

Annual Report 2005

Introduction

The Annual Report 2005 of the Secretary General of the ISPRS covers both a record of the activities within the year as well as the review of the researches and developments of photogrammetry and remote sensing areas.

ISPRS Council extends its appreciation to all of the ISPRS members who are participated in the activities. Without their efforts and contributions, we would not have a suc-

cessful year as far as the welfare and sustainability of ISPRS is concerned.

Please kindly note that all questions or comments related with the Annual Report are to be sent to the Secretary General of the ISPRS.

Orhan Altan, Secretary General

Report from Council

1. Society Activities

The office of the Secretary General of the Istanbul Technical University, Turkey carried day to day works of the office, communicate with all the members and related organizations and various requests were replied within the year.

The Secretary General, being the Former Congress Director, supervise the preparation of the Volume A of the XXth ISPRS Congress and the volume went to print by the year end. It is been expected to be distributed within the first months of 2006.

The Silver Book had been prepared by June and distributed in July.

The Blue Book had been prepared by the September and distributed in October.

A questionnaire prepared and sent to all OdM, StM, RgM, and AsM in order to renew the database upon receipt of the replies, the database of the ISPRS had been modified and updated accordingly.

We would like to thank Rachel Peled for her efforts and cooperation on this subject.

An "Invitation Booklet" inviting institutions, companies, and organizations enumerating the benefits of becoming ISPRS Sustaining Member has printed and distributed at the meetings during the year. Besides recruitments e-mails have been sent up to 1000 potential members. 5000 copies of New ISPRS pamphlets printed and distributed among the participants of several meetings of our profession.

Approvals were given to the meetings requested by the

WG's as per the calendar and our records Volume no's also were given to all requests for archives whether they were provided as digital and/or hand copy form.

In this year Council has met in Zurich and again, with the TCPs, in Enschede, The Netherlands. There have also been several informal meetings of some members of Council. As always there has been constant e-mail communication.

Other issues discussed by Council have been the budget, (see below for more information), and our priorities for external activities.

Based on the success of the Video prepared by the XXth ISPRS Congress, Council has decided to prepare a similar Video for promoting the works and sciences related with the ISPRS activities. This Video will be distributed in February, 2006.

Council members have continued to represent ISPRS at International fora which includes the United Nations, CEOS and ICSU. ISPRS has joint the GeoUnions Group of ICSU and will be involved in the International Polar Year. ISPRS has also joined the Group on Earth Observation (GEO). The President, Secretary General and Congress Director visited a number of member organizations.

2. Membership

As per the main responsibilities and efforts of the Secretary General, the following members were admitted to the ISPRS:

Associate Member:

1. Chinese-Taipei Geoinformatics Society, Chinese-Taipei

Active Members Total Summary														
Type	Category	1	2	3	4	5	6	7	8	A	B	C	D	E
AsM	10	7	2	1										
OdM	89	31	22	12	8	5	5	2	4					
RgM	12	12												
StM	67									8	7	12	26	14
Total	178													

Sustaining Member:

1. Fac. of Geodesy, Univ. of Architecture, Civil Engineering and Geodesy, Sofia-Bulgaria
2. Prosigconsult- Romania
3. INTA SPACETURK- Turkey
4. Selcuk University Division of Photogrammetry, Turkey
5. ITU Centre for Satellite Communications and Remote Sensing, Turkey
6. METU Department of Geodetic and Geographic Information Technologies, Turkey
7. School of Civil Engineering and Geosciences, University of Newcastle Upon Tyne, UK

The most recent status of the membership is given above.

4. International activities

Introduction

2005 has been a busy year for International Activity. Council has made it a priority during 2004 – 2008 to work with international organisations to develop the scientific programme, to expand the international role of ISPRS and to continue the role of ISPRS in education and technology transfer. The promotion of ISPRS activities in remote sensing is seen as a key aspect of this and Council has sought to build bridges to other organisation in order to make our interests clear. As part of this objective members of Council have attended a number of international meetings including the General Assembly of ICSU and meetings of the United Nations, and have participated in the establishment of the Group on Earth Observations (GEO). These activities are summarized in the report below.

International Council for Science (ICSU)

ICSU is a non-governmental organization founded in 1931 to bring together scientists to work together in international scientific endeavour. It comprises 98 multi-disciplinary National Scientific Members, Associates and Observers (scientific research councils or science academies) and 27 international, single-discipline Scientific Unions to provide a wide spectrum of scientific expertise, enabling members to address major international, interdisciplinary issues which none can handle alone. ISPRS became a full Union Member of ICSU in 2002.

The ICSU General Assembly was held in China in October 2005 and President Ian Dowman, Secretary General Orhan Altan and Congress Director Chen Jun attended the meeting. The main topics of relevance to ISPRS were:

1. The Regional Offices will be developed for the benefit of members.
2. Approval of a the Strategic Plan for 2006-2011, which includes:
 - An ICSU involvement in GEO;
 - An ICSU programme on human health;
 - The International Polar Year in 2007-2008;
 - A new programme on Natural and Human Induced Hazards which will focus on translating research findings into policies which are effective in minimising human and economic costs of hazards and disasters.
3. The ICSU grants programme will be suspended in 2007 because of financial problems created by changes in exchange rates. The programme will be reviewed by the Executive Board.
4. The GeoUnions presented a common front on many issues and stressed the importance of Earth Science and Earth Observation, particularly in the areas of the initiatives on health and disasters.

The strategic plan is particularly important because it gives an opportunity for ISPRS to strengthen Earth Observation activities using the international clout of ICSU. Health and management of disasters are topics of particular interest. We have been working with ICSU to present a common front to the GEO Plenaries. We will also make use of the Regional Office in Africa to promote ISPRS activities.

The ICSU GeoUnions held a meeting in China to discuss issues of common interest. The GeoUnions comprise IUG (Geography), IUGS (Geological Science), IUGG (Geophysics and Geodesy), IUSS (Soil Science), INQUA (Quaternary Science) and ISPRS. Six themes (desertification, cities, ground water, health, hazards and polar) have been set up; ISPRS is leading the polar theme, and will coordinate input into the International Polar Year. The GeoUnions also agreed a unified approach to the International Science Years on 2007.

Group on Earth Observation (GEO)

An ad hoc Group on Earth Observation was formed in

2003 after the First Earth Observation Summit held in Washington DC. The third summit formally set up GEO in February 2005, and ISPRS joined as a Participating Organisation at that time. The objective of GEO is to monitor continuously the state of the Earth, to increase understanding of dynamic Earth processes, to enhance prediction of the Earth system, and to further implement international environmental treaty obligations.

GEO has prepared a 10 year plan to set up a Global Earth Observing System of Systems (GEOSS) which is designed to implement societal benefits from Earth Observation which have been identified. Committees have been established to implement this plan, and a number of tasks identified, ISPRS will nominate people to the committees and involve working groups in the execution of some of the GEO tasks. Already ISPRS has joined with IEEE to organize a workshop on GEOSS preceding the Africa GIS2005 conference in Pretoria, and will continue to organize outreach and capacity building events.

Committee on Earth Observing Satellites (CEOS)

CEOS Plenary

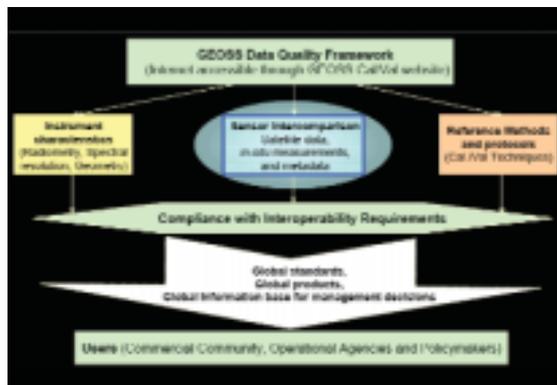
ISPRS is a CEOS Associate and so is represented at the CEOS Plenary. ISPRS is also involved in the three CEOS Working Groups: Information Systems and Services, Cal/Val and Education. The 2005 Plenary was held in London and attended by the President. The meeting was dominated by discussions on how CEOS would interact with GEO, and a working relationship was agreed.

CEOS WGCV

The current structure of the Working Group on Calibration and Validation is shown in the diagram.



Much of the WGCV activity had been related to the GOESS:WGCV sees interoperability as crucial to the success of GEOSS, and believes that CEOS WGCV has a key role to play in establishing this. WGCV proposes to establish Calibration and Validation guidelines, to ensure interoperability of GEOSS member satellite data sources, based on the current space agencies collaboration agreements, common formats and standards; WGCV proposes that all GEOSS partners participate in the establishment of common practices within a GEOSS Data Quality framework as follows:

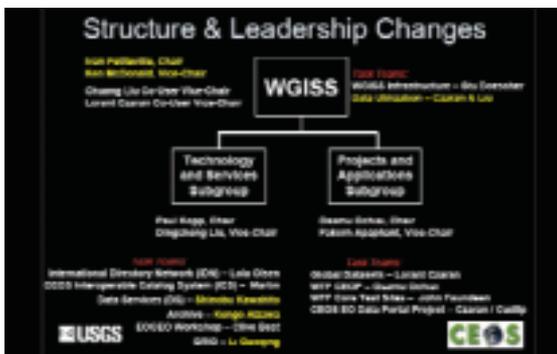


WGCV has prepared a White Paper entitled "Data Quality Guidelines for Satellite Sensor Observations Relevant to GEOSS: Calibration and Validation Issues" which has been crafted to ensure the quality assessment of spaceborne instrument data in the context of a service driven global operational Earth observation remote sensing system.

ISPRS Commission I is the link with WGCV and will be active in this in the future.

CEOS WGISS

The Working Group on Information Systems and Services has, as usual, been very active. The new structure and leadership of the WG is shown in the diagram:



Activities have included an EO Data Portal Project to coordinate global & local dataset access. An Integrated CEOS European Data Server (ICEDS) has been developed as a demonstration client, African user involvement has been explored and SRTM data has been incorporated. The WGISS Test Facility Core Test Sites initiative is ongoing. WGISS has participated in ISPRS meetings during the year.

WGEdu

Sergio Camacho (UNOOSA / WGEdu Chair) presented the WGEdu Report to Plenary, the major issues and conclusions were:

- "Hands-on" capacity building is the best way to learn user needs; there is already an important nucleus of "aware" counterparts that can implement the GEOSS SBAs – but they need support;
- to populate the CEOS Education Portal and advertise its existence;
- the WGEdu, through its member institutions, should organize workshops and training courses, preferably in developing countries;
- CEOS should support pilot projects that introduce the use of EO data to provide or enhance social benefits;
- CEOS should support existing centres and universities in developing countries that are building capacity;
- CEOS should enhance the relationship with the Africa Advisory group and replicate the experience in other regions. The African Advisory Group was created in 2003 and has organised and/or participated in a number of activities related to capacity building in collaboration with CEOS Members & Associates;

ISPRS expects to link with many of these activities during the following year.

Plenary appointed Yolanda Berenguer (UNESCO), the current Co- Chair, be appointed as new WGEdu Chair and that Renee Leduc-Clarke (NOAA) be appointed as Co-chair; it is also proposed that Maurizio Fea (ESA) be renewed as Co-chair;

United Nations

Committee on the Peaceful Uses of Outer Space (COPUOS)

COPUOS is organised by the Office of Outer Space Affairs (OOSA) from the UN Office in Vienna. ISPRS has attended and presented technical reports and statements at the annual Science and Technology meetings of COPUOS in February and the COPUOS Full Annual meetings in June, since 1989. OOSA supported the GEOSS Workshop in Pretoria and will also support The Second International Symposium on Geo-information for Disaster Management to be held in Goa before the Commission IV Symposium. ISPRS also works with the UN Office of Outer Space Affairs Disaster Management International Space Coordination entity (DIMISCO).

CODI

CODI is run by the UN Economic Commission for Africa. The theme of CODI IV which was attended by president Ian Dowman, was Information as an Economic Resource. There are 3 topics: Geoinformation (Geo), ICT and Statistics, which held parallel sessions, and plenary sessions with papers and discussion on all 3 topics. There were useful sessions in the Geo stream on various projects such as Mapping Africa for Africa and AFREF, and on African space programmes.

UN Regional Cartographic Conference for the Americas

President Ian Dowman and Treasurer Stan Morain attended this meeting, held in New York. The meeting gave an opportunity to catch up on cartographic activities in the American continents and to make contact with members and potential members of ISPRS.

JBGIS

The Joint Board of Geo Information Societies comprises ISPRS, IAG, ICA, IMTA, IHO, FIG and the International Steering Committee for Global Mapping. The Board met during the FIG meeting in Cairo and was attended by President Ian Dowman. The main purpose of the Board is to share information about programmes and structures and to co-ordinate activities. During the meeting in Cairo a new structure for the Board was agreed. There would be a chair appointed for 2 years who would act on behalf of the Board after consultation. Holger Magel, President of FIG was elected chair for 2 years and GSDI and OGC were invited to join the Board.

It was decided to set up two ad hoc committees:

- on disaster management to co-ordinate activities of members. First task is to collect information on planned meetings activities etc. Chair Bengt Rystedt.
- to co-ordinate capacity building activities in Africa. First task is to collect information on planned meetings activities etc. Chair Ian Dowman. Members IAG - Ruth Neilan, ISCGM – Fraser Taylor, FIG – Stig Enemark, ICA – Bengt Rystedt.

The Board will meet again at the ISPRS Commission II Symposium in Vienna.

Other relationships

Links are maintained with other organisations such as Open Geospatial Consortium (OGC), Global Spatial Data Infrastructure (GSDI), COSPAR, Digital Globe, International Steering Committee on Global Mapping (ISCGM), International Society of Biomechanics (ISB), IEEE and the North African Center of Remote Sensing (CRTEAN), in order to keep in touch with regional activities and to co-ordinate programmes where appropriate. President Ian Dowman has attended meetings of FIG, GSDI, ISCGM and Digital Globe, and also the Africa GIS2005 Conference. Secretary General Orhan Altan attended the ICA conference in Spain. Members of Council have also attended meetings of Ordinary and Regional Members.

Council will be reviewing ISPRS activities with other organisations and ensuring that we have appropriate representation.

Concluding remarks

It can be seen that ISPRS is well represented in Intergovernmental Organisations such as the UN, ICSU, CEOS and GEO. We also maintain good relationships with fellow



international organisations such as FIG and ICA. Maintaining these relationships is essential if we are to influence developments in photogrammetry, remote sensing and the spatial information sciences, and to ensure that the voice of spatial information science is heard in international fora.

5. Treasurer's Report

2005 has been a very busy year financially as Council advanced our Society's position among international science and application efforts. To ensure ISPRS participation in these efforts, and to properly represent its members, Council have tried to reduce costs by distributing responsibilities within its ranks; and, whenever possible, by sponsoring local ISPRS dignitaries and other experts to represent ISPRS at important events. We might expect this trend will grow in 2006 and beyond. It is important for all members to take an active role in these developments.

In 2005, Council added seven educational sustaining members (StM-E) along with a few larger commercial sustaining members. More than half of all Ordinary Members (58%) paid their subscription fees for the year; but more than 40% did not. Among the other membership categories 75% of all StM members, 85% of Regional Members, and 50% of Associate Members had paid by mid-December 2005. For 2006, our goal is to improve these percentages so our science and technology programs can enhance important world issues requiring collective ISPRS expertise. There has been no increase in Member fees since 1996. However, the costs for conducting Society's business have increased steadily. It is critically important, therefore, for all members to stay current in their subscriptions.

Most noteworthy among the area where our collective energies can be developed and applied is in disaster mitigation, assessment, and management. The devastating impacts of the Indonesian tsunami (Dec. '04), and the destruction of coastal Louisiana from hurricanes Katrina and Rita (Aug-Sept '05) are grim reminders that natural disasters can totally change the lives and welfares of millions of people, rich and poor, in just a few minutes. Even our most advanced scientific understanding of the causes and risks associated with different types of disasters is of little consequence to those in the path of destruction, however, if we cannot develop plausible models and implement workable plans to avoid devastating consequences. As a "society of societies and organizations," ISPRS members have an opportunity to participate in developing image and GIS-based scientific and technical means to: (a) evacuate large areas, (b) assess local and regional damages almost immediately; (c) to direct efficient rescue and

responder services; and reduce threats to public health arising from contaminated water or from other environmental causes. Events in the United States remind us how primitive our technologies are in preparing for, let alone implementing, disaster relief measures. Even more, we are reminded how vast the gap between scientific and cultural preparedness, on the one hand, and government-run responses on the other. We cannot work only with those who develop the science and technology, but with those we hope will adopt our most promising new methods.

ISPRS leadership is aware of our Society's pivotal roles (scientific, technological, social, and economic) in helping to reduce the losses and costs of disasters, and is working through several international bodies to develop and deploy meaningful ways to respond in all disaster-prone regions of the world, including areas that are traditionally underserved and which are therefore most vulnerable. Among the bodies with which your Society are currently engaged are: (a) the United Nations (primarily UNOOSA); (b) the International Council of Scientific Unions (ICSU--specifically the GeoUnions, consisting of ISPRS, IUGG, IUSS, IGU, and IUGS); and, (c) the newly formed international governmental organization called the Group on Earth Observations (GEO--through its "system of systems," GEOSS)

There is room for every ISPRS member to get involved (first) by participating in relevant ISPRS Commission and Working Group activities, and (second) by conveying the aspirations and goals of our professions to local governmental leaders. Our ability to participate as an international society aiming to improve disaster reduction technology rests with you as a member society or organization of ISPRS. Your Ordinary, Associate, Regional, and Sustaining membership fees open doors for your members to work with the Commission Presidents and Working Groups as relevant and crucial experts in these noble causes. They also provide you a line of communication through ISPRS liaison to top-level international bodies and their corresponding disaster reduction science and technology activities. There is much to do, and the journey will be long; but we must all do it. Generations yet to come will consider us wise and prudent to have cared for their welfare.

By now, all members should have received invoices for their 2006 membership fees. A few of you are still in arrears for 2005 and earlier years. Please remit all outstanding payments as soon as possible.

December 16, 2005
Albuquerque, NM
Stan Morain, ISPRS Treasurer

Technical Commission Reports

TECHNICAL COMMISSION I

Image Data Acquisition - Sensors and Platforms

President: Alain Baudoin, Secretary: Nicolas Paparoditis

General activities of the Commission

After the Istanbul Congress the main activity of the Commission was to organize the work of the Working Groups and to formalize the agreements needed to prepare the Symposium as well as possible, while new satellites and projects have been launched and while the use of digital cameras and mobile mapping has been increasing.

The trend to use small satellites has been confirmed in 2005, with - as an example - the British satellite TopSat launched on October 27, 2005 (90 kg / 2.5 m resolution) following the heavier Cartosat from India launched on May 5, 2005 (1560 kg with two 2.5 m PAN cameras)

The support of the two main French Agencies involved in photogrammetry and remote sensing (CNES and IGN) to the French Society of Photogrammetry and Remote Sensing (SFPT) for Commission I activities has been obtained until the next Congress in July 2008 through an agreement on the 25 of May 2005 between the three partners.

Most of the WG chairpersons have been already identified during the ISPRS Congress in Istanbul and confirmed at the Joint Meeting in Chiang Mai in November 2004. Then additional Co-chairs have been proposed and accepted, and all WG officers were active by April 2005.

Details of WG activities are described further in this paper but it could be noted that already 3 ISPRS events were organized by Commission I working groups (WG I/3 in Riyadh, May 10-13, WG I/5 in Hanover, May 17-20 and WG I/2 in Banff, June 6-10). TC I have also been involved in organizing sessions, panel discussions or giving presentation in other relevant events.

Elaboration of the Web site of Commission I:

The webpage of the Commission has been prepared by the President and the Secretary and hosted by the SFPT website

See: <http://www.commissionI.isprs.org>

Participation to meetings with ISPRS involvement:

The President attended the Joint Meeting with the Council in Chiang Mai (and gave a presentation on the Pléiades program to the 25th ACRS/1st ASC Conferences held simultaneously with the ISPRS meeting). He chaired a session at the Remote Sensing Arabia Conference organised with WG I-3 (May 10-13) and at the Hanover Workshop organised by WG I-5 and WG IV-3 (May 17-20)

Links with other organisations

CEOS: Unfortunately the Commission President neither WG I/1 Secretary could attend the CEOS WGCV meeting in Cordoba, Argentina (7 to 11 March 2005) as expected but TC I was represented by WG I/1 at the last CEOS WGCV meeting (7 to 11 November 2005 – Frascati, Italy)

ION: WG I/2 will organise a special session at the ION National Technical Meeting in Monterey, USA in January 2006.

EuroSDR: WG I/3 is organising with EuroSDR the EuroCOW 2006 (International Calibration and Orientation Workshop) at Castelldefels, Spain.

GEO: Recent contacts have been initiated with GEO Secretariat to identify possible cooperation. Participation of some TC I Working Groups in the GEO 2006 Work Plan and further in the GEOSS implementation is under consideration to be detailed by the Commission Symposium in July 2006.

EARSeL: WG I/5 has personal links to EARSeL SIG "3D-Remote Sensing". In the past a common workshop has been made and this is planned also for the future.

Preparation of the Commission Symposium

According to the SFPT-CNES-IGN agreement an Organising Committee has been designated to steer the organisation of the Symposium. The choice of the place (Marne-la-Vallée, near Paris, France) and date (3-6 July 2006) have been confirmed and a professional society, Colloquium, has been selected for providing all required assistance.

The first announcement was published on internet and sent to 2000 people on July 17, and the second announcement, with the call for papers was published on November 14.

(See <http://www.colloquium.fr/sfpt2006>)

Plans for future activities

The main event in 2006 will be the Symposium, entitled "From Sensors to Imagery" where results and trends of the commission topics will be presented and discussed. Beside this event another meeting will be organized by WG I/5 and WG I/6 in Ankara (Turkey) February 14-16 on Topographic Mapping from Space. Some WGs will also participate to meetings relevant to TC I:

- WG I/2 to the ION National Technical Meeting in Monterey, USA (January 18-20)

- WG I/3 to the International Calibration and Orientation Workshop, EuroCOW, in Castelldefels, Spain, January 25-26
- WG I/7 to the 3rd International Symposium on FIOS, in Beijing, China, May 24-26.

New initiatives already proposed by WG I/1 (catalogues of calibration methods / test sites) and WG I/6 (scientific assessment of DMC sensors) should be organized in cooperation with the appropriate entities (CEOS for the first one, SSTL for the second one)

Links between ISPRS and GEO will be, as far as possible, formalized in order to participate to the implementation of the future Global Earth Observation System of System, GEOSS.

Working Group Activities during the Current Year

WG I.1: Standards, Calibration and Validation

Chair: Roland Gachet (France)
Co-Chair: Veljko Jovanovic (USA)
Secretary: Xavier Briottet (France)

Activities in 2005

Within the frame of the CALVAL-IVOS subgroup of CEOS, ESA has started the development of a web portal named CalVal Portal. This development is an answer to the following recommendation: "Initiate an activity to document a reference methodology to predict Top of Atmosphere (TOA) radiance for which currently flying and planned wide swath sensors can be intercompared, i.e. define a standard for traceability. Also create and maintain a fully accessible web page containing, as on instrument basis, links to all instrument characteristics needed for intercomparisons as specified above, ideally in a common format. In addition, create and maintain a database (e.g. SADE) of instrument data for specific vicarious calibration sites, including site characteristics, in a common format. Each agency is responsible for providing data for their instruments in this common format."

Every agency is invited to support this activity providing the relevant information regarding its captors. A contract has been passed with Brockman consult (Germany) which subcontracted to Gaël Consultant (France) for the instruments characteristics and with Richard Santer (Université du Littoral) pour the methodology aspects. This portal is mainly dedicated to radiometric calibration and covers:

- Description of radiometric calibration and validation methodologies
- Description of instruments characteristics with a universal format
- Access to metadata describing instruments
- Access to satellites data on predefined areas
- Access to in-situ measurements on predefined areas

On line calibration tools
Exchange gate for communication of calibration results

The development has started and a first version is due mid 2006; final version for 2007.

Regarding the radiometric aspects the portal should take into account all the needs for the description of data and the exchange of results. It could be possible to complete the job to cover the geometric needs for the characteristics of the instruments, the methodologies, the calibration results and the exchange of data. Within the frame of ALOS in-flight commissioning ESA has already scheduled to include GCPs data bases.

Planned activities

A new Work Plan has been elaborated to improve cooperation at the international level for exchanging data and methods for calibration and validation of remote sensing products and systems. Four main topics have been identified: radiometric calibration, geometry, resolution and MTF measurements, and equalisation. For each of these topics WG I/1 will promote the realisation of a catalogue of existing sites and methods.

Radiometric calibration (absolute, multitemporal or multi-sensors)

This is the area where cooperation with CEOS WGCV has been fruitful during the past years and should be pursued. An internet portal (CalVal Portal) is developed by ESA with the goal to maintain a data base of instruments, sites, methods and to provide a "CalVal Service" for automatic calibration.

New techniques will be studied, such as the use of the moon for in-flight radiometric calibration.

Geometry Data used for geometrical calibration includes GCPs, DTM and test sites. WG I/1 is proposing to elaborate a catalogue of metadata describing format, accuracy and main characteristics of such data sets in order to facilitate bilateral exchanges.

Resolution and MTF measurements

Already most of the existing methods have been identified and compared. Following the Gulfport Workshop in December 2003 a book has been published in the ISPRS Books series: Post-Launch Calibration of Satellite Sensors Edited by: A. M. Budge, S.A. Morain. Future work will be focused on the production of a catalogue of known "edge targets" which could be used for such calibration. CNES and ONERA will initiate this catalogue with the targets used for in-flight commissioning of the French satellites.

Radiometric equalisation.

Test sites used for radiometric equalisation (Greenland, Ant-arctic, ..) are proposed to be described in a catalogue

which characteristics should be defined by the Working Group.

Meetings

Up to now no specific workshop is to be organised by WG I/1 but the topics of the WG will be addressed and the results presented at the Commission I Symposium in July 2006 and then at the ISPRS Congress in July 2008. In the meantime WG I/1 will participate to CEOS WGCV meetings and will cooperate with WG I/5 for preparing the Hanover Workshop in May 2007.

WG I/2 – SAR and LIDAR Systems

Chair: Charles Toth (USA)
Co-Chair: Bryan Mercer (Canada)
Secretary: Boris Jutzi (Germany)

Activities in 2005

Web page: <http://www.commission1.isprs.org/wg2/>

WG Workshop:

2005 June 6-10: Workshop on 3D Mapping from InSAR and LiDAR held in Banff, Alberta, Canada, was the most important meeting organized by the WG with 50 participants from 11 countries.

See: <http://www.fom.fgan.de/isprs/ws05/>

A report has been published in ISPRS Highlights vol 10 n°3 September 2005 pages 26-27.

