



ISPRS Organisation



Minutes of Council Meeting Budapest, Hungary

5-6, 11 April 2000

By John Trinder, Secretary General ISPRS

Council Attendees

President:	Lawrence Fritz (LF)
Secretary General:	John Trinder (JT)
First Vice President:	Shunji Murai (SM)
Congress Director:	Klaas Beek (KB)
Treasurer:	Heinz R��ther (HR)
Second Vice President:	Marcio Barbosa (MB)

In attendance

Chair, Financial Commission (for Item 10)	Armin Gruen (AG)
Journal Editor (for Item 7.1)	Emmanuel Baltasvias (EB)
ISPRS Highlights Editor (for Item 7.2)	Lucas Janssen (LJ)

1. Opening

Remarks

President Lawrence Fritz welcomed all members of the ISPRS Council and thanked them for their attendance. The purpose of the meeting is to:

- Finalise the Strategic Plan including the method of financing the proposed expenditures
- Discuss relationships with other organizations
- Review and finalise plans for the Congress
- Determine Awards to be presented at the Congress
- Review ISPRS publications.
- Plan the General Assembly agenda

2. Approval of Agenda

3. Review of Minutes of Council Meeting in Delft, The Netherlands

4. Policy Discussions

Strategic Plan Implementation

The President's document on the Strategic Plan for ISPRS will be printed for the Congress and provided to all participants in the Congress satchels. It will also be a topic of discussion at the Plenary Session following the Opening Session. As part of the Strategic Plan for the Society, a decision was made to levy all paid registrants (amount to be finalised) at each Congress and Symposia. A submission will be made to the General Assembly (GA) for endorsement of this levy.

Statutes and Bylaws Revision

The Bylaws mailed to Ordinary Members in January were

further modified in Bylaw IX.2 Bylaw XI.2, Bylaw XI.10 (g), and Bylaw XIII.2 and will be included in the document presented to the General Assembly.

Others

International Center for Remote Sensing of Environment The proposal that ICRSE should become a Permanent Committee of ISPRS appears to be acceptable to ICRSE. The agreement between ISPRS and ICRSE will be finalised between LF, the new chair of ICRSE, Alex Tuyahov and Jim Weber in the near future.

5. Amsterdam Congress Plans

Exhibit Program

Traditionally national members and scientific institutions have been given free exhibition space. However, increased marketing by some scientific institutions have required Council to revise this policy. It was decided that only national members only will be provided with 3 square meters for a display in poster form and a policy guideline will be defined for others.

Technical Program

Received abstracts total 1400, from which about 1000 final papers are expected.

The proposed Workshops have so far attracted very low registrations and hence some will be cancelled. The final date to make the decision to go ahead or cancel Workshops is 1 May. Enrolments in tutorials are reasonable and most of them should be able to run.

The Web site is being improved with the help of Lucas Janssen and Andre Steilein.

Congress funding is supporting at least 45 participants from developing countries.

Plenary & Special Sessions

The Opening is scheduled to include two plenary sessions, in which aspects of the Theme 'Geo-Information for All' will be considered.

6. Review of Technical Commissions

After the JM Council reviewed and completed changes to Commission terms of reference for modification of Bylaw XIII.

7. ISPRS Publications

Journal

A report was submitted by EB on the status of the Journal, covering publicity, the backlog of papers, subscription rates and numbers, dispatch dates, Special/Theme issues, Journal activities for the Congress, paper quality and the review process, Helava Award, electronic developments and varia. The winner of the Helava Award was finalised. The Jury was finalised for the period 2000-2003. The terms of the new contract were described.

Bulletin

The responses to the two surveys of readers and members have been disappointingly low. The replies received indicated that the readers were generally satisfied with the content, but the method of distribution in some cases is unsatisfactory. The addresses will be sought from those members willing to provide them. A further request for direct mail addresses will be sought at the General Assembly.

A new contract must be negotiated with GITC for the publication of ISPRS Highlights, and a new Editor-in-Chief must be found.

New ISPRS Logo

The submissions of 31 logos were considered by all members at the JM. Two candidates were voted equal first, from which a preferred candidate logo was selected.

8. Inter-Organizational Activities

COPUOS & UNISPACE III

The new Council should address the request by OOSA to support the education and training programs at the UN Regional Centres in Africa, possibly through Commission VI.

CEOS

LF reported on the Industry Forum proposed to CEOS, and contributions that can be made by ISPRS and will work with a member of the private sector on developing the Industry Forum.

UATI & ICSU

ISPRS was represented at the UATI General Assembly in March by Isabelle Veillet from France.

LF and JT reported that positive progress has been achieved in obtaining full ISPRS membership in ICSU.

9. ISPRS Membership

Ordinary Members

There was a lengthy discussion on the appropriate actions that should be taken against defaulting members. Members will be advised that they may have their Membership cancelled unless they pay their outstanding

dues by the Congress. However, Council will request advice from the General Assembly on actions to be taken, according to Bylaw VI.1.(g), against those Members that have defaulted on payment of dues and have not responded to letters for more than 5 years.

Associate Members

Council approved the application from the 'Russian Society Contributing to Development of Photogrammetry and Remote Sensing' (RSPRS). The application will be presented to the General Assembly for formal approval.

Regional Members

Recruitment dialogue continues with the Organization of Islamic Cities and Countries.

10. Financial Affairs

Treasurer's Report

A preliminary financial statement was presented by HR, who will present the final accounts to the Financial Commission for consideration by 30 April. A report from the Financial Commission will be supplied to Council within 3 weeks of receiving the financial statement.

Considerable discussion was held on the amount of professional financial advice/support is required to maintain the Society books. It was agreed that Council will consult initially with Ordinary Members which conduct similar activities before hiring a consultant.

