS Congress - Istanbul 2004

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### General Resolution G.1 Appreciation

*The Congress Commends:*

The Turkish National Society of Photogrammetry and Remote Sensing, its President Ali Fuat Sarac, and Congress Director Prof. Orhan Altan and the Congress Organizing Committee for their excellent work which has resulted in a very successful Congress.

### General Resolution G.2 Links with the 'Global Land Project' of the Earth System Science

*The Congress Recommends that:*

- close links be developed between ESS-P and ISPRS, at the Council and Commission level;
- ISPRS should consider any opportunity to contribute to developing use of remote sensing and spatial information sciences within the projects generated by ESS-P;
- Specific attention should be paid to developing close relationships in 2004 with the nascent 'Global Land Project.'

### General Resolution G.3 Automating 3D Object Generation and Database Updates

*The Congress Recommends that:*

- fully automated algorithms for generating 3D objects from imagery be studied and developed;
- fully automated methods be studied and developed for updating current 2D and 3D GIS content using digital imagery acquired from aerial, terrestrial and space systems.

### Resolution I.1 Unpiloted Aerial Vehicles

*The Congress Recommends that:*

- an inventory of current and technologically feasible miniature sensors be undertaken;
- an inventory of current and possible future civil applications be catalogued and documented as to appropriateness, levels of readiness, and comparative cost;
- the performance of the various UAV's and their onboard sensors for various applications be investigated;
- a report of the above findings be produced by ISPRS for the global community.

### Resolution I.2 Methods for Characterizing Radiometric and Geometric Sensor Calibration Parameters

*The Congress Recommends that:*

- the joint ISPRS/CEOS task force enlarge the scope of its activities to include descriptions of methods used to characterize post-launch calibration parameters;
  - the potential applicability of sensors' parameters be made more readily available for the scientific development community;
  - a metadata template be developed for use by post-launch science teams that will help data users understand which underlying methods were used to calibrate geometric and radiometric parameters for specific sensor products derived from both aerial and space imagery.
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**Resolution I.3 Geometric Handling of Space Images**

*The Congress Recommends that:*

- existing and evolving algorithms be compared under operational conditions;
- the results of the comparisons be extrapolated (outside the area of control points), analyzed, and reported for each space imaging system.

**Resolution I.4 Advanced Satellite Imaging Systems**

*The Congress Recommends that:*

- improved multi-temporal data acquisition strategies be designed in future systems and enhanced integration and interface methods be developed for existing multiple systems;
- a survey of engineering requirements be initiated to assess the state-of-the-art and system integration potential for intelligent on-board mission planning, data processing, telemetry, and inter-platform communication.

**Resolution I.5 DTM Data Acquisition Quality**

*The Congress Recommends that:*

- an intensified, detailed study be conducted on the accuracy and cost effectiveness of various sensors and techniques;
- international test sites be identified and catalogued for inter-comparison and evaluation of different methods;
- quality standards be developed for advanced optical and active microwave system-derived DTMs.

**Resolution I.6 Platform and Orientation Integration**

*The Congress Recommends that:*

- improved methods for integration of attitude and position information with data processing software algorithms be developed;
- workshops be organized on "Integrated Spatial Sensor Systems" to address topics such as real-time referencing, sensor networking, multi-sensor integration, fusion, sensor management, etc.;
- user standards for data formats, referencing systems, and data archival and retrieval systems be adopted by ISPRS and published.

**Resolution I.7 Handbook of Internet Website Information for Sensors and Platforms**

*The Congress Recommends that:*

- a handbook of Internet websites containing electronic, searchable databases of sensors and platforms (retrospective, current, and planned) be created and maintained as an updatable on-line publication on the ISPRS website;
- robots, UAVs, and other evolving forms of platforms and their evolving sensor systems be included in the handbook.

**Resolution I.8 The Robot as a Sensor Platform**

*The Congress Recommends that:*

- robots as sensor platforms be reviewed, assessed, and characterized for their value as collaborative systems supporting aerial and satellite platforms;
- sensors carried by robots be evaluated for their use in environmental visualizations and tracking tasks requiring multi-sensor data from other platform types.

**Resolution I.9 Small Earth Observing Satellites**

*The Congress Recommends that:*

- studies be conducted to assess the benefits of small satellites;
- that ISPRS provide a forum for developing countries to share their results, experiences and recommendations.

**Resolution I.10 Integrated Mobile, Multi-Sensor Mapping Systems**

*The Congress Recommends that:*

- research should be conducted and workshops organized to assess current and technically feasible designs that improve mobile mapping and updating systems;
- a report of the above findings be produced by ISPRS for the global community.

**Resolution II.1 Spatial-Temporal Concepts and Databases**

*The Congress Recommends that:*

- research be continued for the development, access and management of spatial-temporal databases and the mapping from one database to another to solve semantic interoperability and schematic and semantic heterogeneity;
- research be continued in the areas of spatial-temporal analysis and geostatistics;
- research be continued on the modelling of data uncertainty and quality including the determination of risk indicators;
- spatial-temporal and dynamic GIS applications be developed.

**Resolution II.2 Multi-Dimensional & Multi-Resolution Spatial Information**

*The Congress Recommends that:*

- research for development of structures for managing multi-scale and multi-representation data be strengthened;
- methods for generating multiple resolutions of data by generalization and abstraction be developed;
- research be conducted for semantic and geometric data integration and harmonization;
- spatial ontologies and their concepts be developed;
- research on 3D data structures (including topology and level of detail) and 3D-analysis tools be continued.

**Resolution II.3 Design and Operation of Spatial Decision Support Systems**

*The Congress Recommends that:*

- efforts be undertaken to develop and enhance



methodologies needed to improve the integration of field and object data in spatial decision support systems;

- studies be conducted to assess and predict the statistical fitness for use of combining image, vector, and collateral data used for decision processes.