The Proceedings of the Banff WG workshop was published on a CD and distributed to the meeting attendees.

Participation to other meetings:

2005 March 7-11: ASPRS Annual Convention in Baltimore. Charles Toth, as the Director of Photogrammetric Application Divisions of ASPRS, oversees the work of the LiDAR sub-committee and provides a link between the national and international societies.

2005 May 17-20: Joint Workshop on High-Resolution Earth Imaging for Geospatial Information in Hanover. The WG Chairs attended the Workshop and served on the Technical Organizing Committee.

2005 July 25-29: IGARSS in Seoul, Korea attended by Bryan Mercer.

2005 August 22-26: Dynamic Planet 2005 in Cairns, Australia, attended by Charles Toth. <http://www.dynamic-planet2005.com/>

2005 October 23-27: PECORA 16, Sioux Falls, discussion on promoting the 2006 Commission I meeting.

- Planned meetings, workshops and tutorials

2006 January 18-20: ION National Technical Meeting in Monterey, California. The WG will organize a special session on [Rapid Geointelligence Acquisition from Airborne Platforms](http://www.ion.org/), <http://www.ion.org/>.

2006 July 3-6: Commission I Symposium, Marne-la-Vallée, France.

2007 May 28-31: 5th International Symposium on Mobile

Mapping Technology (MMT 2007) in Padua, Italy. The WG is committed to sponsor the event.

2007 date TBD: In addition, discussions are going on to jointly organize a WG workshop.

- Links and exchanges with other organizations

The WG Officers provide an essential connection to their national societies in the field of WG ToR. The cooperation with other organizations is mostly on a case by case basis and the meetings listed above show the recent and planned activities.

WG I.3: Multi-platform sensing and sensor networks

Chair: Dr. Vincent Tao (Canada)
Co-Chairs: Dr. Ismael Colomina (Spain)
Dr. Raad Saleh (USA)
Secretary: Tom Kradilis (Canada)

Activities in 2005

WG Conferences and Workshops

March 3-5, 2005, Sponsored the First South African International Workshop on Sensor Web Enablement, organised by Council for Scientific and Industrial Research.

May 8-11, 2005, Sponsored and organized The International Conference on Advanced Remote Sensing for Earth Observation; Systems, Techniques, and Applications, Riyadh, May, 2005 (Remote Sensing Arabia)
<http://www.remotesensingarabia.com/inside/contact.htm>

May, 2005, In cooperation with WG I/5 to organise the Hannover Workshop 2005 "Mapping from Space"

June 6-10 2005, Co-sponsored Workshop on 3D Mapping from InSAR and LiDAR held in Banff, Alberta, Canada:
<http://www.fom.fgan.de/isprs/ws05/>

2005 October 25. PECORA 16, Sioux Falls, USA. The WG has organised a Panel session to be chaired by Raad Saleh (5 speakers) Topic to be discussed: Multi-Platform Sensing and Sensor Networks in the Face of Large Scale Natural Disasters.

Publications

Sponsored a Special Issue on "Mapping from High Resolution Satellite Imagery" of Journal Photogrammetric Engineering and Remote Sensing (PE&RS). The special issue will be published in early 2006.

Other Activities

Participated in the OpenGIS Consortium (OGC) on Open Web Services (OWS-3) initiative. Contributed to the development of OGC sensor web standards and specifications.

Planned activities

2006 January 25-26, Castelldefels, Spain: International Cal-

ibration and Orientation Workshop – EuroCOW organised by the Institute of Geomatics, on behalf of the Euro SDR Commission I and with the participation of WG I/3. <http://www.eurocow.org/>

2006 July 3-6 Commission I Symposium (organising a WG session and a tutorial)

Liaison with Open Geospatial Consortium (OGC) on sensor web enablement activities

Involvement in the development and demonstration of interoperable sensor networks

Liaison with NASA/CSA/ESA in the related activities

WG I.4: Airborne digital photogrammetric sensor systems

Chair: Dr. Jon Mills (UK)

Co-Chairs: Jean-Philippe Souchon (France)
Michael Cramer (Germany)

Secretary: Dr. David Barber (UK)

Activities in 2005

Web: <http://www.commission1.isprs.org/wg4/>
<http://www.isprs-wgi4.org>

Meetings: Efforts were made to organise joint meetings to be led by EuroSDR at PhoWo 2005 and ISPRS WG IV/9 at RSPSoc 2005 respectively. Unfortunately, despite promising early indications, neither 2005 event took place.

Planned meetings

2006: Proposals for the 2006 TC I Symposium include two technical sessions (digital cameras and UAVs, the later in collaboration with ICWGV/I) and a one day tutorial on airborne digital cameras.

2007: Planning for the September 2007 workshop, to be held in Newcastle from 12th to 14th September 2007, is well advanced. The time has been chosen to correspond with RSPSoc 2007, and complement PhoWo 2007 (to be held the previous week). Technical sessions will be held at the University of Newcastle, with a workshop dinner reserved at St James Park. A Civic Reception and river cruise are also reserved.

2008: Beijing Congress. Plans not yet determined.

WG Publications

A special issue of ISPRS Journal is in preparation, with 13 papers currently under review for publication in mid-2006. This is a joint call for a special issue on digital aerial cameras between the recent ISPRS Hanover symposium and WG I/4. Guest editors are Christian Heipke, Jon Mills and Karsten Jacobsen.

Other activities

Progress against other proposed activities:

- Website:** A dedicated website has been established and linked to the TC I website. Efforts to further populate the website with data are in progress.

- Circular calls for participation:** There are currently 40 members of the WG, representing 12 different countries.

- Planning and progress meetings:** Unfortunately only a virtual kick-off meeting between WG officers was possible due to time/budgetary constraints of all the officers. Jon Mills met with Michael Cramer at PhoWo 2005, but the first face-to-face meeting of all three officers will be the TC I Symposium in 2006.

- CD Rom distribution:** To encourage WG participation, it was planned to circulate the 2004 RICS CPD CD Rom, that included material from an airborne digital sensors meeting held in Newcastle during 2004, to potential members. Unfortunately, the RICS CD was never produced so could not be distributed.

- Liaison with ICWGV/I:** The first collaboration with ICWGV/I is likely to be the 2006 TC I Symposium, where a joint session on UAVs has been proposed.

WG I.5: Geometric modelling of optical spaceborne sensors and DEM generation

Chair: Dr. Karsten Jacobsen (Germany)

Co-Chairs: Dr. Peter Reinartz (Germany)
Dr. Daniela Poli (Switzerland)

Secretary: Dr. Gürcan Büyüksalih (Turkey)

Activities in 2005

Web page: <http://www.commission1.isprs.org/wg5/>

WG Workshop: High Resolution Earth Imaging for Geospatial Information

17-20 May 2005, Hanover (Germany) hosted by IPI (Institute of Photogrammetry and GeoInformation) and organized by WG I/5 and WG IV/3.

134 participants from 30 countries

This event was dedicated to the 75th birthday of Gottfried Konecny

A report has been published in ISPRS Highlights vol 10 n°3 September 2005, pages 22-24

The publications of the workshop are available under <http://www.ipi.uni-hannover.de/>. A selected number of papers has been published in the special issue 6/2005 of the Photogrammetrie und Fernerkundung – in English.

Planned meetings

2006 February 14-16: Ankara Workshop 2006. Topographic Mapping from Space (with Special Emphasis on Small Satellites) organised by WG I/5 and WG I/6

2006 July 3-6: Commission I Symposium

2007 May 29 – June 1st Hanover – Germany: Resolution Earth Imaging for Geospatial Information (to be organized together with WG IV/3)

A WEB-site of the WG I/5 has been established under <http://www.commission1.isprs.org/wg5/>.

Trends in Geometric Modelling of Optical Spaceborne Sensors: With the newer very high resolution satellites using a slow down factor for the reduction of the angular speed of image movement by permanent rotation of the satellite, the approximations by 3D-affine transformation and DLT do have a reduced meaning because of the clear loss of accuracy. The more strict solutions are dominating now. Especially the rational polynomial coefficients from the satellite vendors, which are based on strict mathematical solutions, are becoming more important.

Trends in DEM generation by Space Information: Instead of the free available SRTM DEM, the generation of digital elevation models based on space images is staying important. The SRTM DEM has with 3 arcsec a too large spacing for several applications and gaps in some areas. In addition high resolution DEMs for urban application based on very high resolution images are a new field of application.

WG I/6: Small satellites

Chair: Ugur Murat Leloglu (Turkey)
 Co-Chair: Arthur Cracknell (UK)
 Secretary: Mazlan Hashim (Malaysia)

Activities in 2005

The web page is prepared fully compatible with the template supplied by the Commission.

See: http://www.bilten.metu.edu.tr/ISPRS_WG_I_6/

The group has 9 confirmed members up to date.

Planned meetings, workshops and tutorials

2006 February 14-16: Ankara Workshop 2006. Topographic Mapping from Space (with Special Emphasis on Small Satellites) organised by WG I/5 and WG I/6. The event will be hosted by TUBITAK-BILTEN. The First Announcement and Call for Papers is already distributed. Detailed information is available at <http://www.bilten.metu.edu.tr/ISPRSWorkshopAnkara2006/>

2006 July 3-6: Commission I Symposium

2007 TBD A Workshop will be held in Malaysia

Links and exchanges with other organizations

A test of the Disaster Monitoring Constellation (DMC) data has been proposed to DMCII and discussed during the meeting held in London in November 2005.

WG I/7 Intelligent earth sensing

Chair: Dr. Guoqing Zhou (USA)
 Co-Chair: Dr. Winfried Halle (Germany)
 Secretary: Dr. Lin Su (China)

WG I/7 technical co-sponsor the First South Africa International Workshop on Sensor Web Enhancement, Pretoria, March 3-5, 2005. I attended this workshop and orally presented "Earth Observing Sensor Web in Future". The workshop has collected all presented PPT, and archived them in the CSIR (The Council for Scientific and Industrial Research) server and burned them into CD-ROM, and is distributing these media worldwide.

WG I/7 is technically co-sponsoring the 3rd International Symposium on FIEOS, Beijing, China, May 24-26, 2006. Dr. C. Wang, chair of IEEE GRS-S Beijing Chapter, is organizing this conference as Chairman. The date/time of symposium was indicated last year by Dr. Wang, associated with other organizing committee members. Because of the time frame confliction with ISPRS Commission I Mid-term Symposium, I have kindly required them to remove the ISPRS logo.

WG I/7 is discussing the collaborative efforts with Dr. C. Wang, chair of IEEE GRS-S Beijing Chapter, to co-organize the workshop on intelligent Remote Sensing Data Distribution in 2005 October, as well as collaborate with Comm.VIII for workshop in 2006.

ICWG I/V - Autonomous vehicle navigation

Chair: Dr. Ron Li (USA)
 Co-Chair: Jurgen Everaerts (Belgium)
 Secretary: Dr. Kaichang Di (USA)

I. State of Science and Technology of Working Group Topics

Recent trends

- As demonstrated in 2005 DARPA Grand Challenge in US, autonomous land vehicle navigation has gained success for rough terrain in a desert environment. In general, navigation sensors including GPS/INS sensors, stereo cameras, radar, laser scanners, odometer, and brake and steering sensors have been used in these autonomous land vehicles successfully.
 - Car navigation systems and driver assistance systems are commercialized in almost every brand of car manufacturers. With the help of precision GPS, map matching, and other techniques, accuracy is sufficient for the designed purposes. The trend is to increase safety, convenience, and efficiency of driving and protect pedestrians in the mean time. Research on vision supported decision making has been carried out by industry and academic institutions and the developed techniques will play a critical role in these systems. Intelligent vehicles will come to the market only when such technology would be sufficiently matured.
 - Land based mobile mapping systems are currently not autonomous and not real-time because of the great challenges of automatic object recognition and rapid processing of the large volume of data acquired dynamically. Intelligent and real-time processing of mobile mapping data remains an active research topic and has got much progress as we hoped.
-

- d) Robotics navigation, particularly in planetary applications and extreme situations, require autonomous operations. A great demonstration is done by the autonomous and semi autonomous rover navigation of Spirit and Opportunity rovers of the 2003 NASA Mars Exploration Rover (MER) mission where both rovers traversed over 5000m, much of which were navigated autonomously.
- e) Autonomous UAV navigation presents a great challenge for the community at this time. Much of the work is being done manually on the ground, although navigation and imaging sensors are used onboard, such as GPS, IMU, altimeters, laser rangefinders, and cameras. Difficulties include, in many cases, dealing with unstable platforms, sudden changes of sensor position and orientation, cloud movement, and non predictable terrain information. Before UAVs can be integrated in the civil airspace, they should also be able to avoid collisions, which calls for an even higher level of real time processing and reliability. These problems are less important for high altitude UAVs (15-20km) altitude, which are currently under development for remote sensing and telecom applications. We hope to see some interesting papers in this area in our WG sessions in Paris and Dresden.

2. Accomplishments of the WG

- A WG Web Page was established in 2004 at <http://shoreline.eng.ohio-state.edu/ICWGV/index.htm>
- This WG is a new inter-commission working group. We invited/recruited sixteen WG members from academia

and industry distributed in USA, Canada, UK, France, Germany, Australia, India, Switzerland, and Belgium.

- We are co-sponsoring the 5th International Symposium on Mobile Mapping Technology (MMT 2007).

- We planned sessions on autonomous vehicle navigation in ISPRS Commission I and V Symposia in Paris and Dresden, respectively. We also planned the 3rd Duane Brown International Summer School in Geomatics, Columbus, OH, USA, 2007.

3. Working Group News

Related events

The 2005 DARPA Grand Challenge, which is the second year of the autonomous vehicle competition sponsored by US government, took place on October 8, 2005 in Mojave Desert. Five vehicles completed the 132 miles off-road course with Stanford's Stanley being the winner. The vehicles autonomously navigated themselves without any external communication. This event represents the great advancement of autonomous vehicle technology, of which the autonomous navigation is the core. Our WG members, Prof. Ümit Özgüner and Dr. Chales Toth, were involved in the development and support of one of the vehicles TerraMax. Led by Dr. Ron Li, Participating Scientist of the Mars Exploration Rover mission, the Ohio State University team has performed Mars rover localization and topographic mapping on a daily basis to support the mission for over 600 days now (and still counting). This presents a unique contribution of our photogrammetry and mapping technologies to the ever exciting planetary explorations.

TECHNICAL COMMISSION II

Theory and Concepts of Spatio-Temporal Data Handling and Information

President: Wolfgang Kainz, Secretary: Alexander Pucher

WGs	Name	Chair	Co-Chair
WG II/1	Spatio-Temporal Modeling	Donna PEUQUET, USA	TANG Xinming, China
WG II/2	Spatial Reasoning, Analysis, and Data Mining	LIU Yaolin, China	Abdülvahit TORUN, Turkey
WG II/3	Multiple Representations of Image and Vector Data	Monika SESTER, Germany	Lars HARRIE, Sweden
WG II/4	Spatial Planning and Decision Support Systems	Ali SHARIFI, The Netherlands	Nik Nasruddin MAHMOOD, Malaysia
WG II/5	Communication and Visualization of Spatial Data	William CARTWRIGHT, Australia	Hiroyuki YOSHIDA, Japan
WG II/6	System Integration and Interoperability	Marinos KAVOURAS, Greece	Stephan WINTER, Australia
WG II/7	Quality of Spatio-Temporal Data and Models	SHI Wenzhong, Hong Kong, China	Robert JEANSOULIN, France
IC WG II/IV	Dynamic and Multi-Dimensional Systems and Applications	Christopher GOLD, United Kingdom	LI Zhilin, Hong Kong, China

State of Science and Technology of Commission Topics

Although much progress has been made in recent years in geographic information science, many questions still remain. In data modeling issues of a full integration of the time-dimension in GIS still poses many interesting scientific challenges; the same holds for spatial analysis of uncertain data, and the detection of hidden information in large data sets (data mining).

Multiple representations and related issues of generalization still expose many unsolved problems as well as the visualization and communication of uncertainty and data quality. Decision support systems become an increasingly important tool for decision makers in various settings of decision processes. Issues of systems integration and interoperability cut across all aspects of spatial data handling. Much needs to be done, still.

The overall trend leads to component based systems that expose functionality that can be assembled for individual needs and applications. The above mentioned issues address crucial aspects of such an approach.

Accomplishment of Commission during the Current Year

The year 2005 was the first year of full operation of all working groups. The major activities focused on establishing the web pages of the working groups and to conduct a first round of scientific activities. All working groups have been active. Working groups II/1, II/2, II/4, II/7, and II/IV have already organized workshops and symposia; Working groups II/3, II/5, and II/6 are preparing events for the year 2006.

The Commission through its working groups or Commission officers was involved in the following activities:

- 2nd International Conference on Recent Advances in Space Technologies (Istanbul, June 9-11, 2005)
- ISPRS Student Consortium – First Summer School (Istanbul, June 19-26, 2005)
- 4th International Symposium on Spatial Data Quality (Beijing, August 25-26, 2005)
- International Symposium on Spatio-Temporal Modeling, Spatial Reasoning, Spatial Analysis, Data Mining and Data Fusion – STM'05 (Beijing, August 27-29, 2005)
- 4th ISPRS Workshop on Dynamic and Multidimensional GIS – DMGIS (Pontypridd, September 5-8, 2005)
- International Workshop on "Service and Application of Spatial Data Infrastructure" (Hangzhou, October 14-16, 2005)
- Pre-conference technical workshop on Spatial Planning and Decision Support Systems (Hanoi, November 5-6, 2005) at the Asian Conference on Remote Sensing.
- Session on Spatial Planning and Decision Support Systems (Hanoi, November 7-11, 2005) at the Asian Conference on Remote Sensing
- International Workshop on Spatial/Spatio-Temporal

- Data Mining (SDM) and Learning (with Special Emphasis on Using SDM Techniques in Remote Sensing and GIS) – SDM05 (Ankara, November 24-25, 2005)
- 3rd Symposium on LBS & TeleCartography (Vienna, November 28-30, 2005)
- ISPRS Workshop on Spatial Planning and Decision Support Systems (Kuala Lumpur, December 8-9, 2005)

The preparations for the Symposium are well under way and the contract with ISPRS has been signed. The symposium will take place as a joint event in Vienna, July 12-16, 2006 (www.gicon2006.at).

Working Group Activities during the Current Year

WG II/1 – Spatio-Temporal Modeling

Chair: Donna Peuquet (USA)
Co-Chair: Tang Xinming (China)
Secretary: Monica Wachowicz (The Netherlands)

State of Science and Technology of Working Group Topics Even with much activity over the past decade, the representation and practical use of space-time information in digital databases is still problematic. Research to-date has shown that the addition of time as an added dimension to existing, traditional data models is not a sufficient solution. While some significant advances have been made, functional space-time systems have not gone beyond the limited prototype stage.

New data models as well as extensions to existing models need to be further developed within an integrative theoretical framework. This must also include spatial, temporal and space-time relationships that may be integrated within these models and used in advancing multi-dimensional query languages. Three-dimensional and space-time topologies represent a fundamental component of this work. Moving non-point objects represent a particularly important focus area that entails considerations in all of these above areas.

Accomplishments of Working Group

Symposium

The International Symposium on Spatio-Temporal Modeling, Spatial Reasoning, Spatial Analysis, Data Mining and Data Fusion (STM'05) from August 27th to August 29th 2005 at Yingjie Exchange Center, Peking University, China. This symposium was organized by ISPRS WG II/1 (Spatio-Temporal Modeling), WG II/2 (Spatial Reasoning, Analysis, and Data Mining), WG II/7 (Spatial Data Quality) and WG VII/6 (Image Data Fusion), jointly with Chinese Academy of Surveying and Mapping (CASM), Wuhan University, Peking University, and the Hong Kong Polytechnic University.

The symposium provided an interdisciplinary forum for international scientists and researchers to present their latest research development and share their experiences in GIS and remote sensing. The topics covered spatio-temporal modeling, spatial-temporal topology, space/time query, spatial-temporal data engine, ontology for spatial-temporal modeling, dynamic spatial database, visualization of dynamic map, web-based spatial-temporal model and applications and spatial-temporal applications for mobile, wireless, location-based services networks, data mining and knowledge discovery, spatial analysis and simulation models, spatial reasoning, multi-sensor, multi-resolution and multi-mode data fusion, applications of data fusion to object recognition, classification and change detection.

Publications

Proceedings of the STM'05 as a volume of the International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences (CD-ROM and paper format). Selected papers will be published as a volume of the ISPRS book series.

Theme section on advances in spatio-temporal analysis and representation, ISPRS Journal, Vol 60, No 1. Papers included:

- Editorial, Donna J. Peuquet (pp. 1-2)
- Reconstructing spatiotemporal trajectories from sparse data, Panayotis Partinevelos, Peggy Agouris and Anthony Stefanidis (pp. 3-16)
- SOLAP technology: Merging business intelligence with geospatial technology for interactive spatio-temporal exploration and analysis of data, Sonia Rivest, Yvan Bédard, Marie-Josée Proulx, Martin Nadeau, Frederic Hubert and Julien Pastor (pp. 17-33)
- IPODLAS—A software architecture for coupling temporal simulation systems, VR, and GIS, Daniel Isenegger, Bronwyn Price, Yi Wu, Andreas Fischlin, Urs Frei, Robert Weibel and Britta Allgöwer (pp. 34-47)

Dissemination

Working Group Web site developed

Working Group News

- We need to expand the membership of the working group.
- Working group meeting in November next year to be held at the University of Laval, Canada in conjunction with the Canadian Geoinformatics Research Center meeting.

WG II/2 – Spatial Reasoning, Analysis, and Data Mining

Chair: Liu Yaolin (China)
Co-Chair: Abdülvahit (Turkey)
Secretary: Ai Tinghua (China)

State of Science and Technology of Working Group Topics

Spatial reasoning, analysis and data mining have become one of the most important topics in the GIS research domain over years attracting different studies from varied domains. Current interest focuses on the establishment of algorithms and models from the point of view of geo-computation and the combination with complex geo-science models at a high level. The ultimate purpose is to integrate these methods to conduct spatial decision-making.

Spatial statistics is still one significant method in spatial analysis and some artificial intelligence based methods begin to be applied in this field. The qualitative and uncertainty analysis gets emphasis and fuzzy mathematics based and probability based methods have been applied in this domain. How to integrate the analysis between spatial data and semantic and temporal data to result in generalized conclusions meets some problems in the future.

Spatial reasoning aims at spatial relation integration, derivation, and generalization making some progress in small scale space, such as robotic research domain. For large scale space, it requires to be extended. This topic depends on the advance of the theory of spatial cognition. Indeed, how a person builds spatial concepts and the reasoning process are still problematic requiring to cooperate with the research of cognitive science.

Spatial data mining becomes an active topic and makes some progress in general approaches from the computer science perspective. Many mining methods from different disciplines have been applied in this domain but the property of spatial position shows not obviously. How to let spatial data mining stand out from general data mining is an interesting question.

Accomplishments of Working Group

WG II/2 successfully organized an international symposium on Spatial-Temporal Modeling, Spatial Reasoning, Spatial Analysis, Data Mining and Data Fusion (see report WG II/1).

WG II/2 successfully organized an international Workshop On Spatial/Spatio-Temporal Data Mining (SDM) And Learning (With Special Emphasis on Using SDM Techniques in Remote Sensing and GIS) – SDM05 – on November 24-25, 2005. The conference was held at Middle East Technical University in Ankara, Turkey, and attracted more than 50 researchers and professionals from about 10 countries with about 25 presented papers and 7 invited talks by 5 widely known researchers. The Secretary General of ISPRS Prof. Orhan Altan, President of Commission II. Prof. Wolfgang Kainz, Co-chair of WG II/2 Abdülvahit Torun and the Head of the Organizing Committee Prof. Zuhail Akyurek gave brief speeches. This workshop addressed many aspects of spatial/spatio-temporal

data - mining ranging from theories, methodologies, algorithms, to their applications. Particularly, the participants focused on how Spatial/spatio-temporal data mining techniques can be integrated with remote sensing and GIS in order to create intelligent systems for geo-related sciences. The workshop was sponsored by METU, TUBITAK, ISPRS, EUROPT and IEEE.

Working Group News

The documents of 'International Workshop on Spatial/ Spatio-Temporal Data Mining (SDM) and Learning (with Special Emphasis on Using SDM Techniques in Remote Sensing and GIS) – SDM05 (Ankara, November 24-25, 2005)' is going to be published as an official ISPRS CD.

WG II/3 – Multiple Representations of Image and Vector Data

Chair: Monika Sester (Germany)
Co-CHair: Lars Harrie (Sweden)
Secretary: Mark Hampe (Germany)

State of Science and Technology of Working Group Topics

Multi-scale and multiple representation issues are an important topic in spatial data handling. There are different groups working in this domain: there is great interest in the GIS domain, where (vector) data of different scales are modeled, generated (generalization problem), integrated and updated. In the image processing community, multi-scale issues are also of high importance, when it comes to extracting information from digital imagery: adequate models are needed that take the multiple representations of the objects in different scales into account. In the domain of generalization of 3D surfaces, there is a lot of research in Computer Graphics. In this area, there are some first connections of the communities, which should however be fostered much more in the coming future: it can be stated, that both communities could profit a lot from each other and currently, partly, things are being re-invented in both disciplines. Finally, a very interesting upcoming topic deals with multi-scale issues in language. In this domain, there are close contacts to Working Group II/6: System Integration and Interoperability, which will be deepened in our upcoming joint workshop.

Accomplishments of Working Group

During the first year the working group has performed the following tasks:

- Setting up a homepage (<http://www.commission2.isprs.org/wg3/>) reflecting the tasks of the working group, some resources and links related to these tasks as well as a news-item advertising next events coming up. So far we had an average number of 30 visitors per month.
- Planning of a joint workshop with ISPRS TC II/6 System Integration and Interoperability. The workshop will be

held 22-24 February 2006 in Hanover Germany. The title of the workshop is "Multiple Representation and Interoperability of Spatial Data". This workshop will be organized together with the ISPRS Working Group II/6: System Integration and Interoperability and the German Bundle-Project "Spatial Data Abstraction". Announcement and call for papers have been sent out by e-mail on the ISPRS-mailing list (>2000 addresses), to the ICA-Commission on Generalization and Multiple Representation, as well as to diverse Journals in Germany. Furthermore, the scientific board of the Workshop will ensure that the announcement is widely spread. Currently, the review process is ongoing until Christmas. At the same time the organizational part of the workshop, like internet presentation, location of the workshop etc. has been progressed (<http://www.ikg.uni-hannover.de/isprs/workshop.htm>).

- Contacts have been taken with the ICA commission on Generalization and Multiple Representation, and have been fostered during the ICA-congress in La Coruna, Spain. Future collaboration can e.g. be a joint workshop in 2007 or 2008.