Financial Commission Report

The 1998 and 1999 Financial Statements, signed by the Treasurer and the Chair of the Financial Commission, will be supplied by the end of May. The 4-year statement will also be signed off by both Treasurer and Financial Commission before the Congress.

The Council endorsed the recommendation of the Financial Commission that the GA be advised that there is no need for an increase in Member subscription rates for 2000-2004 term.

11. Awards

All Awards were discussed and the timetable for notifications and presentations was prepared.

All Awards have already been determined or will be determined in the near future.

Young Authors

10 awards will be available, (5 donated by Japan, 3 from the proceeds of the ISPRS/EARSeL workshop in May 1999, and 2 from ISPRS funds.

All awards will be announced at the Opening Plenary, but presentations will be made at different plenary and GA sessions.

As jury, Council selected the Honorary Member to fill the one vacant position.

12. General Assembly Plans

A letter will be sent to Ordinary Members stating requirements regarding their attendance and contributions at the General Assembly (GA), including:

- Date of arrival
- Registration with the SG
- Attendance at the GA on Sunday.
- Details of the Strategic Plan

- Draft Agenda
- Statement on fees for the next period

13. Council Activities Reports and Actions

60 items were completed, 27 items are still open and 7 items were overcome by events.

14. Next Meeting

Council will reconvene in The Netherlands during 12-14 July 2000 to make final plans and assignments for the Congress.



Joint Meeting Council and Technical Commission Presidents Budapest, Hungary

8-9 April 2000

By John Trinder, Secretary General ISPRS

Council Attendees

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First Vice President:	Shunji Murai (SM)
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Treasurer:	Heinz Rüther (HR)

Apologies

Second Vice President	Marcio Barbosa (MB)
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Commission President Attendees

Commission II:	Ian Dowman (ID)
Commission III:	Toni Schenk (TS)
Commission IV:	Dieter Fritsch (DT)
Commission V:	Hirofumi Chikatsu (HC)
Commission VI:	Lukman Aziz
Commission VII:	Gabor Remetey-Fülöpp (GR)

In attendance

Representing Second Vice President	Jose' Luiz Aguirre
Chair, Financial Commission:	Armin Gruen
Journal Editor:	Emmanuel Baltsavias (EB)
ISPRS Highlights Editor:	Lucas Janssen
Chair, Congress Technical Program Committee:	Martin Molenaar
Representatives of CONGREX (Conference Managers)	Rika Strik Abey Jaarsma

attendance. He thanked Gabor Remetey-Fülöpp and Peter Winkler for their arrangements for the meeting, including the venue, the international seminar organised on Friday 7 April, and the excursion.

The meeting will consider a number of important issues:

- Technical Commission Resolutions
- The Terms of Reference of the Technical Commissions in Bylaw XIII
- Young Authors' Awards
- Honorary Mentions
- The technical program and other activities at the Congress
- Review of the Strategic Plan



Some of the ISPRS Council member with the host in the City Hall of Eger.

Standing: Heinz Rüther, Shunji Murai, Klaas Jan Beek.

Seating: Lawrence W. Fritz, dr. Csaba Horuczi and John Trinder.

1. Opening Remarks

1.1 Welcome Remarks

President Lawrence Fritz welcomed all Council and TCPs and representatives of the Congress Organising Committee to the meeting and thanked them for their



Congress related work at the Joint Meeting.

Left to right: Lukman Aziz (Indonesia), Péter Winkler, José Luiz de Barros Aguirre, Martien Molenaar, Klaas Jan Beek and Ms. Saskia Tempelman.

- Submissions for the new ISPRS logo
- Confirmation of appreciation letters to WG chairs

2. Review of Action Items and Minutes of 1999 C & TCP Meeting in Enschede

TCP Actions: 9 items were completed, 6 are still open, 1 is ongoing.

3. Congress Planning

The general program was presented by the Congress Committee. Items discussed were:

- TCP and Council breakfast planning meeting to be held on Sunday 16 July
- Program for Technical Commission Business Meetings (BM)
- Incoming/Outgoing Technical Commission and Council meeting on Sunday 23 July
- Financial support provided for participants from developing countries
- Procedures for Young Authors Awards
- Financial assistance available for young authors of good papers from developing countries
- Interesting news to be published in the Congress Newsletter
- Encouragement to young people to attend the Congress
- Two best poster awards per Commission will be selected by separate committees for each Commission

Technical Program

The program for the Technical Sessions was presented by MM. Discussion confirmed that there were no major conflicts between the four parallel technical sessions:

Young Authors awards

Oral presentations will be made by all winners of Young Authors' awards, but the programming will be determined by MM once the winners are known.

CATCON2 will be held at the Congress.

Workshops & Tutorials

Some Workshops have been cancelled due to low registrations. Tutorials will be reviewed shortly; some may be cancelled if registrations are too low.

Resolutions

Resolutions submitted by Commissions will be submitted to the ISAC for advice. They will be finalisation at the Congress after the Commission Business Meetings.

4. Scope of Commissions in Bylaws

The scope of the Commissions for Bylaw XIII were finalised during discussion with TCPs and Council.

5. ISPRS Publications

Annual Report

The TCPs were satisfied with the outline of the Annual Report as included in the Orange Book. TCPs were thanked for their prompt submission of their contributions to the Annual Report.

Journal

Manos Baltasvias presented details of the Journal, including:

- Special topics issues: the GIS issue will be ready by October; an issue on hyperspectral data and imaging spectroscopy is planned for next year; and a special edition on 'Mountains' has been suggested for the future
- Plans for a special Congress edition, which should be good publicity for the Journal
- The completion of the judging for the Helava award and determination of the winner
- Development of an electronic edition of the Journal and electronic subscriptions

The terms of the new contract with Elsevier Science have been determined. Amongst other benefits, ISPRS



Moment of the Joint Meeting at the FÖMI RSC.

