

ISPRS DAILY

The XXI Congress

The International Society
for Photogrammetry and Remote Sensing

3-11 July 2008 Beijing, China

Friday 11 July 2008

General Assembly Passes Beijing Declaration

As the XXI Congress draws to a close, the ISPRS begins a new era in its mission to advance the spatial information sciences for the benefit of the Earth and its people.



On 9 July, 120 delegates representing 41 countries at the General Assembly passed the Beijing Declaration. The Declaration is a formal statement of the ISPRS' mission to promote the peaceful use of geo-spatial technology for the benefit of society and the environment. It also sets out a number of ways in which the ISPRS can work to this end.

The Declaration calls on the international community to commit adequate investment to scientific research and development,

education and training, and capacity and infrastructure building; promote the sharing of research and technology for peaceful applications; and encourage constructive dialogue co-operation between scientists, governments, public and private sectors, NGOs and international organisations.

The Declaration draws attention to the wide application of Earth observation technologies in fields such as socio-economic sustainable development;

Continued on page 2...



It's Closing Time

Chairman of the Local Organising Committee Mr Song Chaozhi delivers his closing message.



Passing the baton from Beijing to Melbourne.

The support of the Chinese government and the great efforts of our international peers has made the XXI ISPRS Congress a fruitful and successful event.

Since Geo-imagery Bridging the Continents in Istanbul four years ago, until Silk Road of Information from Imagery here in Beijing, scientists from all over the world have actively participated in the rally to advance remote sensing technology. This has involved developing better software, inventing new hardware, expanding applications and promoting geospatial

information science in numerous ways.

We are pleased to announce that Beijing will pass the baton to Melbourne in 2012, with warm blessings and best wishes. I would like to take this opportunity to express my heartfelt gratitude to every participant who attended the Congress. I hope that we will continue to support international collaboration and the application of remote sensing technology for peaceful purposes, and together, build a bright, prosperous and sustainable future for our people.

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natural disaster prediction; mitigation and response; maintenance of biodiversity; cultural heritage conservation; global and environmental climate change monitoring; energy exploration and management; land use and land cover inventory; food security; sustainable use of water resources; and human habitat, environment and health.

It also points out significant technological achievements in the acquisition and analysis of aerial and satellite imagery, advances of airborne and terrestrial LiDAR and develops in imaging radar technology. It highlights the increased maturity of small satellites, geo-sensor networks, digital cameras and other types of sensors. Advances have also been made in automated information extraction, distributed data processing and multidimensional data modelling.

New forms of co-operation and knowledge-sharing have emerged, most notably the Group on Earth Observation (GEO) and its program to establish a Global Earth Observation System of Systems (GEOSS), the International Council for Science (ICSU) Geo-Unions and the Joint Board of

Geospatial Information Societies.

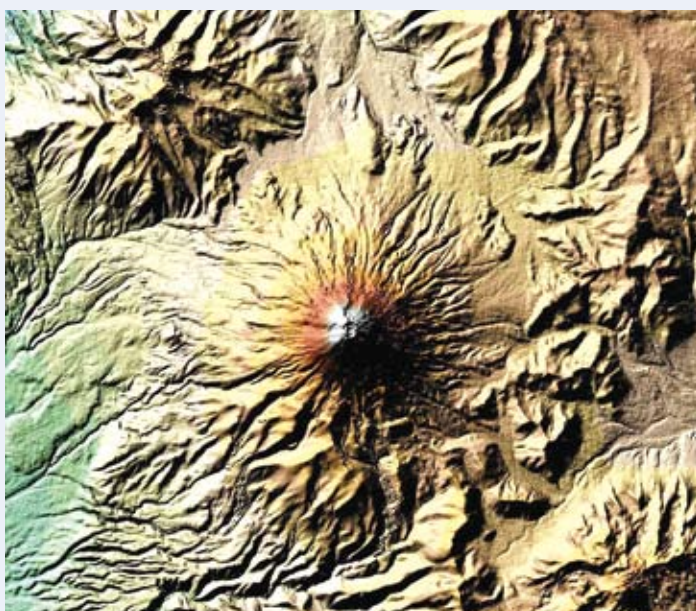
The Declaration affirmed the importance of photogrammetry, remote sensing and spatial information sciences for sustainable development in the 21st century. It recognised the responsibility of non-governmental organisations, especially the ISPRS, to promote the peaceful use of space, airborne and terrestrial technology.

