

ISPRS Society



Summary of ISPRS Council Meeting Minutes

Istanbul, Turkey, 16 – 23rd August 2003

By Ian J. Dowman, Secretary General ISPRS Council 2000-2004

Attendees

President	John Trinder (JT)
Secretary General	Ian Dowman (ID)
First Vice President	Lawrence Fritz (LF)
Congress Director	Orhan Altan (OA)
Treasurer	Ammatzia Peled (AP)

In attendance for some items:

Editor of ISPRS Journal	Manos Baltsavias (EB)
Chair of the Congress Technical Committee	Gonul Toz

Apologies were received from G Begni (GB)

1. Opening (JT)

JT thanked attendees, especially OA for the arrangements. He noted that GB could not attend because of illness. JT also noted that a Joint Meeting would be held as part of the meeting and also that the International Advisory Board, convened by OA to advise on the Congress, would be meeting on Wednesday and would also have a joint meeting with Council and TCPs.

2. Approval of Agenda (JT)

Agenda approved with the following additions:
Exchange 4.4 and 4.5
Add 4.7 Policy on travel
12 add Joint Board

3. Review of minutes of last Council Meeting (ID)

ID reviewed the minutes of the last meeting in Sydney. The following items were discussed:

- Discussions with FAO (John Latham) on a MoU were ongoing.
- Students from Istanbul had attended the meeting of the International Geodetic Students and had promoted the Congress in Istanbul. The next meeting of the IGS would be held in Istanbul in 2005.

4. Policy Matters (JT)

4.1 Review of Technical Commission Structure

4.1.1 Ballot Papers

ID reported that the ballot papers had been sent out with a full rationale from JT and the complete proposals for the new ToRs. A number of responses had already been received.

4.1.2 New schedule and procedures

ID presented Guidelines and Schedule for nomi-

nating TCPs at the 2004 Congress, based on discussions in Sydney. Council proposed some changes to these and decided that these should be sent out with a letter informing members of the result of the ballot in October.

It was also decided that a one day meeting of the new Council and TCPs immediately after the congress would be sufficient. Old Council and TCPs would be invited to attend, if they wished, for half of this time. It was suggested that the meeting would be held on Saturday 24th August and that OA would look for a suitable meeting room.

4.2 Marketing and publicity

TC had requested Council to decide on the programme of Press Releases for the remainder of the year. Council decided on the following:
October Restructuring Commissions
After October Launch of Foundation
It was noted that the initial contract with TC runs out in November and that we would need further consideration of the contract after then.

4.3 Foundation

LF reviewed the Articles of Incorporation which had been filed on 7th July 2003, after approval by the lawyer.

Council reviewed the Bylaws, application for tax-exempt status, etc. and discussed the following points:

- The limit on spending for administration in early years of the Foundation should be \$15,000 until total for all funds reaches a threshold of \$750,000.
- Official Address – will rent and use a PO Box.
- Submit on exemption application that the amount of scholarships (in early years) to be ~\$10,000.
- Operating Procedures – LF presented a draft, to be completed and then further refined by Trustees when appointed.
- Contract for Financial Services – LF to obtain estimate of time for services defined in letter from CPA.
- Brochure – to be finalized with TC, to be viewed by Council before OA prints.
- Web site address should be www.isprs.org/foundation/
- Board of Trustees – names were discussed and members of Council assigned to make contact.

Council approved the Bylaws.
Council approved the Not-for-profit application submission.
Operating procedures of the Foundation to be completed, edited and checked.
Contract for financial services to be followed up by LF.

4.4 Registration of ISPRS

LF reported on correspondence with IRS.
LF also tabled correspondence with Cheryl McMurray, (Certified Public Accountant), who had been engaged as tax consultant in order to submit tax-exemption returns for ISPRS. AP is required to provide the information for this.
LF has full documentation of all correspondence and returns which he will maintain as the Council Archive.
Council discussed the proposal from Karl Kraus (KK) to change the Statutes and Bylaws so that registration could be made in Vienna. SM will be mediating between KK and Council, and he would be fully briefed on Councils actions.

Information from the lawyer is required on whether dual registration is possible, and whether Foundation can continue if ISPRS is registered in Vienna.

4.5 Policy on travel support

Council agreed on the principle that Council should provide support to persons to attend events on behalf of Council only when deemed absolutely essential by all Council, each case should be considered on an individual basis and only to cover actual expenses

5. Congress (OA)

5.1 Preparations for Istanbul Congress

OA gave a report on preparations so far, including additions to programme, such as the COPUOS Action group meeting on Saturday.
OA gave web page statistics; LF report that web access in USA was not easy.
Exhibition bookings are slow. OA requests Council help in encouraging companies to register.
Keywords: Council agreed that keywords should be generic in referring to sensors.
Council discussed suggestions for speakers for Plenary sessions and agreed that session topics should be:

- Scientific review and outlook
- New applications
- Education and policy.

5.2 Contract and bids for 2008 Congress

The draft contract was reviewed and changes agreed.

5.3 Publication of selected papers in Book Series or TGARS.

OA had had discussions with Roger King of IEEE-GRS about publishing the best papers from the Congress in TGARS. It was decided that TCPs could do this for their own Commissions if they wished, contingent on maintaining prominent attribution to ISPRS. This particularly applied to TCVII, but papers from other Commissions could also be included.

6. Review of Commission activities

6.1 Actions arising from previous meetings and Joint meeting.

WGI/I SM had arranged for Mohamed Mostafa to produce a "white paper" on Resolution I,7 '- that an electronic, searchable database of sensor and platform information, both retrospective, current and planned be promoted to the ISPRS community.'

No further action resulted from the TCP reports at the JM, but a number of issues were raised which will be discussed at future meetings.

6.2 ICORSE

JT, ID and LF would meet with ICORSE in Hawaii. It was clear that Council needs to clarify the lines of communication and be more proactive.
The Congress display will be taken to Hawaii.

7. Statutes and Bylaws (GB)

GB was not present at the meeting but it was decided that the additional changes to the Statutes and Bylaws need to be considered.

8. ISPRS Membership (ID)

8.1 Ordinary Members, Associate Members and Regional Members.

ID and AP reported on current status.
It was noted that new applicants should be added to the database immediately on receipt of an application to assign an ID number.

8.2 Sustaining Members

An application had been received from Universiti Teknologi Malaysia.
Council agreed to accept this application.

8.3 Action on overdue members

AP will draft letter to Ambassadors in overdue countries.

8.4 Letter from Agfa

ID had received a letter from Sustaining Member Agfa, protesting that Franz Leberl had claimed that film was dead and that this had 'created enormous chaos' amongst users of film, and asking ISPRS to

'take necessary action in this delicate matter. ID had sent the letter to FL for comment. Council concluded that it was not the responsibility of ISPRS to intervene in a dispute in such scientific matters. It was also noted that other StMs take a different view. Agfa should put their view in the appropriate publication. It was decided that an opportunity should be created to discuss this at Congress if possible.

9. ISPRS Publications (ID)

9.1 Database and Blue Book

9.1.1 Status

AP reported that RP had made many changes to the database and ID had updated the data. LF had made a number of recommendations on both the software and the data.

The following actions would be taken;

1. AP and RP would implement the changes and corrections which had been identified and produce a draft of the Bluebook for Council to approve.
2. The Bluebook would be printed and distributed by AP with a request for members to return a slip with any corrections.
3. ID would continue to make corrections to the data.
4. A new version of the Bluebook would be produced in 2004.

It was noticed that some members had changed their names or the adhering body without notifying Council. Changes of name should be notified to Council for publication in Highlights and announced at GA. New or change of organisations should be approved by GA.

9.1.2 Distribution policy

The following policy was agreed for distributing and selling Member addresses:

- StMs may request a copy which will be provided free of charge;
- Hardcopy labels of part III of the Bluebook could be sold to other organisations for \$250;
- Softcopy list entries in Pt I and Pt II could be sold for \$150;
- Softcopy entries and hardcopy labels (Pts I, II and III) could be sold for \$350.

9.2 ISPRS Bulletin

Council discussed the status of ISPRS Highlights and decided that the current format should be reviewed and alternatives discussed with GITC.

9.3 Home Page

The Home Page was performing well. FR had written a report for the September Highlights on the structure and content of the pages. LF recom-

mended Commission drop down menus be expanded to include ISAC, IPAC and ICORSE Committee activities.

9.4 Archives

ID had obtained a list of the ITC holdings of the Archives and a request from the ITC librarian that the information be listed on the ITC website with a link to the ISPRS website. Council agreed to this. There are gaps in the ITC holding and ID would remind TCPs of their obligation to provide ITC with copies of the Archives when published.

9.5 Orange Book

Council reviewed the draft Orange Book and agreed with minor changes.

The draft would be presented to TCPs at the JM for further comments.

AP had revised the Directives for ISPRS Initiatives and Council had provided comments. AP would send revised version to Council for final approval. Council reviewed the model contract for Symposia and made some changes, this would also be reviewed by the TCPs at the JM.

9.6 Journal

9.6.1 EB reported on the status of the Journal and Council discussed the renewal of the contract with Elsevier.

Elsevier had agreed to appoint an Associate Editor, Council discussed possible candidates and decided that JT should write to them and enquire whether they are interested in the position.

9.7 Book series

9.7.1 Progress report

A report from the Book Series Editor had been received on 11th June. Council had approved publication of books from the WGII/5 and II/6 workshop in Hong Kong, edited by Zhilin Li, Qiming Zhou and Wolfgang Kainz and the workshop on GeoSensor Networks, edited by Anthony Stefanides.

Stan Morain was preparing a proposal for publishing the proceedings of the workshop on Radiometric and geometric Calibration.

9.7.2 Guidelines for reviewing

JT reported that additional comments had been received from ISAC, these were discussed and incorporated into the guidelines.

9.7.3 Contract

Council approved the Memorandum of Agreement for Editors of Camera-Ready Proceedings between ISPRS and Swets & Zeitlinger B.V.

A contract was required between the publisher and editors. Guidance notes are also required.

9.8 Green Book

The draft prepared by ID was reviewed by Council, and suggestions made for a final version.

10. Financial Affairs (AP)

10.1 Report on status

OA reported on the financial situation. Subscriptions were coming in a better rate than in 2002. Investments vary according to exchange rates etc. but overall position is being maintained.

11. Awards

11.1 Helava Award

Council discussed Article 5 of the rules: 'No member of the Juries shall receive the U.V. Helava Award or 'best paper' award.' Agreed that the words 'or the Editors' should be added after 'juries'.

12. Relations with International and other Organisations

12.1 ICSU

ISPRS had been invited to nominate someone for the Policy Committee for Developing Countries and for the Priority Area Assessment Panel on Capacity Building in Science.

12.2 COPUOS

Council reviewed the OOSA programme of meetings. JT had made enquiries about the meeting on Use of Space Technology in Sustainable Development but had not received an invitation.

12.3 COSPAR

ISPRS had been invited by COSPAR to apply for membership. It was decided to go ahead with this.

12.4 CRTEAN

ISPRS had also been invited to apply for Associated Membership of CRTEAN- Centre Régional de Télédétection des Etats de l'Afrique du Nord. It was decided to go ahead with this.

12.5 Digital Earth and Global Mapping

JT outlined the discussions which had taken place at the meeting in Okinawa. It was suggest-

ed that Rytaro Tateishi should represent ISPRS on the International Global Mapping Forum.

12.6 CIPA Statutes

JT had prepared comments on changes to Statutes prepared by Peter Waldhausl. Council accepted these comments.

12.7 Joint Board of the Geospatial Information Societies

JT had attended the meeting in Durban, hosted by ICA. He tabled a letter of intent which set out the objectives of the Board. It is intended to set up a web-site and for the permanent headquarters of GIG in Denmark. The letter was agreed. JT is now chair of JBGIS and ISPRS will host the next meeting in Istanbul.

12.8 US Commercial Remote Sensing Conference

LF had agreed on collaboration in this conference in exchange for benefits for ISPRS.

13. Reports from Council

Reports were tabled.

14. Nominations for Council and TCPs

Council reviewed the current known bids for Council and TCPs for the period 2004 – 2008. It was agreed that efforts should be made to encourage more members to bid for Commissions.