Working Group News

The coming activities and events are related to the Joint Workshop in February, as well as the Symposium in Vienna. There are also cooperation with an upcoming ICA Workshop on Generalization Sunday 25 June 2006 - Portland/USA one day before AutoCarto.

WG II/4 – Spatial Planning and Decision Support Systems

Chair: Ali Sharifi (The Netherlands)
Co-Chair: Nik Nasnuddin Mahmood (Malaysia)
Secretary: Shatri Mansor (Malaysia)

State of Science and Technology of Working Group Topics

Demand and competition for various resources continue to grow almost everywhere, and integrated resource management based on reliable data, information and knowledge, is expected to provide reasonable solutions. Especially in the context of growing emergence of more accountable and inclusive governance style, which calls for more debates and require interfaces for an extended involvement and agreement of all relevant stakeholders over policy issues. While the political and socio-economic and institutional aspects may often be of dominant importance, still there is considerable demand for timely and relevant technical and scientific relevant information. Planners and decision makers, and increasingly the general public, need and demand information as a basis for informed decision.

Advances in geoinformation technology have provided extensive information from the processes that are taking

place on the surface of the earth, many of which are organized in computer systems, some are freely available and others are accessible at affordable price, however not efficiently applied. Research in disciplinary sciences has produced significant insight into many physical and socio-economic processes, leading to development of knowledge formalized in various types of disciplinary models, many of them in public domain, but is not well applied in practice. Development in management and decision sciences has provided opportunities to build decision aids and provide platforms for flows and exchange of different information and knowledge. Although we are moving from a poor to a rich data environment, yet much of the existing information and knowledge is not efficiently and effectively used to support better management of our resources. As information consumes attention of its recipients, wealth of information creates poverty of attention; therefore there is a growing need for systems that make use of the existing wealth of knowledge, information and data, and make them useful for the planners and decision makers. Especially systems and decision aids that provide facilities:

- To bridge the gap or facilitate the interactions between the provider of information (technical group) and the users of the information (decision makers),
- Understand the cause-effect relationships between various socio-economic driving forces and their impacts to;
- Support for understanding the problem and formulating alternative decisions/solutions,
- Support the analysis of the effects and impacts of alternative decision on allocation of resource and services;
- Furthermore and most importantly to provide a forum for debates to facilitate dialogues, negotiation and deliberation of various issues affecting stakeholders, and construct a common language for discussion and deliberation over allocation of resources.

In this context, three main themes, the notion of sustainability, the scope of information and participation, and the supporting role of information technology through development and application of planning and decision support systems in the process of resource management are challenging issues to be addressed.

Accomplishments of Working Group

- Organizing the ACRS-ISPRS Pre-conference technical workshop on Spatial Planning and Decision Support Systems, 5-6 November 2005, Hanoi, Vietnam
- Joint ACRS-ISPRS session on Spatial Planning and Decision Support Systems, 7-11 November 2005, Hanoi, Vietnam
- ISPRS Workshop on Spatial Planning and Decision Support Systems, 8-9 December 2005, MACRES, Malaysia

Working Group News

- Active participation in the ISPRS Technical Commission II Symposium on Spatial Data Handling (SDH 2006) 12-14 July 2006, Vienna Austria
- Organizing a Joint ACRS-ISPRS session on Spatial Plan-

- ning and Decision Support Systems,
- Organizing a Joint ACRS-ISPRS Workshop on Spatial Planning and Decision Support Systems,
- Organizing a Seminar on the Practical Application of Spatial Planning and Decision Support Systems. This will be held in Iran, and will be supported by the Iranian Space Agency as well the Iranian National Cartographic Center.
- Publications:
 - Planning for a special issue of the *Asian Journal of Geoinformatics* on spatial planning and decision support systems,
 - Planning for publication of a book volume on Spatial Decision Support Systems in Theory and Practice

WG II/5 – Communication and Visualization of Spatial Data

Chair: William Cartwright (Australia)

Co-Chair: Hiroyuki Yoshida (Japan)

Secretary: Gennady Andrienko (Germany)

State of Science and Technology of Working Group Topics

WG II/5 - Communication And Visualization of Spatial Data has as its aim to explore not just how geographical visualization tools can be best employed, and also the development of a new theory related to contemporary geographical visualization. Its terms of reference are to: a) Communicate spatial information; b) To explore geovisualization use (including the Web); and to develop and test novel methods and tools for uncertain data visualization.

Accomplishments of Working Group

During 2005 the WG executive consolidated efforts to establish members that could contribute to the WG. This has proven to take more time than allocated, mainly because the Chair and Secretary come from non-photogrammetric/remote sensing disciplines. In order to assemble an interested and effective WG members are needed from the photogrammetric/remote sensing disciplines, and not from the already established contacts in the ICA Commission on Geographic Visualization and Virtual Environments, where the Chair and Secretary have established links. Here, input is needed from colleagues within the ISPRS to nominate active members of the photogrammetric/remote sensing disciplines that are researching in visualization and who might be potential members of the WG.

During 2005 the WG was a co-sponsor of the 3rd Symposium on LBS & TeleCartography, held in Vienna, Austria in November. This was organised by the ICA Commission on Maps and the Internet in cooperation with the Research Group Cartography of the Vienna University of Technology and the ICA Commission on Ubiquitous Computing. The Chair of the WG provided a paper at the Symposium: Cartwright, W. E., 2005, "Towards An Understanding of the

Importance of Landmarks to Assist Perceptions of a Space in Web-Delivered 3D Worlds", proceedings of the 3rd Symposium on Location Based Services and TeleCartography, G. Gartner (ed.), Wien, Austria: TU Wien/International Cartographic Association Commission on Maps and the Internet.

Working Group News

In 2006 two activities are planned:

- During March 2006 the WG Chair will convene a meeting of interested potential WG members during the 2006 Association of American Geographers Annual Meeting, March 7-11 2006. This will take place in Chicago, Illinois, USA.
- A formal WG meeting will be held immediately prior to the GICON 2006 conference in Vienna, Austria in July 2006. It is planned to have this event on Saturday 8 July. The Department of Geography and Regional Research, University of Vienna has kindly offered access to lecture theatres to run this event. It is proposed to run both formal presentations and discussion sessions during this one-day event.

WG II/6 – System Integration and Interoperability

Chair: Marinos Kavouras (Greece)
Co-Chair: Stephan Winter (Australia)
Secretary: Margarita Kokla (Greece)

State of Science and Technology of Working Group Topics

The key scientific challenge for GI research today is epitomized in the most crucial issue of geospatial semantic interoperability. The importance of geospatial ontological research to this objective is unquestionable and continually growing. The crucial matter of Geographic Information Science is to achieve mutual understanding of context and meaning of the geographic domain, both by developers and users of Geographic Information Systems. Geospatial information not only is distinct and special, i.e., differs from other kinds of aspatial information, but it has gained acceptance to provide a framework for referencing most other information. To establish a common framework between providers and users of geospatial information, the research agenda of the field has been focused on structuring knowledge about geography and space by using ontologies. Hitherto, several scientific organizations/societies such as AGILE, INSPIRE, GIScience, etc, have adopted the issue of semantic interoperability as one of their research priorities. Nevertheless, many facets of geographic data integration remain open and unresolved such as the temporal dimension of spatial data, scale and detail, fuzziness etc. What is more, the issue of system-level integration, by tying together knowledge technology methods and components into a unified platform, has been proven a challenge among computer scientists, ontology engineers,

and geographic information researchers, in order to facilitate interoperability in the geographic domain. The WG is actively observing developments in the Open Geospatial Consortium (OGC) and the EuroSpec Programme of EuroGeographics in this area. Dr. Winter liaises with OGC and the Geosemantics Interest Group and Dr. Kavouras liaises with Eurogeographics.

Accomplishments of Working Group

Publications in journals and other volumes

- Bittner T., M. Donnelly & S. Winter, "Ontology and Semantic Interoperability". In: Prosperi, D.; Zlatanova, S. (Eds.), Large Scale 3D Data Integration: Challenges and Opportunities, Vol. CRC Press, Boca Raton, FL, 2005.
- Darra A., M. Kavouras & E. Tomai "Representing Semantic Similarity of Socioeconomic Units with Cartographic Spatialization Metaphors", International Journal of Pure and Applied Mathematics (IJPAM), Academic Publications, 22(1): 33-45, 2005.
- Kavouras M., "A unified ontological framework for semantic integration", "Next Generation Geospatial Information" P. Agouris & A. Croitoru (eds.), ISPRS Book Series, A.A. Balkema Publishers - Taylor & Francis, The Netherlands, pp. 147-156, 2005.
- Kavouras M. & M. Kokla "Semantic Information in Geo-ontologies: Extraction, Comparison, and Reconciliation", LNCS Journal on Data Semantics, 3534: 125-142, 2005.
- Tomai E., M. Kokla & E. Tomai, "Comparing Categories among geographic ontologies", Computers & Geosciences, 31(2): 145-154, 2005.
- Kavouras M., M. Kokla, & E. Tomai, "Semantically-Aware Systems: Extraction of Geosemantics, Ontology Engineering, and Ontology Integration" submitted for publication in E. Stefanakis, M.P. Peterson, C. Armenakis, V. Delis (Eds), "Geographic Hypermedia: Concepts and Systems", Springer.
- Tomai E. & M. Kavouras, "Qualitative Linguistic Terms and Geographic Concepts - Quantifiers in Definitions", Transactions in GIS, 2005, 9(3): 277-290.
- Tomai E. & M. Kavouras, "Beware of Maps Bearing Information - A Situation Semantics Framework", submitted to Cartography and GIS journal.

Publications in Conference proceedings

- Kontaxaki S. & M. Kavouras, "Geo-Q: Spatial Knowledge Extraction based on a Controlled English Query Language and Conceptual Graphs", Proceedings of GIS Planet 2005, 29/5-2/6/05, Estoril, Portugal.
 - Tomai E. & M. Spanaki, "From ontology design to ontology implementation: A web tool for building geographic ontologies", 8th AGILE Conference on Geographic Information Science, Estoril, Portugal, May 26 - 28, 2005.
 - Tomai E. & M. Kavouras, "Context in Geographic Knowledge Representation", 2nd International Conference and Exhibition on Geographic information, Estoril, Portugal, May 30 - June 2, 2005
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- Tomai E. & M. Kavouras, "Mappings between Maps - Association of Different Thematic Contents using Situation Theory", International Cartographic Conference, La Coruña, Spain, July 9 -16, 2005.
- Klippel A. & S.Winter, , 2005: Structural Saliency of Landmarks for Route Directions. In: Cohn, A.G.; Mark, D.M. (Eds.), COSIT 2005. Lecture Notes in Computer Science, 3693: 347-362. Springer, Berlin, September 14-18, 2005.
- Tomai E., M. Spanaki, P. Prastacos & M.Kavouras, "Ontology assisted decision making – a case study in trip planning for tourism", International Workshop on Semantic-based Geographical Information Systems (SeBGIS'05), Cyprus, November 3 - 4, 2005.
- Karalopoulos A., M. Kokla, & M. Kavouras, "Comparing Representations of Geographic Knowledge Expressed as Conceptual Graphs", LNCS 3799 GeoSpatial Semantics: First International Conference, GeoS 2005, Mexico City, Mexico, November 29-30, 2005. Editors: M. Andrea Rodríguez, Isabel F. Cruz, Sergei Levashkin, Max J. Egenhofer.

PhD Theses

Kokla M., "Semantic Interoperability in Geographic Information Science", School of Rural and Surveying Engineering, National Technical University of Athens, Greece, 2005.
Tomai E., "Development of Formal Geo-ontologies", School of Rural and Surveying Engineering, National Technical University of Athens, Greece, 2005.

Other Activities – Accomplishments

- Improvement and updating of WGroup II/6 - System Integration and Interoperability site (<http://www.commission2.isprs.org/wg6/>)
- Involvement in the OGC and the Geosemantics Interest Group (<http://www.geosemantics.org>) and Euro-Geographics interoperability project (http://www.eurogeographics.org/eng/01_EuroSpec.asp)
- Participation of members in international fora with special interest in interoperability and geographic ontologies:
 - EuroGeographics General Assembly, Iceland, 12 – 14 September 2005
 - Symposium on Spatial Cognition, 5.-9 December 2005, Dagstuhl, Germany
- Awards:
 - M. Kokla received the 2005 Dimitris N. Chorafas Foundation Prize for her PhD thesis entitled "Semantic Interoperability in Geographic Information Science".
 - E. Tomai received the 2005 ESRI Second Paper Award for the paper "From ontology design to ontology implementation: A web tool for building geographic ontologies" presented in AGILE 2005 Conference.

Working Group News

Planned Events

- Co organization - Participation in the Joint ISPRS WG

- II/3 - WG II/6 Workshop on Multiple Representation and Interoperability of Spatial Data, Hannover, Germany, February, 22 - 24, 2006 (http://www.ikg.uni-hannover.de/isprs/call_for_papers.htm)
- Participation in the ISPRS Technical Commission II Symposium, Vienna, Austria, 12 – 14 July 2006.
- Organization of the WG II/6 - Workshop in Greece, fall 2007 in the island of Rhodes. Topic: "Geo-spatiotemporal knowledge representation and interoperability".
- Participation in the 21st ISPRS Congress, Beijing, China, 3-11 July 2008.

WG II/7 – Quality of Spatio-Temporal Data and Models

Chair: Shi Wenzhong (Hong Kong, China)
Co-Chair: Robert Jeansoulin (France)
Secretary: Hande Demirel (Turkey)

State of Science and Technology of Working Group Topics
Although much progress has been made in the area of modeling uncertainties in spatial data and models in the last decade, the following issues remain in the area of quality of spatial data and quality of spatial models.

Quality of spatial data

- Spatial data models for uncertain objects and their relationships
- Accuracy assessment for DEM
- Thematic and temporal accuracy of vector spatial data
- Completeness and logic consistency of spatial data
- Metadata and models for spatial data
- Spatial data mining based on metadata
- Quality control for spatial data production

Quality of Spatial models

- Uncertainties in spatial modeling
- Uncertainties propagation in spatial analysis and operations
- Fuzzy spatial queries
- Uncertainties in geographical and environmental analysis
- Uncertainties in multi-data sources-based fusion
- Spatial decision with uncertainty
- Spatial data mining based on uncertain data
- Quality control of spatial data model

Accomplishments of Working Group

4th International Symposium in Spatial Data Quality

The Fourth International Symposium on Spatial Data Quality, was held from 25th to 26th August 2005, This was the fourth Symposium in the series, following the first and second in Hong Kong respectively in 1999 and 2003, and the third in Austria in 2004. Over one hundred scholars from twenty-three different countries and regions registered for this fourth Symposium -- from Australia, Austria, Belgium, Canada, China, Denmark, Finland, France, Germany, Hong Kong, India, Indonesia, Iran,

Japan, Jordan, Malaysia, Mongolia, The Netherlands, Taiwan, Thailand, Turkey, UK and USA.

The Proceedings were published as a collection of the 43 selected papers presented at the Symposium, and are organized as one chapter for the keynotes and 8 chapters for the parallel sessions. The keynote session covers 'Uncertainty and interoperability: the areal interpolation problem' by Michael F. Goodchild et al, 'Quality metadata to address semantic uncertainty and fitness for use' by Peter F. Fisher, 'Towards uncertainty-based geographic information science (part A) – modeling uncertainties in spatial data' by Wenzhong Shi, and 'Image-mining for solving spatial and spatio-temporal uncertainty' by Alfred Stein.

The papers for the parallel sessions reflect major research progress in the area of uncertainty modeling in spatial data and analysis. These include: modeling uncertain topological relations, modeling positional error of spatial data, data quality and fitness-for-use, uncertainties in spatial analysis and query, accuracy of DEM, uncertainties in attribute data, propagation of uncertainties, and uncertainties in remotely sensed image processing. The papers presented in the proceedings indicate several new developmental trends of this research area: modeling uncertain topological relations have attracted more attention than it had previously, more research on uncertainty modeling for spatial analysis appears comparing with static data as it did before, the developed theories and models have been applied to solve real world problems, more theories/methods such as rough set theory and spatial data mining have been gradually introduced.

Other activities

- Set up the Website of the Working Group: the address is <http://www.cmi.univ-mrs.fr/~jeansoul/ISPRS2WG/>
- Sponsored the International Symposium on Spatial-temporal Modeling, Spatial Reasoning, Spatial Analysis, Data Mining and Data Fusion, which was held in August 27-29, 2005 in Beijing, China

Working Group News

- To publish news in ISPRS Highlight on the 4th ISSDQ
- To publish a book on uncertainties in spatial data based on selected papers from the 4th ISSDQ, to be published by ISPRS press
- To prepare the 5th International Symposium in Spatial Data Quality to be held in 2007

IC WG II/IV – Dynamic and Multi-Dimensional Systems and Applications

Chair: Christopher Gold (United Kingdom)
Co-Chair: Li Zhilin (Hong Kong, China)
Secretary: Mir Abolfazl Mostafavi (Canada)

State of Science and Technology of Working

Group Topics

The mission of this working group is to address the dynamic and multi-dimensional aspects of the geospatial information. Spatial data changes over time and space. Current GIS were developed for two-dimensional static data display and management. They neither provide the necessary tools to simulate the dynamics of spatial data nor allow representation of the interaction between them. Simulation of the real world requires movement and interaction, and often the third dimension. The long-term objective of the present working group is to develop new spatial data models and data structures that allow a better representation of the real world within GIS, with a special focus on the representations that are both dynamic and multi-dimensional. This will result in the geographical information systems that have dynamic data structures, support a greater interactivity, and support three dimensional representations.

Accomplishments of Working Group

WG II/IV held a workshop on Dynamic and Multidimensional GIS from September 5-8 2005 at the University of Glamorgan, Wales. About 45 people registered, and there were 33 papers in the ISPRS Archive Proceedings. September 5 was occupied by a Tutorial, sponsored by the EU Marie-Curie Chair in GIS, on basic spatial data structures and Introductory 3D Graphics Programming. About 35 people attended this, and had the opportunity to write basic graphics code. September 6-8 had regular sessions covering a wide range of research topics, and the participants were from most parts of the world, and covered many disciplines. We feel that this was a really successful gathering, which gave everyone an opportunity to discuss research activities. One session was devoted to opportunities for EU-China (and other) collaborative funding opportunities, with University experts starting the discussions. The banquet was held in Caerphilly Castle, complete with whole roast pig and mediaeval entertainers. Workshop sponsors were the ISPRS, the British Ordnance Survey and the National Geomatics Centre of China. The program and photos can be found at <http://www.comp.glam.ac.uk/GIS/DMGIS05/>.

The working group co-organized the International Workshop on "Service and Application of Spatial Data Infrastructure" (Hangzhou, October 14-16, 2005)

Working Group News

- Active participation in the ISPRS Technical Commission II Symposium on Spatial Data Handling (SDH 2006) 12-14 July 2006, Vienna Austria.
- Organizing the fifth international workshop on dynamic and multidimensional GIS (DMGIS) during the summer 2007.
- Co-organizing the first international workshop on the Mobile Geospatial Augmented Reality in May 2006 in Banff Canada.
- Participation in the 21st ISPRS Congress, Beijing, China, 3-11 July 2008.

TECHNICAL COMMISSION III

Photogrammetric Computer Vision and Image Analysis

President: Wolfgang Förstner, Secretary: Karl-Heiko Ellenbeek

Workshops

The working groups of Commission III organized four very successful workshops, listed in the table.

acronym	responsibility	date	place	papers/ posters	participants	comments
Laser Scanning 2005	WG III/3 WG III/4 WG V/3	2005-09-12/14	Enschede The Netherlands	30/10	> 100	exhibition
CMRT05	WG III/4 WG III/5	2005-09-29/30	Vienna, Austria	18/12	65	In conjunct. with DAGM
BenCOS	WG III/1 WG III/2	2005-10-15	Beijing, China	10/-	40	In conjunct. with ICCV
OMNIVIS'05	ICWG III/V	2005-10-21	Beijing, China	12/17	40	In conjunct. with ICCV

The first workshop **Laser scanning 2005** was organized by three working groups, namely WG III/3 *Processing of Laser Scanner Data*, WG III/4 *Image Interpretation for City-Modelling*, WG V/3 *Terrestrial Laserscanning* and took place 2005-09-12/14 in Enschede, The Netherlands.

The topic is hot: More than 100 participants discussed 40 papers and new products in an industrial exhibition. Both, airborne and terrestrial laser scanning technique is investigated intensively including integration of. The second generation of filter algorithms for airborne laser data relying on segmentation and first results on full wave-form data processing were reported.

The proceedings are available on line under <http://www.commission3.isprs.org/wg3/>.

The workshop **CMRT05: "Object Extraction for 3D City Models, Road Databases and Traffic Monitoring"** was organized by the working groups WG III/4 *Image Interpretation for City-Modelling*, WG III/5 *Road Extraction and Traffic Monitoring*, WG IV/8 *Spatial Data Integration for Emergency Services* and took place 2005-09-29/30 Vienna, Austria in conjunction with the annual conference of the German Association for Pattern Recognition (DAGM). About 65 participants discussed 30 papers, especially on building extraction (14), road extraction (9) and traffic monitoring (6). Also here the interpretation of laser data played an important role, especially the integration of LIDAR with image data for better interpretation. As the workshop was immediately before the main conference of the DAGM a large percentage of photogrammetrists also participated in this computer vision oriented meeting.

The proceedings of the workshop are available on line

under <http://www.commission3.isprs.org/cmrt05/>.

WG III/1 *Image Orientation* and WG III/2 *Surface Reconstruction* organized the workshop **BenCOS - Towards Benchmarking Automated Calibration, Orientation and Surface Reconstruction from Images** which took place 2005-10-15 Peking, China. This ISPRS one day workshop was part of the official program of the International Conference on Computer Vision (ICCV). The 40 participants discussed the 10 oral papers given by researchers from photogrammetry and computer vision on one hand and from academia and industry on the other hand. The outline of the planned empirical tests of the working group was discussed.

The positive experience with a joint review of photogrammetrists and computer vision researchers was a bit damped by the low number of papers submitted, which certainly also was due to the chosen deadline: Therefore, if a workshop is held in conjunction with a major conference, one should choose the deadline for submission after the decision on the papers of the main conference, to obtain a larger number of good but possibly specialized papers.

The proceedings of the workshop are available on line under

http://www.ipf.tuwien.ac.at/isprs/wgiii1/BenCOS_2005 or <http://www.cv.tu-berlin.de/isprs/wgiii2/bencos/BenCOS/>.

The inter commission working group ICWG III/V *Image Sequence Analysis* organized the workshop **OMNIVIS'05: Omnidirectional Vision, Camera Networks and Non-classical Cameras** which took place 2005-10-21

in Beijing, China. It was part of the official program of the International Conference on Computer Vision (ICCV). This workshop brought together researchers interested in the problems associated with distributed networks of cameras as well as omni-directional or non-traditional cameras. These are important problems in vision, photogrammetry, robotics, security, and telepresence. Several members of commission III and V working groups were program committee members. It was the 6th workshop of a series. The about 40 participants discussed the 40 papers. Quite some papers on camera calibration for non-standard cameras were presented, which should also be discussed in the Photogrammetric community.

The proceedings are available online under <http://www.eecs.berkeley.edu/~cgeyer/OMNIVIS05/programme.html>.

All workshops were double blind reviewed which resulted in high quality papers. The ratio of the number of participants to the number of presented papers, oral and poster, ranged between 1.3 for the OMIVIS'05 and 4 for the BenCOS workshop and was about 2 on the average. This demonstrates that on an average half of the audience is willing to attend the conferences without having a paper and a rigorous review process does not lead to a low number of participants.

The integration of researchers from photogrammetry and computer vision could be realized, especially in the workshops organized in conjunction with a vision related conference. The application driven research in photogrammetry and the methodology driven research in computer vision have shown to have significant common problems to be solved and in their different view on the same techniques have fruitful discussions for increasing mutual interest.

Plans for 2006 and 2007

The working groups have the following plans for the next two years.

WG III/1:

- Spring 2006: prepare test data for fully automatic relative orientation to have first demo's at PCV'06.
- 2007: workshop, possibly in conjunction with ICCV 2007 in Rio or with CAIP 2007 in Vienna (<http://www.prip.tuwien.ac.at/caip07/>).

WG III/2:

- A benchmark test to be organized was discussed. The test will include test data and test procedures for measuring the performance of surface reconstruction approaches. The database will be structured in such a way, that the researchers can easily integrate the data into their reconstruction framework and compare their results.
- 2007: Working Group III/2 will participate to the Joint Workshop on Remote Sensing and Data Fusion over Urban Areas URBAN 2007 workshop in Paris.
- 2007: A second workshop will be organized in 2007

WG III/3

- 2006: Test on tree extraction from laser scanner data.
- 2007: September 10-14, we plan to organise the workshop Laser scanning 2007 in Espoo, Finland.

WG III/4

- Autumn 2006: several test data sets (LiDAR + Aerial images + Ground plans) available for benchmarking via the ISPRS homepage.
- 2007: PIA'07 Photogrammetric Image Analysis, Munich, Germany

WG III/5

- 2006, May 16-18, Organize an invited session "SAR Urban Monitoring" (10 papers) of 6th European Conference on Synthetic Aperture Radar (EUSAR 2006) in Dresden, Germany, <http://www.dlr.de/hr/EUSAR2006>
- 2006, July, Co-organize an invited session "SAR Urban Monitoring" of IGARSS'06 in Denver, USA
- 2007, April, Organize an invited session of URBAN Conference in Paris, France
- 2007, September 19-21, Organize a conference on "Photogrammetric Image Analysis" (PIA) in conjunction with the other working groups of Commission III, follow up of the 2003 conference to be held in Munich, Germany, <http://www.ipk.bv.tum.de/isprs/pia07/>

All working group chairmen are members of the program committee of the midterm symposium **PCV'06 Photogrammetric Computer Vision** which takes place in Bonn 19.-22. September 2006. The deadline for the papers is 27. March 2006. For more details please visit the home page <http://www.ipb.uni-bonn.de/isprs/pcv06/index.html>.

We want to take the opportunity to thank all working group chairmen and their staff for their brilliant work in 2004 and 2005 and look forward to a fruitful cooperation in the next 2^{1/2} years.

TECHNICAL COMMISSION IV

Geo-databases and Digital Mapping

President: Shailesh Nayak, Secretary: Subhan Khan Pathan

Web Master: Dr. Shibendu Shankar Ray, India
WG website: <http://www.commission4.isprs.org>

Terms of References

- Development, access and management of spatio-temporal databases;
- Spatial data infrastructures;
- Image-based geo-spatial databases;
- Data libraries, data clearinghouses, data warehouses, distributed archives and access to remote data sources, including metadata and digital data standards;
- Web based access, retrieval and dissemination of spatial data, including web-based location-based services;
- Integration of spatial information systems and image analysis for database-driven change detection, data capture and updating;
- Dynamic spatial information systems, spatial data revision and versioning;
- Interfacing 3D models with facility management systems;
- Database generation for digital topographic and thematic mapping (including Ortho-images and digital terrain models);
- Digital landscape modelling and visualization, and large scale urban models;
- Global environmental databases and mapping;
- Extraterrestrial mapping and spatial information systems;
- Analysis of systems and their components for automated and semi-automated digital mapping and geo-information systems;
- Analysis of industry needs and design of systems for production and update of Geo-information.