Left to right: José Luiz de Barros Aguirre of INPE Brazil, Heiz Rütther from South Africa and Ian Dowman of UCL, UK.

has gained control of the name of the 'ISPRS Journal' and the use of the ISPRS logo, and there will be an improvement in the structure and organisation of Journal.

However, the quality of the Journal still needs to be improved, with better reviews, and a faster review process. The general view at the meeting was that the quality of papers in the Journal has improved over recent years.

ISPRS Highlights

The main issue influencing the effectiveness of ISPRS Highlights is the method of distribution. Direct mailing is preferred, but so far only 3 Ordinary Members have indicated that they will provide addresses.

The possibility of publishing ISPRS Highlights in both hardcopy and electronic form was discussed as well as approaches that could be taken so that readers could gain electronic access to it. These and other issues will be considered when the new contract is being negotiated with the publisher before the August. A new editor-in-chief must also be found.

Web and Home Page status

A brief report was given by JT, based on the written report submitted by the Web Master Andre Streilein. The significant issues were:

- The new domain name and address <www.isprs.org>
- The volume of material in the Home Page
- The number of hits on the Home Page has now reached 40,000 per month
- The most popular pages

It was also recommended that ISPRS should consider pub-

lishing a book series, managed by a publication committee. This matter should be considered by the next Council.

Guidelines & Orange Book

The Orange Book has been substantially revised and will be reprinted in the near future for distribution to all Members bidding for the Congress and Commissions in the next inter-Congress period. It is also available in the ISPRS Home Page. The TCPs agreed that the Orange Book is a very useful document. The proposal for Council to place a surcharge on all Symposia and Congress registrations must be added.

6. Inter-Organisation Relationships

ICSU

The President and the Secretary General attended the General Assembly of ICSU in September 1999. ISPRS was not admitted as a full member, but actions are in place that should achieve admission as a full member at the next General Assembly in 2002.

CIPA

JT reported on changes in membership of CIPA. Heinz Rüter is an Ordinary Member of CIPA, while Andre Steilein is the ISPRS representative.

CEOS

A report was given of the main issues considered at the CEOS Plenary, that should be of interest to ISPRS. TCPs were urged to consider following up on matters of interest to their Commission.

Standards (ISO)

Hans Knoop has attended the recent ISO TC/211 and will provide reports to ISPRS, including the proposed standard for qualifications of GIS professionals.

Other Societies

ICA

LF reported on the ICA meeting in Gävle Sweden between Presidents and Secretaries General of ICA and ISPRS. The prospects are good for future cooperation between the two organisations. LF and ICA officers jointly met with Dr H. Haberman of the UN Statistics Division in New York, who is responsible for the oversight of the UN Regional Cartographic conferences, which both ICA and ISPRS have made a commitment to support.

IAG

LF attended the IAG strategic planning meeting held in USA in February 2000. IAG will continue the Summer School in cooperation with ISPRS. ISPRS should cooperate with IAG on inter-disciplinary activities.

Sister Societies

Sister Societies IAG, ICA, FIG, ISPRS and IHO will meet in Amsterdam to discuss how they should operate, including areas of cooperation. The UN Statistics Division has



ISPRS Joint Meeting participants in front of FÖMI Headquarters.

Rear (left to right): Heinz Rüter, Lukman Aziz, Armin Grün, Ian Dowman, Peter Winkler.

Front (left to right): Gabor Remetey-Fülöpp, Hirofumi Chikatsu, Shunji Murai, Lawrence W. Fritz, John C. Trinder, José Luiz de Barros Aguirre.



Hot spring near to Eger – a good occasion for a probe.

been invited to the meeting, to ensure better liaison between the Sister Societies and the UN on the Regional Cartographic conferences.

Other matters

- (i) The next GSDI meeting will be held in Colombia in 2001. A representative from the UN will be present at that meeting. HR did not attend the meeting the Cape Town South Africa, since he was required to pay a registration fee of \$500.
- (ii) TCPs were requested to solicit WG chairs to participate in MARISY2000 meeting.
- (iii) OICC also held a meeting in Tunisia in March 2000, where the ISPRS Ordinary Member in Tunisia represented ISPRS. OICC will cooperate with ISPRS at meetings in Cairo in January 2001. These include the planned ISPRS workshop on Mobile Mapping and an OICC

meeting on GIS/CPS/RIS Application and Sustainable Development. There will also be a UN-sponsored meeting on Sustainable Development, organised by OICC mainly covering aspects of energy and transportation in March 2001.

- (iv) HR is now a representative on the African EIS Executive and chair of WG on Networking and Education. The group is very active and will meet next in June.
- (v) Computer Vision - ISPRS has made good progress in establishing cooperation with experts in the computer vision, where there is a growing interest in ISPRS activities. Overlaps between the two areas are increasing. It is therefore necessary to maintain this cooperation.
- (vi) HR was Technical Chair of ICRSE Symposium in Cape Town in March.
- (vii) Commission II has established links with CEOS, OGC and ISO.
- (viii) Commission VII has strong links with JRC and GSDI.

7. Proposals for 2000-2004 Technical Commissions

Requests were made to TCPs to encourage potential applicants as incoming TCPs, particularly for Commissions for which there are no nominations.

8. Next Meeting of Council and Technical Commission Presidents (JT)

Commitments of TCPs at the Congress in Amsterdam were outlined.

9. Other Business

LF discussed the Strategic Plan that will be presented to the General Assembly.