15. Review of Actions

15.1 ID reviewed the actions on Council.

15.2 ID listed new actions from this meeting.

16. Other Business

16.1 AP suggested that ISPRS make use of a fold up map of the world, shown at ICA, with a satellite image.

17. Next Council Meeting

The next Council Meeting would be Joint Meeting with TCPs and would be held in Beijing on 31st March to 5th April 2004.

18. Close

JT closed the meeting and thanked all for attending and particularly thanked OA and his team for the excellent organisation and hospitality.



Activities of the President in 2003

By John Trinder, President ISPRS Council 2000-2004

The year 2003 has been very busy for ISPRS Council, with many Working Group workshops, related meetings and conferences throughout the year, as well as a number of organisational matters to be considered. Here is a summary of the meetings and conferences that I have attended so far in 2003.

1. 28-30 April 2003 - I hosted the ISPRS Council meeting in Sydney, Australia.
2. 5-8 May 2003 - I attended American Society for Photogrammetry and Remote Sensing (ASPRS) Annual Convention in Anchorage, Alaska and met with the ASPRS committee to discuss the proposed new Terms of Reference of the Technical Commissions.
3. 13-16 May 2003 - I attended the UN-CODI-3 meeting (Committee on the Development of Information for Africa) at UN-ECA in Addis Ababa, Ethiopia, attended the sessions of the Geo group and presented a paper on 'Experiences in ISPRS with High Resolution Satellite Data'.
4. 19 May 2003 - I met, together with Secretary General Ian Dowman and Editor-in-Chief of the ISPRS Journal, Manos Baltasvias, with staff of Elsevier in Amsterdam to discuss the current management of the ISPRS Journal and the development of the new contract. We also met separately with representatives of Swets & Zeitlinger B.V., the proposed publisher of the ISPRS Book Series, to develop procedures for commencing this series.
5. 11-17 June 2003 - I attended the 46th Session of UN-COPUOS (Committee for the Peaceful Uses of Outer Space) in Vienna Austria, at which I presented several statements on topics relevant to ISPRS. At that time, I signed the MoU between ISPRS and the UN-Office of Outer Space Affairs (OOSA) Dr Sergio Comacho for closer co-operation and joint activities. I also attended meetings of COPUOS Action Team #1 on development of a comprehensive world-wide environmental monitoring strategy, and action Team #17 on capacity building, which are implementing two of the 32 recommendations of the UNISPACE III conference held in 1999.
6. 18-26 June 2003 - I travelled to Bulgaria to visit and meet staff and management of GIS-Sofia, visit the University of Architecture, Civil Engineering and Geodesy,



The group in front of St. Sophia, Istanbul.

Department of Photogrammetry and Cartography in Sofia, and make a presentation to the Bulgarian society on recent developments in ISPRS.

7. 27-28 June 2003 - I attended the Workshop of WG VII/4 on Urban Remote Sensing in Regensburg, Germany.
8. 14-16 July 2003 - I was invited to attend the UNRCC-AP (Regional Cartographic Conference for Asia and the Pacific) in Okinawa, Japan where I presented a paper on 'Experiences in ISPRS with High Resolution Satellite Data'.
9. 1 August - I visited the Regional Centre for Mapping of Resources for Development (RCMRD) in Nairobi, Kenya.
10. 10-12 August 2003 - I attending part of the General Assembly, the opening ceremony of the of the ICA Congress in Durban, South Africa, and also a meeting of the Joint Board of Spatial Information Societies, comprising representatives of FIG (International Federation of Surveyors), ICA (International Cartographic Association), IAG (International Association of Geodesy), IHO (International Hydrographic Organisation) and IMTA (International Map Traders Association).
11. 16-23 August 2003 - I presided over the Council Meeting and Joint Meeting of Council and Technical Commission Presidents in Istanbul Turkey. The purpose of these meetings was, amongst other matters, to plan for the technical sessions of the Congress and visit the Congress venue. As well, a meeting was held for the first time of the so-called International Advisory Committee, established by Congress Director, Professor Orhan Altan to advise Council and the Congress Organizing Committee on plans for the Congress as well as developments in ISPRS. Many of the people on this Committee have played a major role in ISPRS Councils and at Congresses over more than 25 years, and included the following Honorary Members, previous Presidents and Congress Directors: Fiedrich Ackermann, Gottfried Konecny, Shunji Murai, Kennert Torlegard, Karl Kraus, Klaas Jan Beek; as well as current Council, current Technical Commission Presidents, the Chair of the International Science Advisory Committee Armin Gruen, and the Editor-in-Chief of the ISPRS Journal Manos Baltasvius (see photos). It was the first time that such a large group of past and present ISPRS officers have formally met in the same location.
12. 1-3 September 2003 – I attended the 49th Photogrammetric Week as a guest of Professor Dieter Fritsch, Rector of the University of Stuttgart and director of the Institute for Photogrammetry.
13. 17 September - I attended the opening day of PIA'03 workshop, organised by Inter-Commission WG II/III, WGs III/4, III/5 and III/6, at the Technical University of Munich. At that meeting I recognised the contributions of Professor Heinrich Ebner in the field of photogrammetry and remote sensing and to ISPRS, over his distinguished career as the Chair of Photogrammetry and Remote Sensing at the Technical University of Munich. He retired on 1 October 2003.
14. 22 September, I represented and spoke on behalf of ISPRS at the celebration of the 75th anniversary of the Swiss Society of Photogrammetry, Image Analysis and Remote Sensing at ETH in Zurich, and attended the celebration dinner at the Rhine Falls in Schaffhausen. At this celebration, the significance of the contributions of Swiss scientists and engineers to the development of photogrammetric instrumentation, cameras and mapping systems were described in detail. A report will appear on the presentations at this celebration in ISPRS Highlights. During that week, I also attended part of the Optical 3D Measurement Techniques conference in ETH Zurich held from 22-26 September.
15. 29 September – 4 October 2003 I represented ISPRS at the Symposium of The International Scientific Com-

many of the people on this Committee have played a major role in ISPRS Councils and at Congresses over more than 25 years, and included the following Honorary Members, previous Presidents and Congress Directors: Fiedrich Ackermann, Gottfried Konecny, Shunji Murai, Kennert Torlegard, Karl Kraus, Klaas Jan Beek; as well as current Council, current Technical Commission Presidents, the Chair of the International Science Advisory Committee Armin Gruen, and the Editor-in-Chief of the ISPRS



Council TCP Advisory Board.

mittee CIPA – Heritage Documentation in Antalya, Turkey.

16. 6-7 October - I attended the Joint Workshop of WG I/2, WG I/5, Inter-Commission WG II/III and EARSeL Special Interest Group on 3D Remote Sensing, on High Resolution Mapping from Space, at the Institute of Photogrammetry and GeoInformation at the University of Hannover, Germany.

17. 8 October I attended the opening day of the workshop on 3-D Reconstruction from Airborne Laser-scanner and InSAR Data held at the Technical University of Dresden, Germany, organised by WG III/3 and EuroSDR Commission I and the Institute of Photogrammetry and Remote Sensing at the Technical University of Dresden.

18. 15-16 October - I attended the joint meeting of WG VII/3 on International Co-operation and Technology Transfer and Geoinformation for Practice, organised by the State Geodetic Administration and the Croatia Section of Photogrammetry and Remote Sensing in Zagreb, Croatia.

19. 3-7 November 2003 - I represented ISPRS at the Asian Conference of Remote Sensing (ACRS) of the ISPRS Regional Member Asian Association of Remote Sensing (AARS).

Further visits for the remainder of 2003 will include:

20. 10-14 November 2003 - The 30th Symposium on Remote Sensing of the Environment (ISRSE), of the Permanent Committee of ISPRS, ICORSE, in Hawaii.

21. 18-20 November 2003 - The 17th Plenary Meeting of CEOS (Committee on Earth Observation Satellites) in Colorado, USA.

22. 2-5 December - 12th International Symposium on Biological Indicators in Hong Kong to demonstrate to the community of biologists the possible applications of remote sensing for developing sustainability indicators.

23. 3-5 December – WG II/2 and II/6 ISPRS Workshop on Spatial Analysis and Decision Making in Hong Kong.

November 2003



Changes to Commission Terms of Reference and Procedures for Electing New Commission Presidents

By Ian J. Dowman, Secretary General ISPRS Council 2000-2004

The Ordinary Members of ISPRS have been balloted and have approved the new Terms of Reference for the Technical Commissions. The agreed Terms of Reference are set out below. These will come into effect for the period 2004-2008. Members have been invited to submit bids to host a Technical Commission for the 2004-2008 period under the new Terms of Reference.

Council have formulated new guidelines for the nomination and election of TCPs in order to speed up and ensure good overall planning for the next four year programme of the Technical Commissions. The vote on bids for Members to host Technical Commissions for the next 4 years will be held at the second General assembly at Istanbul on 16 July 2004. This should provide for adequate time for the newly elected TCPs to form their working groups and possibly appoint Chairs and Co-Chairs before the end of the Congress.

Council is encouraging joint hosting of Technical Commissions by more than one Ordinary Member if the workload of holding a Technical Commission by one Ordinary Member is considered too heavy. Since there are many international conferences held each year in the

areas of interest of ISPRS, Council also strongly encourages Members bidding to host a Technical Commission to consider joint organisation of their Symposium, either with another Commission, or in association with regional events so that the activities of ISPRS are available to all members, thus enabling as many people as possible to participate in ISPRS Symposia.

Council also wish to ensure that the programme of ISPRS meetings does not become overcrowded and that there is not excessive overlap between topics covered at these meetings. The extra time available to TCPs at the Congress and the planning meeting immediately after the Congress will provide time for planning these matters.

I Terms of Reference of Technical Commissions *To be effective from July 2004*

Commission I: Image Data Acquisition - Sensors and Platforms

- a) Design and realization of digital aerial and spaceborne missions for Earth observation;
- b) Design, construction, characterization, and installation

- of imaging and non-imaging sensors (including Optical, IR, SAR, IFSAR, LIDAR, etc.)
- c) Standardization of definitions and measurements of sensor parameters;
- d) Integration of imaging and non-imaging sensors with other relevant systems;
- e) Geometric and radiometric properties, quality standards, and factors affecting data quality;
- f) Test, calibration and evaluation of sensors (including laboratory, in-flight, inter-calibration and test fields);
- g) Integrated platform guidance, navigation, positioning and orientation;
- h) Data reception and pre-processing;
- i) On-board preprocessing of data and autonomous systems;
- j) Systems and media for recording sensor data, auxiliary data (time, position, attitude, etc.) and film scanners;
- k) Image and non-image data transfer standards.

Commission II: Theory and Concepts of Spatio-temporal Data Handling and Information

- a) Fundamentals of spatial database design, spatial data structures, spatial analysis and geostatistics, spatial querying, spatial reasoning, spatial and temporal modeling;
- b) Aggregation, generalization, abstraction and rendering of image and vector data;
- c) Spatial decision support systems;
- d) Processing, analysis and modeling of multi-dimensional geospatial data;
- e) System integration and modeling aspects for data and geoinformation processing;
- f) Interoperability of heterogeneous spatial information systems;
- g) Semantic and geometric integration of heterogeneous spatial information;
- h) Communication and visualization of spatial data
- i) Data mining, filtering, retrieval and dissemination;
- j) Spatial data quality and spatial model quality.

Commission III: Photogrammetric Computer Vision and Image Analysis

- a) Algorithms for geometric analysis of image data regardless of scale;
- b) Geometric analyses of IR, SAR, IFSAR and LIDAR;
- c) Automated feature and attribute extraction techniques and methodologies from multi-sensor, multi-resolution, multi-spectral, hyperspectral, and multi-temporal imagery;
- d) Fundamental research into image understanding for object detection, recognition, identification and reconstruction;
- e) DEM generation and integration of three-dimensional modeling concepts into image analysis processes;
- f) Integration of spatial information systems and object models for object recognition;
- g) Sensor pose determination (including auxiliary information);

- h) Projective and multi-view geometry;
- i) Image sequence analysis;
- j) Algorithms for including features in the orientation processes;
- k) Spatial, spectral and temporal properties of natural and human-formed objects;

Commission IV: Geodatabases and Digital Mapping

- a) Development, access and management of spatio-temporal databases;
- b) Spatial data infrastructures;
- c) Image-based geospatial databases;
- d) Data libraries, data clearinghouses, data warehouses, distributed archives and access to remote data sources, including metadata and digital data standards;
- e) Web based access, retrieval and dissemination of spatial data, including web-based location-based services;
- f) Integration of spatial information systems and image analysis for database-driven change detection, data capture and updating;
- g) Dynamic spatial information systems, spatial data revision and versioning;
- h) Interfacing 3D models with facility management systems
- i) Database generation for digital topographic and thematic mapping (including orthoimages and digital terrain models);
- j) Digital landscape modeling and visualization, and large scale urban models;
- k) Global environmental databases and mapping;
- l) Extraterrestrial mapping and spatial information systems;
- m) Analysis of systems and their components for automated and semi-automated digital mapping and geoinformation systems;
- n) Analysis of industry needs and design of systems for production and update of geoinformation.