I. State of Science and Technology

Spatial information has been the most effective means of depicting events over space and time from the beginning of this era. With the advent of multi platform, multi sensor, multi spectral geodata and the organisation of spatial databases around a Geographical Information Systems (GIS), combined with the Global Positioning System (GPS) and photogrammetry, the process of systematic spatial information acquisition has now become much easier. In recent past, the combination of computer technology, communication technology, database technology, digital cartography, etc. has seen the new impetus to Geo-databases, Digital Mapping and Distributed Access systems.

Full automated processes are still to come, significant levels of automation have been introduced in database generation and mapping based on GIS-driven processes and image processing techniques. It is expected that these algorithms and developments will soon be integrated into COTS software of the geospatial information systems. The availability of such information has catalyzed the development of databases, analytical and predictive modelling through GIS and Decision Support System (DSS). Such models are also being developed based on neural networks, fuzzy logic and hybrid soft computing techniques.

Datasets of various types have been produced at national, regional and global levels. Efforts have also been made at micro level planning particularly to meet the needs of city planners. Currently the development of SDI is not well balanced in different countries and regions. Data updating, data harmonization, establishment of framework, establishment of GIS portals are some of the important issues related to SDI implementation. With the further development of SDI, increasing attention is paid to the application and service of SDI. More efforts should be undertaken to study application-related issues of SDI. Location based services (LBS) based on SDI and tele-geomatics will enable wired and wireless users to integrate GI knowledge in mainstream IT solutions. In addition, it is required to develop an ideal front end to access, manipulate data in its native format and to provide the ability to view data from different formats and projections in one view.

A keen interest in the area of geospatial information management and analysis in geo-sensor data has been increased. This includes both image-based (primarily video) and non-image-based sensors. The reason for this increased interest in geo-sensor data utilisation is not only from the great potential of this new paradigm to revolutionize the way by which data is collected, but also from the emergence of more mature algorithms for the management and harvesting of multi-sensor data. There is a need to evaluate various 3D models for the purpose of generating accurate landscape modeling, their visualization and derivation of various terrain parameters such as contours, slope, drainage, watershed boundaries and morphological structures. The automatic extraction of information from high-resolution imagery needs to be focused. Another important aspect of concern is quality control and improvement. There has been significant progress in managing topological change in geo-spatial databases, although full 3D topology is not yet solved. Positional accuracy improvement as an aspect of update is becoming an outstanding concern. Data models are becoming more complex, for instance update procedures need to maintain unique identifiers.

The web-mapping technology has matured and moved towards 3D web applications, sensor web environments, web-based services, and distributing (grid) geo-computing. The spatial component is nowhere much more visible than in the location-based services, mobile mapping and mobile GIS. Therefore, grid computing continues to be an active research subject in Web GIS because it helps manage massive distributed computing/storage resources, provide high-performance, and facilitate "collaborative" virtual computers/organizations. The development of a Geospatial Semantic Web (GSW) related to discovery, query, and consumption of geospatial content are based only on formal semantic specifications.

The data supplied by planetary missions (Nojomi, Spirit-MER 'A' and Opportunity-MER 'B' and The Moon Mission of India) will open a new chapter in mapping of extra-terrestrial systems and creating spatial databases. The High Resolution Stereo Camera (HRSC) on board the "Mars Express" provides multi-spectral image data with a spatial resolution up to 10 m as well as continuous stereo coverage revolutionizes the data acquisition on the Martian surface. Thus, there is a need to address the reference system (Ellipsoid), Digital Terrain Models, scale of mapping, projection, map sheet layout, sheet designation and name, nomenclature on extra terrestrial bodies etc. for the successful creation of spatial databases related to extra-terrestrial systems.

The spatial databases, information marketplace, client/server and Internet computing are the three major areas, which are transforming the geo-information based industries in the world. The ability to manage spatial data types natively in an object-relational database is a major challenge for the geo information management industry. Therefore, the industry should concentrate how best it can provide the low-cost public information, value added data products to the users, cost effective tools for sharing the database, etc., which will surely influence the market development and industry growth in geo-information management.

2. Accomplishments of Commission

The ISPRS Technical Commission IV (TC IV) on Geodatabases and Digital mapping addresses Spatial Databases and Digital Mapping, Digital Landscape Modelling, Global Databases, Extra-terrestrial Geo-information System, Industries interface and Web-based GIS.

During the year 2005 the activities of Technical Commission IV were concentrated in the preparation of the technical program for the midterm symposium. ISPRS TC IV is organising an International Symposium on 'GEOSPATIAL DATABASES FOR SUSTAINABLE DEVELOPMENT' during September 27-30, 2006.

The proposed themes during the symposium are:

- Spatial data infrastructure (WG IV/1).
- Image database and spatial information management (WG IV/2).
- Automated Geo-spatial data acquisition and mapping (WG IV/3).
- Landscape modelling and visualisation (WG IV/4).
- Web-based geo information services and applications (WG IV/5).
- Location-based services (WG IV/6).
- Extraterrestrial mapping (WG IV/7).
- Spatial data integration for emergency services (WG IV/8).
- Mapping from high resolution data (WG IV/9).
- Dynamic and multi-dimensional systems and applications ICWG II/IV).
- Derivation of global data, environmental change and sustainability indicators (ICWG VII/IV).
- Hazards, disasters and public health (WG VIII/2).
- Arid lands, land degradation and desertification (WG VIII/9)

In addition to this ISRS in cooperation with ISPRS, UNOOSA, FIG, ICA and TUDelft has planned to organise a symposium on "Remote sensing and GIS techniques for monitoring and prediction of disasters" during September 25-26, 2006. The fundamental goal of the Symposium is to discuss the geo-information integration for disaster management considering i) Technology (both software and hardware applicable for Disaster Management), ii) User requirements for geo-information (both management and mobile users) and iii) Information providers (data and standards).

The tutorials on i) Geospatial databases for Urban Planning, ii) Data Integration for Emergency Planning and iii) Mapping from high resolution data are also planned during September 25-26, 2006 at Goa, India.

Web related activities

The technical commission IV has its own website www.commission4.isprs.org. It is regularly updated and following information are available on the website.

- Officials
- Activities
- Annual Reports
- Events (ISPRS Symposium and other related events)
- Working Groups
- Resources and Links
- Search Engine
- Information related to Gi4DM

Out of the 9 working groups, six WG (except IV/5, IV/6, IV/9) maintain their own websites.

3. Working Group Activities

WG IV/I: Spatial Data Infrastructure

Chair: Jie Jiang (China)

Co-Chair: Gabor Remetei-Fulopp (Hungary)

Secretary: Gang Han (China)

WG website: <http://www.commission4.isprs.org/wg/>

State of Science and Technology

Spatial data infrastructure (SDI) is generally defined as technologies, policies, and people necessary to promote sharing of geospatial data at all levels of government, private and non-profit sectors, and the academic community. The goal of SDI is to reduce duplication of effort among agencies, improve quality and reduce costs related to geographic information, to make geographic data more accessible to the public, to increase the benefits of using available data, and to establish key partnerships with states, counties, cities, nations, academia and the private sector to increase data availability.

In recent years, significant developments have been made in SDI. Datasets of various types have been produced at national, regional and global levels. Efforts have also been made at city level. Currently the development of SDI is not well balanced in different countries and regions. Data updating, data harmonization, establishment of framework, establishment of GIS portals are some of the important issues related to SDI implementation. With the further development of SDI, increasing attention is paid to the application and service of SDI. More efforts should be undertaken to study application-related issues of SDI.

Accomplishment of Working Group

- Held workshop on "Service and Application of Spatial Data Infrastructure, at Hangzhou, China during October 14-16, 2005. More than 100 registered participants from 14 countries/regions participated. Participants include from ISPRS Council, CEOS-WGISS, GSDI, ISO/TC 211, ISO/TC 204, FAO, PCGIAP, etc. 3 keynote speeches, 2 plenary sessions, 8 technical sessions and one technical training session were organised. 56 papers were presented and proceedings were published as hard copy and CD-ROM.
- WG Chair Jie Jiang participated in Africa GIS 2005 Conference held during October 31 to November 4 in City of Tshwane (Pretoria), South Africa and provided a half-day tutorial on "Service and Application of SDI" on October 30.
- Participated in ISPRS Workshops on 'Spatial Data Quality' and 'Spatial-temporal Modelling, Spatial Reasoning, Spatial Analysis, Data Mining and Data Fusion' during August 25-26, August 27-28, respectively, in Beijing, China.

- WG Chair Jie Jiang and Co-Chair Gabor Remetei-Fulopp participated actively the FIG Working Week 2005 and GSDI-8 in Cairo, Egypt, April 16-21, 2005.
- During 2005, WG Co-Chair Gabor Remetei-Fulopp has been
 - Director of EUROGI (European Umbrella Organisation for Geographic Information) Working and Advisory Group on GIS on International Level,
 - Invited member of the LOCs of the AGILE 2006 Conference
 - Member, CEOS-WGISS (The CEOS Working Group on Information Services and Systems) Workshop scheduled for 2006 in Budapest.
 - Secretary for the GSDI (Global Spatial Data Infrastructure Association) Board of Directors
 - Bureau member of UNECE WPLA (United Nations Economic Commission for Europe, Working Party of Land Administrations).

All these arrangements are strengthening the links between ISPRS WG IV/I and the respective organisations.

- WG Co-Chair Gabor Remetei-Fulopp participated
 - As moderator in brainstorming Think Tank on "Embracing Cultural Differences in a Global Spatial Data Infrastructure" held at the Massachusetts Institute of Technology, Cambridge, Massachusetts, USA between 17-19 August 2005
 - INSPIRE Expert Group Meeting of the European Commission and presented a report on the role and features of the cadastre for the European Spatial Data Infrastructure (INSPIRE initiative) as formulated by the joint Working Group of the Eurogeographics and the Permanent Committee on Cadastre in the EU.
 - Digital Earth 2005 Conference held in Tokyo Japan between 28-31 March. His presentation on the Spatial Data Interest Community with emphasis on ISPRS WG IV/I activities attracted attention.
 - Organised an Open Day devoted to the "Access and Re-use of Public Sector Information" in the context SDI in Budapest, on May 13, 2005 in conjunction with the European ePSInet Network and the Association of Hungarian Content Providers.
 - Delivered a presentation on the "Challenges of the European SDI on the Land Administration" at the UNECE WPLA Workshop devoted to EU enlargement - Impact on Land Administrations held in Budapest between April 7-8, 2005
 - Core WG member Peter Winkler, Honorary member of EARSeL participated the 25th EARSeL Symposium in Porto, Portugal, between June 6-11, 2005.
 - Cooperation with other groups and organizations:
 - ISPRS WG IV/8 "Spatial Data Integration for Emergency Services" and ISPRS IC WG II/IV "Dynamic and multi-

- dimensional Systems and Applications"
- PCGIAP (Permanent Committee on GIS Infrastructure),
- ISO/TC211 AG on Outreach
- EU DG JRC's Spatial Data Interest Community and Legally Mandated Organisations related to INSPIRE
- UN Geographic Information Working Group
- ITC, The Netherlands
- FIG (FIG Commissions 2, 3 7)
- EuroSDR (European Spatial Data Research Association)

Working Group News

- 2006: To organize technical sessions in the Commission Symposium in Goa, India
- 2007: To organize a workshop on "Data Updating and Services" together with other WGs in summer, Beijing, China and the 2nd WG workshop in autumn, Budapest, Hungary.
- 2008: To organize technical sessions in 21st Congress in Beijing, China.

WG IV/2: Image-based Geospatial Information Management

Chair: Peggy Agouris (USA)
Co-Chair: Matt Duckham (Australia)
Secretary: Arie Croitoru (USA)

WG website: <http://www.commission4.isprs.org/wg2/>

State of Science and Technology

An increased interest in the area of geospatial information management and analysis in geo-sensor networks has been witnessed. This includes both image-based (primarily video) and non-image-based sensors. The reason for this increased interest in geo-sensor networks stems not only from the great potential of this new paradigm to revolutionize the way by which data is collected, but also from the emergence of more mature algorithms for the management and harvesting of geo-sensor networks. As a result of that, an increasing number of publications on applications that geo-sensor incorporate geo-sensor technologies, primarily for habitat monitoring (An Analysis of a Large Scale Habitat Monitoring Application, Robert Szewczyk, Joe Polastre, Alan Mainwaring, John Anderson, and David Culler, The Second ACM Conference on Embedded Networked Sensor Systems, Nov. 2004).

Following this trend, an increased interest in image-based spatiotemporal data processing and analysis has been noticed. In particular, this includes content-based indexing, querying, data mining, and information retrieval in image- and video-based geospatial databases, and large spatiotemporal imagery database management and organization. A primary reason for this is the increased need for efficient spatiotemporal analysis primarily in the areas of emergency response and homeland security. As an example to a recent event that has emphasized the need for

image-based spatiotemporal analysis can be found in this year's hurricane season in the United States (in particular hurricane Katrina).

Accomplishment of Working Group

- Participation in the collaborative ISPRS Workshop 'High Resolution Earth Imaging for Geo-spatial Information', during May 17-20, 2005, Hanover, Germany (WG IV/3).
- Members of WG participated in the ACM-GIS 2005 symposium that was held in Bremen, Germany. The symposium, which was held in conjunction with CIKM 2005, included sessions on moving objects, sensor networks, data integration and data mining, data structures and computational geometry, VR and 3D, data modeling, and image and shape analysis.
- Co-Chair Matt Duckham has participated in Pervasive 2005 (Munich, Germany), GISPlanet (Lisbon, Portugal), COSIT'05 (Buffalo, NY), and an IBFI Schloss Dagstuhl seminar (Saarbrücken, Germany).

Working Group News

- A workshop is being planned in 2007 either in conjunction with a major GIScience conference in USA or COSIT 2007 to be held in Melbourne, Australia.
- A special issue of ISPRS Journal of Photogrammetry and Remote Sensing I titled "From Sensors to Systems: Advances in Distributed Geoinformatics" in 2006.
- The WG will also be involved in the organization of the Second Workshop on GeoSensor Networks will be held in Boston, MA, in 2006. The workshop is expected to bring together experts from diverse research domains, including spatial databases and spatial information modeling, robotics and digital image analysis, mobile computing, operating systems, database management, and environmental applications.

WG IV/3: Automated geo-spatial Data Acquisition and Mapping

Chair: Christian Heipke (Germany)
Co-Chair: Peter Woodsford (United Kingdom)
Secretary: Markus Gerke (Germany)

WG website: <http://www.commission4.isprs.org/wg3/>

State of Science and Technology

There are many scientific groups doing research in automatic geo-spatial feature acquisition. One focus is on capturing of 3D objects. The use of sensors like laser scanners is of increasing importance, especially in combination with imaging sensors. The new digital sensors have become of interest for automatic image interpretation and object extraction research. Presently, the appropriate way to incorporate automatic image analysis into operational systems is by semi-automation, which is reflected by recent developments.

Emphasize is clearly shifting from pure data acquisition

and linear flow lines to updating existing databases. Therefore, data models now have an important role in updating. Nevertheless, in certain cases there remains a requirement for near-real time mapping.

Quality control and improvement are key concerns. There has been significant progress in managing topological change in geo-spatial databases, although full 3D topology is not yet solved. Positional accuracy improvement as an aspect of update is becoming an outstanding concern. Data models are becoming more complex, for instance update procedures need to maintain unique identifiers. An interesting development is that of CityGML (www.citygml.org/) with its provision for different levels of detail in the representation and transfer of 3D city models.

Digital photogrammetric workstations are increasingly integrated with GIS data management, so covering the complete process from data capture to data management, analysis, visualisation and dissemination. At present they are incorporating database and visualization functionalities, partly in 3D.

Accomplishments of Working Group

- Organised the Workshop on High Resolution Earth Imaging for Geospatial Information¹, May 17-20, 2005, Hannover, Germany (along with WG I/5). The Workshop was dedicated to the 75th birthday of Gottfried Konecny and special session was organised. 12 oral sessions and 3 poster sessions were organised. 52 oral and 25 poster presentations were made. One key-note address and 5 invited talks were delivered. 134 participants from 30 countries attended this workshop. A special issue in German PFG will appear during late 2005. The Workshop proceedings are available on <http://www.ipi.uni-hannover.de>.

Working Group News

- 2006: WG-related sessions at Commission-IV-Symposium in Goa.
Special issue of ISPRS-Journal: Digital Aerial Cameras, to appear in 2006
- 2007: A Workshop on High Resolution Earth Imaging for Geospatial Information has been scheduled during May 29, Jun 1, 2007 in Hannover, Germany (along with WG I/2, I/5, I/6, possibly others).
- 2008: Xinjiang Workshop on Continuous Updating (in planning stage)

Continuation of collaboration with ICA: Incremental Updating & Versioning of Spatial Data Bases (A. Peled and T. Cooper)

WG IV/4: Landscape Modelling and Visualisation

Chair: Jochen Schiewe (Germany)
Co-Chair: Marguerite Madden (USA)
Secretary: Thomas Jordan (Germany)

WG website: <http://www.commission4.isprs.org/wg4/>

State of Science and Technology

Landscape Modelling and Visualization are central tasks for characterizing the current environmental conditions, assessing trends and predicting future states. Hence, the results are crucial information for decision makers working for a sustainable environment from various view points and at different scales.

With both, advancements in sensing and visualization technology on one hand, and increasing user demands with respect to semantical and geometrical accuracy, near real-time access to the information and the various displaying formats on the other hand, manifold research has to continue in these areas, which will be accompanied and forced by this Working Group. In particular, the focus will be on i) efficient and enhanced landscape data and information representation for decision support; ii) continued efforts be made to accurately and comprehensively model the landscape through visualization and landscape metric computation, iii) advancements in telepresence, virtual, and augmented reality technology be integrated with remote sensing to develop full sensory experience of virtual environments and iv) the usability of photorealistic rendering vs. non-photorealistic rendering.

Accomplishments of Working Group

A workshop was organized along with Annual American Society for Photogrammetry and Remote Sensing (ASPRS) Conference during March 9-10, 2005. Two sessions were organized. 25 participants attended this workshop.

Working Group News

- A publication of special issue of ISPRS journal on 'Landscape Modelling, Analysis and Visualization.' has been planned.
- 2006: Oral and poster sessions in the course of the Symposium of ISPRS Commission IV, to be held February 28-March 2, 2006 in Goa, India.
- 2007: Joint Workshop with other WGs of ISPRS (like IV-6), time and location (in Germany) still to be determined.

WG IV/5: Web-based Geo-information Services and Applications

Chair: Mukund Rao (India)
Co-Chair: Songnian Li (Canada)

State of Science and Technology

New and active OpenGIS initiatives related to WG IV/5 terms/topics include

- the Open Geospatial Consortium's Web Map Service (WMS) Implementation Specification has been

- approved as International Organization for Standardization (ISO) Standard;
- OGC continues to work on its Web Services Specifications (Phase 3) to enable an interoperable, multi-source decision support environment, Specially in the areas of Common Architecture, Sensor Web Enablement, Geo-Decision Support Services, Geo-Digital Rights Management, and Open Location Services;
 - the development of a Geospatial Semantic Web (GSW), where discovery, query, and consumption of geospatial content are based on formal semantic specification; and
 - the development of the OpenGIS Web Services Context Document Schema Interoperability Experiment.

Grid computing continues to be an active research subject in Web GIS because it helps manage massive distributed computing/storage resources, provide high-performance, and facilitate "collaborative" virtual computers/organizations. The Commission on Maps and the Internet, ICA has quite actively organized workshops since 2004 on Ubiquitous, Pervasive and Internet Mapping; Location Based Services & Telecartography; Geographic Hypermedia; Open Source Geospatial; and Internet-Based Cartographic Teaching and Learning. These developments are closely related to WG IV/5 terms of references.

Another series of workshops is the International Workshop on Web and Wireless Geographical Information Systems (W2GIS), which also actively involves the topics on Web-based GIS and GIServices. It's in discussion now that WG IV/5 may be involved in the organization of its 6th workshop in 2006.

Accomplishments of Working Group

Co-Chair Songnian Li involved in organizing the 13th International Conference on Geoinformatics, held in Toronto, August 17-19, 2005.

WG IV/5 has completed its website testing and will have it officially linked to ISPRS website soon.

Working Group News

An ISPRS Workshop on Web Geoinformation and Services is being planned in 2007.

A book on development in Web GIS is being planned.

WG IV/6: Location based Services

Chair: Michael Hahn (Germany)

Co-Chair: Stephan Nebikar (Switzerland)

- Website: <http://www.isprswg46.hft-stuttgart.de>

State of Science and Technology

A growing diversity in the field of mobile data services was a main motivation to form the Open Mobile Alliance in 2002. With a membership of nearly 400 companies spanning the mobile industry value chain, the OMA has established itself as the leading international standards

body for mobile specifications. OMA defines industry wide requirements, architectural frameworks, and industry specifications for enabling technologies and end-to-end interoperability.

Conventions like the annually organised "CITA Wireless" show that most LBS applications are not as advanced as assumed in many cases. Here we understand an LBS application as one that knows the current real-time location of a mobile device, which creates a spatial zone around the current location, that performs a "what's near me" query, and then delivers driving, traffic, and other information which relates the current position to the specified destination. Navigation advisors and friend finders (e.g. MapQuest(R) Find Me) are the prominent exceptions. Beyond those there are lots of applications which still to be developed.

Accomplishments of Working Group

An expert meeting "3D GI 2005" was organised by the Co-Chair Stephan Nebiker at the Basel University of Applied Sciences in Switzerland, October 19, 2005. The focus of 3D GI 2005 was on Geoinformation services, which is a major objective of our WG ToRs. Around 20 participants attended the expert meeting. A follow up event of the expert meeting was the workshop "3D GI 2005" which was organised at the same location on October 20 and 21, 2005.

A Web page (<http://www.isprswg46.hft-stuttgart.de/>) has been set up which gives details about the current WG activities. Further, the WG objectives and the forthcoming events supported by the WG are announced on this page.

The working group is in contact with the open mobile alliance in particular with its Location Working Group. Specifications, open standards and interoperability issues which are addressed in the ToRs of our WG are particularly pushed by this international specifications setting body.

Working group News

2006: Organising 3 sessions during the midterm symposium of Commission IV on 'Geospatial Databases for Sustainable Development'.

Providing support to an International Workshop on 3D Geoinformation organized by the University Teknologi Malaysia in August 2006 in Kuala Lumpur.

Organising a (student) competition on "LBS related to themes of the ISPRS".

Topic 1: Levelling using digital cameras or PDAs with digital cameras, or mobile phones with digital cameras.

Topic 2: Creation of a location based BLOG

Common to both ideas is that mobile low cost equipment should be employed and innovative solutions are in the focus of this competition.

2007: A workshop is being planned.

WG IV/7: Extraterrestrial Mapping

Chair: Jurgen Oberst (Germany)
Co-Chair: Paul Schenk (USA)
Secretary: Marita Wählisch (Germany)

WG website: <http://www.commission4.isprs.org/wg7/>

State of Science and Technology

The past decade has seen a number of successful and spectacular planetary exploration missions. NASA orbiters and landers are exploring Mars. Cassini is beginning its orbital tour through the Saturnian System and has returned first image data from the satellites of this giant outer planet. Messenger, launched earlier this year, is headed for Mercury. On the European side, Mars Express and its onboard High Resolution Stereo Camera (HRSC) are mapping the surface of Mars from orbit in 3-D; Smart-1 is approaching the Moon.

With the public showing renewed interest in space- and planetary exploration, space agencies worldwide have expressed ambitious plans for new planetary missions. NASA is continuing its strong Mars Exploration Program and has just announced a major initiative for a return to the Moon. Likewise, ESA is planning to launch missions to Venus (Venus Express) and Mercury (BepiColombo). Japan will send the Lunar-A and the Selene spacecraft to the Moon. Likewise, India and China are preparing their own lunar orbital missions.

With this large number of planetary missions coming at a quick pace and returning an ever increasing volume of data, there is an emerging need for advanced methods, techniques, and spatial systems to support space exploration with high-resolution, high-precision mapping data.

Accomplishment of the Working Group

A meeting of the working group was organized on June 20-24 in Singapore, which included 20 presentations, see report in <http://www.isprs.org/publications/highlights/highlights0905/10HLO905Society.pdf>

A get-together of working group members during the HRSC (the High Resolution Stereo Camera on Mars Express) team meeting that took place in London, 9-10 September. A project of comparisons of DTM-processing software and data products for the Mars Express stereo camera HRSC was initiated. Target sites and standard image data have been identified for this comparison, and work guidelines have been set up. This project involves all Photogrammetry/Cartography Institutions that participate in the HRSC project. The results will be presented at the coming ISPRS meeting of the commission IV next year.

Working group News

2005: Working group meeting:

- following the Lunar and Planetary Science Conference, Houston, TX,
- special session at the EGU (European Geosciences Union) Meeting, Vienna
- special session at the AOGS (Asia Oceania Geoscience Society) Meeting, Singapore

2006: Extra-Terrestrial mapping / Working group meeting, preferably together with project team meetings, e.g. of MarsExpress, Berlin.

2007: Working group meeting, preferably in the form of a special session at large geosciences meetings.

WG IV/8: Spatial Data Integration for Emergency Services

Chair: Sisi Zlatanova (The Netherlands)
Co-Chair: Jonathan Li (Canada)
Secretary: Andrea G. Fabbri (The Netherlands)

WG website: <http://www.commission4.isprs.org/wg8/>

State of Science and Technology

Crisis response is a very specific phase of disaster management. Data collection for emergency response and especially on 3D reconstruction from various sensors is very critical (N. Pfeifer, N. Kerle, J. Li). The need of 3D for emergency response was discussed continuously in the group. A paper on this topic was published in GIM International by the chairs of the group. In general the interest of 3D is rapidly increasing. 3D GIS is desirable but still many institutions involved in emergency response are challenged various more important questions related to 2D. The interest in 3D is observed mostly amongst young people, who do not really have experience with geospatial data. Progress in 3D data structuring and visualization is striking. A special attention is paid more and more on integration of CAD and 3D GIS. A very promising development is the work of the OGC CAD/GIS group which is actively cooperation with some members of WGIV/8 (e.g. T. Kolbe). A work was initiated on (3D) services for evacuation from buildings and 3D visualization of routes (Y. Lee., N. Pfeifer, S. Zlatanova). The work on 3DGazetter is also in progress but still at a very initial stage (H. Scholten, A. Camara and S. Zlatanova). The WG is actively following the developments with EU large projects regarding disaster management such as ORCHESTRA, GMES, DIMISCO, INSPIRE, etc. via the members of the group. The group is actively cooperating with AGILE, EuroSDR, OGC, working groups from FIG, ICA and EC (Directorate Environment).