Photographs by Gabor Remetey - Fullop.



The U. V. Helava Award – Best Paper 1999

By Emmanuel P. Baltsavias, Editor-in-Chief,

ISPRS Journal of Photogrammetry and Remote Sensing

The U.V. Helava Award, sponsored by Elsevier Science B.V. and LH Systems, LLC, is a prestigious new ISPRS Award, which was established to encourage and stimulate submission of high quality scientific papers by individual authors or groups to the ISPRS Journal, to promote and advertise the Journal, and to honour the outstanding contributions of Dr. Uuno V. Helava to research and development in Photogrammetry and Remote Sensing.

The Award is presented to authors of the best paper, written in English and published exclusively in the ISPRS Journal during the four-year period from January of a Congress year, to December of the year prior to the next Congress. The Award consists of a monetary grant of SFr. 10,000 and a plaque. A five-member jury, comprising experts of high scientific standing, whose expertise covers the main topics included in the scope of the

Journal, evaluates the papers. For each year of the four-year evaluation period, the best paper is selected, and among these four papers, the one to receive the U.V. Helava Award.

The first U.V. Helava Award will be presented at the 19th ISPRS Congress, Amsterdam, 16-23 July 2000. The five-member jury appointed by the ISPRS Council evaluated the 34 papers of 1999 and announced its decision for the Best Paper. The winner of the 1999 Best Paper is:

Automated Reconstruction of 3D Models from Real Environments

V. Sequeira¹, K. Ng², E. Wolfart¹,
J.G.M. Gonçalves¹, D. Hogg²

¹European Commission - Joint Research Centre,
TP 270, I-21020 Ispra (VA), Italy

²School of Computer Studies, University of Leeds,
Leeds LS2 9JT, UK

Jury's Rationale for the Paper Selection

The paper describes an integrated approach for automating the construction of textured 3D scene models of building interiors from laser range data and digital images. The approach has been implemented in a collection of algorithms and sensors within a prototype mobile platform, whose components are presented, together with experimental results. The paper gives a comprehensive overview of all processing steps, is clearly presented, well written and illustrated. The work presented is a combination of various experiences and based on actual practical work, thus, the problems addressed and the presented solutions are relevant. The subject of the paper is on new emerging technologies that continuously gain importance in our scientific fields, with a wide range of applications in visualisation, virtual reality, building facilities management, architecture and others.

On behalf of the ISPRS and the U.V. Helava Award jury, I would like to congratulate the authors for this distinction and thank them for their contribution. I would also like to thank the sponsors of the Award, and the jury members for their hard work and thorough evaluations.



V. Sequeira



K. Ng



E. Wolfart



J.G.M. Gonçalves



D. Hogg

Report on the Joint ISPRS Commission Workshop on Dynamic and Multi-dimensional GIS

Beijing, China, 4-6 October 1999

By Jun Chen, Chair of ISPRS WG. IV/3

(Temporal Aspects & Topographic Database Maintenance)

Recent years we have witnessed a rapid growth of research interest and applications on multi-dimensional data handling and modelling. Research topics in this area include, for example, 3-D spatial data modelling, spatio-temporal data model, dynamic handling of spatial data, integrating and inter-operation of heterogeneous data, multi-dimension indexing and querying, visualisation of multi-dimension data, interpolation and analysis of multi-dimensional data, and large volume of data organisation and database updating. Governments are also actively involved to encourage the research efforts by competitively awarding grants for research and education in related areas. The International Society for Photogrammetry and Remote Sensing (ISPRS), being the leading professional group in the field, naturally

plays a very important role. The First International Workshop on 'Dynamic and Multi-Dimensional GIS' (DMGIS) was organised by the Working Groups of ISPRS Commission IV and held in Hong Kong in 1997. The Second International Workshop on 'Dynamic and Multi-Dimensional GIS' (DMGIS '99) was held in Beijing, China, October 4-6, 1999. It is the continuation of the first one. DMGIS '99 was co-organised by six working groups of ISPRS (WG.IV/III.1, WG.IV/III.2, WG.II/2, WG.IV/1, WG.IV/3, WG.VI/3) and IGU Study Group on Geographical Information Sciences, co-chaired by Prof. Jun Chen, director of National Geomatics Centre of China, Prof. Qiming Zhou from Hong Kong Baptist University and Prof. Zhilin Li from The Hong Kong Polytechnic University. The local organiser

is the National Geomatics Centre of China. It was co-sponsored by the National Natural Science Foundation of China, Chinese State Bureau of Surveying and Mapping, Chinese Academy of Engineering, National Remote Sensing Centre of China, China Association for GIS, Chinese Society of Surveying and Mapping, Supresoft Inc.

160 participants from 13 counties and two regions attended this conference. More than 70 papers were presented in the Workshop and about 60 oral presentations were given. Current front-line research topics were extensively discussed. Concerning the theme of dynamic, there were given 16 papers on spatial-temporal modelling. Referring to the multi-dimensional issue, there were 5 papers on spatial concepts and spatial relations; 8 papers on cartographic presentation and transformation; 7 papers on 2D or 2.5D modelling and 8 papers on 3D modelling. There were also given 6 papers on image processing or database management, and 22 papers on system design and application.

Two keynote addresses, the one by Prof. Dieter Fritsch (Institute of Photogrammetry, Stuttgart University) and the other by Prof. Clyde M. Gold (Centre for Research in Geomatics, Faculty of Forestry and Geomatics, Laval University) introduced to the workshop's themes. Prof. Fritsch's topic was 'Spatial data revision'. He compared the vision (the requirement) with reality (current situation) of the geo-reference data and analysed the methods, results and applications of data revision strategies. He pointed out that data revision is an issue of sustainability. Prof. Gold talked on 'Spatial relations'. He stated that the spatial tessellation could be space-primary and feature-primary. The Voronoi diagrams could be used for the description of spatial relations and models. Prof. Wolfgang Kainz (Division of Geoinformatics, Spatial Information Theory and Applied Computer Science, ITC) presented a special session on 'Introduction to fuzzy logic and applications in GIS'.