Commission V: Close-Range Sensing – Analysis and Applications

- a) Systems and algorithms for real-time imaging, mobile mapping and video processing;
- b) Photogrammetric vision metrology technologies with special consideration of a CAD/CAM and spatial information systems;
- c) Integration and fusion of multiple data sources for advanced object extraction and modeling;
- d) Laser scanning for 3-D representation of objects and scenes;
- e) Close-range image sequence analysis procedures;
- f) Vision-based techniques for visualization, simulation, robotics and animation;
- g) Vision metrology systems and industrial applications;
- h) Photogrammetric techniques in biomedical engineering and human motion studies;
- i) Techniques for architectural, archaeological and cultural heritage applications;

Commission VI: Education and Outreach

- a) Promotion of education and training at fundamental, advanced and professional levels;
- b) Promotion of technology transfer, considering account regional needs and resources;
- c) Computer-assisted teaching, training and distance learning;
- d) Innovative techniques for information dissemination on the Internet;
- e) Promotion of youth forum and innovative outreach activities;
- f) Assist the Council in the promotion of ISPRS activities in the regions;
- g) Quality enhancement of content and format of ISPRS publications and Internet home pages.

Commission VII: Thematic Processing, Modeling and Analyses of Remotely Sensed Data

- a) Relationship between spectral, radiometric and temporal properties of objects, their physical and chemical properties and their variations;
- b) Image classification and analysis methodologies;
- c) Analysis of characteristics of multi-spectral, hyper-spectral, multi-sensor, microwave and multi-temporal image data for extraction of attribute information;
- d) Methodologies of computer-assisted interpretation and analysis of remotely sensed data;
- e) Validation of data and information using laboratory and in-situ methodologies;
- f) Improving atmospheric modeling for radiometric correction;
- g) Multi-source data fusion and integration techniques;
- h) Modeling of satellite data derived parameters;
- i) Global databases and determination of indicators of change for global modeling, monitoring and sustainable development;
- j) Integration of remote sensing and GIS techniques;
- k) Aerosol and particulate detection and identification.

Commission VIII: Remote Sensing Applications and Policies

- a) Forestry, vegetation, agricultural and biodiversity studies and applications;
- b) Hydrology, oceanography, coastal zone, snow and ice applications;
- c) Atmospheric and weather studies and applications;
- d) Geology, pedology and geomorphology studies and applications;
- e) Monitoring and management of land and water resources;
- f) Land use, human impact and ecosystem analyses;
- g) Disaster monitoring, mitigation and damage assessment;
- h) Hazardous waste and environmental pollution assessment;
- i) Infrastructure, transportation and communications studies and applications;
- j) Satellite and aerial remote sensing policies;

- k) Cooperation with international environmental programs and strategies;
- l) Earth Observation activities to support sustainable development.

2 Guidelines and Schedule for Nominating TCPs for 2004 - 2008

Technical Commissions (TC) are hosted by Ordinary Members. Members wishing to host a TC should submit an application to the Secretary General 4 months before the Congress according to the instructions given in section 3 below. Council will welcome applications from 2 members to jointly host a TC or for separate hosting of TCs, but joint organisation of Symposia. Members making an application must be fully conversant with the responsibilities of hosting a TC and of the responsibilities and duties of the Technical Commission President (TCP) as set out below.

3 Procedure for applying to a Technical Commission

Nomination procedure

1. Members wishing to host a Technical Commission, for the next four-year period shall submit an application to the Secretary General 4 months before the Congress. The application shall contain the following information:
 - Name(s) of Ordinary Member(s) making the application;
 - Name of the proposed Technical Commission President (TCP);
 - A provisional plan for financial and management arrangements;
 - A provisional plan for technical meetings (symposia and workshops) for the four year period.

Application may be made for more than one Commission

2. Council may discuss proposals with applicants to make sure that their plans meet the expectations for running a Technical Commission. To help in such as assessment, applicants may be interviewed by Council, in person or by telephone conference prior to the Congress.
3. Before the General Assembly of ISPRS decides to allocate a Commission to an Ordinary Member, the proposed TCP shall present to the General Assembly the details of their proposal as set out in paragraph 1.
4. The General Assembly will, in its election of Technical Commission hosts, consider the merits and experience demonstrated by the proposed TCP in activities such as having been the Chairperson of a Working Group, author of an invited paper, etc.

After election

1. Elected TCPs will be required to attend a 1 day joint meeting with Council immediately after the Congress. Applicants will be notified of the dates of that meeting before the Congress.

2. Preparation for selection of WG officers and the determination of Terms of Reference (ToR) must commence at the Congress at which the TCPs have been selected, in consultation with the outgoing TCPs, and taking into consideration the Resolutions approved at the Congress for the Commission. The selection of WG officers and WG ToR must be finalised for presentation and ratification at the Joint Meeting of TCPs and Council in autumn following the Congress.
 3. The schedule of all Symposia will be approved by Council at the post Congress Joint Meeting. Council requires a draft programme for Symposia and major workshops to be presented and approved at the Joint Meeting which will be held in the autumn of the Congress year.
 4. The host country will be required to sign an agreement with ISPRS. This will set out the responsibilities of both parties. A model agreement is available from the Secretary General.
- October 2003



The U. V. HELAVA Award - Best Paper 2001

By Emmanuel P. Baltasvias, Editor-in-Chief, ISPRS Journal of Photogrammetry and Remote Sensing

The U.V. Helava Award, sponsored by Elsevier B.V. and LGGM, LLC, is a prestigious ISPRS Award, which was established in 1998 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 second U.V. Helava Award will be presented at the 20th ISPRS Congress, Istanbul, 12-23 July 2004. The five-member jury appointed by the ISPRS Council evaluated the 29 papers of Vol. 56 (2001) and announced its decision for the Best Paper. The winner of the 2001 Best Paper is:

Seamline detection in colour orthoimage mosaicking by use of twin snakes



**Martin Kerschner, Institute of Photogrammetry and Remote Sensing, Vienna University of Technology,
Gusshausstrasse 27-29, A-1040 Vienna, Austria**

Jury's Rationale for the Paper Selection

The paper describes an interesting and original application of combining colour and texture similarity criteria with an advanced active contour concept (twin snakes) for fully automated detection of optimal seamlines in the creation of orthoimage mosaics. In spite of weaknesses in the quality evaluation of the method and quantitative validation of the results, the paper gives a good overview of possible mosaicking problems, while the approach is well present-

ed and aims at improved automation in a task of practical relevance and increased demand, namely orthoimage production.

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



Latest News from the XXth ISPRS Congress

By M. Orhan Altan, ISPRS 2004 Congress Director

ISTANBUL

ISPRS
2004



The XXth ISPRS Congress will be organised during the dates of 12 – 23 July 2004 in the brand new Congress Center, Istanbul Convention and Exhibition Center (ICEC). It is expected that about 2500 participants will attend the Congress. The work to be carried out for preparing a congress for such a number can easily be imagined. 45,000 copies of the first announcement and 17,500 copies of the second announcement with call for papers had been prepared, printed and distributed worldwide. With this very professionally prepared material and the support of our good web-site www.isprs2004-istanbul.com, we got a record number of abstracts (1762) among the ISPRS congresses.

The ISPRS Congress includes all the technical meetings of ISPRS Technical Commissions and Working Groups, Theme and Special Sessions, all ISPRS General Assemblies, Tutorials and Seminars, Exhibitions, Social Events, Technical Tours, Committee Meetings and Meetings of the Joint Board of Spatial Information Societies to be held in conjunction with the Congress as well as ISPRS Council and Technical Committee meetings which will be held prior to the official opening.

The main body of the Scientific Program consists of Oral and Poster presentations where more than 100 oral sessions and 50 poster sessions will take place. As this congress is a one and a half week event, these sessions will be organised in such a way that there will be minimum overlap between the interested similar topics and also enough time to visit the exhibition with the recent technological developments.

In previous congresses during the Opening Ceremony there were some scientific keynote addresses. This time the opening ceremony on the 14th of July is devoted to the so-called "Cultural Opening". But for the very interesting themes, there will be 3 Plenary Sessions, where, for example, the capacity of high resolution satellite systems,

multilateral environmental agreements and remote sensing, automated object extraction from images, dynamic and multidimensional GIS or non traditional applications will be treated by prominent invited speakers.

I want to draw your attention also to a newly organised event namely "Youth Forum". Youth Sessions, which will be held for the first time during the ISPRS 2004 Congress, and which are considered as important by the ISPRS Technical Commissions. On Saturday, 17 July 2004, there will be oral and poster sessions organised by the young attendees. We place great importance to this event, which we mean to be the future of our profession and if sufficient number of requests is received, a summer camp will be organised after the congress as part of the social program of ISPRS 2004 with a special nominal fee.

There will be scientific and commercial exhibitions as well where the latest research and developments and technologies in the photogrammetry, remote sensing and spatial information sciences will be displayed. The response from exhibitors and participants has been very good. We are negotiating with the Istanbul Congress and Exhibition Center Management for the second floor of the exhibition hall, where we want to offer the possibility of another exhibition floor and for poster paper presentations.

The Congress will highlight applications of geo-spatial technologies for mapping, managing and monitoring land, water and natural resources, leading to sustainability of development. The WSSD in Johannesburg recognised that images of the Earth and its environment, which are the primary source of geo-information to experts in ISPRS, enable assessment and monitoring of: food and water security; environment and habitat; hazards and disasters; renewable resources; deforestation and land degradation; quality of ocean and coastal areas; the atmosphere; and diseases. This Congress will address many of these issues.

As these issues are technical issues, which should be discussed among the scientists, there is also a great interest from the politicians and NGOs as some of them already showed great interest in participating in the congress.

We, as the Organising Committee, are doing our best to organise an unforgettable event during the XXth Congress.



XX Congress: Why You Should Visit

By Stan Morain, Chair, Geography and Director, EDAC, E-mail: smorain@edac.unm.edu

Geo-Imagery Bridging Continents is the theme of the XXth Congress of the International Society for Photogrammetry and Remote Sensing (ISPRS) in Istanbul 12-23 July 2004. ASPRS is the host for Commission-I of ISPRS, which focuses on platforms, sensors, and imagery. In my capacity as President of Commission-I, I have recently spent a week, along with my wife Marilyn, visiting the Congress venue and delighting in the fabulous sights and hospitality on both the European and Asian sides of the Bosphorus.

Istanbul is a thoroughly modern city of some 12 million people representing a tapestry of cultures spread over more than 3000 years of settlement history and many waxing and waning empires. Anyone who has travelled Interstates 5 or 15 from San Diego to the Los Angeles Basin will feel immediately at home, as I did, on a trip from Istanbul to Edirne, one of the former capitols of the Ottoman Empire. This 250 kilometre trip amply testifies to Turkey's modern highways, 4 & 5 star hotels, reliable electrical energy, and scrumptious restaurants.

Magister Tours, the official touring company for the Congress, is prompt and efficient with modern air-conditioned buses and a tour agenda to fits all tastes. For starters, Marilyn and I travelled by boat along the Bosphorus to the Black Sea; visited the Dolmabahce Palace (home of the last Sultans and the first President

of modern Turkey, Mustafa Kemal Atatürk); and had lunch on the rooftop of the Arcadia Hotel overlooking the Blue Mosque. Marilyn then had time for the Topkapi Palace and Museum, additional sightseeing, and shopping. Many tempting pre-and post Congress tours will be offered.

Not to forget our mission, the Congress itself will be a panorama of workshops, tutorials, and technical sessions offering a complete menu of photogrammetry, remote sensing, algorithms and models, GIS, and GPS technology and practice. We're planning for over 2000 registrants to participate in the technical advances of over 45 Working Groups from all seven of the technical Commissions. Four and a half days of exhibits join the technical activities during the second week of the Congress.