Accomplishments of Working Group

- Organised the First International Symposium on Geo-information for Disaster Management. Information
-

about the Symposium (including many .ppt presentations) is available on <http://www.gdmc.nl/events/gi4dm>. The papers of the symposium are published by Springer titled "Geo-information for Disaster management".

- Research seminar on Homeland security, 8 May, Baltimore. Information about the seminar can be found on <http://www.bentley.com/enUS/Corporate/News/Quarter+2/Geospatial+Research+Seminar.htm>. The papers from the seminar are in process of publishing in Directions magazine <http://www.directionsmag.com>. The most important observation of this seminar was that the priorities in North America and Europe slightly differ. The North America institutions invest much more resources in homeland security compared to Europe.
- During the GIS planet conference (30 May,- 2 June, Estoril, Portugal) were given two workshops on technology on Emergency Response with members of the group (H. Scholten, M. Kevany, M. Goodchild, A. Camara). The workshops discussed all aspects of emergency response: from data collection, processing and organization to analysis and visualization on different devices. The workshop provided a good overview on user requirements for all risk management.
- One week of this year Vespucci summers school (3-8 July, Fiesso, Italy, <http://www.vespucci.org/>) was devoted to disaster management. The week was extremely interesting not only because of the excellent atmosphere and interaction between teachers and students but also because of the possibilities to explore 'real-time' (geo-)information provided on the web for citizens. The results of the on-the-spot-created case study regarding terrorist attack in London were recently published in Geoinformatics Magazine.

The WG was involved also in the organization several other workshops and symposia on related topics. Short description is given below.

Working Group News

- 2006: The Second Symposium on Geo-information for disaster management, 25-26 September, 2006, Goa, India.
International Workshop on 3D Geoinformation 2006, Kuala Lumpur, Malaysia
"Remote Sensing and GIS techniques" Zlatanova & Nayak (eds.), publisher Spinger, based on selected papers from the second international symposium on GI4DM.
"GI-technology for emergency response" is in progress and will be published by Taylor & Francis within the ISPRS book series.

WG IV/9: Global data base

Chair: Hiromichi Fukui (Japan)
Co-Chair: John Kineman

WG IV/10: Mapping from High Resolution Data

Chair: David Holland (UK)
Co-Chair: Pradeep Srivastava (India)

State of Science and Technology:

On the Technology front, the year 2005 saw the launch of (i) CARTOSAT-1, a dedicated stereo satellite with 2.5 m panchromatic resolution and 27.5 km swath by the Indian Space Research Organisation on May 5 and TOPSAT, a 120 kg micro satellite, with a 2.5 m panchromatic/ 5 m multi-spectral resolutions and 25 km swath by the UK consortium of companies funded by British National Space Centre and the UK Government on October 27.

On the Science front, University of Osnabrueck, Vechta, Germany (M. Ehlers) has developed a panchromatic and multi-spectral data fusion technique based on the standard Intensity-Hue-Saturation technique combining filter-

28-30 Nov 2005 Vienna, Austria	3rd International Symposium on LBS and TeleCartography, ICA Commission on Maps and Internet	Georg Gartner georg.gartner@tuwien.ac.at
14-16 Oct 2005, Hangzhou, Chian	ISPRS Workshop on Service and Application of Spatial Data Infrastructure, WGIV/1, WGVII/8, WGII/IV	Jie Jiang jjie@nsdi.gov.cn
19-30 Aug 2005 Vienna, Austria	Joint Workshop of ISPRS and DAGM on Object Extraction for 3D City Models, Road Databases and Traffic Monitoring, WGIII/4, III/5, WGVII/8	Franz Rottensteiner rottensteiner@unsw.edu.au
17-19 Aug. 2005, Toronto, Canada	13th International Conference on Geoinformatics "Coping Disasters across Continents"	Jonathan Li junli@ryerson.ca
26-28 July 2005, Xiamen, China	4th International Conference on Environmental Informatics (ISEIS 2005)	Jonathan Li junli@ryerson.ca
21-22 June 2005 Bonn, Germany	First International Workshop on Next Generation 3D City Models	Gerhard Groeger groeger@uni-bonn.de



ing in the Fourier domain which allows for better retention of original spectral characteristics in the fused image. S.P. Kozaitis and R.H. Cofer report on lineal feature detection using multi-resolution wavelet filters in PE&RS, June 2005 to automatically detect seed pixels. P.M. Dare describes a shadow analysis technique in the high resolution satellite imagery in urban areas in PE&RS Feb. 2005. L.C. Chen et al. report a novel adaptive patch projection technique for the generation of ortho-photos from satellite images in PE&RS, Nov. 2005. T. Podobnikar reports on production of an integrated DTM from multiple such data sets of different quality in the Int. J. of Geographic Information Science, Jan 2005.

Accomplishments of Working Group

Working group News

- 2006: One-day seminar on "Mapping Potential of Cartosat-1 Mission" at Hyderabad, India during the first quarter of 2006.
One-day tutorial on "Exploitation of topographic height information generated from Space-borne Imagery" prefixing the September 2006 Goa Symposium is being planned.
- 2007: Join hands with WG I/5 and WG IV/3 - an International Workshop on "High Resolution Earth Imaging for Geospatial Information" to be held in Hannover, Germany during May. 29 - June 1st, 2007.

A Workshop along WG I/4 and Annual Conference of the Remote Sensing and Photogrammetry Society (RSPSoc) during September 12-14, 2007

j. Other Relevant Information

k. Commission Officer Address Update

Chair WG IV/4: Landscape Modelling and Visualisation

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Chair WG IV/5: Web-based Geo-information Services and Applications

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TECHNICAL COMMISSION V

Close-range Sensing: Analysis and Applications

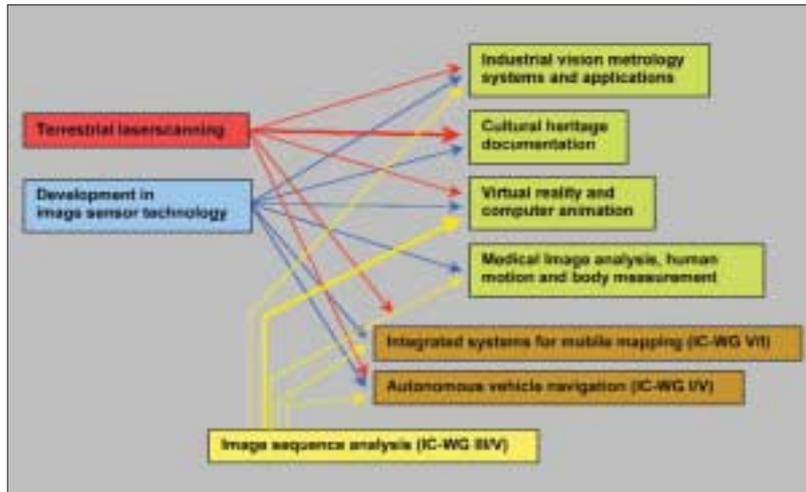
President: Hans Gerd Maas, Secretary: Danilo Schneider

I State of Science and Technology of Commission Topics

Commission V covers a field, which has traditionally been referred to as terrestrial photogrammetry or close range photogrammetry. This field seen a strong growth over the past two decades, with fields such as industrial quality control, robotics or biomedical vision depicting major depicting major new fields of activity. While these applications fields are usually not considered under the umbrella term 'geosciences', they clearly match with the definition of the term 'photogrammetry'. Following this tendency, the focus of Commission V has propagated into a wide range of new application fields during the past years. A central issue in many developments is the integration of sensor technology with fully automated data processing schemes to generate highly automated online or real-time photogrammetric measurement systems. Here we often find the term 'image engineering', standing for custom-made solutions based on active and passive

sensing and illumination devices combined with task-specific image analysis techniques.

These tendencies have caused a clear shift in Commission V activities. While the commission was formerly mainly focused on applications such as cultural heritage recording and documentation, many promising new application fields are found in industrial design, production and quality control processes. Sophisticated image engineering approaches were developed to support the reliability of image analysis procedures and to achieve success rates beyond 99.9% in fully automatic multi-ocular photogrammetric 3D measurement systems. Active systems based on cameras combined with projection techniques allow for 3D surface measurements at data rates beyond one million points per second. In addition, they allow for the realization of powerful illumination algorithms in vision systems used for example in reverse engineering. These techniques have opened immense new markets for photogrammetry, which have only rudimentarily been exhausted by now.



Triangulation-based laserscanners have been used in industrial measurement systems for more than two decades. The advent of terrestrial laserscanners based on time-of-flight or phase-measurement principles, which offer a range of several hundred meters and a data rate in the order of 10 kHz or more, has added a new dimension to cultural heritage recording in recent years. Laserscanners also depict a rather powerful instrument for new market sectors such as facility management. Laserscanners and laserscanner data processing can be considered a bridge between photogrammetry and traditional engineering geodesy, with the instrument design resembling the one of geodetic instruments and point cloud processing principles derived from photogrammetric image processing and image analysis techniques. Laserscanner and high resolution camera sensor data fusion depict a topical research issue in this field. Range cameras, combining a greyscale image and a simultaneously recorded depth image, form a new interesting device in this field. Besides conventional central perspective digital cameras and laserscanners, diverse unconventional sensor types are becoming popular. Many of these can be summarized in the category of omni-directional vision systems.

Commission V delivers many contributions to the development of virtual reality products, with applications fields ranging from cultural heritage to animation and movie production. In addition to the generation of high quality textured 3D object models, multi-ocular image sequence processing introduces time as the 4th dimension, allowing for manifold applications in 3D motion analysis. Image sequence analysis and sensor fusion also play a major role in the development of mobile mapping systems and in autonomous vehicle navigation tasks. Beyond this, the fusion of sensorics, photogrammetric data processing, CAD, GIS and VR techniques has recently opened new research and application fields in augmented reality.

Besides industrial applications, medical imaging can be considered an application field with a strong growth potential, where photogrammetric techniques can deliver

valuable contributions. New application fields can also be seen in tomography data processing and in biometry, where photogrammetric techniques are used in applications ranging from forestry to raster electron microscopy.

Commission V has always been successful in attracting many 'non-photogrammetrists' - noting that this term is undefined and that everybody extracting quantitative information from imagery is actually a photogrammetrist. Commission V has also seen a large number of successful research projects passing into practical application, thus

opening new fields of activity and creating new markets for photogrammetrists.

2 Accomplishments of Commission during the current year

Commission V consists of six working groups plus three intercommission working groups, emphasizing links to Commission I and Commission III. The following diagram shows the commission structure:

After several successful workshops conducted by Commission V working groups in 2005, the next event will be the Commission V symposium, which will take place in Dresden 25-27. September 2006. Contributions will be accepted on the basis of a full paper review, coordinated with Commission III. The deadline for the submission of papers is 1 april 2006. Commission V will have both printed proceedings and web access to all papers.

Another series of workshops is planned for 2007. Detailed information on Commission V structure and activities can be found on <http://www.commission5.isprs.org/>.

3 Working Group Activities During the current year

3.1 WG V/I: Industrial vision metrology systems and applications

Chair: Thomas Luhmann (Germany)

Co-Chair: Frank van den Heuvel (The Netherlands)

Secretary: Werner Tecklenburg (Germany)

3.1.1 Progress, needs, and developments

WG V/I covers a wide range of topics that reach from digital imaging sensors, mathematical modelling, and image analysis to application-oriented issues and standardizations. Consequently, the working group has links with other ISPRS working groups and non-photogrammetric

groups as well. As a significant trend during the past 10 years one can recognize a decreasing interest of industrial users in the work of ISPRS. Hence, it is one objective of our working group to intensify contacts to industry and system suppliers.

The recent technical development is characterized by a number of technological progresses. Digital imaging sensors are available with up to 40 Mpixel for still-video cameras, and more than 1.5 Mpixel for digital video cameras. New data interfaces (e.g. CameraLink) with higher data rates offer new chances for real-time applications. Special digital sensor systems like high-speed cameras, panorama cameras, stereo-cameras, CMOS cameras, intelligent cameras etc. enable new applications but new demands on photogrammetric processing and software as well. Hybrid sensor solutions (e.g. fringe projections, laser, GPS/INS) are of increasing interest especially in the field of large-scale metrology. Here photogrammetric solutions are combined with different sensor data, e.g. laser trackers and laser scanners.

Automation is obviously one of the most challenging tasks in industry. Successful systems of today usually work with coded targets that can be identified and located in 3D fully automatically. Non-targeted objects and object parts are much more difficult to measure, e.g. contours and edges. Although numerous algorithms are known, a high level of reliability and accuracy is often not achieved.

3.1.2 Accomplishments of the working group

WG V/1 activities have concentrated on establishing a closer cooperation between CMSC (Coordinate Metrology Systems Conference, USA) and our WG. Thomas Luhmann has attended the conference in July 2005 where he had the opportunity to deliver ISPRS Comm. V flyers and where he could present Dresden as the city of the next symposium. In addition, he had a meeting with the CMSC board in which they have discussed the formal and informal aspects of the future cooperation. As a first step, cross-links to each other's webpages have been created. For the next time they have agreed to discuss an each-wise sponsorship for members of ISPRS and CMSC to visit each other's conferences. This issue is of course a matter of the Commission V president who will be informed in time in more detail. The CMSC conference has gathered about 200 participants and more than 20 exhibitors. For our working group this is probably the most interesting place besides the German Control Fair and the Optical 3-D conference. WG chairmen are optimistic that a formal cooperation between both groups can be established very soon.

WG V/1 has co-organized the 2nd workshop on Panoramic Photogrammetry, held in Berlin 2005. In addition a special WG V/1 session could be organised for the conference on Optical 3-D Measurement Techniques 2005 in Vienna.

3.1.3 Forthcoming activities

Meetings:

- Participation on CMSC, Orlando, Florida, 2006.
- Working group sessions on Commission V symposium, Dresden 2006.
- Co-organisation of the next Panoramic Photogrammetry workshop, Berlin, 2006.

Other activities:

- A mailing list of about 500 addresses is used to deliver WG e-mails. However, more effort must be spent in order to get responses by WG members, and to establish a filtered list of those who are interested in contributing to the WG.

3.2 WG V/2: Cultural heritage documentation

Chair: Pierre Grussenmeyer (France)

Co-Chair: Klaus Hanke (Austria)

Secretary: Tania Landes (France)

3.2.1 Accomplishments during 2005

A web site for ISPRS Working Group V/2 has been established at <http://photogeo.insa-strasbourg.fr/isprsV2.html> (official address is <http://www.commission5.isprs.org/wg2/>) ISPRS WG V/2 chairs and regional coordinators participated:

- at CIPA 2005 Symposium "International Cooperation to Save the World's Cultural Heritage" in Torino (Italy) from Sept. 26th to October 1st. More than 300 participants from 30 different countries were present and the proceedings contain 217 papers available at <http://cipa.icomos.org>.
- at CIPA Executive board meeting in Torino (before the congress): Grussenmeyer, Hanke, R  ther, Takase.

3.2.2 Working Group News and Proposed Future Program

ISPRS WG V/2 will assist with the technical program and participate in:

2006:

- Sept. 25-27: Commission V Symposium 'Image engineering and vision metrology', Dresden.
- Oct. 30 – Nov 4: possible CIPA Workshop in Limassol, Cyprus (Organizer: Marinos Ioannides)
- November or December: possible Aluka/UCT/CIPA/ISPRS/Africa 2009 workshop in Monbassa-Kenya (Organizer: H. R  ther)

2007:

- June: ISPRSWG V/2 workshop in Strasbourg (to be confirmed in January 2006)
- October 1-6: CIPA 2007 symposium in Athens

The current web site will be expanded with additional links to resources available on the Internet. The list of active members of ISPRS WG V/2 will be completed and published on the web site.

The participants of the CIPA symposium in Torino will be contacted. Links with CIPA WG chairs will be done.

3.3 WG V/3: Terrestrial laser scanning

Chair: Derek D. Lichti (Australia)
Co-Chair: Norbert Pfeifer (The Netherlands)
Secretary: Tahir Rabbani (The Netherlands)

3.3.1 State of Science and Technology of Working Group Topics

A number of trends in terrestrial laser scanning research have been observed at the recent laser scanning workshop and O3D conference. These include registration/orientation algorithms, point cloud segmentation and calibration. Many are focused on applications, predominantly cultural heritage recording and structural measurement.

3.3.2 Accomplishments of Working Group

- **Members:** We have been very active in recruiting members for the WG, trying to capture the interest of researchers outside the photogrammetric community. We have members from forestry, civil engineering, mechanical engineering and geology whose applications are of interest to us. In total there are more than 30 members.
We have been in communication with the Chairman of the new International Association for Engineering Geology (IAEG) Commission C19, "3D terrestrial laser scanning technology in the Geosciences" (<http://www.iaeg.info/Default.aspx?tabid=33>). We have agreed to try and organise a joint meeting in the future. In the first instance we plan to have at least one session on engineering geology applications of laser scanning at the 2006 Symposium in Dresden.
- **Laser Scanning Workshop:** The Workshop *Laser Scanning 2005* was held in Enschede 12-14 September. This was a joint effort organised by working groups III/3, III/4, and V/3. It was very successful workshop with many papers on both terrestrial and airborne laserscanning. Twenty-nine oral and ten poster presentations were given. Papers quality was generally very high, which can be attributed to the double-blind peer review process that was used for paper submissions. Both WG chairs participated in the workshop by reviewing papers and by chairing oral presentation sessions.
- **Optical 3D Measurement Techniques Conference:** This conference was held in Vienna 3-5 October 2005. There were 6 oral presentation sessions and numerous poster papers directly related to terrestrial laser scanning and point cloud processing. This is significant growth since the last O3D conference in Zürich in 2003. Both WG chairs participated by chairing oral presentation sessions.
- **Software Survey:** A user survey of terrestrial laser scanner software was performed. Questionnaires were sent out to WG members and others. Nineteen completed responses were received. The results were sent by email to all participants and have been posted on the WG website.
A poster about the Working Group and the software

survey (described below) was posted at both the workshop and O3D conference.

- **Hardware Survey:** The result of a survey of laser scanner instruments compiled from manufacturers is posted on the website.

3.3.3 Working Group News

- **Next Workshop:** The next laser scanning workshop, to be organised again with Commission III working groups, has been tentatively scheduled for the week of 10 September 2007 in Finland. Juha Hyypä has communicated this to Orhan Altan.
- **Planned Registration Test:** A performance test of different surface registration (i.e. ICP-type methods) software (both research and commercial packages) is planned for early 2006. We will provide 4 datasets to participants who will use their software to estimate transformation parameters. The WG chairs will collate the results and perform the comparisons. Several WG members have already indicated their willingness to participate.

3.4 WG V/4: Virtual reality and computer animation

Chair: Sabry El-Hakim (Canada)
Co-Chair: Fabio Remondino (Switzerland)
Secretary: Jan Böhm (Germany)

3.4.1 State of Science and Technology

Although a great number of publications, workshops, and research activities took place over the past year, there have not been significant advances or breakthroughs in the modeling main problem areas. The fully automated image-based techniques, mainly being developed in the computer vision community, are still mostly unutilized in real applications. A significant number of papers in the photogrammetric workshops were on using laser scanner but, as in the past few years, they typically did not include new ideas. Many research confirmed that the use and integration of multiple technologies is the solution to 3D reconstruction of relatively large and complex objects and sites. The main issues are how to perform the seamless integration and how to increase the level of automation in the whole processing pipeline. Those remain clearly unsolved issues. In the computer graphics community, photo-realism and at the same time maintaining real-time speed, remains a hot research issue for large-size models, both in geometry and texture. Although advances in computer and graphics hardware are occurring at fast rate, the ever-increasing demand for details and realism results in increasing the model size at even faster rate. As a result, several significant methods for rendering huge models (hundreds of millions of polygons) at frame rate have been developed. On the other hand, realistic reflection and lighting models remain difficult to implement in real time. On the application front for modeling from reality, virtual heritage remain the most active, as evident by the large

number of conferences, papers, and funded projects devoted to this application.

3.4.2 Accomplishments of the Working Group

The working group workshop, titled "3D Virtual Reconstruction and Visualization of Complex Architectures" (3D-Arch 2005) was held in Venice-Mestre, Italy, in August 22-24, 2005. The proceedings, available on-line at: <http://www.3d-arch.org>, includes 33 fully reviewed papers, out of 45 submitted. Three excellent invited papers were presented, as well as a video theatre session where 11 animations were shown. More than 50 participants attended the workshop. A report will be published in the December issue of the ISPRS Highlights.

The working group maintains a web site with links to the member's web pages, extensive links to relevant sites, and important events. There are also sets of test data each consists of a group of images of an object or site, and camera calibration information.

3.4.3 Working Group News and Future Plans

The group is planning a second workshop in 2007; time and venue have not been finalized yet.

3.5 WG V/5: Development in image sensor technology

Chair: Ralf Reulke (Germany)
Co-Chair: Sergej Yu. Zheltov (Russia)
Secretary: Uwe Knauer (Germany)

3.5.1 Accomplishments of the WG

- A WG webpage was established at <http://www.commission5.isprs.org/wg5/>
- WG has organized the 2nd Panoramic Photogrammetry workshop in 2005 together with WG V/1 (proceedings <http://www.informatik.hu-berlin.de/sv/pr/PanoramicPhotogrammetryWorkshop2005/>)
- We are involved in the standardization process for digital mapping cameras (DIN 18740-4).

3.5.2 Working Group News

- We will invite new WG members from academia and industry in 2006.
- Participation in DIN tutorial 2006.

3.6 WG V/6: Medical Image analysis, human motion and body measurement

Chair: Petros Patias (Greece)
Co-Chair: Nicola D'Apuzzo (Switzerland)

3.6.1 State of the Science and Technology

Techniques and systems for analysis and 3D reconstruction are extensively used in the medical field. Medical image analysis is an established and efficient technology for diagnosis in different medical disciplines. Classical data

sources such as CT and NMR are continuously refined and the technology is moving forward to a automated segmentation of 3D volume data. 3D computer vision techniques and VR/AR are used more and more in the medical and tele-medical fields. Photogrammetric 3D tracking systems can also be considered as classical analysis and diagnosis tools used, for example, for motion capture and gate analysis. The same technology is applied also in other field as for example 3D tracking of surgical instruments. Technologies for 3D surface measurement are increasingly applied in various medical fields, such as, forensic medicine, orthodontics, prosthetics, orthopedics, otolaryngology, reconstructive and plastic surgery; and not to forget are the applications in biometry research and security applications.

3.6.2 Activities and accomplishments in 2005

- The first meeting of the newly formed WG was held in Zurich, Switzerland on February 21st 2005. Decisions were taken about the goals and terms of reference of the WG, the organization of a workshop or summer school, the participation at conferences and workshops.
- The WG web site has been established in February 2005. It informs about the WG, its activities and its members (22 active, 5 passive) and features interesting links.
- The WG has finalized the organization of a summer school on Advances in Medical Imaging. The School will be held in Aghios Nikolaos, Crete, Greece from April 24th to 29th 2006. The School aims to bring together young scientists and developers from different disciplines, the common denominator being their interest in Medical Image Analysis, to study and discuss the latest developments in digital imaging, recording and modelling in medical applications.

3.6.3 Plans for 2006

- Realization of the summer school on Advances in Medical Imaging, from April 24th to 29th in Aghios Nikolaos, Crete, Greece.
- Participation and plan of TC sessions at ISPRS Comm.V Symposium in Dresden, Germany.
- Possible active participation and plan of sessions and/or tutorials at different conferences: SPIE Medical Imaging 2006, CARS 2006 (Computer Assisted Radiology and Surgery), CAOS 2006 (Computer Assisted Orthopaedic Surgery), 9th Symposium on 3D Analysis of Human Movement 2006.

3.7 IC WG V/I: Integrated systems for mobile mapping

Chair: Naser El-Sheimy (Canada)
Co-Chair: Antonio Vettore (Italy)
Secretary: Mohamed Mostafa (Canada)

3.7.1 State of Science and Technology of Working Group Topics

Last year have witness the development of improved methods for integration of attitude and position information with data processing software algorithms. This include two major areas; (a) Integration of navigation data (e.g. GPS) in the bundle adjustment software. Current integration strategy is to first process the GPS data using a stand-alone processor; and then to use the resulting positions as parameter observations in a photogrammetric bundle adjustment. This implementation has obvious benefits in its simplicity; however, a more fundamental fusion of the gps and photogrammetric data streams is possible. In this research area, investigations are made into a single combined adjustment that natively uses both photogrammetric image measurements and raw gps code and carrier-phase observations. The anticipated advantages of this new integration technique include improved reliability and the ability to make use of gps data when less than four satellites are available. The technique also streamlines processing as only a single software package need be used. (b) Specialized integration techniques of MEMS sensors into direct georeferencing (DG). Advances in MEMS technology combined with the miniaturization of electronics, have made it possible to produce chip-based inertial sensor for use in measuring angular velocity and acceleration. These chips are small, lightweight, consumes very little power, and extremely reliable. However, due to their lightweight and fabrication process, MEMS inertial sensors have relatively large uncertainty and consequently affect the obtained accuracy of the navigation solution in the integrated systems, especially when GPS signals are interfered or blocked. Therefore the development of such kind of navigation system needs to deal with these issues. One option is to improve the navigation algorithm, especially the integration technique. Some researchers, for example, attempt to improve navigation algorithms through the use of unscented Kalman filter and Neural Network, respectively. It is anticipated that such techniques will lead to DG systems that cost few thousands dollars and therefore will help the widespread of DG in MMS.

3.7.2 Accomplishments of Working Group during the current year

- Drs. Naser El-Sheimy and Mohamed Moustafa organized a special workshop on "Mobile Mapping Technologies" at the FIG Working Week 2005 and GSDI-8 meeting in Cairo, Egypt, 16-21 April 2005.
- Dr. Jan Skaloud was invited to the ISPRS council meeting hold at ETHZ in Zurich on May 13th, 2005 where he gave a scientific presentation.
- Dr. Jan Skaloud becomes a EuroSDR project leader of the project related to reliability of Direct Georeferencing
- Dr. Naser El-Sheimy offers an invited workshop on Mobile Mapping Systems at the first annual Middle East conference on Geospatial Information, Technology and Applications 'Map Middle East 2005', Dubai, UAE
- As a member of the ISPRS Remote Sensing Arabia (held at the Intercontinental Hotel, Riyadh, Kingdom of Saudi Arabia, May 7-11, 2005) organizing committee, Dr. El-

Sheimy was responsible for the development of a two day tutorials program before the meeting.