#### **Resolution II.4 Raster-Based Spatial Analysis on the Web**

*The Congress Recommends that:*

- raster-based spatial analysis with integration of web-based visualization systems be strengthened;
- the role of scale in spatial analysis be researched.

#### **Resolution II.5 Dynamic and Multi-Dimensional GIS**

*The Congress Recommends that:*

- the series of international workshops on dynamic and multi-dimensional GIS be continued;
- studies be continued on dynamic and multi-dimensional GIS.

#### **Resolution III.1 Directly Observed, Triangulated and Control Point-Free Sensor Poses**

*The Congress Recommends that:*

- studies be conducted to compare the performance of direct geopositioning with triangulated estimates of pose positions using highly redundant, film-less image sequences from digital aerial cameras;
- developments in fully automated pose positioning technologies be pursued;
- research on tracking egomotion be conducted, for example, of a user of a 3D database.

#### **Resolution III.2 Directly-Sensed versus Image-Extracted Shapes of Non-Terrain Objects**

*The Congress Recommends that:*

- algorithms be developed and studied that fully automate the shape reconstruction of industrial objects from redundant calibrated and uncalibrated image streams;
- trade-offs be studied between direct observed shapes versus image-extracted shapes employing collateral object information.

#### **Resolution III.3 From 2.5D Surface Models to 3D Object Models**

*The Congress Recommends that:*

- algorithms be developed and studied in cooperation with the computer vision community that produce surface models fully automatically and without any manual intervention or post-editing;
- technologies be investigated that develop a full 3D object from 2.5D measurements;
- fully 3D object models of terrain be developed to consist of the bald Earth and of models of the natural and manmade objects which exist on top of it.

#### **Resolution III.4 Combined Laser-Based and Image-Derived Terrain Surface**

*The Congress Recommends that:*

- new algorithms get developed and studied to take advantage of combined data sets for fully automated surface modeling;
- laser-based surface models and systems for creating them be compared and assessed with respect to new image-based systems and/or surface models obtained from combined datasets, for creation of highly redundant image stacks;
- guidelines for sensor selection for surface modelling of various terrain types be established.

#### **Resolution III.5 Radar Interferometry Algorithms**

*The Congress Recommends that:*

- radar polarimetric/differential interferometric algorithms be developed, assessed and developed in their application to available radar source data;
- studies be performed to compare surface models obtained from interferometric source data with laser- and image-derived surface models;
- the ability and accuracy of observing and quantifying motion and change on the Earth's surface be studied.

#### **Resolution III.6 Urban Modeling**

*The Congress Recommends that:*

- studies be conducted on the use of automated analysis of sensor data streams for urban modeling;
- mixed reality, the internet, and broadband wireless data transfer be evaluated in the development of new approaches for the application of urban 3D GIS content.

#### **Resolution III.7 Data Sets and Algorithm Testing**

*The Congress Recommends that:*

- standard source data sets be created to reflect the most innovative sensor data and applications scenarios;
- these standard source data sets be distributed for use by the global S&T community;
- a public domain algorithm base be installed and maintained for specific important applications in ISPRS-relevant image analyses;
- approaches to assess algorithm performance be defined, described and made publicly available;
- international tests that compare algorithms be conducted and coordinated, and results published.

#### **Resolution IV.1 Handling of Web-Based Spatial Data and Geo-Information Services**

*The Congress Recommends that:*

- development of web geo-spatial data services, such as web map services, web feature services, web coverage services, web registry services, be continued;
- web geo-information parallel processing and analysis services be investigated and applied;
- applications for web geo-information, distributed network storage services be studied and developed;

- applications using geo-grid technology for geo-information services be studied and developed;
- data quality of internet-based processes and applications be studied and measured;
- cooperation continue with organizations working on information systems and services, interoperability, standards, and specifications, such as with CEOS WGISS, OGC and ISO/TC211.

#### **Resolution IV.2 Location-Based Services**

*The Congress Recommends that:*

- the integration of spatial data in info-mobility services be enhanced;
- methods for real-time integration, generalization, updating and adaptive visualization of spatial information be developed.

#### **Resolution IV.3 Landscape and Visualization**

*The Congress Recommends that:*

- research continue on the developments for efficient and enhanced landscape data and information representation for decision support;
- continued efforts be made to accurately and comprehensively model the landscape through visualization and landscape metric computation;
- advancements in telepresence, virtual, and augmented reality technology be integrated with remote sensing to develop full sensory experience of virtual environments;
- the usability of photorealistic rendering vs. non-photorealistic rendering be investigated.

#### **Resolution IV.4 Image Databases**

*The Congress Recommends that:*

- methods be developed for addressing the special characteristics of image databases, including historic photographic and image data, taking into consideration the particularities of image data;
- research be performed to create intuitive and reliable ways of managing large quantities of imagery in spatial-temporal databases;
- innovative and efficient ways be developed for indexing, organizing, accessing, and querying imagery residing in large databases;
- automated approaches be devised for the use of image databases to support the extraction, management, and spatial-temporal analysis of geospatial information.
- methods for data interpretation to derive explicit knowledge from implicit data be developed;
- spatial data mining techniques continue to be developed and promoted.

#### **Resolution IV.5 Automation for Database Creation and Updating**

*The Congress Recommends that:*

- advanced automated techniques for data extraction and change detection, including GIS-driven approaches, continue to be researched and developed;

- advanced techniques be investigated and developed for implementing "near-real-time" mapping.
- that work continue on automating geo-spatial data production and updating from imagery and collateral sources, both in semi-automatic and in automatic modes;
- that efforts be increased to integrate developed algorithms into digital photogrammetric workstations and geospatial information systems.