Items of special interest...

1. Safety and security: Marilyn and I flew direct, non-stop to Istanbul via Chicago on Turkish Airlines (a code share program with American Airlines for those who must use U.S. carriers). To and from, the flights were clean and on-time. Airport security was strict and reassuring. Safety in Istanbul demands common prudence, as it would in any large city, but the people everywhere were friendly and accommodating. The vast majority of locals wear European attire (most often casual!).



2. **Contacts:** The Congress' technical program, deadlines, and organised tour options can be viewed by surfing <http://www.isprs.org>. Coordinates for the Commission Presidents are also given here. Also please check <http://www.isprs2004-istanbul.com> for all technical program activities, tours, registration forms and hotel accommodations. The Istanbul Convention and Exhibition Center is in the Harbiye area of Istanbul, in a parkland adjacent to the Bosphorus on the European side.
3. **Participation:** ISPRS consists of over 103 Ordinary Members who represent national societies for photogrammetry, remote sensing, and geomatic organisa-

tions. ASPRS is the Ordinary Member for the United States. You are encouraged to be an active ISPRS contributor through service on international working groups, by making technical presentations, or by participating in poster sessions, workshops, and tutorials. Longer term service on working groups is through appointment by Commission Presidents, or through elections held by the voting delegates from each of the Ordinary Members at the Congress' General Assemblies. The beauty of it is that you can be as involved as you like with both ASPRS and ISPRS, simultaneously. There are no personal membership dues for ISPRS.



XX Congress: 50 Questions and 3 Prizes

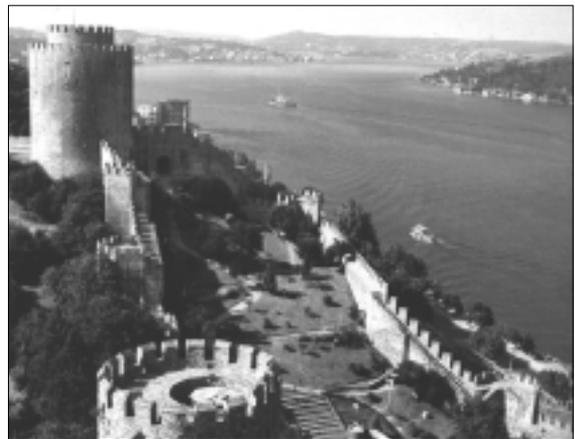
By M. Orhan Altan, ISPRS 2004 Congress Director

ISTANBUL

ISPRS
2004



1. Which is the first written Peace Treaty in the world and between which nations was it signed? Where can a part of it be seen today?
2. How many levels of civilisations was unearthed in Troy?
3. Where is one of the two most important settlements of the Neolithic Age?
4. When the Kimmar and the Meds had been fighting for five years, what happened on the 28th of May 585 B.C.?



Istanbul.



Troy.

5. Which is the oldest known town plan? When and where and by whom was it discovered?
6. How old is the town plan discovered at Level VII?
7. How long do the marriage festivities last in the villages in Anatolia?
8. Where do fathers meet to speak about the financial part of the matrimony after the bride's father agrees to the proposal of marriage?
9. When do wedding ceremonies usually start in the villages in Anatolia?
10. Which is the main source of meat in Turkey? Why is it different from its European counterpart?



Istanbul.

11. What is the origin of yoghurt?
12. How are fresh vegetables prepared in the Turkish kitchens?
13. Why was the theme of the Congress "Geoimagery Bridging Continents" chosen for the XXth ISPRS Istanbul Congress?
14. To which great empires Istanbul was the capital?
15. What is the official name of the airport in Istanbul?
16. Where was Homer born? Where is his mythological city Troy situated?



Kekova.

17. Where was the first beauty contest between Aphrodite, Hera and Athena held?
18. Where was the oldest known shipwreck excavated?
19. When and where were the coins made of electrum used and by whom and for what purpose?
20. Which are the two of the Seven Wonders of the World in Anatolia and where were they situated?



Ushisar.

21. Where did Noah's ark land after the great flood?
22. Where was St. Nicholas, known as Santa Claus, born in Anatolia?
23. Where are the Seven Churches of Asia mentioned in the Revelation of John located in Anatolia?
24. Where is Hagia Sophia, which for many centuries was the largest church in Christendom, standing?
25. Who was the first man to fly and where did he fly?
26. When was the Turkish women given the right to vote?
27. How old is the Grand Bazaar and how many streets, shops, entrances and workers are there in the Covered Bazaar?
28. What is the native language of Jesus Christ and where can you hear it still spoken?

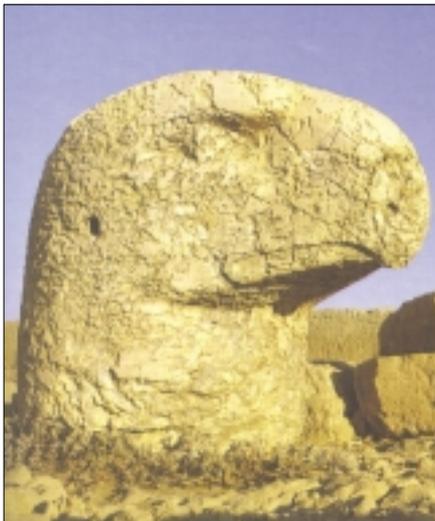


Apollon.



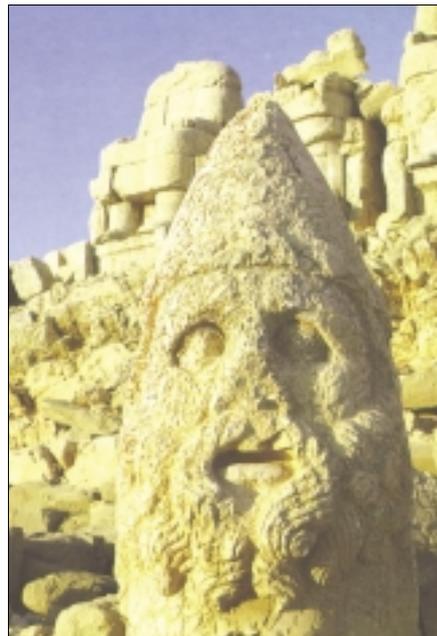
Pam Ukkale.

29. Where was the first church ever built and where is the site of the oldest temple?
30. When were the Karain, Beldibi and Belbası caves used by mankind?
31. How can Turkish architecture be divide roughly?
32. How are houses built in folk architecture and to which direction does the door open?
33. What did the Byzantines call their city and why?
34. What is the first date of the building of St. Sophia in Istanbul?
35. When did Anatolia begin to be influenced by the Seldjuks?
36. What was one of the most important legacies of the Seldjuks in Anatolia?
37. When did the first Otoman people come to Anatolia and to which region did they come?



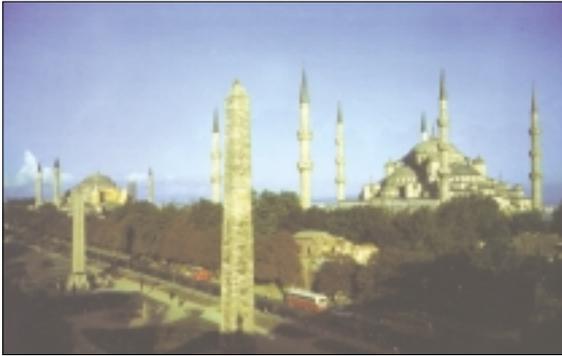
Nemrut.

38. Who was one of the greatest Ottoman Sultans and how was he known to the West?
39. When did Sultan Mehmet the Conqueror conquer Istanbul and what was one of his first acts in entering the city in triumph at the head of his army?
40. Who opened its doors to Sephardic Jews?
41. What is the role of Ciragan Palace in the tourism industry today?
42. How many minarets does the Sultan Ahmet Mosque have?
43. Under what name is the Sultan Ahmet Mosque known to the West?



Nemrut.

44. Who was the architect of the Mosques Süleymaniye in Istanbul and Selimiye in Edirne?
45. Which was the second major art of the Ottomans?
46. Where was the art of miniatures found and what did they depict?
47. Where was ceramic ware produced in Anatolia?
48. Where was ceramic ware used for decoration purposes?
49. How did the Ottomans keep their records?
50. How long did the Otoman Empire last?



Istanbul.

1. **The first person to reply most of these questions correctly**, he/she will win the prize "FREE REGISTRATION" which includes:
 - Attendance to the Congress

- Congress documents, bag, badge, certificate of attendance
- Participation in the Opening and Closing Ceremonies and Welcome Reception
- Participation in the Exhibitors' Reception
- DVD of the Proceedings
- Personal pigeon box

2. The second person to reply most of these questions correctly, he/she will win the prize Free Tour # 21"
3. The third person to reply most of these questions correctly, he/she will win the prize "Tour # 5"

In case there are more people having given the same number of correct replies, a lottery will be drawn under the jurisdiction of the Congress Director, Prof. Dr. M. Orhan Altan.



Notes from the International Workshop on High Resolution Mapping from Space, Hanover 2003

By *Dr.-Ing. Uwe Weidner, Institut für Photogrammetrie und Fernerkundung, Universität Karlsruhe, Germany, E-mail: weidner@ipf.uni-karlsruhe.de* and *David Holland, Ordnance Survey, UK, E-mail: david.holland@ordnancesurvey.co.uk*

This workshop was the fourth in a series on this topic, which began in 1997. In 2003 the meeting was a joint ISPRS/EARSel event, combining the work of three ISPRS working groups: WG1/2 (Sensor calibration), WG 1/5 (platform and sensor integration) and IC WG II/IV (geospatial data production); together with the EARSel special interest group on 3D remote sensing.

There were 76 registered participants at the meeting, from a total of 21 different countries (in Europe, Asia, North America and Australia), who contributed to approximately fifty presentations over three intensive days.

Overview

This proved to be a very interesting and useful meeting, with many high-quality presentations on subjects ranging from the detection of features on the surface of Mars to the production of high-quality DEMs and orthophotos of the whole Earth. The specialist topics of the working groups involved meant that there were many papers examining the intricate details of the processing of satellite imagery in order to achieve the best possible geometric accuracy. There were also several presentations detailing new sensors and new applications for existing sensors. Such was the breadth of information presented that even those researchers who keep up with events in the remote sensing world almost certainly learned something new. Not only were the presentations of top quality,

but so also were the organisation of the meeting and the animated discussions to be heard between the participants during the coffee breaks and lunches.

Plenary Session – Monday 6th October

After the usual welcoming speeches, Prof. Eberhard Parlow, Chairman of the European Association of Remote Sensing Laboratories (EARSel) gave a strong criticism of ESA policy, which has largely ignored the development of high resolution satellite imagery, in favour of more global remote sensing. It was suggested that the decision makers in ESA are disproportionately influenced by GMES (Global Monitoring for Environment and Security), at the expense of more locally-based disciplines such as photogrammetry, cartography or forestry.

The keynote speech, "Current Developments and Future Trends in Imaging and Mapping from Space" was given by Professor Gordon Petrie, of the University of Glasgow, who is well known in this community for his wide knowledge of satellite sensors, both civilian and military. In this excellent overview, he discussed the capabilities of the current remote sensing satellites deployed by many countries around the world. Some of the interesting points which he presented are repeated below.

For the next few years the US will be heavily dependent on commercial satellite systems such as QuickBird and

IKONOS. The recent award of a contract, potentially worth \$500 Million, to DigitalGlobe (makers of QuickBird) as part of the US military intelligence "NextView" programme, has caused a stir in the industry. Without the financial backing of the US government, it is unclear how Space Imaging and OrbImage will attract enough funding to survive. OrbImage have only recently emerged from bankruptcy protection status, while Space Imaging have lost the promise of funding from their original backers, Lockheed Martin and Raytheon. Meanwhile, many countries around the world have launched, or are planning to launch, high resolution imagery satellites. These include Israel, South Korea, Japan, India, Taiwan and France. Most new satellites are either for military or "dual use" (i.e. both military and civilian). Past experience has shown that imagery from allegedly dual use satellites often stays in the spy satellite category, and is not released for general sale.