Spatial-temporal modelling was one main focus of this workshop. L. Mussio et al. (Italy) discussed the potential of combining various techniques of spatial-temporal modelling – finally a three level procedure was proposed. Hong Shu et al. (China) studied the basic spatial events and their abstract data types in spatio-temporal data modelling. Moreover, also time-varying spatial functional data models and a space-time manifold data model were developed to support continuously time-varying spatial object modelling. L. Pluemer (Germany) reviewed some recent trends in database theory and artificial intelligence and discussed in more detail those aspects of time which are specific for GIS. M.Y. Pang et al. (Hong Kong, China) discussed the background theories and major functionality of a process-based model for integrating and exchanging spatial knowledge in multiple disciplinary in terms of spatial processes as well as their interactions in complex real world systems. Jie Jiang et al. (China) studied the approach of designing event-driven spatio-temporal databases for land subdivision systems. Jun Chen et al. (China) defined the spatial and temporal constraints for detection father-son relations of land parcels; a relation-oriented approach was proposed for tracing the spatio-temporal links between different versions of land parcels. V. Cole et al. (New Zealand) presented a model of spread for invasive plant species using a GIS-based cellular automata (CA) framework. S. Kakumoto et al. (Japan) proposed an approach for occasional data update and unification of databases in spatial-temporal GIS. W. Zhang et al. (Australia) discussed the techniques available for handling the temporal interpolation of spatially dynamic objects, with particular emphasis on changes to their geometric properties. Several interpolation methods for three key variants of geometric change were proposed. Y. Ohsawa et al. (Japan) proposed a spatio-temporal data management method based on a hierarchical spatial data structure (GBD-tree) and the geographic dif-



The Chinese participants singing during the workshop dinner.

ferential script file (GDSF) method. M. Hatayama et al. (Japan) proposed a database structure of spatial temporal GIS and studied the concept of a Risk-Adaptive Regional Management Spatial Information System (RARMIS) based on the proposed database structure. D. Payne et al. (New Zealand) proposed a generalised fire model that retains the contextual precision of models used for specific fire behaviour. J.M. Zang et al. (China) introduced a dynamic information system (CoalMan) to support the data management and decision-making for hazard reduction in coal mining areas. X. Zhang et al. (China) introduced the approach for dynamically monitoring land use change based on the integration of RS, GIS and GPS technologies. Tinghua AI (China) summarised the change model that will guide dynamic phenomena visualisation design in electronic map and presented some of principles on map visualisation, exploration, generalisation and organisation.

Concerning spatial concepts and spatial relations, Zhilin Li et al. (Hong Kong, China) discussed some fundamental issues on topology of spatial entities in both vector and raster spaces. They found that in vector space, an open set in 1-D (R) space is not an open set anymore in 2-D (R^2) and 3-D (R^3) vector spaces. Similarly, an open set in 2-D (R^2) vector space is not an open set in 3-D (R^3) vector spaces. As a result, the fundamental topological concepts such as boundary and interior are not valid anymore when a lower dimensional spatial entity is embedded in higher dimensional space. In raster space, the basic topological concept in vector space is implicitly inherited. This is why topological properties of spatial entities can also be studied in raster space. Topological paradox will be caused if the 'connectedness' of raster space is not carefully defined. Raster (discrete) space offers an efficient means for the study of entities in continuous space. R. Zhao et al. (China) studied distinguishing the adjacent relationships between disjoint spatial objects. They extended the concept of immediate adjacency to k-order adjacency based on Voronoi distance (VD), and described the k-order adjacent relations with Voronoi-based 9-intersection (V9I) within which VD is introduced. Wei Guo et al. (China) investigated the orientation topological property of spatial objects in N-dimensional space ($N > 0$) and designed a topological consistency check tool according to this topological property. Xiaoyong Chen et al. (Thailand) developed a model for hierarchical and functional reasoning for complicated spatial relations. Shanjun Mao (China) put forward the GGIS (Gray Geographic Information System) concept, as well as the data model and algorithm of integration of GGIS and TIN to lay a basis for realising dynamic management of geologic data.

Concerning cartographic presentation and transformation, B. Veverka et al. (Czechia) introduced the methods of transformation between geographic coordinates system S42 and WGS 84 system for Europe mapmakers. X. Wang and T.A. Clarke (U.K.) discussed a method for aerotriangulation based on the separate least square estimation where the 3D coordinates of the object points and the camera parameters are estimated separately. B.S. WANG et al. (China) dis-



ISPRS' Secretary General John Trinder during his presentation.