#### **Resolution IV.6 National and Regional Spatial Databases**

*The Congress Recommends that:*

- studies, tests and evaluations be conducted on the development, access and management of national databases in federated databases;
- data sharing and dissemination processes using web services be investigated, including cost models;
- data harmonization and data integration approaches, including research on semantic and geometric translation between schemas, be investigated to facilitate the wider use of geo-databases for both mapping and non-mapping applications;
- the synergy of the imagery segment and its integration with GIS, positioning and communications be continued and enhanced in the framework of the national, regional and global spatial data infrastructures and in other applications
- cooperation be encouraged with the global spatial initiatives, such as with GSDI, the Global Mapping project, and CEOS WGISS.

#### **Resolution IV.7 Global Databases and Environmental Infrastructures**

*The Congress Recommends that:*

- environmental infrastructures be developed to ease accessibility and use by specialists and non-specialists;
- efforts be made to acquire, integrate and harmonize environmental databases on regional, national and global levels;
- global geospatial data infrastructures with metadata catalogues be developed;
- research be conducted on global 3D spatial modelling suitable for global databases;
- cooperation with related global spatial initiatives, such as the ISCGM, CEOS WGISS, the ICA Commission on Spatial Data Standards, etc. be continued.

#### **Resolution IV.8 Extra-Terrestrial Information Systems**

*The Congress Recommends that:*

- mapping professionals continue to be actively involved in the planning of future lunar and planetary missions in order to maximize the utility of data obtained for supporting future space exploration;
- research be continued in developing improved, new, and advanced techniques for data acquisition and mapping of celestial bodies;
- spatial information systems be developed to support

extraterrestrial exploration and science;

- these activities liaise with the ICA Commission on Planetary Cartography.

#### **Resolution IV.9 High Resolution Image Data for Mapping**

*The Congress Recommends that:*

- information content and accuracy of the new high resolution digital sensors be studied and evaluated;
- the synergy of the various high resolution sensors for topographic and thematic mapping be investigated.

#### **Resolution V.1 Automation for Vision Metrology and Industrial Applications**

*The Congress Recommends that:*

- stand-alone vision metrology systems integrating imaging sensors, CAD/CAM, and other systems, such as laser scanning and structured light systems be further studied;
- target and feature extraction, with special consideration of the multi-image correspondence problem, be further developed;
- new sensors and areas of application for vision metrology be studied;
- efforts be made to implement cooperation and collaboration between ISPRS Commission V and the CMSC.

#### **Resolution V.2 Scene Modeling and Virtual Reality Content Creation**

*The Congress Recommends that:*

- automatic image analysis techniques used to extract models of objects and scenes for applications in visualization, documentation analysis, and VR be further developed;
- multi-sensor and non-sensor data collection and integration concepts for complex scenes and environments be further studied;
- particular emphasis be put on the integration of laser scanning concepts, systems and data, and the development of new calibration and object extraction technology based on omnidirectional cameras;
- new VR applications requiring 3D models created with photogrammetric techniques, or with other integrated techniques be promoted;
- mechanisms be implemented for cooperation between ISPRS Commission V and visualization, computer vision, and graphics groups.

#### **Resolution V.3 Motion Analysis, Human Body Measurements and Medical Image Analysis**

*The Congress Recommends that:*

- new models and techniques for close-range and aerial/space image integration be developed in cooperation with Commission III and IV, with a focus on aspects such as the combination of data from various sources, object extraction techniques, 3D modeling and texture mapping;
- solutions be developed for the integration of office-to-

field data collection systems, remote access capability and for the management of distributed multimedia spatial databases incorporating close range imagery;

- wireless field computing applications be enhanced for geodata acquisition and processing.

#### **Resolution V.6 Visualization and Animation**

*The Congress Recommends that:*

- the development of image-based techniques for use in live figure and environment generation tasks;
- the study of methods and technologies to support the interaction of real and virtual objects and actors (augmented reality) be intensified;
- the study and critical comparison of the available visualization techniques and related software be intensified;
- collaboration with the animation and other relevant communities be further developed.

#### **Resolution V.7 Image Sequence Analysis for Mobile Mapping**

*The Congress Recommends that:*

- investigations of these topics be promoted, in close cooperation with Commission III and researchers in engineering and computer vision;
- ISPRS continue to play a leading role in organizing and sponsoring the Conference Series on Mobile Mapping, in collaboration with IAG and FIG;
- investigations on algorithmic aspects and the development of computational systems for applications with special emphasis on time constrained solutions be conducted.

#### **Resolution VI.1 Education and Training**

*The Congress Recommends that:*

- an active role be pursued in the development and maintenance of the CEOS Education Working Group web portal;
- cooperation be expanded with regional members of ISPRS, sister societies, and non-governmental organizations to organize educational activities and pursue the development and maintenance of educational web portals;
- the efforts of UN and other national and international organizations be supported for coordinating and delivering training opportunities in sustainable development and capacity building, in developing countries;
- efforts be made to place and update common definitions of new terms through use of internet facilities, especially via the ISPRS website
- Commission VI be assigned to collaborate with UN/OOSA in review of its annual curriculum for remote sensing workshops.

#### **Resolution VI.2 Computer Assisted Teaching and Learning (CAT/L)**

*The Congress Recommends that:*

- an evaluation of existing and new concept developments of CAT/L and e-learning be addressed;

- the development and use of new and innovative techniques such as multimedia visualization and virtual reality be encouraged;
- public domain educational software and web pages continue to be developed;
- the CAT Contest (CATCON) awards be continued.

### **Resolution VI.3 Capacity Building and Technology Transfer within the Developing World**

*The Congress Recommends that:*

- opportunities for technology transfer to and within the developing world be further investigated and expanded;
- such technology transfer be initiated, encouraged and/or supported in cooperation with sister societies and international/regional organizations;
- efforts be made to create a general awareness among decision makers, industry, development funding agencies and the general public about the benefits of remote sensing and GIS information.