Sensor Models

Many papers looked at the different ways of correcting raw satellite imagery. Topics discussed included the use of automatic systems (employing star-trackers, GPS, and motion-sensors); systems based on rigorous sensor models; and systems based on more general solutions, using Rational Polynomial Coefficients (RPCs - also called the Rational Function Model). RPCs may either be supplied by the vendors (based on the true sensor model), or determined empirically using ground control points. The jury seems to be out as to which of the various methods gives the best results; but most of the presenters had achieved geometric accuracy of less than 1m from the basic 1m imagery (i.e. accuracy better than the pixel size). Pragmatically, it probably does not matter whether the rigorous model or the Rational Function Model is used, most users just want to use the data in their systems. Problems occur when this is done naively, with the user unaware of the problems they may have introduced (e.g. by determining the coefficients themselves, or by choosing an inappropriate set of control points). In most cases, the software gives no indication of these problems. Several authors discussed how accuracy also depends on the number and distribution of control points used, but again there was a debate as to the number required, and some strange results which indicated that adding control points actually reduced the accuracy (perhaps this was a case of poor control points).

New and Forthcoming Satellites

There were several presentations on the operational status of IKONOS and QuickBird, especially in Europe. An interesting statistic from Klaus Reiniger of the German Remote Sensing Data Centre (the European Ground Segment for Ikonos) is that 95% of European Space Imaging's customers take the pan-sharpened, "Geo" product. The coverage capabilities of the two satellites were compared and contrasted - QuickBird individual scenes cover a larger area, but Ikonos can take multiple strips on a single pass, thus effectively covering a greater area. Which of these methods is the most effective way of capturing large

amounts of imagery depends to a large extent on the application. There are several European satellites currently amassing enormous amounts of data, and others which are due for launch in the near future. Alain Boudoin, of CNES, described the very ambitious plan to capture a 5m-resolution orthorectified image of the whole world, together with the accompanying DEM (at a post spacing of 30m), using the High Resolution Stereoscopic camera on board SPOT 5. Forty two million square kilometres of cloud-free images have already been captured, and are now being processed. SPOT Image were very keen to stress that all this was being done to a high specification, without the need for ground control points. An ISPRS project has been initiated to assess the quality and accuracy of the resulting data. Early results of this project were presented by Peter Reinartz - the final results will be published at the end of the project in the first half of 2004.

While France concentrates on the SPOT optical imagery, in Germany the emphasis is on radar satellites. The German Aerospace Centre (DLR) is involved in processing the data from the Space Shuttle Radar Topography Mission (SRTM) which will eventually provide a DEM of most of the Earth, at a grid spacing of 30m and an absolute accuracy of 16m. The DLR involvement is mainly with the higher resolution "X-band" data, which covers the Earth in a framework of stripes, with gaps in between. The programme is now almost finished, and products should be available next spring. The presentation by Richard Bamler (DLR) gave a very good overview of the programme, and of the next generation of SAR satellites. Following on from their experience with the radar from the shuttle, the DLR are involved in both TerraSAR-X and SAR Lupe, two SAR satellites capable of imagery at 1m resolution, due for launch in or after 2005. Although neither system is specifically designed for use in topographic data capture, both could potentially be used for this purpose. DLR have even proposed a set of "parasite satellites" which "chase" the main SAR satellites around the Earth and pick up the signals backscattered from the ground. Another application of SAR data, described by Nico Adam of DLR, is the detection of movement using permanent scatterers, which appear in long time-series of SAR images. In urban areas, permanent scatterers can be used to detect millimetric changes in the Earth's surface. Volker Spreckels, of the German coal mining company DSK, presented work on subsidence determination by different sensors ranging from aerial imagery and LIDAR to RADAR used for DEM generation. This talk summarised the many practical issues of trying to compare the different data sets.

Current and Imminent Mapping Applications

Until this conference, most of the known applications of high resolution imagery had either been for military use, or for small, regionally-based projects. Here in Hanover it was interesting to hear of several civilian applications which are looking at much larger areas. These included

the mapping of Saudi Arabia (100,000 square km) using IKONOS and QuickBird imagery; the mapping of large areas of Poland (50,000 square km) using IKONOS; and a large project involving the mapping of Flanders (13,000 square km) again using IKONOS. These projects have not yet completed, and no papers are yet available. Some of the projects are using satellite imagery to supplement aerial photography, others are using it as a complete replacement for conventional orthophotography. It will be interesting to see how these projects progress over the next few months.

Feature Extraction and Data Fusion

Several people presented their work on feature detection (or object recognition) in IKONOS and QuickBird imagery. Most feature extraction work in the past has been done at a higher resolution (e.g. 10-25cm aerial photography) or a lower resolution (e.g. 10m SPOT imagery). Finding features in 1m imagery is something of a new challenge. Uwe Bacher gave a good presentation on "fuzzy classification and ziplock snakes" which he used to find road segments in a multispectral IKONOS image, and then to automatically join them together. This was a completely automatic process which seemed to give good results. Sidharta Gautama gave a talk on "continuous relaxation labelling" to detect differences between road networks in an image, and the equivalent network in a pre-existing database, using a network graph technique. Although there were very few talks on data fusion, the presentation by John Trinder on this topic was very interesting. He presented work by his student Yi Hui Lu, on the detection of buildings using a fusion of digital surface models and multispectral image classification techniques. On a completely different subject, Marco Neubert, of the Institute for ecological and regional development in Dresden, showed the results of

his analysis of different image segmentation software packages, based on their ability to classify an IKONOS image. The results showed that each of the packages segmented the image in a different way, and that some were markedly better than others.

Miscellany - Mapping Mars, Shape from Shading,...

There is obviously a great deal of interest in the Martian surface, with several spacecraft and probes due to reach it later this year. One problem that the Mars mappers will have to contend with is the sparsity of ground control points, or GPS, on Mars. The first field surveyors to land on Mars with their total stations and tape measures are not due for some time yet. One topic which links Mars to Earth-based data collection is in the use of "shape from shading" to determine the shape of the terrain relating grey values to surface inclination relative to the illumination direction. This technique has been used in desert regions of the Earth (as shown by Noam Levin), and similar regions of the moon (described by Volke Lohse) and will no doubt be used on the forthcoming martian images. The European Mars Express programme was especially highlighted by Ralph Schmidt and Michael Spiegel, who discussed the automatic determination of tie points and the estimation of exterior orientation parameters for the Mars Express High Resolution Stereo Camera.

Conclusion

As can be seen from the above summary, this workshop covered many topics relating to high resolution imagery and its applications. The organisers should be commended for the excellent preparation of the workshop, and for their hospitality throughout our stay. I think the phrase "and now to close the meeting we will each have a glass of beer", should be heard more often at this type of event!



Report on the ISPRS – WG VI/3: International Co-operation and Technology Transfer Meeting 'Geoinformation for Practice'

In Zagreb from 15-17 October 2003

By Mojca Kosmatin Fras, E-mail: mojca.fras@geod-is.si

Zagreb, the capital of the Republic of Croatia, was the host city of the last planned meeting of the WG VI/3 before the Congress in Istanbul, previously confirmed by the ISPRS Council. The event was organised in co-operation of ISPRS, TC VI, WG 3, State Geodetic Administration of the Republic of Croatia, Croatian Section of Photogrammetry and Remote Sensing, and under the auspices of Croatian government. The local host put an extraordinary effort to co-ordinate and organise really high-level event from many aspects. Already pure statistical data could give an impression of the workshop scope: around 600 participants from 34 countries worldwide (450 registered, 50 VIP and press

participants, 90 members of parallel program), 45 oral paper presentations and 3 poster presentations separated in 7 topics and 8 sessions, published proceedings (50 papers, 260 pages), 4 parallel program activities, 11 business presentations and 3 closed business presentations, exhibition with 21 exhibition stalls and around 30 exhibitors from 6 different countries, 15 sponsors, and a rich social program. However, perhaps even more important was the hospitality and positive atmosphere, the participants could enjoy in all the three effective days of the workshop, and the presence of the spirit of the WG 3 reflecting international co-operation and technology transfer.



Opening ceremony, Prof. Trinder speech.

The organisation started of course well in advance. With co-operation of the TC VI and WG 3 officers, the organising committee (9 Croatian members and 4 international members) chaired by Prof. Dr.sc. Željko Bačić (director of State Geodetic Administration) and Zvonko Biljecki (president of Croatian Section of PRS), and the international scientific committee were established. The first announcement and call for papers was sent on 6 June, 2002, promoting the workshop with the logo 'Geoinformation for Practice' and announcing seven specific topics of the program:

- Theme I: Establishment and organising of geo-information systems in countries in transition
- Theme II: New aspects in photogrammetric data collecting and processing
- Theme III: Integration of GPS technology into geoinformation systems
- Theme IV: Visualisation in geo-information systems
- Theme V: International projects for efficient technology transfer and education of new profiles in geoinformatics
- Theme VI: Customer oriented geoinformation systems
- Theme VII: Spatial data and quality control

Collected information was available also on the web site of the meeting, including invitation, links and sponsors, program, accommodation, registration, topics, general information, about Zagreb and Croatia, paper submission, parallel program, exhibition, business presentations, social events, organising committee and contact addresses. This was followed by the second announcement (15 February 2003, preliminary program, meeting venue) and the third announcement (1 October 2003, final program).

Fifty papers that were sent till the deadline were reviewed by the members of scientific committee, each being responsible for one theme (Prof. Dr. sc. Pavao Štefanović, Prof. Dr. sc. Theodor Fiedler, Prof. Dr. sc. Florijan Vodopivec, Prof. Dr. sc. Miljenko Lapaine, Prof. Dr. sc. Josef Jachimski, O. Univ. Prof. Dipl.-Ing. Dr. Techn. Karl Kraus,

Prof. Dr.-Ing. Mult. Gottfried Konecny). The authors corrected their papers in accordance to the suggestions and remarks of the reviewers and proceedings were prepared and printed a few days before the workshop started, considering ISPRS Archives guidelines. Then, everything was just prepared for the beginning of the event.

Hotel Opera was selected for the meeting venue, offering excellent facilities and located just in the heart of the city. The main events were held in the Crystal Ballroom, started with the opening ceremony. Mr. Zvonko Biljecki moderated the ceremony. After his introductory words, Ms. Ingrid Antićević-Marinović, the Minister of Justice in Croatia, welcomed the audience. It was great honour for the organisers and participants that the president of ISPRS, Prof. John Trinder was present the first day of the workshop, giving his speech in the opening ceremony, exposing the mission and role of the ISPRS and TC VI. On behalf of the president of TC VI, Dr. Tania Maria Sausen, who was unfortunately not able to come to the meeting, Dr. Mojca Kosmatin Fras read her letter to participants and added



Opening ceremony, participants.

some information regarding WG 3 - its Terms of Reference, accomplished activities and plans for the future. Mr. Željko Bačić underlined the importance of the event for Croatia and the region. This was the first time that an ISPRS event was organised in Croatia. After a nice musical performance, the two key-note speakers gave their contributions: Prof. John Trinder about ISPRS and its recently established Foundation and Prof. Karl Kraus with lecture on airborne laserscanning technology and its use in evaluating and monitoring floods, as an example of technology transfer. After a coffee break, the program started with first technical session and opening of the exhibition. In the evening, a cocktail took place in Mimara museum, proceeded with special invitation to the mayors residence where good wine and tasteful dishes were offered.

The next two days were full in program. Each technical session was chaired by one of the scientific committee

member. The authors presented its papers, each having approx. 15 minutes of time. Presentations were of very good quality, prepared with much care, and for many young authors this was the first time to take floor in an international event. In addition to this, four parallel activities took place:

- IV. donor's co-ordination meeting for cadastre and property registration:
Representatives from donor countries, international institutions, Ministry of Justice, State Geodetic Administration and other Croatian institutions together with experts involved in joint projects on IV. regular co-ordination meeting exchanged information on achievements in transition and modernisation of Croatian Cadastre and Land Registration System.
- A round table on land administration in the region:
Participants from Slovenia, Bosnia and Herzegovina, Serbia and Montenegro, Macedonia, Kosovo, Moldova, Russia, Sweden, Norway, United Kingdom, The Netherlands, Germany, Hungary, United States of America, Croatia as well as from the World Bank took part.
- Croatian Geodetic Society anniversary:
Celebrating 80th year of editing Geodetic Journal, 50th year of Union of Croatian Geodesist Societies founding, 30th year holding of the first meeting of Croatian Geo-



At the exhibition.

desist, 10th year of Croatian Geodetic Society found, 10th year of founding of majority county Geodetic Societies. Croatian Geodetic Society who is an umbrella national geodetic organisation, held a ceremony of occasional presentations and speeches, giving appropriate recognition to deserving members of the society.