cussed the coordinate transformation of GPS and terrestrial networks in Gauss plane coordinate system. G. Salemi et al. (Italy) discussed the transition from Geographical Information Systems (GIS) to Systems for Geodata Interoperability (S.G.I.) in terms of co-operation among levels of interoperability. Hongshan NIE et al. (China) presented a Linear Abstract Algorithm (LAA) for road fitting in AVL system. Y.H. Choi (Hong Kong) studied knowledge acquisition and formulising for generalisation process and provided some empirical facts describing how roads are represented on maps at various scales. Xinliang Xu et al. (China) discussed some issues on generalisation in UGIS. Seven papers were given on 2D or 2.5D modelling. M.A. Brovelli et al. (Italy) studied different approaches for outlier detection in DTMs and defined strategies to cope with outliers for datasets stored on lattices in 2D or on profiles in 1D. E. Csaplovics et al. (Germany) discussed an approach to digital topographic modelling of rugged terrain combining advanced methods of filtering implemented in the SCOP-software for digital terrain modelling with object-orientated selection and representation of rock formations. This was based on a case study focussing on the digital representation of some selected rock formations like rock reefs and rock towers of the National Park 'Saechsische Schweiz'. Zhilin Li et al. (Hong Kong, China) presented some new techniques for representation of DTM at any given scale based on an objective criterion – the natural principle of objective generalisation. Furthermore, two algorithms have been developed. D. Thibault et al. (Canada) described a method for terrain reconstruction from contours based on curve extraction and generalisation techniques and uses the properties of the Voronoi diagram and Delaunay triangulation. Wei Lu et al. (Japan) proposed a system for generating orthogonal aerial imagery making use of existing DEM data and digital topographical map for calculating the orientation of the camera. Hong Fan et al. (China) introduced the primary function, design principles and work flow of V-C&D, a tool that can be used to build up digital elevation models (DEMs). Xiaogang Cheng et al. (China)

introduced the methods of dealing with the characters, organisation and modelling, and representation of multimedia geo-spatial Information with examples of Tibet Multimedia Electronic Atlas and Yuxi Hypermedia Electronic Atlas for Tourists.

Eight papers were presented on 3D spatial data modelling. M. Pfund et al. (Switzerland) described approaches to generate automatically country-wide 3D models of topographic objects by combining several data sources. Qingquan Li et al. (China) presented the modelling method of 2.5D and 3D object depending on laser scanning data and an application system based on 2D scanner, DGPS and CCD cameras was introduced. Min SUN et al. (China) proposed an approach for representing the cloverleaf junction. For all constraint points a TIN arithmetic was used to partition the cloverleaf junction road surface, further a data structure was proposed which combined extended BLOB type and R-tree index to manage cloverleaf junction data. Qingyuan Li et al. (China) introduced experiences with 3D GIS, including (1) five group topologic relation; (2) data structure based on the five groups relation; (3) method of surface divide body; (4) concept of one surface with three layers. (5) presentation surface with a group of small C2 continuous cubic surfaces; (6) volume interpolation in inner body. Lixin Wu et al. (China) introduced a coding technique Qua Pa for 3D space entity based on the binary step-by-step operation of entities coordinates and the principle of the Morton coding. Tong Cao et al. (China) presented a table access algorithm for converting 3D raster to octree. Peijun Du et al. (China) discussed some data structures that can be used in 3D Mining GIS, and studied visualisation of 3D GIS taking into account applications in mining. Lebin Xiao et al. (China) presented a four-level vectored octree hierarchy structure to represent both 3D object surfaces and their interiors.

On data acquisition, J. Trinder et al. (Australia) reviewed some of the approaches used in the development of automatic methods of information extraction, for elevation determination, feature extraction using knowledge based systems and machine learning, and ground based mobile mapping systems. Examples were given of the application of these methods for data acquisition for digital mapping and GIS. D. Zheng et al. (The Netherlands) studied the methodology to acquire spatial knowledge for decision making when using linguistic If-Then rules instead of numerical values in the spatial decision models, also if data uncertainty is involved. Yuehua Sheng et al. (China) studied algorithm models based on set theory and mathematical morphology for extracting cartographic data from scanned mining maps. Gui Feng et al. (China) presented a fast edge detecting method based on Fuzzy sets. Yong Zhang et al. (China) presented a distributed method to deal with large volume of geographic images. Lining Zhao et al. (China) discussed the modelling of spatial databases as well as the automatic extraction of geographic information in Digital Ocean.

On system design and application, there were 22 papers. H. Chen et al. (Hong Kong, China) presented the concept and architecture of an application model to help novice GIS users to use GIS and to increase the efficiency of

designing new geospatial processing procedure. Deren Li (China) introduced an initial solution for integrating and representing different types of data and its implementation in GeoStar software. Y.C. Lee et al. (Hong Kong, China) developed a geodata translation system to implement data translators and to support semantic translation. Heui-Chae Jin et al. (South Korea) studied the flow control on dynamic capacitated networks in GIS focusing on the algorithm of the control problem and the architecture to build-up the system. J. Buchkner et al. (Germany) presented solutions for different steps of multitemporal moor monitoring. Buheaozier et al. (China) proposed a model based on the discrimination of surface spectral reflectance to classify the land-cover and land-use change of the coastal area of North China Plain. Lexiang Qian et al. (China) discussed the possibilities for regional development study by integrating Virtual Reality Systems with GIS. Jin Zhan (China) introduced Unified Modelling Language (UML) and its application in GIS. Huayi Wu et al. (China) proposed a technique of persistent GIS object to bridge the gap between the RAM and external memory. Bing Lei et al. (China) introduced a GIS-based information system of Water resource management. Lixin Wu et al. (China) introduced the development of a networked mining core GIS. Ziping Zhang et al. (China) proposed some idea for city planning and controlling making use of RS and GIS. T. Kondo et al. (Japan) introduced a hybrid integration (combining automatic, semi-automatic, and manual procedures) system for map digitisation developed by Asia Air Survey Co., Ltd. H. G. Schmitt (China) introduced the Shuttle Radar Topography Mission sponsored by German Aerospace Center, NASA and the Italian Space Agency. Bo Huang et al. (Hong Kong, China) developed a toolkit (GeoV&A) to provide an environment where users can carry out interactive 3D visualisation and analysis from existing GIS databases and browse the corresponding results. C. Monti et al. (Italy) described the research carried out in the Laboratory of 'GIS e Cartography Numerical' of the Department di Ingegneria Idraulica Ambientale e del Rilevamento of the Politecnico di Milano. R. Suresh et al. (U.S.A.) described the architecture of DIAL (Data and Information Access Link), which is a web based data server developed by NASA. Qinyuan Li et al. (China), Yifan Li et al. (China) also discussed application of Internet/Intranet GIS. H. Tong et al. (Australia) proposed a forest decision support system. Haiyan Zhang et al. (China) introduced the method of railroad alignment using 3D-realistic visualised terrain map. Yuyang Dong (China) introduced an intelligence monitor and control alarm GIS for residence.