### **Resolution VI.4 Promotion of the Profession to Students and Young Scientists**

*The Congress Recommends that:*

- an active promotion be initiated to attract and integrate young people into ISPRS activities, especially University students;
- efforts be made to encourage the use of the photogrammetry, remote sensing and GIS techniques as educational resources and to incorporate them into curricula at grammar and high schools levels;
- the development of multilingual educational material in the photogrammetry, remote sensing and spatial information sciences, mainly for high school and university students;
- efforts be made to promote and conduct an ISPRS Youth Forum in all regions of the world.

### **Resolution VII.1 Spectral Signature Research**

*The Congress Recommends that:*

- research on spectral signatures, especially in the areas of hyper-spectral and microwave sensing, be continued;
- cooperation be continued with institutions maintaining databases on spectral signatures;
- collaboration with the International Symposium on Spectral Sensing Research (ISSSR) and other international conferences on Physical Measurements and Spectral Signatures in Remote Sensing be strengthened and coordinated with ISPRS Symposia and Workshops;
- research be undertaken in modeling of physical processes, especially the use of spectral signatures as input.

### **Resolution VII.2 Image Classification and Analysis Methodologies**

*The Congress Recommends that:*

- multi-sensor data acquisition techniques and fusion

- concepts at the feature and decision levels for landscape modelling tasks be studied and developed;
- extraction tools and classifiers for high spatial and spectral resolution data be further developed;
- expert systems for remote sensing data classification be developed;
- classifiers for high spatial, spectral, and temporal resolution data which can be easily available to and comprehensible by common users be developed;
- classification/analysis methodologies for microwave data with respect to multi-angle, multi-polarization and multi-frequency developments be addressed;
- data integration and fusion techniques be developed.

### **Resolution VII.3 Analysis of Characteristics of Multi-Spectral, Hyperspectral, Multi-Sensor, Microwave and Multi-Temporal Image Data for Extraction of Attribute Information**

*The Congress Recommends that:*

- improved physical and analytical algorithms/techniques for extraction of geophysical and biophysical parameters be developed;
- enhanced methods for thematic data extraction using advanced data sources be developed;
- standards for these procedures, assigning accuracy thresholds, be developed.

### **Resolution VII.4 Validation of Data and Information Using Laboratory and In-Situ Methodologies**

*The Congress Recommends that:*

- standards be developed for validation procedures;
- measurement networks and protocols be created;
- international cooperation be promoted for collection of validation data from various regions;
- developments of methodologies be addressed for the upscaling of in-situ measurements and the downscaling of remote sensing measurements;
- cooperation with CEOS CalVal Working Group, the Global Monitoring for Environment and Security (GMES), and other similar groups be established.

### **Resolution VII.5 Improving Atmosphere Modeling for Radiometric Correction**

*The Congress Recommends that:*

- software/models for image based atmospheric correction that meet required levels of accuracy be developed;
- ISPRS help promote the creation of aerosol measurement networks, their characterization and cooperation with institutions engaged in creating aerosol databases.

### **Resolution VII.6 Generation and Use of Global Databases**

*The Congress Recommends that:*

- the development of methodologies for generation and quality evaluation of global databases for global studies in cooperation with Commission IV and the International Geosphere Biosphere Program (IGBP) be continued;

- algorithms for monitoring aspects of global change such as land use, land cover, and land change be developed;
- evolving strategies be developed for assimilating remotely sensed data into global models.

### **Resolution VII.7 Sustainable Development and Sustainability Indicators**

*The Congress Recommends that:*

- remote sensing based information and systems be promoted for use in attaining food and water security;
- algorithms, models, and sustainability indicators be developed for predicting changes in different eco-systems such as agro-ecosystems, forests, and coastal zones;
- efforts be made to enhance international cooperation by identifying and generating common environmental sustainability indicators amenable to remote sensing.

### **Resolution VII.8 Connections between Health and Water Bodies**

*The Congress Recommends that:*

- cooperation with specialists developing relationships between parameters and information about health and water be strengthened;
- actual information needs about water bodies be defined by these specialists;
- techniques to derive these information from remote sensing sources and utilize it in GIS be developed, consolidated, and disseminated.

### **Resolution VIII.1 Agricultural Systems Management**

*The Congress Recommends that:*

- procedures and models needed to attain food and nutrient security be developed for remote sensing-enabled cropping systems;
- efforts be made to provide space based inputs for precision farming;
- models be developed for assessment of environmental impacts on modern agriculture;
- crop growth monitoring systems be developed that consider all factors influencing the crop.

### **Resolution VIII.2 Forest Biodiversity and Management**

*The Congress Recommends that:*

- procedures and models for inventorying and monitoring of forest resources, timber stock, and biomass estimation be improved;
- research efforts towards estimation and conservation of forest biological diversity and its sustainability using remote sensing and GIS techniques be enhanced;
- ISPRS cooperate and participate in international efforts, such as those conducted by the International Union of Forest Research Organizations (IUFRO), to improve forest management and biodiversity.

### **Resolution VIII.3 Mineral Resources and Geological Mapping**

*The Congress Recommends that:*

- techniques be developed for the integrated use of space and in-situ geophysical measurements in exploration of mineral resources;
- cooperation in this area be promoted with relevant international organizations, such as with unions of the International Council of Science (ICSU).

### **Resolution VIII.4 Human Settlements and Impact Analysis**

*The Congress Recommends that:*

- appropriate tools and models for perspective and development plans for urban areas and for providing urban amenities in rural areas be developed;
- actions as recommended by the HABITAT II Conference be pursued;
- appropriate methods for documentation, conservation, management and permanent control of Natural Heritage and Cultural Landscapes be developed in collaboration with CIPA for UNESCO;
- actions be initiated to monitor land use and land cover transformation, with special emphasis on urban growth.