- Drs. Naser El-Sheimy, Ayman Habib and Bryan Mercer offers a one day tutorial on at the ISPRS WG1/2 workshop "Three Dimensional Mapping from InSAR and Lidar", Banff, Alberta, Canada, June 7-10, 2005. Drs. Bryan Mercer and El-Sheimy were members of the organizing committee of the workshop.
- Dr. Antonio Vettore, co-chair of the the IC WG I/V hosts the Workshop Italy-Canada 2005 "3D Digital Imaging and Modeling: Applications of Heritage, Industry, Medicine and Land" in Padova, Italy, 17-18 May 2005
- Dr. Mohamed Mostafa taught an 8 hour course in the International MSc. in Airborne Photogrammetry and Remote Sensing at the Institute De Geomatica, in Spain on Integrated Systems Orinetation
- Dr. Mohamed Mostafa taught a 4 hour course in the ASPRS Alaska Regional conference, 20-23 Febuary, 2005 on GPS/IN/Digital Imaging
- Dr. Mohamed Mostafa co-authored Chapter 9.5.2 on Inertial Navigation Systems and Chapter 14.2 on Mobile Mapping in the Manual of Photogrammetry – Fifth Edition
- Dr. Mohamed Mostafa serves as the Editor, PE&RS - Direct Georeferencing Column.
- Dr. Mohamed Mostafa organized and moderated four technical sessions and panel discussions in the ASPRS annual conference in Baltimore, MD, March 7-11, 2005. These sessions are: Airborne GPS for Photogrammetry, Data Flow in Commercial Digital Imaging Systems, Digital Camera Panel Discussion, and Digital Imaging Data Acquisition/Processing Flow – A User's Perspective.

3.7.3 Planned meetings, workshops and tutorials

- Drs. Naser El-Sheimy and Dorota Grejner-Brzezinska will be the General Chair and Program Chair of the US Institute of Navigation (ION) National Technical Meeting (NTM) which will take place on January 18-20, 2006 - Monterey, California. The ISPRS WG I/2 on "SAR and LIDAR Systems" was invited to organize a session on "Rapid Geointelligence Acquisition From Airborne Platforms" during the meeting.
- The WG lunches the web page for The 5th International Symposium on Mobile Mapping Technology (MMT'07) which will take place in Padua, Italy, 28-31 MAY 2007
<http://www.cirgeo.unipd.it/cirgeo/convegni/mmt2007/index.html>
- The laboratory TOPO, EPFL will host the SGPBF (Swiss Society of Photogrammetry Engineering) workshop on digital aerial photogrammetric cameras on November 25, 2005
- Dr. Mohamed Mostafa will be contributing to the International Calibration and Orientation Workshop (EuroCOW 2006) in Castelfdefels, Spain, which will take place in January 2006 as a member of the scientific committee
- Dr. Mohamed Mostafa organizes four technical sessions and panel discussions in the ASPRS annual conference, which will be held in Reno, Nevada, 1-5 May 2006.

3.8 IC WG I/V: Autonomous vehicle navigation

Chair: Rongxing (Ron) Li (USA)
Co-Chair: Jurgen Everaerts (Belgium)
Secretary: Kaichang Di (USA)

See Com. I report.

3.9 IC WG III/V: Image sequence analysis

Chair: Mac Pollefeys (USA)
Co-Chair: David Nister (USA)
Secretary: Stephan Heuel (The Netherlands)

See Com. III report.

4 Other Relevant Information
5 Commission Officer Address Updates

See enclosed list. The webpage will be kept up-to-date.

TECHNICAL COMMISSION VI

Education and outreach

President: Kohei Cho, Secretary: Mitsunori Yoshimura

State of Science and Technology of Commission Topics

The technology advancement is increasing the importance of education by two means. One is the need for education of new technologies, and the other is expanding ability of e-Learning. Due to the rapid advancement in the field of photogrammetry, remote sensing, and spatial information sciences, engineers who are skilled in traditional technologies are facing pressures for mastering new technologies such as LiDAR, polarimetric SAR, hyper-spectral sensors, mobile mapping. Thus new educational materials, change of curriculums at universities, and opportunities for life long education are strongly required. Expectation to e-Learning is more than ever. With various multimedia technologies, e-Learning including distance learning, video on demand, and self-studying has become much powerful and less expensive. E-Learning is starting to provide opportunities to learn latest technology at any time and place.

However, on the other hand, there are many questions on e-Learning. Can we learn everything with e-Learning? Who is evaluating the quality of each e-Learning materials? How can we find good ones from various e-Learning materials on the Internet? How can we harmonize the accreditation of e-Learning credits of different universities and/or countries? What is the roll of e-Learning in capacity building?

Accomplishments of the Commission

Year 2005 was the first step of the new Commission VI for searching the ways to solve the various subjects of the commission including the problems described above. The Commission has been involved in a numbers of international workshops and symposiums including;

- WG VI/1 and VI/2 joint Workshop on "Tools and Techniques for E-Learning", Potsdam, Germany, June, 2005;
- The joint ISPRS Workshop on Disaster Monitoring and

Assessment, Bangkok, Thailand in November 2005;

- Africa GIS 2005, South Africa, November 2005;
- Asian Conference on Remote Sensing (ACRS), Hanoi, Vietnam, November 2005;

The details of the accomplishments of each WG are described in each WG report. However, I would like to mention that one of the highlight of the Commission VI for 2005 was organization of the first Student Summer School (SS), Istanbul, Turkey 2005. The SS was organized by the ISPRS Student Consortium (SC) with the help of WG VI/5. The SC proved that the students could play important rolls within the framework of ISPRS. We are expecting SC to bring new wind to ISPRS.

Working Group Activities during the Current Year

WG VI/1 Educational Frameworks and Methodologies

Chair: Henrik Haggren (Finland)
Co-Chairs: Alain Duperet (France), Anders Boberg (Sweden)

State of Science and Technology of Working Group Topics

The main trend in Europe is currently the change of the academic curriculum system according to the so called Bologna agreement. In many universities the complete academic programme in surveying or geomatics would in future correspond to the 3+2+3- structure. The full studies will consist of three years for the Bachelor degree, two years for the Master's degree, and three years for the

Doctor's degree. This has the consequence that the modular curricula in photogrammetry, remote sensing and geomatics will be change accordingly. In general, the change is performed differently in each university. It is necessary, that the WG would actively follow this development and collect data of the new curricula.

Accomplishments of Working Group

The WG VI-I co-organized the ISPRS Workshop of Commissions VI/1 - VI/2, "Tools and Techniques for E-Learning", Potsdam, Germany, June 1-3, 2005. The proceedings are available <http://www.igg.tu-berlin.de/ConfMan/ISPRS/proceedings/index.html>.

Working Group News and Future plans

The WG VI-I aims to have a smaller meeting in March during the Swedish Map Days in Jönköping and discuss there the education aspects as far as it concerns the current academic curricula in photogrammetry, remote sensing and spatial information systems. A part of the Jonkoping meeting is also devoted to Internet education in GIS. In June the Commission will have its symposium in Tokyo.

The WG VI-I foresees to meet representatives of AGILE in Cracow in September 2006 during the EUGISES 2006. The meeting would cover the GIS education themes more widely than what we are doing with our ISPRS WG VI-I. However, and as being part of the geomatics education, it would be beneficiary that members of the ISPRS WG VI-I would participate there. If it appears reasonable, ISPRS would then also be later interested in join with future EUGISES as well, and initiate closer cooperation with AGILE.

WG VI/2 e-Learning

Chair: Gerhard König (Germany)
Co-Chair: Mark R. Shortis, Australia

State of Science and Technology of Working Group Topics

Although the e-learning hype of the last years is over, increasing activities concerning web based education can be observed. This effect is partly due to companies and educational institutions aiming to reduce manpower and costs, and the availability of cost-effective learning management systems. On the other hand the trend for lifelong learning to broaden knowledge and skills and to withstand market demands in the age of globalization plays an even more important role and widens the acceptance of e-learning courses and material.

In order to obtain well maintained and sustainable teaching material, a trend to commercialisation is visible. Even universities, often clustered to centres of excellence, are discussing business models bringing their educational opportunities to market.

A variety of highly developed software modules for e-learning are operational now, e.g. designed for preparing field trips, for planning exercises in virtual landscapes or other GIS or remote sensing related applications. This is a sign that e-learning is currently an important factor and will play a still more significant role for future educational strategies.

Accomplishments of the Working Group

After the establishment of the WG the web pages were set up quickly. They are based on ISPRS specification, include terms of reference and planned activities for the period 2005-2008 as well as an online form to register for membership. Up to now 59 members have signed up and details are published on the contacts page. Visitors can also find a list of links to various useful online resources and freely accessible materials. Most of these have come from Computer Assisted Teaching contests (CATCON) organised by WG VI/2 during the last three competitions. Moreover, a link is added to a comprehensive list of educational material on the web, maintained by WG VI/4. Suggestions have been sent to WG VI/4 to eliminate some outdated links, complemented by proposals to URLs to recent e-learning material. Of course it is essential to promote this information source in order to achieve a wider recognition for a common use.

The WG organised, in conjunction with WG VI/I, the TC VI Workshop "Tools and Techniques for E-Learning", 1 - 3 June 2005, Potsdam, Germany. The workshop took place at the Campus "Albert Einstein", and was hosted by Germany's National Research Centre for Geosciences (Geoforschungszentrum Potsdam - GFZ).

33 experts from 8 countries attended the workshop, arriving notably from Australia, Austria, Denmark, Finland, Germany, Ireland, The Netherlands and Switzerland.

22 lectures were discussed in seven sessions, focussing on Didactics and Copyright, E-Learning in Photogrammetry and Remote Sensing, E-Learning and XML, Virtual E-Learning Environments, The Internet as Learning Medium, E-Learning international and Customized Learning Systems. 10 poster and 2 computer demos were presented during the poster-session. The proceedings (134 pages) are available on CD and online (<http://www.igg.tu-berlin.de/ISPRS/proceedings>).

Parallel to the workshop the meeting "Innovationen in Aus- und Weiterbildung mit GIS" (Innovations in Education and Professional Training with GIS) organized by GFZ and the German umbrella association for Geoinformation (Dachverband für Geoinformation e.V. - DDGI) took place at the same venue, attracting over 120 participants. During this meeting e-Learning topics also played a mayor role. The access to this event was free to all ISPRS participants and vice-versa giving an opportunity for discussions and exchange of ideas, which participants made ample use of.

Working Group News and Future Plans

The working group will be involved in technical sessions on computer assisted teaching and training, and distance learning during the ISPRS Intercongress Symposium of TC VI in

Tokyo, Japan, June 27-30, 2006. The WG will also organize CATCON4 the educational software contest, which will be part of a Intercongress Symposium for the first time. Another open topic concerns web casting of workshops, tutorials etc. During the next months the WG will explore this capability, implement a test environment and will report on the progress in evaluating this technique.

WG VI/3 International Cooperation and Capacity Building

Chair: Xiaoyong Chen (Thailand)

Co-Chair: Sjaak J.J. Beerens (The Netherlands)

Regional Coordinators:

South America: Osmar Gustavo Wohl Coelho (Brazil)

South Africa: Ulrike Rivett (South Africa)

Mid Africa: Olajide Kufoniyi (Nigeria)

Mid Asia: Karl Harmsen (India)

CEOS Point of Contact: Yukio Haruyama (Japan)

Accomplishments of the Working Group

In order to achieve the goals expressed in its Terms of Reference, the WG has organized concrete activities with in 2005:

- Has setup a WEB page for the working group;
- Has co-organized a session at the GEOBRAZIL, Sao Paulo, Brazil, June 2005 and presented about the Commission VI TOR and activities in South America;
- Has developed some connections with international and regional organizations (such as United Nations University, UNESCAP, FAO, CEOS, ACRS, ACGIS, APRSAF, CPGIS, EIS Africa, AARSE (Africa), FIG (International Federation of Geodetic Engineers), GEO (as part of GEOSS 10-Year Implementation Plan, MapAsia and so on) for disaster management and e-learning;
- Has co-organised a workshop in collaboration with ITC-UN University on establishment of an Africa-wide network of universities on capacity building in disaster management, which has been initiated through a workshop on 12 and 13 September 2005 at the Makerere University, in Kampala, Uganda, attended by 65 representatives of universities and training institutions from throughout Africa
- Has co-organized two international conference and workshop in this year:
 - the joint ISPRS Workshop on Disaster Monitoring and Assessment, Bangkok, Thailand in November 2005;
 - Africa GIS 2005, South Africa, November 2005;
- Has co-organized the session in the conference of ACRS'26, Hanoi, Vietnam 2005:
 - Panel Session on international cooperation and capacity building;
 - Panel Session on e-learning and education;
- Will co-organise a workshop in collaboration with ITC on December 12-13, 2005 on the further enhancement of the world-wide network of RS/GIS capacity building institutions referred to as GI-NET

Working Group News and Future Plans

During 2006 WG VI/3 intends to organize a number of events and activities for which preparations have been made during 2006. Working group VI/3:

- Has prepared for co-organizing the session in the conference of AsiaGIS'2006, Malaysia in April 2006:
 - Panel Session on international cooperation and capacity building;
 - Panel Session on e-learning and education;
- Has evaluated and recommended some open courses on RS and GIS for technology transfer and training, with ITC, AIT and JAXA especially for developing countries
- Has prepared to do the following activities for international cooperation and capacity building:
 - Establishment of a South-east Asia of RS/GIS capacity building institutions cooperated with JAXA of Japan and Geoinformatics Center of AIT.
 - Establishment of an African-wide network of universities on capacity building in disaster geo-information management of universities in collaboration with ITC-United Nations University.
 - Development of a Capacity Building Programme comprising workshops, seminars, training, education and research in Land Administration in collaboration with ITC-United Nations University.
- Has prepared for organizing a special session on international collaboration and capacity building during the mid-term Symposium of Commission VII at Enschede, the Netherlands in May 2006;
- Has prepared for co-organizing a session on international cooperation and capacity building during the 6th African Association of Remote Sensing for the Environment (AARSE) in Cairo, Egypt in December 2006.

ISPRS WG VI/3 has further plans for organising and co-organising sessions and workshops during:

- Map Asia 2006 in August-September 2006 in Bangkok, Thailand
- ACRS 27 in Ulan Batur, Mongolia, October 2006

WG VI/4 Internet Resources and Datasets

Chair: Timothy Foresman (USA)

Co-Chair: Venkatesh Raghavan (Japan)

Accomplishments of the Working Group

The Internet Resources web links page has been analyzed, and all broken links have been restored. Of the 117 working links, 56 of the annotations have been revised and updated.

Working Group News and Future Plans

Protocols for adding new Internet resources and datasets to the website needs to be ascertained. In the interim, plans are being made to change the names of the categories to more appropriately reflect the content as well as placing the categories in alphabetical order, and continua-

tion of revising and updating the annotations for each link. The strategy with reference to just how detailed the annotations will be is based on a format of 2 – 4 sentences that will show the organization's name, purpose, and resources Working Group IV would like to create a form for new link submissions that would be accessible from the website.

WG VI/5 - Promotion of the Profession to Students

Chair: Rahmi Nurhan Celik (Turkey)
Co-Chair: Zhu Qing (China)
Secretary: Zaide Duran
Student Coordinators:
Jaakko Järvinen (Finland), Esra Erten (Turkey)
Sultan Kocaman (Switzerland), Yohei Shiraki (Japan)

State of Science and Technology of Working Group Topics

Promotion of the Profession to Students and hence Student Consortium was founded in ISPRS 2004 Istanbul under ISPRS Working Group VI General focus and working fields of working group has been defined as follows that are also the Terms of references of the Group.

- Promotion and support of international student activities including the ISPRS Student Consortium.
- Encouragement of active participation of students, especially undergraduate students, in ISPRS events and promotion of reduced fees and stipend for their participation.
- Collection and maintenance of a database on persons who are involved in the promotion of the profession to students, including the members of ISPRS Student Consortium and educators.

In order to realize above terms of references the group targets establishing World-wide Student Network. Therefore to encourage this goal: Organizing scientific and social events such as summer schools, summer camps, national, regional and global status reports on education, and technical and scientific professional topics.

Accomplishments of the Working Group

During the first year of the Student Consortium, the founder team has started from the basics to build up the organization in stable but also flexible way. In practice, this means among other things that the team has prepared a WEB site for the Student Consortium (<http://www.students.itu.edu.tr/~isprs/>), introduced the organization internationally in many ways and also started to gather information of the members with a member questionnaire located at Student Consortium's WEB site. The current number of Student Consortium members is over 140 from almost 30 countries all over the world, from China, to United States. Especially many European countries are

represented. The current web site with new appearance of Student Consortium can be reached via following link.

<http://www.commission6.isprs.org/wg5/>

During the formation, ISPRS Student Consortium founder members organized ISPRS Youth Forum that was agreed by the ISPRS Council that will remain to be organized in all ISPRS General Assembly held every four years, and ISPRS Youth Camp. Both events were organized in Istanbul and in Dardanelle respectively.

As the first official event of ISPRS Student Consortium an ISPRS Summer School was organized. General Information of ISPRS Summer School as follows:

ISPRS Summer School

Topic: Satellite Data Processing and Spatio-Temporal Analysis for Resources and Disaster Mapping, Monitoring and Management

Lectures: Prof. Dr. M. Ehlers - Germany
Prof. Dr. W. Kainz - Austria
Prof. Dr. S. Kulur – Turkey
Prof. Dr. F. Sunar Erbek - Turkey
Prof. Dr. D. Z. Seker – Turkey
Assist. Prof. Dr. H. Demirel – Turkey
Dr. U. Michel - Germany
Dr. T. Ozalp – Turkey
Dr. M. Celikoyan - Turkey

Dates: 19th to 25th June

Location: Istanbul Technical University Maslak Campus, Istanbul

Participants' Profile: Almost 50 students registered for ISPRS Summer School, from which 39 from 11 different countries (Australia, Bulgaria, Greece, Poland, France, Italia, Germany, Spain, UK, Turkey etc.) finally participated.

Sponsors: ISPRS Council, ESA, Turkish Chamber of Surveying and Cadastre Engineers, Istanbul Technical University (ITU), ITU CSCRS, Yildiz Technical University, System Computer Ltd whose the representative of Leica Geosystems in Turkey, (YTU), Of Çay, Nescafe.

Working Group News and Future Plans

Currently ISPRS Student Consortium focused organizing second Summer School. Location, Dates and Topic will soon be announced on Student Consortium Web site.

However as the first organizational approach ISPRS student consortium is hardly work on establishing a Student Network all over the World. Several local meeting where the chair's location is in Istanbul and e-meeting have been done for structuring this network. Therefore year 2006 will be the year of structurally powering up the Student Consortium's organization.

Special Interest Group "Technology Transfer Caravan"

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

Accomplishments of the Special Interest Group

- JICA NET Distance Education on Remote Sensing and GIS for Developing Countries. Throughout 2005. Lecturer: Sh. Murai. Teaching Material (Word and Power Point Files) and VOD lectures on 9 CDs.
- UNESCO Training Workshop for Site Managers and Conference „Space Technologies to Support the Conservation of Natural and Cultural Heritage“, 25-28 October and 28 October –2 November, Campeche, Mexico. With the lecturers A. Gruen and F. Remondino the SIG had key contributions at both events.
- Caravan/JAXA Training Course „Remote Sensing and GIS for Watershed Management“ in Vientiane, Laos, 5-9 December 2005. Lecturers: A. Gruen, Y. Inomata, S. Ito, Kyaw, Sh. Murai, Nah, V. Phonekeo, L. Samarakoon
- Caravan/JAXA Training Course „Remote Sensing, GIS and GPS Technologies for Tsunami Damage and Coastal Mapping“, Bandarawela, Sri Lanka, 19-23 December. Lecturers: Dampegama, M. Hazarika, S. Ito, Magsud, O. Makoto, Rajapaksha, Uditha, Wickramatachi, Wijesinghe

Special Interest Group News and Future Plans

For 2006 we plan the following events:

- Caravan Summerschool „Digital Recording and 3D Modeling“ in Aghios Nicolaos, Crete, Greece, 25-29

April 2006. Lecturers: J. Amiri Parian, E. Baltsavias, F. Blais, C. Brenner, C. Fraser, A. Gruen, Sh. Murai, M. Pateraki, P. Patias, F. Remondino

- Caravan Student Tutorial at the Symposium of Commission VI, Tokyo, 27-30 June 2006. Topics: Thesis and Proposal Writing, Work Organization, Time Management, Professional Aspects, International Organizations and Relations
- Caravan Student Summerschool at the ACRS in Ulan Bator, Mongolia, 5-6 October 2006. Topics: Satellite Remote Sensing and GIS for Natural Resource Management
- JICA NET Distance Education on Remote Sensing and GIS for Developing Countries. Throughout 2006. Lecturer: Sh. Murai. Teaching Material (Word and Power Point Files) and VOD lectures on 9 CDs.

Plans for 2007:

- February: Caravan Training and Workshop in Mandalay, Myanmar on „Remote Sensing, Photogrammetry and GIS for Sustainable Management of Natural and Cultural Heritage“
- October: Caravan Training and Workshop in Luang Prabang, Laos on „Remote Sensing, Photogrammetry and GIS for Sustainable Management of Natural and Cultural Heritage“.

TECHNICAL COMMISSION VII:

Thematic Processing, Modelling and Analysis of remotely sensed data

President: John L. van Genderen, Secretary: Andrew Skidmore

1. Introduction

In the 2004 annual Report, the Terms of Reference for the new TC 7 were described as well as the new structure of the Working Groups. These can be seen on the TC7 Website.

During 2005, several major activities were carried out, plans were made for the Mid-Term-Symposium, and preliminary activities were planned for 2006 and 2007.

2. Main Events organized in 2005

The main events carried out during the year were:

WG VII.1: Fundamental Physics and Modelling:

Chair: Michael Schaepman (The Netherlands)

Co-Chair: Shunlin LKiang (USA)

Co-Chair: Mathias Kneuehler (Switzerland)

- i) The "4th Workshop on Imaging Spectroscopy" (26.4.-29.4.2005 in Warsaw, Poland) hosted by Warsaw University. The workshop attracted some 150 participants and reflected very well the current state of research in imaging spectroscopy in Europe. The proceedings of the conference are currently being compiled and should be available through EARSeL in print soon.
 - ii) The "9th International Symposium on Physical Measurements and Signatures in Remote Sensing" (ISPM-SRS) (17-19 October 2005, Beijing, China). It was a particular challenge to address all previous achieved standards by Gerard Guyot and colleagues but the response of more than 450 submitted abstracts proved that the concept of the conference reflects current requirements and desires of the remote sensing community in that domain. The Symposium was attended by more than 250 participants, and was of a very high caliber.
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WG VII.2: Information Extraction From SAR

Data

Chair: Michel Inggs (South Africa)

Co-Chair: Rudiger Gens (USA)

Working Group VII. 2 did not have any activity in 2005

WG VII.3: Information Extraction From Hyperspectral Data

Chair: F. D. van der Meer (The Netherlands)

Co-Chair: Walter Debruyne (Belgium)

Co-Chair: Megan Lewis (Australia)

Working Group VII. 3 did not have any activity in 2005

WG VII.4: Advanced Classification Techniques

Chair: Roman Arbiol (Spain)

Co-Chair: Zhang Yun (Canada)

Co-Chair: Marie-Jos Lefevre-Fonollosa (France)

Working Group VII. 4 did not have any activity in 2005

WG VII.5: Processing of Multi-temporal Data and Change Detection

Chair: Gong Jianya (China)

Co-Chair: Ben Gorte (The Netherlands)

Co-Chair: Else Swinnen (The Netherlands)

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- iii) "The Fourth International Symposium on Multi-spectral Image Processing and Pattern Recognition (MIPPR)", Oct. 31-Nov. 2, 2005, Wuhan, China. This Symposium was jointly organized with SPIE. It was attended by 300 participants, and produced a five volume hard copy set of Proceedings as well as digital version.
-

WG VII.6: Remote Sensing Data Fusion

Chair: Zhang Jixian (China)

Co-Chair: Jie Shan (USA)

Co-Chair: Katarzyna Dabrowski-Zielinska (Poland)

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- iv) "International Symposium on Spatial-temporal Modeling, Spatial Reasoning, Spatial Analysis, Data Mining, Data Fusion", was successfully held at Peking University, Beijing, China from August 27-29. The Symposium was also a joint workshop of ISPRS WGII/1, 2 and 7. This is the first time that China hosted a conference in this field. It attracted about 150 participants who
-

came from 20 countries, and provided an interdisciplinary forum for international leading scientists and young researchers to present their latest research developments and share their experiences in this field. The Symposium included keynote speeches, panel discussions and technical exhibitions. The conference proceeding was published both in hard copy and on CD-ROM

- v) Workshop on "Disaster Monitoring and Assessment through Images 2005", jointly organized with seven other ISPRS WGs and the Asian Institute of Technology. The workshop was scheduled from 4-6 November 2005 at AIT, Bangkok, Thailand. The workshop focused on the use of geo-information technologies for disaster monitoring, assessment and mitigation with emphasis on data management, discovery, translation, visualization and fusion.
-

WG VII.7: Innovative Problem Solving Methodologies for Less Developed Countries

Chair: Olajide Kufoniya (Nigeria)

Co-Chair: Norman Kerle (The Netherlands)

-
- vi) Special session at the "26th Asian Conference on Remote Sensing" (ACRS - <http://www.acrs2005.ac.vn>) in Hanoi in November 2005. The special session was attended by the President of ISPRS, President of TC7, President of TC6 and several WG Chairs and Co-chairs. The papers have been published in the Proceedings of the 26th ACRS
-

3. Joint Meeting ISPRS Council TCP's

This meeting was hosted by ITC in Enschede, the Netherlands, from 30 September to 2 October.

4. Contribution to ISPRS Highlights

TC7 submitted a contribution on its activities to the ISPRS Publication Highlights, to promote its scope and attract more involvement from the ISPRS community.

5. Co-operation with other RS organizations

TC7 has held joint meetings in 2005 with EARSeL, AARS, SPIE and AIT. In 2006 cooperative activities are planned with GOCF-GOLD, IEEE-IGARSS, SELPER, AARSE, and AARS.

6. Mid-Term Symposium

Preparations are well advanced for the ISPRS TC7 Mid-Term Symposium to be hosted by ITC in Enschede, the

Netherlands, from 8-11 May 2006. The deadline for abstracts is 15 December. The opening keynote speaker, Prof. Dr. Richard Bamler from DLR, Germany has accepted. TC7 will also participate in TC8 in Haifa, Israel, because of the synergy between the two commissions.

The Inter Commission Working Group VII/IV on Derivation of Global Data, Environmental Change and Sustainability Indicators will also organize a special session at the Mid-Term-Symposium in Goa, India, end of September 2006. The President of TC7 attended/will attend all of the above mentioned events (except AIT workshop).