- Two seminars on real property registration and cadastre project:

Representatives of the project Real Property Registration and Cadastre that started in the end of 2002 in

Republic of Croatia, presented past activities and informed interested participants about the further activities.

In the evening of the second day the participants were invited to the gala dinner in hotel Sheraton with music, dancing floor, in a relaxed and friendly atmosphere. The third day in the morning, a city tour was organised. After finishing with sessions and other program in the late



Gala dinner in Sheraton hotel.

afternoon, the workshop was closed with short speeches of Mr. Biljecki, Mrs. Kosmatin Fras and Mr. Bačić, who all expressed satisfaction of the workshop. The high quality of the organisation was also due to fifteen sponsors who contributed with considerable financial support. Unfortunately, the planned all-day excursion in the National park -Plitvice Croatia on Saturday had to be postponed because most of the participants had to return home.

To my opinion, this event significantly contributed to promotion of ISPRS, TC VI and WG 3 in Central and East-Southern region of Europe. The participants could fully use the opportunity to exchange experience, discuss the recent problems and find new contacts. The host demonstrated the value of team work, devotion and enthusiasm, involving also young people and students in the organisation.

The WG 3 should now concentrate to its participation to the Congress in Istanbul. We wish that the WG 3: International Co-operation and Technology Transfer will continue and develop its work also after the Congress in Istanbul.

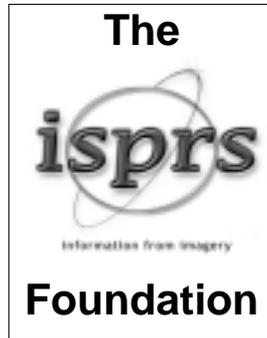
Please, find more details on the workshop on the web site <http://www.comm6wg3-isprs-meeting2003.com.hr/>.



President Launches ISPRS Foundation

By John Trinder, President ISPRS Council 2000-2004

ISPRS President of ISPRS, John Trinder, launched the ISPRS Foundation on 15 October 2003 at the joint meeting of ISPRS WG VI/3 on International Co-operation and Technology Transfer, and Geoinformation for Practice, organised by the State Geodetic Administration and the Croatia Section of Photogrammetry and Remote Sensing, in Zagreb Croatia. The development of the Foundation has taken many hundreds of hours of work, particularly by First Vice President Lawrence Fritz, to develop the documentation to satisfy the legal issues, and the financial and administrative procedures. It has involved in the first instance, the registration of ISPRS in Maryland USA as a not for profit corporation, which was achieved in April 2002, and then the development of the Foundation Bylaws, Articles of Incorporation and the operating procedures. The linking of the registration of ISPRS and the Foundation was a requirement of the legal system in USA. An explanation of the reasons for registering ISPRS in USA has been provided previously to Members by letter in July 2002, and in the Annual Report in ISPRS Highlights in March 2003. The Foundation was registered in Maryland USA in August 2003 as a not for profit corporation.



Therefore the ISPRS Foundation is an independently registered entity in USA that has been established solely for providing financial assistance to advance the benevolent purposes of ISPRS. It is designed to foster linked relationships with other foundations and trusts established in the ISPRS Member countries and regions, and will enable international sharing and administration for the common good of the sciences and disciplines represented by ISPRS.

Purpose of Foundation

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 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.

The Foundation will support ISPRS objectives in the photogrammetry, remote sensing and spatial information sciences by provided funds for:

- Awards
- Travel Grants
- Research Initiatives
- Scholarships & Fellowships
- Internships & Exchange Programs
- Distance Learning
- Awareness Education
- Tools & Literature
- International Workshops
- Standards Projects
- Preservation & Archiving

The Foundation programs therefore will:

- benefit the international community by enabling improved education, training and tools to be shared by those less privileged, especially those in developing countries and regions
- promote and facilitate international co-operation and collaboration
- enable and support research and development initiatives for advancing the capabilities and applications of the sciences of ISPRS

Management of the Foundation

The Foundation will be independently managed by a Board of Trustees who will be appointed by the ISPRS Council and ratified by the ISPRS General Assembly. The Board will have at least five and no more than 11 members who reflect the international character and diversity of the Society and its membership. Two Trustees may be members of ISPRS Council. Trustees will not receive any salary or other compensation for their services. Non-Council Board will be appointed on a rolling basis.

The trustees will be responsible for:

- Wise investment, management, and approval of disbursement of Foundation funds
- Determination of the annual sum available for distribution of grants, depending on the level of donations
- Examination of accounts annually in accordance with generally accepted accounting principles and filing of forms required for the Foundation to maintain its non-profit, tax-exempt status
- Consideration of priorities for charitable goals identified annually by Council
- Approval of the kinds and classes of securities and accounts in which the funds of the Foundation shall be invested

- Call for the appointment of special committee when appropriate to assist in the allocation of funds

Publicity of the ISPRS Foundation

Publicity of the Foundation will be pursued by the following:

- A Press Release has already been issued
- Preparation of a special brochure as distributed in the December issue of ISPRS Highlights
- Development of a special Web Page attached to the ISPRS Home page at www.isprs.org/foundation/
- Development of a Foundation logo as displayed in this article

- Future personal contacts with potential donors by ISPRS officers

Donations

Donations to The ISPRS Foundation may qualify for charitable tax deduction or tax relief. Money should be made payable to The ISPRS Foundation and mailed to: The ISPRS Foundation, P.O. Box 6234 Silver Spring, MD 20916 U.S.A. Fax: +1-301-460-0021 www.isprs.org/foundation/ / or e-mail to foundation@isprs.org.



Report on ISPRS IC WG II/IV and ICA WG on IU&V

Joint ICA/ISPRS WS on Incremental Updating and Versioning of Spatial Data Bases

By Ammatzia Peled, E-mail: peled@rjb-3d.com and Antony Cooper

The 4th Joint Workshop on the Incremental Updating and Versioning of Spatial Data Bases was held at the Durban Manor, Durban, South Africa, on Friday 8 and Saturday 9 August 2003. This workshop was sponsored by the ISPRS IC WG II/IV on Systems for Automated Geo-spatial Data Production and Updating from Imagery, the International Cartographic Association's (ICA) Working Group on Incremental Updating and Versioning and the Eurogeographics Research and Development Forum. Twenty-two delegates from six countries participated, with a strong participation by South Africans.

The workshop consisted of presentations on the theory of incremental updating and versioning, together with presentations on practical experiences and problems, focusing especially on data structures and models, and mechanisms for transferring updates. In the second part of the workshop, we addressed the concepts of, and issues related to, incremental updating and versioning, which had been identified in our previous workshops in Beijing (2001) and Frankfurt (2002). In breakout sessions we developed further a few selected key concepts, including:

- Legacy data sets
- Language and standards for incremental updating and versioning
- Standardised data models

During the lively discussions, several new issues were identified, such as:

- Copyright and other intellectual property ownership issues
- The provenance of the provider of the update

- Real time updates, such as used in advanced navigation systems

The work on Incremental Updating and Versioning was also presented during a special reporting session on Tuesday 12 August 2003, as part of the 21st International Cartographic Conference held at the International Convention Centre, Durban, South Africa. This meeting attracted 16 participants from 11 countries, including several interested in continuing to participate in the research and development activities related to incremental updating and versioning.

Two further Joint Workshops on the Incremental Updating and Versioning of Spatial Data Bases have already been scheduled: 12-14 July 2004 in Istanbul, Turkey, prior to the XX ISPRS Congress and General Assembly, and 8-10 July 2005 in A Coruña, Spain, prior to the 22nd ICA Congress. We also plan to convene another meeting in January or February 2004, for additional case presentations, discussions and exchanging ideas, in either Paris, France, or Amsterdam, The Netherlands.

Our first book, proposed during the 20th ICC in Beijing, is currently in preparation and aims to reflect the current status of the practice and theory of incremental updating and versioning. We intend publishing a second book on the concepts of incremental updating and versioning and best practices.

Details of the ICA Working Group, the workshops and our progress may be found on our Web-site at: <http://geo.haifa.ac.il/~icaupdt>



Report on PIA '03 – ISPRS Conference on Photogrammetric Image Analysis

In Munich, Germany, 17-19 September 2003

By Amnon Krupnik, Co-Chair, WG III/2, E-mail: amnonk@softhome.net

The ISPRS Conference on Photogrammetric Image Analysis was held at the Technical University of Munich on September 17-19, 2003. The conference was a joint effort of ICWG II/IV, WGs III/4, III/5 and III/6. The organising committee included Heinrich Ebner, Albert Baumgartner, Konrad Eder (Technical University of Munich), Christian Heipke, Kian Pakzad (University of Hanover), Helmut Mayer, Jürgen Peipe (Bundeswehr University, Munich), Olaf Hellwich (Technical University of Berlin), Carsten Steger and Christian Wiedemann (MVTec Software GmbH, Munich). The conference was a follow up to the successful conference held in Munich four years ago. Papers were selected by a double blind review (of three reviewers) of full-length manuscripts, ensuring high professional level of presentations.

The conference was preceded by a one day tutorial, entitled "Statistical Methods in Projective Geometry for Image Analysis." The tutorial was given by Wolfgang Förstner, and emphasised the possibilities of using projective geometry and homogeneous coordinates, which are widely used within the computer vision community, in photogrammetry.

The opening session started with a welcome address by Ernst Rank, the first vice president of the university, and by ISPRS president, John Trinder. Later, Franz Leberl, president of ISPRS Commission III, delivered a keynote speech entitled "Photogrammetric Image Analysis – Quo Vadis?" In this talk, Prof. Leberl shared his views about the current state of photogrammetry. His conclusions were that (i) Photogrammetric technology is an application of image analysis; (ii) Computer processing of visual information is very hard, and therefore progress in photogrammetry hard as well; (iii) There is a paradigm shift – a move towards a near real time processing of almost unlimited number of digital images of a scene; and (iv) Photogrammetry is not only applied technology, but has many facets; these are subject to turbulent changes, but are specific and predictable.

The technical program contained two invited and twenty five contributed papers. The interdisciplinary nature of the conference was well noticed in the range of subjects, and by the research interests of the presenters. The papers presented a combination of "traditional" photogrammetry, image analysis and computer vision technology and applications.

The papers were organised in eight technical sessions, devoted to the following subjects:

- Surface reconstruction and 3D feature extraction
- Building extraction
- Image sequences

- Road extraction
- Roads, cars and navigation
- Remote sensing, laser, and vegetation
- Close range and industrial vision
- Object representation

The papers were published in The International Archives of Photogrammetry and Remote Sensing, Vol. XXXIV, Part 3/W8. A CD of the proceedings is available as well.

The participants of the conference have enjoyed the famous hospitality of the people of Munich, with the atmosphere of the coming Oktoberfest well noticed. There were two social events. The first day was concluded with an ice breaking reception at the Technical Univer-



Prof. Leberl's address at the opening session.

sity of Munich. The reception presented an excellent opportunity for a free chat among the more than 70 participants. A conference dinner was held in the second evening at the Munich City Hall. It was preceded by a second, rather interesting, key note talk by Armin Grün, held in the city council room. The talk discussed the attempts to use close range photogrammetry for reconstructing the Great Buddha of Bamiyan, a 53 meter high statue that was destroyed by the Taliban regime in 2001. Prof. Grün's descriptions about the trip to Afghanistan were as fascinating as the professional matter itself.

The conference marked a special event. Professor Heinrich Ebner has retired his position as the head of The Chair for Photogrammetry at the Technical University of Munich, after many years of outstanding scientific achievements. In the name of the participants of PIA '03, and many other members of the Photogrammetric community, I would like to take this opportunity, and wish Professor Ebner good luck in his new way.