### **Resolution VIII.5 Disaster Monitoring, Mitigation and Damage Assessment**

*The Congress Recommends that:*

- the development of appropriate tools and methodologies for disaster management using remote sensing and GIS technologies be pursued;
- in collaboration with Commission I, efforts be initiated to help define an integrated system of observation comprising space, aerial, and in-situ measurements for disaster early warning, monitoring, damage assessment, and mitigation;
- cooperation with various partners such as CEOS, the International Global Observing Strategy (IGOS), and the International Charter on Space and Major Disasters be enhanced.

### **Resolution VIII.6 Coastal Zone Management and Ocean Colour Research**

*The Congress Recommends that:*

- relevant activities be initiated for development of analytical algorithms for retrieval of bio-geo-chemical parameters, data merging, and for facilitation of operational use of ocean colour data;
- cooperation be established with other international agencies such as the International Ocean Colour Coordinating Group (IOCCG);
- procedures and protocols be developed for Integrated Coastal Zone Management using remote sensing and GIS techniques.

### **Resolution VIII.7 Water Resources Security**

*The Congress Recommends that:*

- procedures and analysis packages for integrated use of

- remote sensing and GIS databases for sustainable development of water resources be developed;
- monitoring of glaciers and the possible effect of global change on their retreat be studied.

### Resolution VIII.8 Ocean State Forecasting

*The Congress Recommends that:*

- improved methods for retrieval of ocean parameters, their validation, merging algorithms and modeling efforts be developed;
- collaboration be established with Intergovernmental Oceanic Commission and Global Ocean Observation Experiment group;
- studies be conducted to demonstrate the value of remotely sensed imagery for accurately predicting site-specific tidal cycles in collaboration with the International Hydrographic Organization (IHO).

### Resolution VIII.9 Atmospheric and Weather Studies

*The Congress Recommends that:*

- a Working Group be formed to evaluate the efficacy of presently available models and their accuracies;
- it identify gaps in existing observational capacity;
- it define a system of space, air and in-situ observation systems, and refinement of models in collaboration with the World Meteorological Organization.

### Resolution VIII.10 Support of Implementation of International Policies and Treaties

*The Congress Recommends that:*

- investigations and development of vegetation (especially forest), soil and other thematic mapping techniques be pursued;
- the use of remote sensing data at national and international levels, with focus on carbon fixing and desertification, be studied;
- the use of remote sensing data for enhancing identification, detection, and rapid response techniques be promoted;
- ISPRS coordinate with the International Global change Atmospheric Chemistry (IGAC) Programme;

- an ad-hoc committee be established to coordinate ISPRS contributions to studies of applying remote sensing for international policies and treaties.

### Resolution VIII.11 Polar Research

*The Congress Recommends that:*

- an ISPRS Working Group be assigned to develop dialog and collaboration on polar research;
- the WG support ICSU and the IPY 2007 by identifying and conducting relevant remote sensing initiatives.

### Resolution VIII.12 Continuity and Open Access to Moderate Resolution Earth Observation Data

*The Congress Recommends that:*

- a Working Group be assigned to help define an optimum constellation of complementary satellites to meet Earth observation requirements on a long term basis;
- the WG liaise with IPAC, the GEO Ad hoc Working Group, the UN-OOSA Action Teams, and other related national and international initiatives to promote and voice the technical and data policy needs of ISPRS Members;
- the WG work towards facilitating access to EO data to all those who need it for sustainable development activities at a reasonable cost.

### Resolution VIII.13 Tropical areas

*The Congress Recommends that:*

- definitive statements and conclusions be prepared which identify remote sensing-based solutions that meet the needs of managers and policy makers in relation to national and regional sustainable development in tropical areas;
- a targeted outreach policy be developed, particularly targeting international donors to assist in such studies;
- workshops be held in these areas bringing together scientists, civil engineers, relevant managers and decision makers, preferably in each of the three large areas (Latin America, Sub-Saharan Africa, South East Asia);
- such activities be led in close cooperation with Commission VI.

## ISPRS Awards- Istanbul 2004

### Brief Citations

#### The Brock Gold Medal - Dr.Krishnaswamy Kasturirangan (India)

Dr Kasturirangan has been instrumental in developing a strategic direction of Indian space endeavours for the future. These efforts have put India as a pre-eminent space-faring nation among the handful of countries that have major space programmes.

#### The Otto von Gruber Award – Dr Stephan Heuel (Switzerland) – work entitled "Uncertain Projective Geometry – Statistical Reasoning for Polyhedral Object Reconstruction".

Dr Stephan Heuel successfully developed a unified approach for projective geometry and statistics by integrating the concepts of computer vision and photogrammetry.

**The U.V. Helava Award - Changno Lee (South Korea) and James S. Bethel (USA) – paper entitled "Extraction, modelling, and use of linear features for restitution of airborne hyperspectral imagery".**

The clearly written, instructive and informative paper deals with the semi-automated line extraction incorporating the orientation process for linear array CCD sensors, an important and very relevant topic considering the current development of digital aerial cameras.

**ISPRS Honorary Member – Lawrence W. Fritz (USA)**

Lawrence Fritz has served with distinction in ISPRS since his early involvement in 1968. More recently he has spent 16 years on the Council, in the positions of Congress Director, Secretary General, President and First Vice President.

**The Gino Cassinis Award - Sherman S. C. Wu (USA)**

Sherman Wu was the first person to complete the topographic mapping of the entire planet of Mars. He is also developing a real-time photogrammetric mapping systems based on LiDAR and IFSAR and digital photogrammetry.

**The Eduard Dolezal Award - Dr Jiang Jie (China)**

Dr Jiang Jie has made significant contributions to the geospatial information sciences through research and development of operational GIS applications, as an author, and through the ISPRS related activities.

**The Schwedefsky Medal – Emmanuel Baltsavias (Switzerland) and Zhilin Li (Hong Kong)**

Emmanuel Baltsavias has made significant contributions to ISPRS as editor of the ISPRS Journal of Photogrammetry and Remote Sensing, by raising the scientific standing of the Journal to among the best worldwide.