7. Planned Events for 2006

For 2006, the main activity of TC7 will be organizing, hosting and running a successful TC7 Mid-Term-Symposium. All the WG Chairs, Co-chairs and regional Coordinators are busy preparing the technical sessions and soliciting participants, exhibitors, etc.

In addition to active involvement and participation in TC8 and TC4 Mid-Term-Symposia, a few smaller regional events have been arranged for 2006:

- i) ISPRS IC VII/IV will co-sponsor the Second International Symposium on Land Use/Land Cover Change using RS/GIS to be held in Ulaan Baatar, Mongolia, 8-10 June 2006.
- ii) Participation in SELPER annual Conference, Colombia, 2006 (TC7/WG VII).
- iii) Joint sponsor of the 27th ACRS in Ulaan Baatar, Mongolia, 9-13 October 2006.
- iv) Participate in African RSE Conference in Cairo, Egypt, end October 2006.

Prof. Dr. J.L. van Genderen, President, ISPRS TC7

27th November, 2005

TECHNICAL COMMISSION VIII

Remote Sensing Applications and Policies

President: Ammatzia Peled, Secretary: Basheer Haj-Yehia

The accelerated impact and the role of remote sensing (RS) in monitoring the earth has manifested itself in the decision to create the new ISPRS Commission on Remote Sensing Applications and Policies. Together with TC VII, these two technical commissions create a critical mass of experts; scientists and professionals who will deal with the range and scope of challenging issue and cooperate with other organizations and institutes concerned with RS topics. In this way, the ISPRS will be vested with the status, and establish itself as the leading force in remote sensing, worldwide.

The terms of reference of Commission VIII, that were adopted by the General Assembly, during the XXth ISPRS Congress held in Istanbul Turkey (July, 2000), were reported already in my last annual report for 2004 [Highlights, March 2005]. The Commission VIII TORs may be aggregated into several major topics that the working groups will deal with: human settlements, hazards and disasters, land degradation and desertification, natural resources, geology, geomorphology, water, arid lands, coastal zones and wetlands, ocean color and state, forests and landscape biodiversity, agriculture and food production, atmosphere, climate, weather, regional correlated issues, policies and treaties. In order to foster the many issues addressed by the terms of reference, twelve working groups (WG) were established under commission VIII, as follows:

- WG VIII/1: Human Settlements and Impact Analysis [Chair: Derya Maktav, Turkey; Co-Chair Carsten Juergens, Germany; Co-Chair: Peter Winkler, Hungary].

- WG VIII/2: Hazards, Disasters and Public Health [Chair: Piero Boccoardo, Italy; Co-Chair: Veerubhotla Bhanumurthy, India; Co-Chair: Amelia M. Budge, USA].
 - WG VIII/3: Atmospheric, Climate and Weather Research [Chair: Juergen Fischer, Germany; Co-Chair: Larry DiGirolamo, USA; Co-Chair: Gabriela Seiz, Switzerland; Secretary: Rene Preusker, Germany].
 - WG VIII/4: Management and Research of Tropical [Chair: Laurent Polidori, French Guiana; Co-Chair: Pedro Walfir Souza Filho, Brazil; Regional Coordinator: Thongchai Charupatt, Thailand; Secretary: Moise Tsayem Demaze, France].
 - WG VIII/5: Policies, Treaties and Data Access [Chair: Bhupendra Jasani, United Kingdom; Co-Chair: Irmgard Niemeyer; Germany].
 - WG VIII/6: Coastal Management, Ocean Colour and Ocean State Forecasting [Chairman: Robert Frouin, USA; Co-Chair: Ichio Asanuma, Japan; Co-Chair: Samantha Lavender, (United Kingdom); Regional Coordinator: Mervyn J. Lynch, Australia; Regional Coordinator: Costas Armenakis, Canada].
 - WG VIII/7: Water Resources Security and Management [Chair: K.D. Sharma, India; Co-Chair: Alfonso Calera Belmonte, Spain; Co-Chair: Sanjay K. Jain, India; Secretary: Rajesh Goel, India].
 - WG VIII/8: Polar and Glaciers Research [Chair: Beata Csatho, USA; Co-Chair: Marc A. D'Iorio, Canada; Co-Chair: Hongxing Liu, USA; Regional Coordinator: Petri Pellikka, Finland; Regional Coordinator: Xiao Cheng, China].
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WELCOME TO

ISPRS Technical Commission VIII, Mid-Congress Symposium

'Remote Sensing Applications for a Sustainable Future'

4-7 September, 2006

Workshops and Tutorials 1-3.9.2006, Haifa, Israel

Visit our Symposium website:
<http://geo.haifa.ac.il/~isprs/tc8.html>

- WG VIII/9: Arid Lands, Land Degradation and Desertification [Chair: Dan Blumberg, Israel; Co-Chair: Michael S. Ramsey, USA; Co-Chair: Nagaraja Ravoory, India].
- WG VIII/10: Precision Farming and Sustainable Food Production [Chair: James (Jim) S. Schepers, USA; Co-Chair: Giampiero Genovese, Italy; Co-Chair: Gavin A. Wood, United Kingdom].
- WG VIII/11: Sustainable Forest and Landscape Management [Chair: Barbara Koch, Germany; Co-Chair: Hakan Olsson, Sweden; Co-Chair: Alan Blackburn, United Kingdom].
- WG VIII/12: Geological Mapping, Geomorphology and Geomorphometry [Chair: Benoit Deffontaines, France; Co-Chair: Eyal Ben-Dor, Israel; Co-Chair: Thomas Cudahy, Australia].

The terms of reference called, implicitly and sometime explicitly, that all work done should also take into consideration aspects such as sustainable development, ecological and environmental considerations, and the human impact. In addition, as a commission dealing with applications, all working groups were also asked to consider general issues such as providing useful information to the user in near or real time on an operational basis for decision making, forecasting, monitoring, solving problems and conflicts. Last but not least, all working groups were asked to link with other organizations and institutes that are related to their specific scope and goals.

Of course, the diligent and enthusiastic working group leaders manage the activities of these working groups. After a year of actual work I can quite candidly report that many of these WG leaders excelled in their work, both in terms of magnitude and their scientific or practical contribution. Some did less. Yet, these are the members of the working groups that generate our scientific and other commission work going forward. As of December 2005, the working groups have reported about 386 members from 71 countries. We hope that the commission's Mid-Congress Symposium (4-7.9.2006) will trigger and enhance the mobilization of more contributors to the WGs, the commission's activities and to the ISPRS mission.

Cooperation with Other Organizations

As specified by many of the resolutions and terms of reference, concerning Commission VIII, cooperation with other international organizations and institutes was emphasized. It is both my privilege and honor to report that the WGs and the commission took this task quite earnestly and our combined activities have been successful so far. These activities already started in 2004 when Piero Boccoardo, Chair WG VIII/11 represented ISPRS at the United Nations International Workshop on the Use of Space Technology for Disaster Management, 18-22 October 2004, Munich, Germany. Also, four ISPRS representatives of the five themes at the International Geo-Union initiative are Commission VIII WG chairs and co-chairs. In addition, Polar Research, the ISPRS proposed theme for this initiative, was proposed by Beata Cshato, Chair of WG VIII/8 on Polar and Alpine Research.

Together with John van Genderen, president TC VII, I have joined the scientific program committee of the 31st ISRSE symposium held in St. Petersburg, Russian Federation, June 2005. Also, Commission VIII held five special sessions in this symposium. This was a good step in cooperating with ICORSE that is actually a permanent committee of ISPRS. I hope ICORSE will be able to generate 2-3 special sessions at the Haifa symposium. In addition, I have agreed to serve on the scientific program committee of the 32nd ISRSE symposium, planned for 2007 in San Jose, Costa Rica. There as well, we plan to hold several special sessions of various working groups. This will further our cooperation with ICORSE and I hope it will continue through the future terms as well. As a result of our role at the 31st ISRSE, the UN will have a special session at the Haifa symposium. Thus, our efforts to cooperate with one organization catalyzed another avenue for cooperation.

The same logic guided me to agree in cooperating with our Regional Member, AARSE, and become a member of their program committee for their next conference to be held in Cairo, Egypt, October 2006. In addition, WG VIII/4 (Polidori) will make an effort to run a tutorial on tropical issues, prior to the conference. Through the good work of

the working-group leaders (WG VIII/1 and WG VIII/11), our commission is also cooperating with EARSeL, another ISPRS Regional Member.

As a result of an initiative made by ISPRS first VP (Trinder), four of WG VIII/6 leaders (Lynch, Assanuma, Lavender and Armenakis) will support and cooperate with SOPAC, starting in 2006. This initiative is to support the needs of the South Pacific region in various aspects of remote sensing, data acquisition and fusion with vector data, amongst others.

Commission VIII is very active in the GEO task groups and the Geo-Union initiatives. Several of our WG leaders joined these task groups, joining other officers from other ISPRS commissions: Derya Maktav, Chair WG VIII/1 is representing ISPRS at the GeoUnions Joint Science Team on cities and mega-cities. Piero Boccoardo, Chair WG VIII/2 is representing ISPRS on several GEO task Groups: DI-06-03, related to InSAR technology for disaster warning and prediction; DI-06-08, related to multi-hazard events concerning coastal risks; and DI-06-12, to initiate a knowledge-transfer program to developing countries, to ensure basic capacity to utilize earth observations for disaster management. Amelia Budge, Co-chair WG VIII/2 is representing ISPRS on several GEO task groups: HE-06-01, related to priorities of health communities regarding environmental observations; HE-06-02, organize a workshop in 2006 on human health issues; and HE-06-05, related to the assessment, with emphasis on developing countries, of existing capacities for the integration of earth observation and health data. Samantha Lavender, Co-chair WG VIII/6 is representing ISPRS at the GEO task group DI-06-05, concerning coastal and near-shore maps and terrain models.

Commission Activities

- International Journal of Remote Sensing Special Issue "Remote Sensing of Urban Areas", Vol 26, no 4 (Editors: Derya Maktav (Chair **WG VIII/1**) and Carsten Jürgens, Co-chair **WG VIII/1**), 2005.
- **WG VIII/11** Co-sponsorship, Symposium on: "3D Remote Sensing in Forestry", 14-15 February 2005, Vienna, Austria.
- Fifth International Remote Sensing of Urban Areas Symposium (URS-2005) (initiated by Carsten Jürgens, Co-chair **WG VIII/1** and Derya Maktav, Chair **WG VIII/1**) and Third International Symposium Remote Sensing and Data Fusion over Urban Areas (Urban 2005), Tempe, USA, **14-16 March 2005** (Proceedings of the ISPRS WG VIII/1 Human Settlements and Impact Analysis, the International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences (Editors: Matthias Moeller & Elizabeth Wentz).
- RSPSoc one-day symposium "Sensing and Mapping the Marine Environment 2", **5 April 2005**, London, UK. (Samantha Lavender, Co-chair **WG VIII/6**)
- **WG VIII/8** participating and representing ISPRS in the IPY proposal on: "Geomatics for the North - Circumpolar Conference on Basic Geospatial Information for Northern Development".
- **WG VIII/11** Co-sponsored symposium "ForestSat 2005", 31.5-3.6.2005, Borås, Sweden. (Convened by Hakan Olsson, Co-chair WG VIII/11).
- EARSeL Symposium: SIG session Urban Remote Sensing, Porto, Portugal (Convenor: Carsten Jürgens, Co-chair **WG VIII/1**), **June 2005**.
- 31ST ISRSE Conference, June 2005, St. Petersburg, Russian Federation. Commission VIII held 5 special ISPRS Sessions on Hazards, Public health, Polar, Policy and Arid lands issues (Piero Boccoardo, Chair **WG VIII/2**; Amelia Budge, Co-chair WG VIII/2; Gunter Schreier, Member **WG VIII/5**; Irmgard Niemeyer, Co-chair **WG VIII/5**; Bhupendra Jasani, Chair **WG VIII/5**, Beata Csahto, Chair **WG VIII/8**; and was involved with the conference scientific programme (Ammatzia Peled, TCP VIII).
- GeoUnions Health Team Meeting, **31.8-1.9.2005**, Uppsala, Sweden. Amelia Budge, Co-chair WG VIII/2 was representing ISPRS
- RSPSoc 2005 annual conference, "Measuring, Mapping and Managing a Hazardous World", **6-9 September 2005**, Portsmouth, UK. Session titled "Oceans & Coasts", co-sponsored by ISPRS WG VIII/6.
- COSPAR Capacity Building Workshop, Regional Workshop for African Oceanographers: Ocean Remote Sensing: a Tool for Ocean Science and Operational Oceanography, **19-30 September 2005**, Rabat, Morocco. (Samantha Lavender, Co-chair **WG VIII/6**)
- **WG VIII/9** Co-Sponsored Workshop on: "Land Degradation in Tropics – Role of Spatial Technologies" (Shailesh Nayak, TCP IV & Ravoori Nagaraja, Co-chair WG VIII/9), and organization of parallel sessions on: "Environment degradation" during the ISRS annual convention, 6-9 December 2005, Ranchi, India.

Planned Activities

- **WG VIII/11** & EARSeL joint Conference "3D Remote Sensing in Forestry" 13-15 February, 2006, Vienna, Austria
- **WG VIII/4** joint Workshop on Tropical Ecology with 19th Annual Meeting of German Society for Tropical Ecology, 21-24 February, 2006, Kaiserslautern, Germany.
- **WG VIII/1** Joint activity with EARSeL Special Interest Group on: Urban Remote Sensing: First Workshop: "Urban Remote Sensing: Challenges & Solutions", 2-3 March 2006, Berlin, Germany
- **WG VIII/11** Workshop on "Spatial Decision Support Systems in Forestry-Methods, Applications, Challenges", 19 April, 2006. Within the framework of the 9th AGILE International Conference on Shaping the future of Geographic Information Science in Europe', 20-22 April 2006, Budapest, Hungary.
- **WG VIII/11** co-sponsorship, First International confer-

- ence on Object-based Image Analysis (OBIA 2006), July 4-5 2006, Salzburg, Austria
- 7th Joint ICA/ISPRS/EuroGeographic International Workshop on Incremental Updating & Versioning, 1-3 September 2006, Haifa, Israel (**Commission VIII**).
 - **WG VIII/7** Workshop on: "Evapotranspiration and Recharge at River Basin Scale from Remote Sensing", November 2006, Albacete, Spain
 - **WG VIII/10** Workshop " Agriculture and remote sensing", 2006/7, Stresa, Italy.
 - **WG VIII/8**, Workshop in relation to the IPY Arctic Conference, Summer 2007, Yellowknife, Canada.
 - EARSeL General Assembly and Symposium, Istanbul 2008. Hosted by **WG VIII/I** and EARSeL SIG on Urban Remote Sensing

Mid-Congress Symposium

ISPRS Commission VIII will hold its Mid-Congress Symposium on: "Remote Sensing Applications for a Sustainable

Future" on 4-7 September 2006 in Haifa, Israel. The information about this conference has been publicized through the Internet, E-mails and brochures sent via regular mail. The themes for the symposium focus, but are not limited to the terms of reference for each Working Group. In addition, workshops and tutorials are planned for 1-3 September 2006, just prior to the symposium. Several such events are already planned and the organizers will welcome additional suggestions for workshops, tutorials and special sessions.

More information about the September 2006 Haifa symposium, the mission of ISPRS Commission VIII and the working groups activities, may be found at the commission URL <http://geo.haifa.ac.il/~isprs/tc8.html>

Hope to see you all in Haifa 2006 meeting and other TC VIII events.

Ammatzia Peled
Haifa, December, 2005

Committee and Standing Activities

2. ISAC Report 2005

by Armin Gruen, ISAC Chairman

In 2005 ISAC went through a period of consolidation. Some members left the Committee, others are not yet appointed. On occasion of the Council Meeting in Zurich, 12-15 May 2005, there was an intensive discussion about the future role of ISPRS with respect to the input of mapping agencies and system manufacturers. There was general agreement that, as a first step, ISAC should open up for representatives from these groups of experts. As a first action Dr. A. Streilein, swisstopo was appointed for the Photogrammetry group.

Other topics of concern are still the working mode, the structure and the legal status of ISAC within ISPRS. The Chairman made a proposal to Council as to what kind of measures should be introduced in order to make the work of the Committee more efficient and Council agreed in general. However, the practicalities are not implemented yet.

The year 2006 is expected to bring along much work for ISAC, because this is the time for a mid-term review of the structures and contents of Commissions and Working Groups.

The ISAC membership as of the end of 2005:

Geospatial Information Sciences

Prof. Dr. Michael F. Goodchild, University of California, USA

Prof. Dr. Martien Molenaar, ITC, The Netherlands
Anne Ruas, IGN, France

Photogrammetry

Prof. Dr. Clive Fraser, University of Melbourne, Australia
Prof. Armin Gruen, ETH Zurich, Switzerland (Chairman)
Dr. Andre Streilein, swisstopo, Switzerland

Remote Sensing

Prof. Dr. Paul Curran, University College of Swansea, UK
Prof. Dr. Tony Milne, University of New South Wales, Australia

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Photogrammetry

Prof. Dr. Clive Fraser, University of Melbourne, Australia

Prof. Armin Gruen, ETH Zurich, Switzerland (Chairman)

Dr. Andre Streilein, swisstopo, Switzerland

Remote Sensing

Prof. Dr. Paul Curran, University College of Swansea, UK

Prof. Dr. Tony Milne, University of New South Wales, Australia

Robin Letellier (1991-2003)

Steve Nickerson (1999-2002)

Cliff L. Ogleby (1999-2006)

Gaetano Palumbo (2001-2004)

Mario Santana Quintero (2004-2007)

c. Society Representatives of ISPRS

Gabriele Fangi (2005 – 2008)

Pierre Grussenmeyer (2002-2006)

Klaus Hanke (2003 - 2006)

Petros Patias (2003 - 2006)

Associate Members (ex officio):

Internet Communication Officer (Webmaster)

Michael Doneus (2003-2006) - ICOMOS

4. CIPA – The ICOMOS & ISPRS Committee on Documentation of Cultural Heritage

I. GENERAL

A. Statutes

The new version is valid from 1st January 2005 onwards. ISPRS and ICOMOS have already approved and signed.. In addition CIPA is permanently upgrading its Operational Guidelines which can be found on CIPA's web site.

B. Date of last elections

July 17, 2004, in Istanbul, Turkey.

C Date of next elections

October 1st, 2006 in Athens, Greece.

II. GOVERNANCE AND MEMBERSHIP

A. COMMITTEE OFFICERS of the CIPA

Executive Board

President

Petros Patias (2003 - 2006)

Vice Presidents

Cliff L. Ogleby (2003 - 2006)

Robin Letellier (2003 - 2006)

Secretary General

Klaus Hanke (2003-2006)

Treasurer

Pierre Grussenmeyer (2002-2006)

Ordinary Members

a. Society Delegates

Giora Solar (ICOMOS) (2005-2007)

Yukata Takase (ISPRS) (2005-2009)

b. Society Representatives of ICOMOS

Symposium Director, Torino 2005

Sergio Dequal (2003-2007) - ISPRS

Co-Symposium Director, Torino 2005

Marco Dezzi Bardeschi (2003-2007) - ICOMOS

Symposium Director, Athens 2007

Andreas Georgopoulos (2005 – 2009) ISPRS

Associate Members (other)

Antonio Almagro Gorbea (2000-2005) - ICOMOS

Deren Li (2002-2006)

Divay Gupta (2003-2007)

Honorary Members

John Badekas, Greece

Carl-Wilhelm Clasen, Germany

Ross W.A. Dallas, UK (2004)

Cevat Erder, Turkey (2004)

Mario Fondelli, Italy

Jozef Jachimski, Poland (2004)

Peter Waldhaeusl, Austria (2005)

Elzbieta Wanot, Poland

B. List of National and Committee Delegates:

The Board increased to **67** officially nominated and approved members. (Status 12.09.2005).

CIPA has today **60** National and **7** Committee Delegates. From the **60** are **33** from National ICOMOS Committees and only **27** from National ISPRS Member Societies. Together they represent **43** countries. Only **15** countries have nominated delegates from both, ICOMOS and ISPRS. Further nominations, extensions and updates are due until end of the year.

Call for Delegates: National and International ICOMOS Committees are kindly requested to nominate delegates respectively extend delegations so that information can be exchanged and partnerships established with the National ISPRS Members. The ICOMOS delegates are to be nominated for three years (whereas ISPRS has four year cycles) with the possibility of extension up to 12

years. Communication is mainly by email in English language. Specially interested experts are welcome who wish to advise, co-operate with and contribute to the work in the Working Groups of CIPA.

III. ACTIVITIES

A. MEETINGS, SYMPOSIA

1. **XX. International Congress of ISPRS in Istanbul**, Turkey, 12-23 July 2004, with two special sessions for CIPA and a great number of publications concerning applications of photogrammetry, laser scanning, remote sensing and related sciences to Cultural Heritage. ISPRS created a "Foramitti- Session" to be held at each ISPRS in memory of the great CIPA founder and photogrammetric pioneer Hans Foramitti. The Foramitti sessions are devoted to heritage recording and documentation, to the state of the art, the development of new technology, and applications at present and in the future. VicePresident Letellier reported on the strategic alliances in the framework of the RecorDIM initiative. President Petros Patias commemorated the 35 years anniversary of CIPA and outlined the future program. Vicepresident Cliff Ogleby talked for Gaetano Palumbo, World Monument Fund, on Heritage at Risk and CIPA, and finally on Heritage Documentation in the future, dreams and predictions.-
2. **RecorDIM Roundtable 4** in Istanbul, Turkey (see <http://extranet.getty.edu/gci/recordim/>)
3. CIPA was testing the efficiency of Regional CIPA Workshops to build up regional awareness, interest and capacity. The **International Workshop on Vision Techniques Applied to Rehabilitation of City Centers**, Lisbon, Portugal, 25-27 Oct 2004 took place and was a great success. See <http://www.vision-tec-workshop.org>.
4. The **XXth International CIPA Symposium** was held in Torino, Italy from 27 September to 1 October 2005. Symposium Directors are Prof. Dr. Sergio Dequal, Associate Member of CIPA and Prof. Dr. Marco DEZZI.
International Cooperation to Save the World's Cultural Heritage has been chosen as the theme to underscore the notion that only the international cooperation between public and private endeavours can provide viable solutions to safeguard and preserve the World Cultural Heritage for future generations.
5. **CIPA – RecorDIM Roundtable-5** took place immediately after the Symposium (October 1-2, 2005), to follow-up on the symposium RecorDIM Plenary Session discussions. It will then focus on how to

improve communication between conservation organizations, and on increasing efficiency and effectiveness in the use of the Alliance Hub.

6. The **annual CIPA Business meeting** took place on Sept 26 2005 in Torino, Italy

B. PUBLICATIONS AND WEB SITE

Publications:

CIPA has its own series of publications, the CIPA International Archives for Documentation of Cultural Heritage. The last Volume XIX is below nr. 2. And next year volume XX will appear in Torino, Italy, on the occasion of the Jubilee Symposium nr. XX.

1. Dequal Sergio (ed.): **International Cooperation to save the World's Cultural Heritage**. Proceedings of the International CIPA Symposium in Torino, Italy. International Archives of CIPA Vol XX, Torino 2005 and The ISPRS International Archives of Photogrammetry, Remote Sensing and Spatial Information Systems Vol. XXXVI-5/C34 ISSN 1682-1750. 100 plus postage. To be ordered from sergio.dequal@polito.it.
2. Orhan M. Altan (ed.): Proceedings of ISPRS Commission V, (Petros Patias, President) of the XXth International Congress for Photogrammetry, Remote Sensing and Geoinformation, Istanbul 12-23 July 2004, The ISPRS International Archives of Photogrammetry, Remote Sensing and Spatial Information Systems Vol. XXXV Part 5. 998 pages. Approx. one third of the publications are interesting for cultural heritage recording. ISSN 1682-1750. €100 plus postage. To be ordered from Oaltan@itu.edu.tr
3. Orhan M. Altan (ed.): **New Perspectives to Save the Cultural Heritage**. Proceedings of the International CIPA Symposium in Antalya, Turkey. International Archives of CIPA Vol XIX, Antalya 2003 and The ISPRS International Archives of Photogrammetry, Remote Sensing and Spatial Information Systems Vol. XXXIV-5/C15 ISSN 1682-1750. €100 plus postage. To be ordered from Oaltan@itu.edu.tr
4. Petros Patias (Ed.): **"Close Range Imaging, Long Range Vision"**. Proceedings of the Symposium of ISPRS Commission V (2-6 September 2002 in Corfu, Greece). Again one third of all the 115 contributions concern CIPA, specially the area Image Analysis and Spatial Information Systems for Applications in Cultural Heritage. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Vol XXXIV-5/V, 622 pages, ISSN 1682-1750, Thessaloniki, 2002. A4, 750 pp. €100 plus postage. To be ordered from treasurer@cipa.icomos.org
5. Wolfgang Boehler (Ed.): **Scanning for Cultural**

Heritage Recording. Workshop Proceedings of CIPA's Working Group 6 on Integrated Surveying Methods for Heritage Recorders, Corfu, 1-2 September 2002. A4, 160 pp. The volume contains keynote papers on 3D scanning hardware and software and many fine examples of projects where scanners were used for heritage recording purposes. CD included. Aristotle University Thessaloniki, 2002. €50 plus postage. To be ordered from treasurer@cipa.icomos.org

6. Joerg Albertz (Ed.): "**Surveying and Documentation of Historic Buildings - Monuments - Sites, Traditional and Modern Methods**". Proceedings of the International CIPA Symposium in Potsdam, Germany, 18 - 21 Sept. 2001. International Archives of CIPA Vol XVIII, 656 pages, Berlin 2002. ISSN 0256-1840. €50 plus postage. To be ordered from treasurer@cipa.icomos.org
7. Klaus Hanke, Pierre Grussenmeyer: "**Current advances in 3D reconstruction and Documentation of Cultural Heritage**". A Tutorial of CIPA's Working Groups 3 and 4 on Simple Methods for Heritage Recording and on Digital Image Processing and Vision Sciences in Conservation, Corfu, Greece, 2 Sept. 2002. To be ordered from treasurer@cipa.icomos.org
8. Petros Patias (Ed.): "**Close Range Imaging, Long Range Vision**". Proceedings of the Symposium of ISPRS Commission V (2-6 September 2002 in Corfu, Greece). One third of all the 115 contributions concerned CIPA, specially the area Image Analysis and Spatial Information Systems for Applications in Cultural Heritage. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Vol XXXIV-5/V, 622 pages, ISSN 1682-1750, Thessaloniki, 2002. A4, 750 pp.
9. Camillo Martins Gomes (Ed.): "**Mapping and Preservation for the New Millenium**". Proceedings of the International Symposium of CIPA in Recife, Brazil, 3 - 6 Oct. 1999. International Archives of CIPA Vol. XVII available from the ICOMOS Documentation Centre Paris as Machine Copy against costs or via internet from <http://cipa.icomos.org>

C. WORKING GROUPS

A CIPA Working Group is a limited but manageable group of interested people willing to work on one of CIPA's permanent areas of interest. The Working Groups are intended to be stable, and more permanent than Task Groups. A CIPA Task Group is formed by a group of people willing to work on a specific research need or topic. In all instances, the scope of the Working Groups will include single objects, assemblages and sites/landscapes,

and the Working Groups will address both tangible and intangible aspects of cultural heritage.