In the closing session, one 'Young Author's Awards' was given to Mr. Wei Zhang from Department of Geomatics, The University of Melbourne, Australia.

The address for acquiring the proceedings of DMGIS '99 (IAPRS Vol. 32 Part 4W12) is as follows: Prof. Jun Chen, National Geomatics Centre of China, No. 1 Baishengcun, Zizhuyuan, Beijing, China, 100044. Tel: 86-10-68424072, Fax: 86-10-68424101, E-mail: chenjun@nsdi.gov.cn or jiangjie_263@263.net



Report on the ISPRS WGV/3 Symposium in Cotonou, Benin, 6th to 9th December 1999

By Heinz Rüther, Treasurer, ISPRS

The need to co-ordinate education in Remote Sensing, Photogrammetry and Geomatics in general has been recognised in a number of expert meetings in Africa. In response to this a meeting was jointly organised by ISPRS working group V/3, the Regional ISPRS member, AARSE (African Association for Remote Sensing of the Environment) and CENATEL, the Benin 'Centre National de Teledetection et de Surveillance du Couvert Forestier'. The meeting was generously sponsored by the UN Office for Outer Space Affairs and by the Ministry of Rural Development, Benin.

The theme and title of the meeting was 'Promoting Space Technology Transfer and Geomatics Education in Africa'. The symposium was jointly chaired by Vincent Mama, Director of CENATEL and AARSE delegate for Benin and myself in my capacity of council members responsible for ISPRS activities in Africa.

It was initially planned to hold the meeting in Cape Town or Addis Ababa, arguably two of the most popular conference venues in Africa. However, the final choice fell on Cotonou in franco-phone Benin, this decision was made for a number of reasons, prominent among these were the desire to give one of the smaller African countries and ISPRS member an opportunity to expose their activities to a wider audience and to promote networking between anglo-phone and franco-phone countries. The meeting took place from the 6th to 9th December 1999 at the International Conference Centre in Cotonou.

Some 120 delegates from 19, primarily African, countries attended the opening session, a number which did not significantly change for all subsequent technical sessions. Besides the individual delegates, there were representatives from four International/regional organisations, four education centres, ten application centres and nine Universities. This turnout was surprisingly high for a conference on Remote Sensing/Geomatics education in Africa and augurs well for future co-operation in this field on the continent.

In the opening session, which was covered by Benin National Television, Vincent Mama from CENATEL, Professor Peter Adeniyi, AARSE president the Working group chair of WGV/3, and Professor Luigi Mussio, welcomed the delegates. A senior representative of the Ministry of Rural Development officially opened the symposium. Keynote addresses were presented by Dr. Adigun Abiodun and myself. Dr. Abiodun, recently retired from OOSA, is one of the most prominent experts in Africa and his very open and critical keynote address reflected his deep insight into the African Remote Sensing scenario. Dr Abiodun

reported on the numerous Remote Sensing initiatives in Africa, both in applications and in education, often associated with substantial funding. Although many of these have been successful, there are still numerous countries and sub regions with a significant lack of Remote Sensing activities and a desperate need for training and education. Dr. Abiodun also drew attention to the fact that of the original six tracking stations in Africa, only Hartebeesthoek near Johannesburg is fully active. This keynote address was one of the highlights of the symposium.

Professor Peter Adeniyi used the occasion of the opening session to launch his book 'Geoinformation Technology Applications for Resource and Environmental management in Africa', an AARSE publication.

Four of the technical sessions of the three-day meeting covered the topics of education in Africa with reports on experiences in a number of African countries, including a report on the 'Virtual African University'.

It was impossible to attract sufficient papers on education and technology transfer to fill all technical sessions with presentations directly related to the conference theme. The remaining six sessions thus contained papers on new technologies, applications and reports by African institutions such as CENATEL, AGRHYMET, IITA and AARSE, to name but a few.

Interviews with the National Television of Benin and the National Radio during the conference gave me the opportunity to emphasise the relevance of Geoinformation for Africa. I also met with the Director of the Benin Cabinet, the Honourable Cosme Akpodji I informed him about ISPRS activities and we discussed possible co-operation between universities in Africa, Europe, Canada and the United States.

The spirit of the symposium is best reflected in the resolutions which were formulated by the delegates.

Noting that

The International Symposium has successfully addressed issues of space technology transfer and geomatics education of principal importance for the benefit of the African continent.

Recognising that

- The shortcoming in Geomatics education experienced in many African countries and the need to develop

- capacity and infrastructural set-ups in the field
- African scientists, (end-users of Geomatics and space technology), educations, decisions makers and donors are living in isolation unable to participate in the ongoing development of geo-information; that decision making bodies are often uninformed with respect to geo-information management issued and that the donor countries are duplication and not integrating Geomatics and geo-information related activities
- The international community emphasis co-operation and collaboration on a north-south basis, while there is a lack of support for communication and collaboration between African Institutions and organisations (south-south links)

Recommends that

1. a follow-up symposium on Space Technology Transfer and Geomatics Education in Africa is held in the year 2001 in an African country initiated by the organisers of the Cotonou symposium
2. At the occasion of the 2001 symposium efforts should
3. International Organisations and donors should support educational and training activities in Geomatics and Geo-information Technology in Africa with an emphasis on South-South links in addition to and in conjunction with existing North-South links.
4. The European Union (EU) through its Fifth Framework (INCO) should consider more active support of inter-African collaboration in research, education and consultancy in Geomatics and Geo-information Technology with emphasis on South-South links in addition to and in conjunction with existing North-South links.