The document also reaffirms the ISPRS' commitment to realise the full potential of information from imagery through research and development, scientific networking, international co-operation, inter-disciplinary integration and education and training. It also highlights the importance of increasing public recognition of photogrammetry, remote sensing and the spatial information sciences.



Technical Commission Vision

Technical Commission Vision VIII: Remote Sensing Applications and Policies



In the late 20th century, it was pointed out that changes of the global environment could alter the living environment for human beings. Such changes include rising sea levels, tropical forest reduction, desertification, destruction of the ozone

layer, acid rain and decreased bio-diversity. It is essential that we try to predict as accurately as possible the course of these global changes so effort can be made to mitigate the adverse impacts of these changes.

Any adequate understanding of global changes must be based on an approach that regards the earth as a single system, within which various global geophysical parameters, processes and the interactions take place. So far it has been near-impossible to establishment of these parameters using conventional observation and measurement methods conducted in field campaigns. Satellite observation is therefore central to any attempt to solve global environmental problems.

On the other hand, remote sensing is now using many operational applications such as data input to numerical weather prediction, extreme weather forecasting, fisheries, ship navigation, coastal management, crop yield estimation, and monitoring of forests, forest fires and volcano eruptions.

The goals of TC VIII are to better understand Earth system science, to expand the application fields of remote sensing and to increase the operational use of remote sensing.

Haruhisa Shimoda

ISPRS Honours its Finest

The following awards are presented at the Gala Dinner on 10 July.



The Gino Cassinis Award was presented to Prof. Dr. Zhilin Li from Hong Kong, in recognition of his book, *Algorithmic Foundation of Multi-scale Spatial Representation*, published in 2007 by CRC Press (Taylor & Francis Group). The publication provided an excellent mathematical/algorithmic foundation for multi-scale representation and digital map generalisation.

The Gino Cassinis Award is awarded to a person who has significantly enhanced the mathematical and statistical foundations of the photogrammetry, remote sensing or spatial information sciences.

The Eduard Dolezal Award was presented to Dr. Nguyen Dinh Duong from Vietnam in recognition of his contribution to developing remote sensing methodologies in Asia.

Dr. Nguyen developed WinASEAN (Windows based Advanced System for Environmental Analysis with Remote Sensing Data), commonly used in remote sensing research and education in many countries in Asia.

The Eduard Dolezal Award assists individuals from developing or reforming countries to participate in the Congress.

The Schwidefsky Medal was awarded to Dr. Gerhard Kemper and Prof. Klaus Szangolies from Germany. Dr. Kemper was recognised for his contributions to the ISPRS, and Prof. Szangolies for his contribution as editor-in-chief of the German Journal for Photogrammetry, Remote Sensing and Geoinformation.

The Schwidefsky Medal recognises

significant contributions to photogrammetry and remote sensing, through publication or another form.

The Willem Schermerhorn Award was awarded to Sisi Zlatanova from the Netherlands in recognition of her excellent performance as Chair of ISPRS working group IV/8: Spatial Data Integration for Emergency Services. She has also organised a number of ISPRS symposiums and contributed greatly to the organisation of the ISPRS TC IV Symposium in 2006 and the XXI Congress in Beijing.

The Samuel Gamble Award was awarded to Dr. Wilber K. Ottichilo from Kenya, Dr. Jide Kufoniya from Nigeria, and Dr. Li Deren from China.

Dr. Wilber Ottichilo is the Director General of the Regional Centre for Mapping of Resources for Development in Nairobi, Kenya. Dr. Ottichilo has been an active participant in ISPRS affairs in Africa and is a member of the AFREF Steering Committee, Chair of the Board of EIS Africa, a member of UNEDRA and of the UNECA GEO Committee of CODI.

Dr. Jide Kufoniya is the Secretary General of the Africa Association of Remote Sensing of the Environment (AARSE), a member of the AFREF Steering Committee and is heavily involved in the UN Economic Commission for Africa. He is chair of ISPRS WG VII/7: Innovative Problem Solving Methodologies for Less Developed Countries and regional representative of the WG VI/3 - International Cooperation and Capacity Building.