Zhilin Li has made significant contributions to photogrammetry, remote sensing and geospatial sciences through original research, and the medium of publication as editor and author.

**The Willem Schermerhorn Award – Dr. Marguerite Madden**

In recognition of her excellence performance as Chair of ISPRS working group IV/6: Landscape Modelling and Visualization.

**The Samuel Gamble Award – Ray Harris (UK), Haggai Nyalopa (Kenya) and Victor Savinykh (Russia)**

Ray Harris has made a major contribution as chair of the ISPRS International Policy Advisory Committee (IPAC) and has written extensively on the challenges of access to data.

Haggai Nyalopa has served the profession in Africa with distinction in various roles, and has represented the region in international forums.

Victor Savinykh has had been an outstanding leader of the profession in Russia as Rector of MIIGAiK in Moscow, for 15 years, author of three University textbooks and cosmonaut for three space missions.

**President's Citations**

**Commission I - Karsten Jacobsen (Germany), Chair ISPRS WG I/5: Platform and Sensor Integration.**

For outstanding leadership, scientific and technical contributions, and participation in Commission I programs throughout the 2000-2004 period.

**Commission II - Christian Heipke (Germany), Chair of ISPRS WG II/8: Digital Systems for Image Analysis.**

For significant contributions to the WG through the organisation of meetings, collaboration with other organisations and a special issue of the ISPRS Journal of Photogrammetry and Remote Sensing.

**Commission III - Helmut Mayer (Germany) Chair WGIII/4: Automated Object Extraction.**

He has been an exemplary WG Chair and totally devoted to ISPRS affairs.

**Commission IV - Monika Sester (Germany), Chair WG IV/3: Data Generalization and Data Mining.**

In recognition of her significant contributions to the operations and advancements of Commission IV.

**Commission V - Gabriele Fangi (Italy) Co-Chair WG V/4: Image Analysis and Spatial Information Systems for Applications in Cultural Heritage.**

In recognition of his significant contributions to the operations and advancements of Commission V through his work as Co-Chair of WG V/4.

**Commission VI - Manos Baltsavias (Switzerland) Chair WG VI/1: Education and Training**

For the development of a comprehensive web page on available education and training courses, and the organization of an excellent scientific meeting in Africa.

**Commission VII Karl Staenz (Canada), Chair WG VII/1: Fundamental Physics and Modelling.**

In recognition of his significant contributions to ISPRS Commission VII activities from 2000-2004.

## ISPRS Congress Istanbul Awards

### I. Young Authors Awards

Devrim Akca	Switzerland	ETH-Zuerich	A New Algorithm For 3D Surface Matching
P.-H. Hsu	China Taipei	National S&T Center For Disaster Reduction	Feature Extraction Of Hyperspectral Images Using Matching Pursuit
Axel Wendt	Germany	University Of Applied Sciences Oldenburg, Institute Of Applied Photogrammetry And Geoinf.	On The Automation Of The Registration Of Point Clouds Using The Metropolis Algorithm
Tinghua Ai	China	Wuhan University, Cartography and GIS	A Generalization Of Contour Line Based On The Extraction And Analysis Of Drainage System
Andrea Forberg	Germany	Univeristaet Der Bundeswehr München, Institut Für Photogrammetrie Und Fernerkung, 85577, Neubiberg, Germany	Generalization Of 3d Building Data Based On A Scale-Space Approach
Camillo Ressler	Austria	TU Vienna, Institute Of Photogrammetry And Remote Sensing	Experimental Results On The Determination Of The Trifocal Tensor Using Nearly Coplanar Point Correspondences
Derek D. Lichti	Austria	Curtin University Of Technology, Spatial Sciences	A Resolution Measure For Terrestrial Laser Scanners
Michele Crosetto	Spain	Institut De Geomàtica	Deformation Measurement Using Interferometric SAR Data
Devrim Akca	Switzerland	ETH-Zuerich	A New Algorithm For 3D Surface Matching

### 2. The CATCON Award

- Gold Prize To Jonathan Haig of The University of Hannover, Germany
- Silver Prize To Matthias Fluehler of ETH Zurich, Switzerland
- Bronze Prize To Shashkant Sharma of Bhaskaracharya Institute for Space Applications and Geoinformatics of India

### 3. Best Poster Awards

- H. Raggam and K.H. Gutjahr: Accuracy Analysis and Surface Mapping Using SPOT-5 Stereo Data
- C. H. Liu: Fast Georeferencing Images Through a Generalized Photogrammetric Algorithm
- S. N. Mahapatra, V. K. Mahindru, A. K. Swain, A. Upadhyaya: Updation and Positional Accuracy Improvement of Geo Spatial Data-Innovations at Kampsax India Private Limited
- A. Habib, R. Al-Ruzouq: Automatic Registration and Change Detection of Multi-Source Imagery with Varying Geometric and Radiometric Properties
- A. Hincq, M. Idrissa, V. Lacroix, H. Bruynseels, O. Swartenbroeckx: A Visibility Test on SPOT5 Images
- M. F. Buchroithner, O. Waelder, B. Koenig, T., Gruendemann, G. Neukum, K. Habermann: True-3D Visualization of the Martian Surface Based on Lenticular Foil Technology Using HRSC Imagery,

- N. Watanabe: A Study on Tempo-Spatial Change of Interaction Between the Human Activity and Paleo Environment in Jomon Period, Japan
- D. Winterhalder: Title not known
- S. Phem, K. Grabmaier: Refresher Course on Digital Photogrammetry
- C. Katterfeld, M. Sester: Desktop Virtual Reality in E-Learning Environments,
- R. Khedam, A. Belhadj- Aissa: Contextual Classification of Remotely Sensed Data Using Map Approach
- Y. Imai, M. Setojima, Y. Yamagishi, N. Fujiwara: Tree-Height Measuring Characteristics of Urban Forests by LIDAR