Working Group I:

Data Acquisition and Recording Techniques for Cultural Heritage Documentation

TOR: This Working Group will coordinate and initiate activities and research into the acquisition of data and information for the purpose of documenting cultural heritage. The WG is primarily focussed on the collection of data and information.

The WG will address manual measurement, field survey methods, film based and digital photography, video recording, photogrammetric techniques, laser scanning, sonar scanning, aerial photography, satellite imaging, geophysical prospecting techniques and ...

Working Group II:

Documentation and Information Management

TOR: This Working Group will coordinate and initiate activities and research into the processing, enhancement and quality control of information in cultural heritage documentation.

The WG will address the use of geographic, management and multimedia information systems, display and visualisation techniques, 2d and 3d modelling techniques and systems, metadata and quality standards, web based applications, ...

Working Group III:

Training, Technology Interchange and Communication

TOR: This Working Group will coordinate and initiate activities and research into education and training at fundamental, advanced and professional levels, ... including the development of computer assisted teaching and learning

The WG will also coordinate and initiate activities and research in the transfer of techniques and technologies used in cultural heritage documentation between all interested parties. The WG will facilitate communication between CIPA and other International organisations, fellow researchers and the public in general.

D. PROGRAMS

1. An important initiative is called **RecorDIM** for Recording, Documentation and Information Management, coordinated by Vicepresident Robin Letellier. RecorDIM has its own homepage sponsored by the Getty Conservation Institute as a strong and leading partner of the initiative. Others are ICOMOS international, PWGSC Canada, English Heritage, Malta Centre for Restoration, several ICOMOS ISC's, the WMF, National and international Institutions, University Institutes. Each partner contributes to a program

which can be summarized by "Bridging the gaps" which have been identified in common workshops and round table discussions. For further details please see the RecorDIM homepage at <http://extranet.getty.edu/gci/recordim>

2. Preparations for the XXI. International Symposium of CIPA October 1 – 6, 2007 in Athens, Greece. Symposium Director (ISPRS): Prof. Andreas Georgopoulos, National Technical University of Athens For further information consult the website: <http://cipa.icomos.org>

E. INTER-INSTITUTIONAL COOPERATION

1. The main cooperation is that with ISPRS, the International Society for Photogrammetry, Remote Sensing and Spatial Information Sciences. The cooperation is defined by the CIPA Statutes, controlled by Society Delegates. CIPA has the status of a Permanent ISPRS Committee as well as of an International Scientific ICOMOS Committee. Historically CIPA is also an ICOMOS International Scientific Committee with fruitful cooperation with its other ISCs.
2. For 2002 – 2007 CIPA has a strong cooperation with the Getty Conservation Institute and with ICOMOS international in the framework of the RecorDIM Initiative, coordinated by CIPA Vice-president Robin Letellier. In this framework many cooperations exist.

IV. FINANCIAL SUPPORT

CIPA has a dozen of Sustaining and Institutional Members which pay a yearly membership fee according to their size. But travels are normally being paid by the delegating institution or university. A further income are the symposia which cover the hotel expenses of the Executive Board and the printing costs of the Proceedings. A small surplus helps to cover mailing costs. A further but very small income results from selling of the proceedings.

6. ISO

by Orhan Altan, Secretary General

ISPRS is a liaison member of several ISO Technical Committees and has a commitment to supporting efforts to establish standards for data format and transfer. ISPRS also supports efforts for interoperability and data transfer through the Open GIS Consortium (OGC). In order to implement this support, explicit reference to ISO and OGC is made within the terms of reference of different ISPRS Working Groups.

The Ad Hoc Committee on Standards was set up by Council under Bylaw VII for the period 2004 – 2008 to co-

ordinate ISPRS input to standards organisations, with Chair: Wolfgang Kresse and ISPRS representative to ISO: Hans Knoop in January 2005. It reports to the ISPRS council on all topics related to standardization.

This report refers to activities of the ISO/TC 211 "Geographic information / geomatics", the Open Geospatial Consortium (OGC), the European standardization, and some individual tasks.

In 2005 two meeting-weeks of ISO/TC 211 took place, June 6-10 in Stockholm and September 12-16 in Montreal. The projects related to imagery make progress. Three major standards will soon be completed: ISO 19101-2 "Reference model – Part 2: Imagery", ISO 19115-2 "Metadata – Part 2: Extensions for imagery and gridded data", and ISO 19130 "Sensor data models for imagery and gridded data".

The state of the art of calibration and validation has been very well presented by the volume 2 of the ISPRS book series, which was published at the Istanbul-congress in 2004. The topic is presently under consideration by a lot of new efforts, but most of those projects have not reached maturity yet. However, some first steps should be taken in order to avoid incompatible solutions. A New Work Item Proposal (NWIP) is likely to be brought in at the next ISO/TC 211 plenary in May 2006.

The OGC has opened the floor to photogrammetry and remote sensing through the SensorML project (Sensor model language). The SensorML is presently a Recommendation Paper (RP) document. After a planned public demo at the next OGC-meeting in Bonn in November 2005 the document shall become an Implementation Specification, which is the highest stage reachable within the OGC document hierarchy.

Another OGC-project is "GML in JPEG2000 for Geographic Imagery". It is presently a Request for Comment (RFC). Photogrammetry shall become a part of GML/JPEG2000 in the future. Technically this is feasible by using the existing model of GML. For a good reason the implementation has been postponed until the ISO 19130 and SensorML will both be completed.

8. Journal

The year 2005 was a year of many changes for the ISPRS Journal of Photogrammetry and Remote Sensing: a new team took over the editorship of the journal, a new Editorial Advisory Board was appointed, a new paper management system was introduced, the journal's web-site was renewed, a new series of theme issues was planned, and a new start was made with reducing the paper queue and increasing the appearance frequency of issues.

New editorial team

As of January 2005 George Vosselman (ITC, the Nether-

lands) succeeded Manos Baltasvias (ETH Zürich, Switzerland) as Editor-in-Chief of the ISPRS Journal of Photogrammetry and Remote Sensing. At the same time Marguerite Madden (University of Georgia, U.S.A.) and Eberhard Gülch (Stuttgart University of Applied Sciences, Germany) started as additional associate editors. Olaf Hellwich (Technical University of Berlin, Germany) continued as associate editor. After seven years at the ISPRS Journal Manos Baltasvias was appointed Second Vice President of the ISPRS at the Istanbul Congress.

New Editorial Advisory Board

A new Editorial Advisory Board with experts from the fields of photogrammetry, remote sensing and spatial information sciences was approved by the ISPRS Council and invited by Elsevier.

New paper management system

On March 14, the Elsevier Editorial System (EES) has been launched for the ISPRS Journal. EES replaces the old Elsubmit system and offers completely web-based communication between authors, reviewers, the Editor-in-Chief, associate editors, and Elsevier. To prepare for EES, the editorial workflow was precisely described, a classification scheme was introduced, a reviewer database was created and an introduction course was taken by all editors. The classification scheme can be used to select reviewers by matching their expertise with the classes assigned by authors to their submitted manuscripts. EES also allows to efficiently retrieve all kinds of information on the status of papers and load and performance of editors and reviewers. Experiences made so far with EES are very good. In December EES has been expanded with the Artwork Quality Control Tool. This tool automatically checks the resolution of figures in submitted manuscripts.

Theme issues

Two theme issues appeared in 2005. Theme issue 59/4 (June) was devoted to "Remote sensing and geospatial information for natural hazards characterisation" and was edited by E.D. Paylor II, D.L. Evans, and D.M. Tralli. Issue 60/1 (December) contained a theme section on "Advances in spatio-temporal analysis and representation" and was edited by D. Peuquet.

Based on input from the Technical Commission Presidents, a planning has been made for the theme issues in the coming years. To reduce the backlog in published issues, three theme issues per year instead of the regular two were planned for the next years. The theme issues under preparation for publication in 2006 are on the Potential of High-Resolution Satellite Imagery for Topographic Mapping (edited by M. Schroeder and C. Fraser), Digital Aerial Cameras (edited by C. Heipke, J. Mills and K. Jacobsen), and Airborne and Spaceborne Traffic Monitoring (edited by S. Hinz, R. Bamler and U. Stilla). The special issue with the best young author papers from the Istanbul congress has been rescheduled for 2006.

Impact factor

The 2004 impact factor as published by Thomson Scientific was 1.317. Although this is a strong increase compared to the 2003 impact factor of 0.47, it is to be interpreted with care because of relatively small number of articles published in the ISPRS journal. The 2004 impact factor is defined as the number of citations made in 2004 to articles of the ISPRS Journal published in 2002 and 2003 divided by the number of articles published in 2002 (37) and 2003 (23). From this one can derive that the citation index is based on 79 citations only. Thus the citation index is likely to strongly fluctuate if e.g. articles of a topical theme issue are frequently cited. The overall trend is, however, certainly positive: the total number of citations to ISPRS journal articles of all years increased from 301 in 2003 to 452 in 2004.

Updated web information

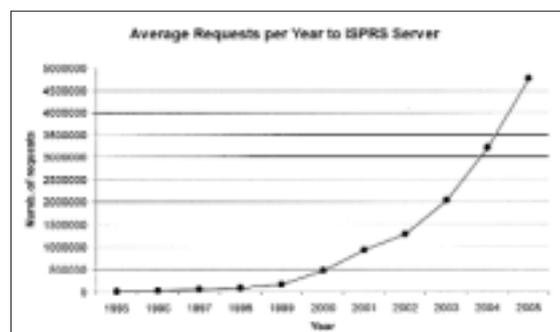
The ISPRS website of the journal has been updated and transferred to <http://www.itc.nl/isprsjournal>. This site is targeting the ISPRS community with information on calls for papers for theme issues, announcements of Heleva Awards and special subscription rates. Elsevier continues to operate the regular ISPRS journal website <http://www.elsevier.com/locate/isprsjpr>. In cooperation with Elsevier the author instructions have been completely revised and are now shown on the Elsevier website.

Photogrammetria on-line

All old issues of the ISPRS journal between 1938 and 1964, called Photogrammetria at that time, have been digitised and are now available through ScienceDirect. These back issues are available at a one time payment of 100 US\$.

Processing pipe line

Large efforts have been made to reduce the processing time of papers. Priority has been given to papers submitted in 2004. In 2005 some 140 reviews have been received. Many more have been requested, but unfortunately potential reviewers often decline invitations or do not even respond to them. Over the year the number of papers under review and the number of papers under



Average request per month to ISPRS server FROM January 1995 to November 2005.

revision strongly increased. The paper processing pipe line seems to be well filled now and it is expected that this will lead to a good number of issues in 2006.

George Vosselman, Editor-in-Chief.

9. Highlights Report

In 2005 we have produced Volume 10 of ISPRS Highlights. It is being produced with good teamwork between the ISPRS Headquarters Team, the Publisher's Production Manager (Sandra Visscher) and Publisher (GITC).

In 2006, Highlights is going to be prepared as e-bulletin instead of paper form and distributed via e-mail beginning from the June Issue. March 2006 issue will be printed and distributed by mail as before.

Issue	No. Pages	Print Run	Remarks
March Vol. 9.1	76	2000	Annual Report 2004
June Vol. 9.2	48	2000	
September Vol. 9.3	48	2000	
December Vol. 9.4	48	2000	

Table Statistics regarding ISPRS Highlights in 2005

10. Homepage

The ISPRS website (<http://www.isprs.org>), online since more than 10 years, has turned out to be one of the most important components of ISPRS communications, providing up-to-date information about the society and linking its various activities. In December 2005 there are about 700 HTML pages with approximately 25 000 lines of information available on the ISPRS website; there are more than 1000 PDF files, occupying more than 10 GB of data. A search engine (provided by Google) is also working inside ISPRS, with the possibility to search for pages inside ISPRS server or inside the WWW.

A new layout was created at the end of March. In the central part of the page there is a symbolic image containing different ISPRS projects. On the left some menu with links to the main topics are listed while on the right there are the news, the Journal and the Highlights links.

Most of the recent ISPRS Archives (<http://www.isprs.org/publications/archives.html>) and related publications (http://www.isprs.org/publications/related_pub.html) are

nowadays online, in PDF form while a great number of educational links is continuously updated (<http://www.isprs.org/links/tutorial.html>). The mailing list has more than 650 people subscribed: once a month the latest news inside the website are communicated as well as new events, links and job opportunities.

The statistics give a reasonable estimate of the use of the ISPRS web server, as it counts only requests for single HTML documents and the requests for images, graphics, icons etc. are not taken into account. Moreover, the statistics refer only to the requests made outside the ETH domain, which excludes all the accesses during maintenance of the documents. In Figure 1 is shown the yearly average requests to ISPRS server, in the period January 1995-November 2005. An increasing interest of the community for the ISPRS homepage is evident: the steady increase of the use of the HTML documents over the years and especially after the registration of ISPRS domain (1999) is obvious.

Nowadays, ISPRS server receives more than 450 000 requests per month.

ISPRS topics and relationships between TCs and WGs are summarized at www.isprs.org/table.html.

Updated information about the published volumes, schedules and authors instructions are instead available at www.isprs.org/publications/bookseries.html.

As of December 2005, all the TCs have a personal homepage, while 55/58 WGs, 4/5 ICWGs set up a personal homepage.

Fabio Remondino, ISPRS Webmaster

11. Events Calendar

I. Terms of Reference

The ISPRS Events Calendar is published in the quarterly ISPRS bulletin, ISPRS Highlights, and regularly updated on the ISPRS Home Page. The Calendar contains a list of all ISPRS sponsored and co-sponsored workshops, symposia, tutorials and other meetings. It also contains details of all international and national conferences on topics related to the activities of ISPRS, including those in photogrammetry, remote sensing, spatial information systems, geomatics, surveying, mapping, machine vision, image processing and similar areas.

The ISPRS Events Calendar Editor will be responsible for updating the entries in the Calendar on a regular basis. The tasks are:

- Provision to the ISPRS Highlights publishers in an agreed format, of an updated Calendar for each quarterly edition of ISPRS Highlights, approximately five

weeks before the publication dates of March, June, September and December. The commencing date of the entries in the Calendar will be one month after the publication dates.

- Provision to the ISPRS Web Master on an up-to-date basis in an agreed format, updated versions of the Calendar for the ISPRS Home Page.
- Collection of details from ISPRS officers of all ISPRS sponsored and co-sponsored events, including theme of the event, dates, location, contact persons and addresses for publication in the Calendar.
- Collection, from appropriate sources, of details of events on topics related to the areas of activity of ISPRS, including theme of the event, dates, location, contact persons and addresses for publication in the Calendar.
- Maintenance of contact with the ISPRS Secretary General on the status of the Events Calendar on a monthly basis.

II. Guidelines for Organising ISPRS Events

Approval and announcement

- TC Presidents or WG Chairs should consult the ISPRS Events Calendar Editor to identify other events with which they can conveniently coordinate dates and locations. All event organizers are encouraged to co-locate ISPRS Sponsored or Co-Sponsored events, which are on the same or similar topics. If this coordination is not feasible and a proposed event topic clashes and is scheduled within four months of another approved event, then special approval may be granted by the Secretary General with the agreement of the affected TC Presidents.
- The procedure for approval of events is as follows:
 - Working Group Chairs review The Events Calendar and consult with their TC President on the topic and date of an event.
 - TC President sends the Secretary General details, which include proposed dates, topic, location, convenor with contact details and names of co-sponsors.
 - If the event is approved, the Secretary General will give formal approval to the TC President and copy this to the Calendar Editor, "Prof. Tuan-chih Chen". If full details cannot be provided initially, they should be sent to the Calendar Editor as soon as they are available.

III. Procedures

I. Versions

For efficiency, different headings, and to avoid errors in signifying changes, two main versions will be created - one

for Highlights and another for the Web Page. The Web Page version is maintained constantly as new entries are received. The Highlights version is created and modified from the final Web Page version created for the months of March, June, September and December.

2. Web Page version

Cut out obsolete entries at least monthly.

Using previous Web Page version, do three find and replace operations on: "NEW", "UPDATED", bold. The bold headings and "Confirmed by Council" or "Cosponsorship" notations are to be retained in bold. At end of this operation there will be a clean version.

Make all new entries in bold. Make updates and signify as "UPDATED", with changed data only in bold. Add ISPRS logo to all ISPRS sponsored events as informed from Secretary General. Secretary General will also inform whether the event has been approved "Confirmed by Council" or is "pending Council approval" or if the event has "Cosponsorship" by ISPRS.

Send updated version to Web Master and Council by e-mail.

3. Council Version

The ISPRS Events Calendar will be sent to all members of ISPRS Council monthly as a general reference. The Council could check the details, and then send their comments or corrections to the Events Calendar Editor, e.g. the confirmation of ISPRS Events and the co-sponsorship of other events.

4. Highlights version

Change header information to show Web Page site.

Using current Web Page version, cut out obsolete entries from the previous quarter and current month.

Send by e-mail to ISPRS Highlights one month before publication month. The disadvantage of this version is that the deadline is 40 days before the issue date, therefore this version is not up-to-date and should be used for rough reference only.

5. List of ISPRS Meetings

This is a calendar extracted from the ISPRS Events Calendar, and contains only a list of all ISPRS sponsored events organised by ISPRS WGs and Commissions, and approved by the ISPRS Council. It will be sent to the ISPRS Secretary General quarterly. This would be useful for sending to other groups for inclusion in their lists of events, too.

6. Contents

Receive inputs from outside sources. Seek events from trade publication calendars and from Internet searches of relevant organizations (see links below).

Keep all entries to those having international interest (e.g. international in event title) or from those of ISPRS member organizations (Ordinary, Associate, Regional, Sustaining).

Do not list user groups unless the organization is an ISPRS Sustaining Member, e.g., Intergraph, ESRI, ERIM, etc. That



ISPRS President, Ian Dowman, visited Events Calendar Editor, Tuan-chih Chen, in March 2005 in Taiwan.

helps promote organizations to become ISPRS Sustaining Members.

Except for ISPRS events, do not list events, which do not have city, country and a phone or e-mail contact address. Except for ISPRS events and those of the JBSIS (Joint Board of Sister Societies-ICA, IAG, IHO, FIG, IGU), do not list events, which have pending dates.

Details- a) Check locations column to verify that the country is in all capital letters; the city is in lower case. b) Check order of dates to ensure earliest dates are first. c) Check that all ISPRS events have a "Confirmed by Council" or "Confirmation pending" notation in the leftmost column. d) Check these items in the event field: make sure ISPRS is before WG; make sure WG is before all WGs in listing; make sure ISPRS WGs are Roman for Commission and Arabic for WG number, e.g.. IV/3; use ICWG for inter-commission WGs; put quotation titles on a separate line if space permits; put hyphen before each event if multiple events are in same listing; always seek ways to reduce number of lines; verify www addresses when time permits.

There should always be in the left column for all ISPRS events either "Confirmed by Council" or "approval pending" or "Cosponsorship Confirmed by Council". The "approval pending" gives ISPRS Council and TCPs an indication of what is being proposed and will help them coordinate events and avoid conflicts.

7. General

The purpose for ISPRS is to allow WGs and Commissions to identify open dates or events, which they may link up with or avoid conflicting with. This avoidance of conflicting with other events externally and definitely internally is a major responsibility of ISPRS. We publish the calendar to encourage others to do likewise.

The margins of the table are set so that the calendar may be published in Highlights without alteration.

Search for relevant events. Identify events, which will be of interest to ISPRS Members and to Members of the JBSIS. It is important to cover events, which are on the interdisciplinary boundaries of ISPRS so that all Commissions and WGs are aware of who and how they can interface with related organizations.

IV. Announcement

TO: TECHNICAL COMMISSION PRESIDENTS,
WORKING GROUP CHAIRPERSONS, & EVENT
ORGANIZERS

*Events Calendar Editor greatly appreciates your responses
to this announcement*

The ISPRS Events Calendar is published in the quarterly ISPRS bulletin, ISPRS Highlights, and frequently updated on

the ISPRS Web Page. The Calendar contains a list of all ISPRS sponsored and co-sponsored congresses, conferences, symposia, workshops, tutorials and other meetings. It also contains details of all international and national events on topics related to the activities of ISPRS, including those in photogrammetry, remote sensing, spatial information systems, geomatics, surveying, mapping, machine vision, image processing and similar areas.

The purpose for ISPRS is to allow Commissions and WGs to identify open dates or events which they may link up with or avoid conflicting with. This avoidance of conflicting with other events externally and definitely internally is a major responsibility of ISPRS. We publish the calendar to encourage other sister societies to do likewise. It is important that we cover events which are on the interdisciplinary boundaries of ISPRS so that our Commissions and WGs are aware of who and how they can interface with related organizations. Please refer to the Appendix 3 of ISPRS Orange Book, too: <http://www.isprs.org/documents/orangebook/app3.html>

The Events Calendar Editor respectfully asks all TC Presidents, WG Chairpersons and Members to submit the details of their congresses, conferences, symposia, workshops, tutorials and meetings:

- 1) Date (maybe open or pending, see above),
- 2) Event,
- 3) Web site address,
- 4) City, Country,
- 5) Contact person, TEL, FAX, & E-mail.

Please email or fax the details to:
Professor Tuan-chih Chen (ISPRS Events Calendar Editor)
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Thank you very much for your support and your assistance.

V. Accomplishments and Activities during the Current Year

- The ISPRS Events Calendar Editor, Prof. Tuan-chih CHEN, was invited to participate the XXII ICC 2005, at A Coruña, Spain.
- The ISPRS Events Calendar Editor, Prof. Tuan-chih CHEN, was elected as President of The Chinese-Taipei Geoinformatics Society (CTGS), which was applied as an Associate Member of ISPRS. The ISPRS President, Prof. Ian Dowman, has visit CTGS in Taiwan in March 2005. Now CTGS has been voted as a new Associate Member by all Ordinary Members.
- The ISPRS Events Calendar Editor is always keeping

contact with the Technical Commission Presidents, Chairs of Working Groups, and the contact persons of other events to get the newest up-to-date information.

12. Book Series

Change in editorship

Maxim Shoshany, the original ISPRS Book Series Editor, ended his term in January 2005, and the editorship passed to Paul Aplin. Maxim Shoshany was a leading figure in the early development of the ISPRS Book Series, and continues to provide valuable guidance. He is thanked for his efforts. Two ISPRS Book Series volumes were in progress at the time of the change in editorship and, for these two volumes, Maxim Shoshany has continued to act as a co-editor, along with Paul Aplin.

Scientific content

At the time of the new ISPRS Book Series Editor taking up the post, a new brief was devised by the ISPRS Council. In particular, the editor was to reflect on the status of the Book Series and develop a long-term strategy to ensure continuing success. It was felt that the existing description and intention of the Book Series was a little unclear, and that the awareness of the Book Series was not as wide as it could or should be. Specifically, originally, the general and main purpose of the Book Series was to publish volumes associated with technical ISPRS workshops and conferences, although there was also a statement of intent to publish 'other' works of relevance to ISPRS. This position has now been altered a little to broaden the scope of the Book Series. That is, whereas before the Book Series was generally dependent on ISPRS meetings, it is now a mechanism in its own right for publishing literature on topical and significant issues within the broad field of photogrammetry and remote sensing – although individual volumes 'may' emerge in association with ISPRS meetings, where such meetings are held on suitable (i.e. topical, significant) issues. Summary text prepared for the ISPRS website reflects this basic vision of the Book Series:

The ISPRS Book Series comprises significant scientific publications in photogrammetry and remote sensing, and related disciplines. Each volume in the series is prepared independently and focuses on a topical theme. Volumes are published on an occasional basis, according to the emergence of noteworthy scientific developments. The material included within each volume is peer-reviewed rigorously, ensuring strong scientific standards. While volumes are published on any suitable theme, it is common for themes to be related to ISPRS meetings. The series is published by Taylor & Francis.

The publishing process

Given the relatively recent emergence and development of the ISPRS Book Series, the actual procedures involved in preparing and publishing volumes had developed on a rather ad hoc basis. While general guidelines existed

regarding the responsibilities of the volume editors, the Book Series Editor and the publisher, these were incomplete and not always wholly appropriate. As such, considerable effort has been made to clarify the roles and responsibilities of all parties involved in the ISPRS Book Series and, in particular, to develop a clear procedure for volume editors to follow when preparing volumes. A meeting was held between ISPRS and the publisher, Taylor & Francis, in London in February 2005 (and dialogue has been ongoing ever since) to address this and other issues. Clear guidelines for volume editors are now available on the ISPRS website, at <http://www.isprs.org/publications/bookseries.html>.

Consolidation

2005 was a year of consolidation for the ISPRS Book Series. Only one new volume was published, but another is due for publication soon and many other expressions of interest were received, some of which led to successful volume proposals. Considerable effort was made to raise awareness of the Book Series, and to this end the new website was developed and released, and announcements were made in ISPRS Highlights and on ISPRS email lists. In particular, ISPRS meeting organizers and ISPRS TC and WG representatives were contacted and invited to consider editing volumes in the ISPRS Book Series. Efforts were made to publicize the benefits of the Book Series to individuals involved in ISPRS activities. Specifically, in addition to

the obvious opportunities for publishing scientific work in the Book Series, individuals involved in ISPRS activities receive a 35% discount from Taylor & Francis on all Book Series volume purchases. Taylor & Francis have also begun to increase their efforts in arranging independent reviews of published volumes in the scientific media, as part of an overall drive in the Book Series towards scientific excellence.

New volumes

One new volume of the ISPRS Book Series was published in 2005, 'Next Generation Geospatial Information' edited by Peggy Agouris and Arie Croitoru. This has become the third volume of the ISPRS Book Series. It is hoped the fourth volume, 'Mobile Mapping Technology' edited by Jonathan Li and Vincent Tao, will be published early in 2006, but this has been delayed considerably to date. Three further volume proposals were accepted in 2005 and are currently in preparation. These are 'Advances in Remote Sensing and Geoinformation Processing for Land Degradation Assessment' edited by Achim Roeder and Joachim Hill, 'Advances in Spatio-temporal Analysis' edited by Xinming Tang, Wolfgang Kainz, Yaolin Liu and Jixian Zhang, and 'Geoinformation in Disaster Management Response' edited by Siyka Zlatanova and Jonathan Li. Various other expressions of interest have been received by the ISPRS Book Series Editor, and new volume proposals are currently in preparation.