Professor Li Deren has made a significant contribution to the scientific development and industrialization of geoinformation technology in China. He is currently the Chairman of the Academic Commission of the State Key Laboratory for Information Engineering in Surveying and Mapping and Remote Sensing (LIESMARS).

The Samuel Gamble Award goes to a person who has contributed significantly to the development, organisation or professional activities of the photogrammetry, remote sensing and spatial information sciences.

Editorial Team

The local organising committee will publish eight issues of ISPRS Daily: Thursday, Friday, Saturday, Monday (7th July), Tuesday, Wednesday, Thursday and Friday.

Editor-in-chief:

SUN Baowu

Advisor:

Prof. LI Zhilin

Journalists:

Vienna LEE

Inga TING

Editorial Assistant:

Andrew LI

Layout Team:

PAN Fen

SUN Wenting

Photographer:

WU Xiaogan

ZHAO Jianguo

WU Jiang

Local Co-ordinator:

YAN Ronghua

Local Co-ordinator Assistant:

MEI Yang

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The team behind the ISPRS Daily.

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Closing Ceremony

- ◆ **Presentation of Achievements and Highlights of Congress**
Technical Commission Presidents
- ◆ **Report on GA Ratification by Secretary General**
Prof. Orhan Altan
- ◆ **Presentation of President's Honorary Citation**
ISPRS President Prof. Ian Dowman
- ◆ **Presentation of Best Poster Papers**
ISPRS Congress Director Prof. Chen Jun
- ◆ **Presentation of CATCON Prizes**
President of ISPRS Technical Commission VI Prof. Kohei Cho & ISPRS Honorary member Prof. Shunji Murai
- ◆ **Presentation of Certificate of Recognition to Local Organizing Committee**
ISPRS President Prof. Ian Dowman
- ◆ **Congress Director's Report**
Prof. Chen Jun
- ◆ **Report on GA Resolutions**
ISPRS First Vice President Prof. John Trinder
- ◆ **Address by outgoing President**
Prof. Ian Dowman
- ◆ **Address by incoming President**
Prof. Orhan Altan
- ◆ **Flag Handover**
- ◆ **Address by incoming Congress Director**
Prof. Cliff Ogleby
- ◆ **Closing Address by outgoing Congress Director**
Prof. Chen Jun



CATCON Winners Announced

CityGML, an OGC-standard training course on the representation of 3D urban objects presented by Robert Kaden of Berlin University of Technology, Germany, has taken Gold (US \$1,000) in the CATCON e-learning software contest. *Limulator2.0*, a program that emulates the function of LiDAR sensors, took Silver (US \$700) and ITC GEONETCast Toolbox, developed to handle continuous data streams from different sensors in the GEONETCast environment, was awarded Bronze (US \$500).

GT Simulator, a program that allows beginners to virtually experience the ground truth spectral measurement of the Earth's surface, won the participants' vote by a landslide. It received a special judges' award, as it was only included in the contest for review and was not eligible for an official prize.

"*CityGML* combines teaching of virtual lessons enriched by multimedia techniques, hands-on exercises and use of communication tools," said the judges' statement.

The contest, which attracted around 80 spectators yesterday, aims to promote the development and dissemination of quality user-friendly software packages, multimedia tutorials and data sets for computer assisted teaching (CAT). Ideally, the software or dataset is non-commercial and provided to users free of charge.

To resolve the difficulty of judging

unfunded projects against applications from professional development teams, the judges nominated eLML for a non-financial Gold Award in the professional field. eLML is an open source XML framework for creating structured e-learning content.

The four other contestants were GITTA – Geographic Information Technology Training Alliance, OLAT – Online Learning and Training, WIPS – Worksheet Image Processing System, and VITLT – Virtual Interactive Traverse Learning Tool.

Applications were judged on ease and clarity of use, sophistication, educational relevance, availability (i.e. is the software free) and accessibility (is the software free of hardware and software restrictions).



Archiving cities in 3D

Laser mapping technology, StreetMapper, has been short-listed to support the Digital City research project.

The Chinese Academy of Sciences (CAS) Shenzhen Institute of Advanced Technology has short-listed StreetMapper laser scanning technology to support Digital City, a research project aimed at creating 3D digital representations of cities. StreetMapper is a joint development between UK-based company, 3D Laser Mapping, and German guidance and navigation specialist, IGI.