### 4. Youth Forum Best Papers Awards

- L. Trevis, N. El-Sheimy: The Development of a Real-Time Forest Fire Monitoring and Management System
- V. Kurgun, E. Erten, N. Musaolu: Forest Fire Risk Mapping from Satellite Imagery and GIS a Case Study

### 5. Youth Forum Best Poster Awards

- T. Saegusa, H. Chikatsu: 3D Modeling and Representation of -Ideal City- Painted by Piero Della Francesca
- S. Siachalou: Urban Orthoimage Analysis Generated from Ikonos Data
- A. Akkartal, F.S. Erbek: Analysis of Changes in Vegetation Biomass Using Multitemporal Landsat TM Images





## In the Spotlight: Lawrence W. Fritz

*The Most Recent Honorary Member of ISPRS*

*By Saye Nihan Çabuk*

In this issue Lawrence W. Fritz, the most recent Honorary Member of ISPRS, was our guest this afternoon and he answered our questions on his career, his achievements and challenges facing the ISPRS community today. Talking about his feelings of the ISPRS Honorary Member Award, Fritz says that it is an ultimate compliment of his colleagues and the most important award he has ever received.

Considering that Larry has been successfully involved in a wide range of ISPRS activities for over 35 years, he has been a part of many significant scientific, administrative



and policy activities relating to our professions. When asked, he noted that one of his most satisfying administrative achievements, was being the leader of the ISPRS Council which created the ISPRS strategic plan. His most satisfying scientific contribution was the introduction of stereoscopic superimposition into data extraction of information/data from imagery which thus enables direct verification of the quality of the data.

When asked what is the greatest challenge facing our society, Larry noted that ISPRS derives spatial, spectral and temporal data from imagery. Our disciplines have been quite successful in addressing spatial (photogrammetry) and spectral (remote sensing) challenges in its past activities. However its next challenging frontier is to deliver temporal information from imagery to meet the increasing demands of the public for more timely information.

In addition to its scientific and technological activities, Larry believes that the Society plays a crucial 'societal' role. That is, 'society' by definition includes relationships and friendships. Larry is quite fond of a quotation that he feels summarises the most rewarding part of his involvement in ISPRS. He quotes Thomas Jefferson who stated "Friendship is precious not only in the shade, but in the sunshine of life and thanks to a benevolent arrangement of things, the greater part of life is sunshine". He thanks all his colleagues for making this quotation a reality for him.



## In the Spotlight: Prof. Ian J. Dowman

*2004-2008 ISPRS President*

*By Mathias Lemmens, editor, GIM International*

The General Assembly - the decision making body of the ISPRS - elected during its meeting on 19 July unanimously prof. Dowman as the new ISPRS President.

*Tell us something about your background and your activities within ISPRS?*

I have worked as a photogrammetrist for over 40 years. First as a practitioner and since 1969 as a faculty member at University College London (UCL), UK. At UCL, I am since 1991 professor of Photogrammetry and Remote Sensing, Department of Geomatic Engineering. I am active

in the ISPRS since 1984. First as editor of the ISPRS newsletter on equipment for education, later on as Workgroup chair and co-chair. In the 1996-2000 period I was president of Commission II and in the 2000-2004 period Secretary General.

*What is your task as ISPRS president and what are your ambitions for the coming years?*

Basically, the president has two main jobs. First he has to control the policy of the council and to look for new initiatives. The other task is to present the society to the



outside world, to other communities. We have worked hard the last four years to work on the terms of reference. It is now nearly eight years since the strategic plan was formulated and discussed. Now it is time to see whether we achieved what we have set out; should we put more emphasis on the one thing or on the other and what are the new things to be doing? One of the areas the ISPRS needs to further develop is remote sensing. We established during this congress an extra commission. A lot what was done by the previous Commission VII, that means the application side of remote sensing, is now going to commission VIII. Commission VII will focus on thematic processing, modelling and analyses of remotely sensed data, that means the more theoretical aspects of remote sensing. This is because we really have to show to people who are involved in remote sensing that ISPRS can generate good work in this field. We already established relationships with IEEE, and with the IGARSS conferences. We want to integrate those activities so that the ISPRS really does represent significantly the remote sensing community. So that people do not just come to the ISPRS for the photogrammetric part, for which we are well known for, but also come for advanced Remote Sensing issues.

*Remote sensing covers a very broad area. Which part of the field of remote sensing do you have in mind?*  
 The way we look at it is that instead of looking at certain aspects like vegetation mapping or erosion studies, we look at

regions. We will going to have a working group on tropical areas, for example. Looking in this way at remote sensing is that a number of different technologies contribute to providing solutions the problems which a certain region faces. For example LiDAR technology, which is usually not considered to be main stream remote sensing, can be a valuable tool for studying forest canopy and forest structures and can thus be very valuable for those who are doing the monitoring

*What is your vision about the developments in education also in relation to Commission VI?*

Education is extremely important. Not only in its own right but also in expanding the education activities of the ISPRS into regions such as Africa, where education is really the key to get people involved in society. E-learning is certainly an area in which we want to be intensively involved. And

in general we want to bring youth into the society and enable them to start communicating globally in an early stage. The youth sessions held last Saturday fits in this prospect.

*How is your wife feeling about your election as ISPRS president?*

My wife is actually very happy with my election. She likes to be involved in it and she has done that already a very long time. She especially likes the contact with people from many different continents and cultures. And of course, when I should not have her fully support I would not be able to this work.



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## China (Beijing) wins 2008 Congress Bid New Council Elected

By Beverley Adams, ImageCat, Inc.

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### Report on the 3rd General Assembly

Applause rang out in the Halic Room on Monday 19 July, as China (Beijing) succeeded in its bid to host the 2008 ISPRS Congress, receiving 135 of the 160 votes cast. A jubilant Professor Chen Jun was swiftly ratified as Congress Director, afterwards commenting that "China (Beijing) thanks all friends and delegates for the opportunity to host this event. China has been working towards this honour for eight years and is excited to be hosting the Congress for the first time."