75 Years Anniversary of the Swiss Society for Photogrammetry, Image Analysis and Remote Sensing (SGPBF)

By E. Baltasvias, Zurich, 11 November 2003, E-mail: manos@geod.baug.ethz.ch

On September 22nd 2003, the 75 years of SGPBF were celebrated at ETH Zurich, just before the 6th Optical 3D Measurement Techniques Conference. The Swiss Society for Photogrammetry was founded on September 22nd 1928 at ETH Zurich by 58 single and 12 sustaining members, and became immediately a member of the ISP. Since then, it has offered a lot to its members and has contributed significantly to the development of education and training, research and development, hardware and software products, international co-operation and activities within ISPRS and regional organisations like OEEPE and EARSeL. The Society was responsible for the successful organisation of two ISP Congresses (1930 in Zurich and 1968 in Lausanne), its member H. Haerry served as ISP President (1964-1968), while several other members (F. Baeschlin, H. Haerry, W. Bachmann, E. Huber, A. Gruen) served in the ISPRS Council at various positions during the periods 1926-1934, 1948-1952, 1960-1972 and 1992-1996. Switzerland was also responsible for ISPRS Commission V in the period 1988-1992, the chair of the ISPRS Financial Commission (1996-2000), the Chair of the International Scientific Advisory Commission (2000-2004), Associate Editor and Editor-in-Chief positions for the ISPRS Journal of Photogrammetry and Remote Sensing

(1993 to date) and the ISPRS Webmaster position (1994 to date). SGPBF members were active in various other ISPRS or ISPRS-related activities, as WG chairpersons, organisers of scientific events, tutorials etc. The two major academic institutions, ETH Zurich and EPF Lausanne, as well as other ones, like the University of Zurich, have contributed through their education programmes, especially



Prof. S. Murai, President of the Japanese Society for Photogrammetry and Remote Sensing and honorary member of ISPRS, gives a present to SGPBF President Prof. A. Gruen.



Prof. G. Danuser, Keynote Speaker of the Optical 3D Measurement Techniques Conference.

at postgraduate level, and their research activities to the advancement of our disciplines, the education of foreign students and the research co-operation at international, regional and bilateral level. The Swiss School for Photogrammetric Operators in St. Gallen (1966-1986) has contributed to the training of operators of analogue and analytical instruments. The contribution of Switzerland in the manufacturing of geodetic and photogrammetric instrumentation is unparalleled world-wide. Names like Wild, Kern, Leica are well known within our profession, and the developments in this field are treated in more detail in an article by Hughes et al. in this issue. Other smaller companies were and are also internationally active (like Swissphoto AG), while during the last period small innovative, internationally-active firms have appeared, especially in Remote Sensing and GIS. All these years, SGPBF has followed and adapted to the new developments, as its name also shows, and with currently 213 members continues to fulfil its original aim as a technical-scientific society, serving its members.



Presentation of the SGPBF honorary membership to Ch. Eidenbenz, A. Flotron and O. Koelbl, all previous SGPBF Presidents (from left to right) by SGPBF President A. Gruen (third from left).

Thus, it was not very surprising but still a great honour that several important representatives have participated to the celebration of the 75 years of SGPBF. ISPRS President J. Trinder, representatives of the German (K.U. Komp), Austrian (G. Muggenhuber), Japanese (Prof. S. Murai), Chinese (Prof. Deren Li) and Turkish (Prof. O. Altan) Sister Societies, the Director of the Swiss Federal Office of Topography and the Swiss Society for Geomatic and Land Management. Before the greeting words of the above colleagues, the Keynote Address for the Optical 3D Measurement Techniques was given. The talk "Photogrammetry in Functional Genomics" by Prof. G. Danuser, Scripps Research Institute, La Jolla CA, USA, an ex student of ETHZ, gave an impressive account of the successful use of geodetic and photogrammetric methods in totally different and very modern scientific disciplines. The celebration continued with the presentation of the honorary membership of the SGPBF to Ch. Eidenbenz, A. Flotron and O. Koelbl, and talks by A. Chapuis and P. Fricker (Leica) on the "Development of Photogrammetry in Switzerland – a (continuous) Success Story" and Ch. Eidenbenz (Federal Office of Topography) on "75 Years of SGPBF – a Retrospective".

A highlight of the event was the panel discussion on the future of Geomatic "Geomatic – Quo Vadis" with representatives from research, development and professional practice. The panel was moderated by the SGPBF President Prof. A. Gruen with participants O. Koelbl (Prof. EPF Lausanne), S. Nebiker (Prof. University of Applied Sciences both Basel), E. Gubler (Director, Federal Office of Topography), J. Kaufmann (President, Swiss Society for Geo-

matic and Land Management), H. Hess (CEO, Leica Geosystems), K.U. Komp (President, DGPF), G. Muggenhuber (Austrian Society for Geoinformation), T. Gruenfelder (President, Swissphoto AG). A very lively discussion, involving also the audience, unfolded on pre-selected topics and showed that in spite of rapid developments,



J. Trinder, ISPRS President brings the wishes of ISPRS to SGPBF.



A snapshot of the panel discussion. From left to right: S. Nebiker, E. Gubler, J. Kaufmann, H. Hess, K.U. Komp, G. Muggenhuber.

changes in the education and the profession, overlap and competition with other disciplines, difficult economic situation and other difficulties, our profession, based on traditional strengths of our education and the continuous technological developments, cannot only survive but also flourish in new application fields.

The celebration concluded with a delightful dinner and jazz/blues music in the Castle Laufen at the Rhine Waterfalls in Schaffhausen, where the members of SGBPF and their guests had once more the opportunity for friendly discussions and strengthening of their relations in a relaxed atmosphere.

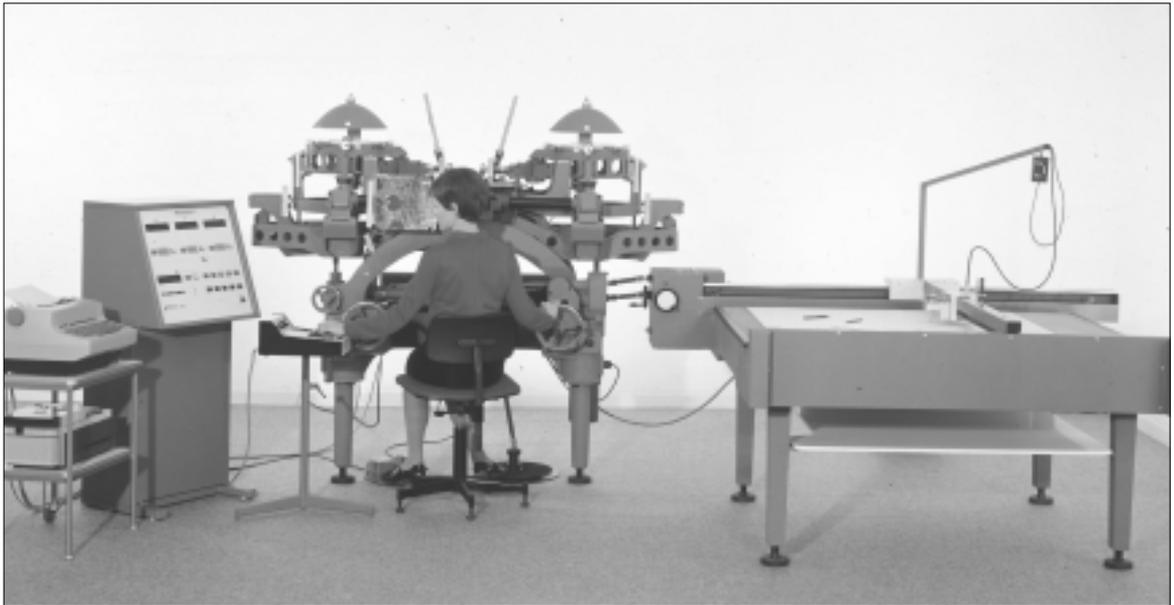
The Development of Photogrammetry in Switzerland

By D. Hughes, P. Fricker, A. Chapuis, E. Traversari, P. Schreiber, F. Schapira, Leica Geosystems GIS & Mapping GmbH, Heinrich-Wild-Strasse, CH-9435 Heerbrugg, Switzerland*

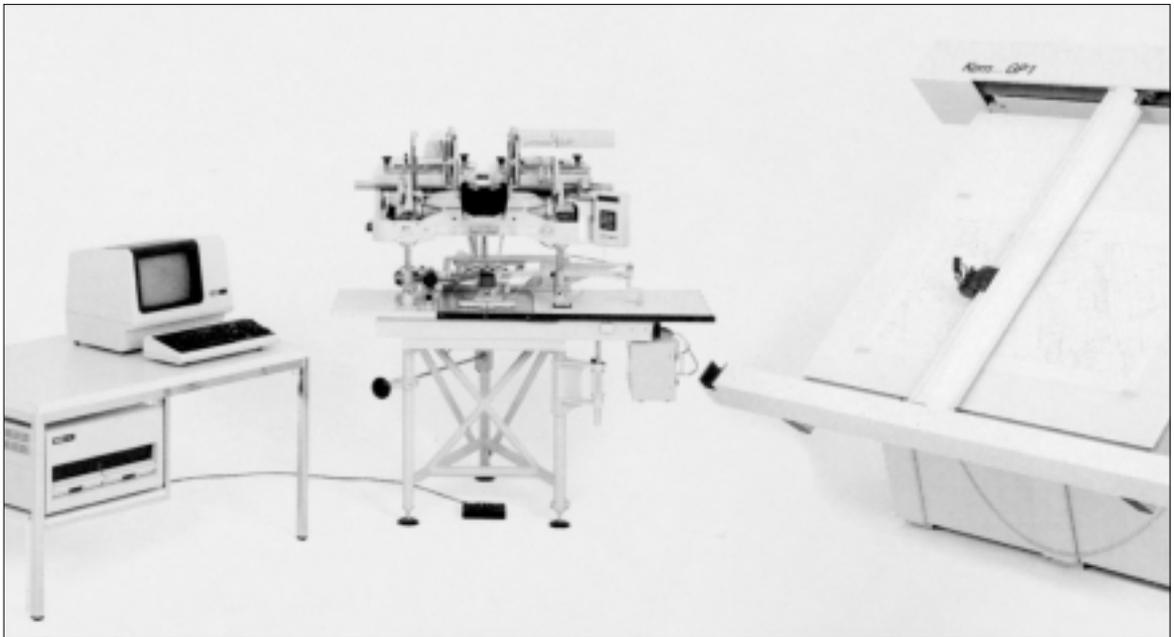
In order to follow the first steps of photogrammetry in Switzerland, the book on the history of Photogrammetry in Switzerland "Photogrammetrie in der Schweiz – Geschichte – Entwicklung" [1] is the best starting point. The history of the Swiss Society for Photogrammetry, Image Analysis and Remote Sensing (founded on the 22nd of Sept. 1928) and the two manufacturing companies Kern Aarau and Wild Heerbrugg (both now consolidated into Leica Geosystems AG) are inseparably connected with each other. The following report sets out to explain how technological development, market requirements and infrastructure worked together to favour a small country such as Switzerland establish such a dominant influence on this technology.

Summary

This report discusses the three important stages of analogue, analytical and digital photogrammetry development in relation to terrestrial and airborne applications. The products of the companies Kern Aarau and Wild Heerbrugg are listed in order of their date of market introduction together with important system characteristics [2]. As of 1990 both companies were integrated into the Leica company. Lack of space in this report forces the authors to limit the product illustrations and descriptions to those highlights of major importance and technological breakthrough.



A8, 1952.



PG2-GPI, 1960.

The Analogue Period

This period is characterised by the extraordinary longevity of the instruments. The development went from 1922 to 1990, when the last analogue instrument AGI left the factory. Many of these instruments were upgraded with a digital output and software for PCs so hundreds are still in use to this day.