ISPRS greatly appreciates the contribution of the sponsors, OOSA and the Benin Ministry of Rural Development and the efforts of Vincent Mama, Luigi Mussio and Bruno Grippa, which, through their commitment, made the symposium a success.

85th Birthday of T. J. Blachut

By Gottfried Konecny, University of Hanover

On February 10, 2000 a very dignified celebration took place in Warsaw in Poland. It was organised by Prof. Adam Linsenbarth, the Director of the Polish Institute for Geodesy and Cartography on the occasion of Dr. T. J. Blachut's 85th birthday.

While Dr. Blachut personally could not be in Europe during this day Prof. Linsenbarth and the friends and admirers held the celebration anyway.

The government of Poland awarded him with a prestigious medal on that day and the Polish Surveyors Association remembered him with an emblem as an honorary member. Theodor Blachut was born in 1915 in Poland to graduate as a professional surveyor in Lwow. The second world war surprised him as member of the Polish Army in France. On occasion of the German invasion in France he fled to Switzerland and became employed by the former Wild Company. Wild sent him to many countries to introduce photogrammetric procedures by their instruments. One of these countries was Canada, where the National Research Council offered him the task to head up a photogrammetric research centre in 1951.

This research unit became under him soon a very respected international research institution with G. Schut developing analytical aerial triangulation, U. Helava creating

the analytical plotter. Blachut himself concentrated on orthophoto and stereo-orthophoto technology and fostered many developments in photogrammetric technology and applications by other scientists such as H. Ziemann in camera calibration, D. Haumann in glacier mapping, Z. Jaksic, V. Kratky and Van Wijk in software developments. T. Blachut served as President of the Canadian Institute of Surveying and as editor of the "Canadian Surveyor" giving many impulses to the growth of the Canadian surveying and mapping profession such as in survey education, and in cadastral and urban surveys.

His early commitments to the Pan American Institute of Geography and History (PAIGH) made sure that these technologies found an entrance into Latin American countries.

In ISP (now ISPRS) he cared for the introduction of orthophoto mapping for improving the efficiency of mapping.

By far the most impressive tribute of the celebration were the statements of at least 10 Polish photogrammetrists, who had reached high positions in Poland, who had spent research fellowship stays at his institution, and who expressed their gratitude for the influence he has had on their personal development and for the development of the discipline in Poland by this opportunity.



ISPRS Workshop 'Bridging the Gap' in Ljubljana, Slovenia Held from 2 to 5 February 2000

By Gottfried Konecny, University of Hanover



ISPRS Working Group VI/3 on Technology Transfer, chaired by Prof. Luigi Mussio of Milano, Italy held another workshop in February 2000 in Slovenia, following other meetings in Padua in 1997, in Bahia Blanca in 1997, in Perugia in 1998, in Parma in 1999 and in Cotonou in 1999.

The year 2000 workshop was organised by the co-chair of the working group Ms. Moica Fräs. It was the first ISPRS meeting ever held in Slovenia. With about 300 participants it was well attended, the paper contributions were of high calibre, the atmosphere of the workshop was very congenial and hospitable.

Moica Fräs and her director Roman Renner of the Institute of Geodesy, Photogrammetry and Cartography deserve congratulations and thanks from the participants.

The topics of the workshop concentrated not only on photogrammetry with its aspects on terrain modelling, orthophoto generation and digital cameras, but also their applications in remote sensing and mapping imbedded into the larger framework of GPS, GIS and the documentation of cultural heritage.

This wide scope permitted the Slovenian participants to comprehend the wider field of geoinformatics, into which modern photogrammetry is imbedded.

The meeting was preceded on Wednesday, Feb 2 in the morning by an ably presented tutorial on Laser Scanning conducted by Norbert Pfeiffer from the Technical University of Vienna.

The official opening in the afternoon included words by the local authorities, by the WG chair Prof. Luigi Mussio, and by the President of CIPA, Prof. Peter Waldhäusl.

G. Konecny gave the introductory paper on 'Geodata and Information Systems – a Challenge for the Next Century'. Slovenian contributions on the state of the art followed.

Thursday, Feb 3 was devoted to digital photogrammetry and GPS technology (Prof. Sledzinecki of Poland) with DGPS radio transmitted corrections (Doeller of Austria), followed by new developments in digital cameras (Schreiber of LH Systems).

On Friday, Feb 4 the topic of land use statistics was covered (Croci of Elnostat) with remote sensing contributions (Kobler of Slovenia) and critical comments by the director of the Statistics Division Banovec of Slovenia. In the afternoon CIPA's activities to monitor cultural heritage were discussed with a most impressive contribution by Letellier, Canada on laser scanning and 3D visualisation of cultural objects. Many interesting contributions by Italian authors followed on the topic.

Part of the presentation were published in a first volume of the proceedings, with another volume to follow.

On Saturday a very relaxing outing to the famous Postojna caves, to a castle, to the Lipica horse breeding institution and to a typical country tavern was organised.

To all who participated at the meeting the impression was left, that Slovenia has a high scientific and technical potential in the professional field, which the international scientific community should be made aware of.

Do you have news items for ISPRS Highlights?

Do not miss this year's editorial deadlines!

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