Council elections followed, with delegates voting unanimously to appoint:

President – Ian Dowman

Secretary General – Orhan Altan

First Vice President - John C. Trinder

Second Vice President – Emmanuel Baltasvias

Treasurer – Stanley A. Morain

Afterwards, Petros Patias was elected Chair of the Financial Commission. Attendees were then called back to the ballot box, to vote on Financial Commission Members. Following several last-minute nominations, in a close run contest between the three nominees, Costas Armenakis of Canada and Lena Halounova of the Czech Republic were appointed.

Business of the day progressed to a series of reports from the CIPA Committee, webmaster and the Chief Editor of the ISPRS journal. Following their animated presentations, current President John Trinder awarded certificates in recognition of outstanding contributions to Petros Patias, Fabio Remondino, and Emmanuel Baltasvias.



Professor Trinder then oversaw voting on a series of Council-proposed amendments to ISPRS statutes and bylaws. All proposals were duly passed. After input from the floor, discussions on future changes culminated in Council being authorised to recommend an increase in the number of Honorary Members.

It was decided that Ordinary, Regional and Associate members in long-term default of payment on subscriptions will be expelled. Members with a shorter history of non-payment have been placed on a warning list.

Events concluded with a concise report by Secretary General Ian Dowman, on Interorganisational relations. The ISPRS continues to forge strong relations with numerous United Nations and International Umbrella Organisations and the newly-elected ISPRS Council will continue expanding international relations around the World.



## Launch of the ISPRS Foundation

By Johan Boesjes, President GITC *bv*

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During a reception to launch the ISPRS Foundation, Larry Fritz presented details about ISPRS' new initiative. Being the finance officer of the Foundation, Fritz enthusiastically told the invited audience that the ISPRS Foundation is an independently registered entity that has been established solely for providing financial assistance to advance the benevolent purposes of ISPRS.

The Foundation is designed to foster linked relationships with other foundations and trusts established in the ISPRS

Member countries and regions to enable international sharing and administration for the common good of the sciences and disciplines represented by the ISPRS.

The ISPRS Foundation is intended to improve the ability of ISPRS to satisfy its aims and objectives, by administering a broadly-based international program of fund raising to provide grants to qualified individuals and organisations, who are pursuing and/or applying knowledge for advancing the sciences and technologies associated with

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the disciplines embodied by ISPRS. The Foundation will raise, invest and grant funds on an unrestricted and restricted basis for this purpose. It will contribute significantly to the efforts of ISPRS in international co-operation and technology transfer.

Among the specific charitable goals of the Foundation are: awards, travel, research initiatives, scholarships and fellowships, a number of education programmes, standards and grants.

The ISPRS Council annually will assess needs and submit requests for support from the Foundation. Many well-

known names representing a wide spectrum of experts from academia, industry and government, and who are involved in the sciences, with which ISPRS is associated, have been appointed as members of the Board of Trustees of the ISPRS Foundation. They will qualify the merits of the requests and is the approval authority. Multinational committees will support the Trustees in evaluation of the requests.

The reception offered a good opportunity to exchange information for those who want to support Foundation goals and programs.

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## Obituary: Dr BLACHUT, Teodor Joseph

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Dr Teodor (Ted) Blachut, a leading photogrammetrist of the 20th century, passed away in Ottawa, at the age of 89 on 17 June 2004.

Ted was born and educated in Poland. He graduated in 1938 from the Technical University in Lwow, Poland in Geodetic Engineering (Dipl.Ing) and received in 1971 the degree of Doctor of Technical Sciences from the Swiss Federal Institute of Technology in Zurich (ETH).. His thesis was on the subject of stereo-orthophotos.

During the Second World War, after the fall of Poland, Ted made his way to France where he joined the 2nd Polish division. After the fall of France, the Polish Division crossed to Switzerland and was interned there. During that time Ted met Dr Max Zeller, professor of photogrammetry at the Swiss Federal Institute of Technology (ETH) who happened to be the commanding officer of the interned camp. His love of photogrammetry started at that time. He worked briefly with Prof. Zeller and then joined WILD Heerbrugg where he participated in the development of the famous autograph A7 and travelled widely to install Wild photogrammetric instruments and give instruction and training. In 1951, Ted with his Swiss wife Fanni immigrated to Canada to organise a Photogrammetric Research Section in the Division of Physics at the National Research Council of Canada in Ottawa. He was able to assemble a group of scientists, who under his direction developed new concepts and photogrammetric instrumentation. Schutz pio-

neered analytical aerial triangulation and his method of block adjustment was used all over the world. Helava formulated the concept of analytical plotter and NRC build the Anaplot which was exhibited at the ISPRS Congress in Helsinki in 1976. The intense preoccupation of the section with analytical methods in aerial triangulation lead to the development of mono comparator which was manufactured by a Canadian company.

The concept of stereo-orthophotos advanced by prof. S.H. Collins was embraced by Ted Blachut and further developed and enhanced by him. Stereo- orthophoto became one of the leading achievements of the last century in the field of photogrammetry.

Ted published some 130 scientific papers. He co-authored with Prof. R. Burkhardt a book entitled Historical Development of Photogrammetric Methods and Instruments, sponsored by ISPRS. He was active in ISPRS and other photogrammetric societies organised many scientific conferences. His scientific work brought him much recognition. He was elected Fellow of the Royal Society of Canada and the Polish Academy of Sciences (PAN) ,and received the honour of Doctor honours causa from the Technical University of Mining and Metallurgy (AGH) in Krakow Poland.

He is survived by his wife of 55 years Fanni, his sons Janek, Daniel and Piotr and his ten grandchildren, all in Canada.

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