Legend:

A = Autograph of first order (Wild)
B = Autograph of second order (Wild)
PG = Photogrammetric Instrument (Kern)

PUG = Point marking & transfer device (Wild)
PMG = Point marking device (Kern)

Product	Phase-in	Phase-out	Unit Sales	Characteristics
A1	1922		3 prototypes	
A2	1926	1941	28	for C2 and P3 photo plates
A4	1933	1963	33	terrestrial photogrammetry with C12
Ordovás-Kern	1930		1 prototype	
A5	1937	1953	90	1st universal instrument of Wild, workhorse instrument during WWII years
A6	1940	1953	115	less features than the A5
PG0	1946		1 prototype	advanced but too expensive
A7	1952	1972	412	2nd universal instrument of Wild
A8	1952	1980	1035	"the" workhorse over nearly three decades
PUG3	1959	1973	310	point marking and transfer device for aerotriangulation
PG1	1960		3 prototypes	
PG2, PG2I	1960	1985	>700	most important instrument of Kern in the accuracy class of the A8
A9	1959	1974	71	3rd universal instrument of Wild with half format image carriers
B8	1961	1972	721	together with the B8S, the most-built instrument of 2nd order
A40	1964	1982	89	terrestrial photogrammetry with C120 and C40
PUG4	1968	1985	449	improved PUG3 with zoom optics
A10	1969	1984	308	4th universal instrument
B9	1969	1971	31	complementary to the A9 with half format image carriers
B8S	1971	1982	808	most important 2nd order instrument of Wild
PG3	1971	1981	30	universal instrument of Kern
PMG2	1977	1994	>60	point marking and transfer device with comparator characteristics
AM/AMH	1977	1983	173	family of universal instruments of Wild based on air cushions and in the accuracy class of the A8
AMU	1979	1981	21	5th universal instrument of Wild – fully electronic
AG1	1981	1990	230	simplified, economical universal instrument in the A8 accuracy class
PUG5	1984	1990	44	ultrasonic point marking and transfer device with the accuracy of an analytical comparator

Highlights in the Development of the Analogue Photogrammetric Instruments

It would have been inconceivable to think of photogrammetry instrument production in Switzerland without recognition of the following related factors:

- The development of photography in France and Germany in the 19th century
- The development of the basic theory of photogrammetry in Germany in the 19th and 20th century
- The need for military maps in a topographically difficult country such as Switzerland, as was required during the period between WWI and WWII
- Industries such as Zeiss in Jena and Kern and their supply of a basic stock of well trained precision mechanics and technical designers into the market
- Business and capital commitment of a few industrialists

Without doubt, the need for military maps for reconnaissance was the driving force which guaranteed the market absorption of photogrammetry instruments in Switzerland and provided a base for the further development of instruments for civilian applications.

Today, the military customers of photogrammetric systems contribute a substantial part to the company turnover and are a driver for sophisticated development however the civilian users, after almost a century of instrument availability, have become the principal customers of photogrammetric systems.

The Analytical Period

Legend:

AC = Analytical Instrument of highest accuracy (Wild)

BC = Analytical Instruments simplified (Wild)

DSR = Analytical Instruments (Kern)

OR = Ortho-Rectifier (Wild)

SD = Analytical Instruments (Leica)

Product	Phase-in	Phase-out	Unit Sales	Characteristics
B8 Stereomat	1964		1 prototype	automated correlation developed with Raytheon of USA
A2000	1968		1 prototype	fully automatic orthophoto instrument
OR1	1975	1991	88	computer controlled slit ortho-projector
AC1	1980	1987	45	instrument based on Abbé principle
DSR1	1980	1984	30	compact system, controlled by several microprocessors
BC1	1982	1984	82	simplified version of the AC1 (without Abbé principle)
DSR11	1984	1989	100	simplified version of the DSR1
BC2	1984	1989	184	PC computer platform
S9-AP	1987	1990	30	analytical plotter for System 9 for online recording into a database, as of 1989 from Prime Wild GIS AG
DSR12	1988	1991	130	PDP computer platform
DSR14				PC computer platform
DSR15				VAX computer platform
BC3	1989	1990	65	Unix PC computer platform
SD2000	1991		>400	PC computer platform and image injection
SD3000	1992		>100	PC computer platform and image injection as well as optical base change



SD3000, 1992.

Highlights in the Development of the Analytical Photogrammetric Instruments

Apart from the prototypes B8 Stereomat and the A2000 the companies Wild Heerbrugg and Kern Aarau added analytical systems to their production relatively late. In the late 1950's, U.Helava invented the analytical plotter by replacing space rods and linear scales with collinearity equations and computers and soon after led the development of the first analytical plotter AP-1 in 1961. The pinnacle of accuracy with analytical systems was achieved, without doubt by the AC1 but the high cost of this system forced it off the market. The SD2000 from Leica built on the collective experience of Wild and Kern, has been the culmination in the development of analytical photogrammetry technology. The economic manufacturing methods and reliability of this system has led to its continuous series production to this day and ousted competitive systems from the market.

The Period of Interactive Graphic Systems

Product	Phase-in	Phase-out	Unit Sales	Characteristics
GeoMap	1981	1984	117	CAD for processing geodetic data and measurements
Informap	1979	1983	>20	product of Synercom, USA
Wildmap	1980	1983	>20	photogrammetry addition to Informap
System 9 -E/D	1987	1990	>40	GIS workstation, from 1989 Prime Wild GIS AG
Infocam	1985	2000	>70	LIS for cadastral applications

Highlights in the Development of Interactive Graphic Systems

Interactive graphic systems were required from the beginning of the 1980s as complementary systems to the analytical photogrammetric plotters and the electronic tachymeter used in field surveying. The entrance into this new market was made through a distribution agreement with the American company Synercom in 1979. Parallel to this partnership, GeoMap was developed for the geodesy market. Supported by experience gained during the mid 1980s, System 9 based on a comprehensive system architecture of SUN computers was then developed in Heerbrugg and Toronto. The low sales figures of this system as seen from today's stand point, were due to a too early market entry and the reason why this system was sold in 1989 to the company Prime Wild GIS AG, and later all 100% to Prime Computer. A large part of the development team at that time is responsible today for the development of the GIS system MapInfo. In Aarau, Infocam was developed parallel to the Heerbrugg developments and positioned between GeoMap and System 9. Unfortunately, none of these systems created a genuine break-through into the market.

The Digital Period

Legend:

DSP = Digital Stereo Plotter (Kern)

DSW = Digital Scanner Workstation (Helava Assoc. Inc., LH Systems and Leica Geosystems)

DPW = Digital Photogrammetric Workstation (Helava Assoc. Inc., Leica Geosystems, BAE Systems)

Product	Phase-in	Phase-out	Unit Sales	Characteristics
DSP1	1988		1 prototype	first digital workstation from Kern
DSW100	1989	1994	30	precision Film Scanner film HAI-100
DPW	1992	2003	>1000	Leica was exclusive distributor for the „Digital Photogrammetric Workstation" by Helava Assoc. Inc.
DSW200	1994	1997	60	first Film Scanner from LH Systems
DSW300	1997	1999	60	first Film Scanner with automatic roll film device
DSW500	1999	2002	70	high-speed Film scanner from Leica
Orthobase	1999		>2200	part of ERDAS Imagine and, since 2001, belonging to Leica Geosystems
DSW600	2002		>50	improved high speed scanner from Leica
LPS	Sept. 2003		40 Beta-versions	Leica Photogrammetric Suite



DSP1, 1988.



DSW600, 2002.

Highlights in the Development of the Digital Photogrammetric Workstations

The development of digital photogrammetry was marked in 1992 by the signing of an exclusive marketing agreement with Helava Associates Inc. in San Diego. The establishment of the joint venture company LH Systems in 1997 crowned the relations with this company. The continuous improvements on SO CET SET™ led to this software package establishing itself as the most efficient and productive in the high accuracy market. The ownership rights to SO CET SET™ however remained with BAE Systems, when Leica Geosystems acquired ERDAS Inc. in 2001. Because the rights to the most widely sold remote sensing software, ERDAS Imagine, changed to Leica Geosystems, the competitive situation with SO CET SET™ led to the decision by Leica Geosystems to develop its own equivalent digital photogrammetric package.

The Terrestrial Cameras

Legend:

C = Stereocamera

P = Single terrestrial camera

Product	Phase-in	Phase-out	Unit Sales	Characteristics
P3	1926	1946	unknown	1st photo theodolite, 10 x 15cm
C12	1933	1963	150	terrestrial stereo camera
P30	1946	1970	>280	further development of the P3
C40	1968	1983	35	stereometric camera
C120	1968	1984	142	successor of the C12
P32	1972	1987	312	complementary camera for a theodolite
P31	1974	1987	122	universal terrestrial camera

Highlights in the Development of Terrestrial Photographic Cameras

Without doubt the first terrestrial cameras made stereo-photogrammetry possible in mountainous terrain before the airplane offered itself as a useful camera platform. The use of photogrammetry in accident applications with a photo theodolite was derived from the use of the fixed-base stereo camera C12 and C120. Although the production of the P31 used with a theodolite and the P32 ceased in 1987, the stereo camera is still manufactured by Pentax under license and this robust and durable device continues to be used in all weather situations as a "police stereometer" in Japan and Switzerland.

The Aerial Cameras

Legend:

C = Photogrammetric Camera, manual change of photo-plates

RC = Automatic Camera, automatic change of photo-plates or film advancement

ADS = Airborne Digital Sensor

Product	Phase-in	Phase-out	Unit Sales	Characteristics
C1	1925			f = 165mm, interchangeable magazines
C2	1927	1944	50	f = 165mm, 10 x 15cm, 13 x 13cm glass plates, hand-held single camera or with a suspension for 2 convergent cameras
C3	1929		1 prototype	f = 165mm
RC3	1937	1941	unknown	f = 210mm, f/4.5, 18 x 18 cm
RC5/RC5a	1944	1956	130	f = 120/210cm, 18 x 18 cm
RC7/RC7a	1949	1972	15	f = 170mm, 14 x 14cm, automatic glass plate camera
RC6	1951	1955	unknown	f = 165mm, 12.8 x 12.8mm
RC8	1956	1972	382	f = 115/152/210mm, 18 x 18cm (glass plates) and 23 x 23cm (film)
RC9	1958	1972	100	f = 88mm, f/5.6, half format
RC10	1969	1984	380	f = 88/153/210/303mm
RC10a	1982	1988	64	same as the RC10 but controlled by microprocessor
RC20	1987	1993	138	same as the RC10A, but with FMC
RC30	1992		>400	same as the RC20 but with gyro-stabilized suspension
ADS40	2001		>15	1st commercial airborne digital sensor with 10 line CCDs, f = 62.7 mm



C2, 1927.



RC30, 1992.



ADS40, 2001.

Highlights in the Development of the Aerial Cameras and Airborne Digital Sensors

The development of the aerial camera of Wild and later Leica, has a remarkable history. Because of the small home market in Switzerland, Wild and Leica were continuously adapting their systems to the needs and developments overseas, especially America and Japan, in order to survive. The large steps came after WWII with the move from 18cm glass plates to stable-base film and shortly thereafter, to the 23cm wide film. The development of the super wide angle objectives and, somewhat later, the compensation of forward motion and the development of the gyro-stabilised suspension, crowned 80 years of development of the analogue film cameras. The future signs of the digital era were recognised in time and so Leica were able, in 2001, to manufacture and deliver the first commercial digital airborne sensor.

Conclusion

This compilation of the achievements in Switzerland, regarding conception, design and manufacturing of photogrammetric instruments and systems, makes one realise the creativity and market knowledge which were necessary, in order to successfully supply the world market for over 80 years with these products. This article can hopefully be a starting base for the continuation of the history of photogrammetry in Switzerland, which so far has been recorded by [1] only up to 1980.

Literature

- [1] P. Fülischer (Ed.), 1996. Photogrammetrie in der Schweiz - Geschichte – Entwicklung. Published by the Swiss Society for Photogrammetry, Image Analysis and Remote Sensing. Buch 7872, Dümmler, Bonn.
- [2] M.G. Albota, 1976. Short Chronological History of Photogrammetry. XIII ISP Congress, Helsinki.
 Dates in this publication do not always coincide with Leica's records due to difference of product announcement date and delivery date.

This report is also available in German, French, Italian, Spanish and Russian.

* Corresponding author; Tel.: +41-71-727 3177; Fax: +41-71-727 4691, E-mail: peter.fricker@gis.leica-geosystems.com

ISPRS Highlights will now be available from GITC by at



US\$ 28 per year

(for individuals who belong to an ISPRS member organisation)

US\$ 35 per year

(for non-members)

Please contact GITC's subscription department for more details or e-mail:
martina.sonsma@gitc.nl

To receive ISPRS Highlights you only have to send us the complete address (*personal name, organisation name, address, city + postcode, country, phone, fax, e-mail, date, signature*) together with the (details of) payment. You can pay by credit card (*number, expiry date, signature*) or by mailing to GITC by separate post (*cheque, postal order, international money order, evidence of bankdraft*). The delivery of the magazine will start after receipt of payment