StreetMapper captures highly accurate measurements at speeds of up to 70 kph. Multiple laser scanners are mounted on vehicles. Each scanner has a range of 150 metres, and 80 degree field-of-view and can capture up to 10,000 measurements per second. When combined with an on

board GPS and Inertial Navigation System (INS), it can achieve positional accuracies of up to three centimetres, says its developers.

If selected, StreetMapper will be used to create 3D models of the urban landscape. These models will be the foundation for research and development into Digital City, which will be propelled by 3D earth projects such as Google Earth 3D and Virtual Earth 3D.

"StreetMapper is easy to operate, achieves unparalleled accuracy and can be tailored to meet our requirements," said Baoquan Chen, Professor and Deputy Director of the Digital City Research Centre.

Technical Terminology

For a limited period of time, The Photogrammetric Record is offering Congress participants free access to its technical terminology guide for the photogrammetric community.

The Editorial team of The Photogrammetric Record has long felt the need for standardised terminology to eliminate inconsistency within authors' works and maintain consistency over time. In 2000–2001 a terminology listing was produced for internal use only. After much revision, this was published in The Photogrammetric Record in June 2007.

In a paper presented to ISPRS WG VI/1 at this Congress, UK Delegate and editor of The Photogrammetric Record, Paul Newby, brought the Record's Terminology

Guide to a wider audience. It is hoped that the Guide will help authors of technical papers everywhere, and provoke feedback, revision and ultimately acceptance. This will greatly benefit photogrammetrists and those who publish their work worldwide.

The original publication containing the full listing can be found at www.blackwellpublishing.com/photrec. It is available free of charge for a limited period to any Congress participant. Feedback and suggestions are welcome.

Building a Better Global DEM

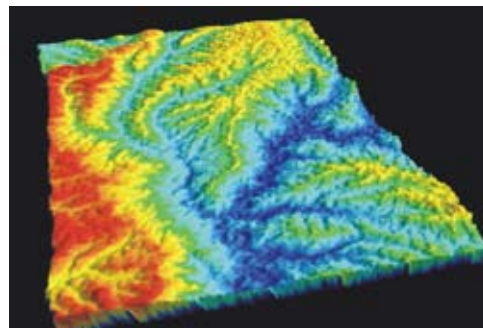
A global DEM with sub-metre errors may not be far off.

Digital Elevation Models (DEM) of the Earth's surface are important for creating a number of products from other satellite sensors. While DEMs have a long history, the first truly global DEM was created only ten years ago and even the best of the modern varieties seem to have errors measuring in tens or hundreds of metres. There is hope however, that a global DEM with sub-metre errors is not far off.

Jan-Peter Muller from University College London says that by 2013, a fully global 30-metre DEM based on US and Japanese data is highly likely. The real issue is whether or not such a global DEM will include bathymetry over the continental shelves of the continents, where the water depth is usually less than 100 metres.

In a presentation to Congress participants, Muller recalls that the first global DEM was a NOAA DEM with 10 km postings. This was followed by GTOPO30 from the US Geological Survey, with postings at one kilometre. A study by Wil Featherstone and others at Curtin University in Perth, Australia, shows that despite errors of up to 100 metres, this data set is still downloaded hundreds of times a day, so is obviously still fit for purpose.

Since then, there have been a succession of attempts to create a global DEM, most notably by the US-Italian Shuttle Radar Topography Mission. The global SRTM data



set has 90 metre postings, but is full of holes.

US Geological Survey and the Earth Remote Sensing Data Acquisition Centre in Japan have agreed to co-operate on a fused ASTER/SRTM data set to give 30 metre postings, using the Indian Cartosat optical satellite to fill voids. Such a DEM has already been produced of India.

Another alternative that is also under consideration is the use of PRISM data from the Japanese Space Agency.

However, Muller says that none of these sensors will give coverage of the shape of the continental margins, where the water is less than 100 metres thick. This data does exist or is being created by most nations as part of UN agreements which allow countries to control the potential resources of their continental shelf. This requires the submission of accurate bathymetry of the claimed region to be submitted to the UN. However, this data is not likely to be released for 25 years.

This article was written by Jon Fairall, editor of ISPRS Congress media partner, Asian Surveying and Mapping in Sydney, Australia.

Conference Announcement

The Digital Earth Summit on Geoinformatics: Tools for Global Change Research is being held 12-14 November 2008 in Potsdam, Germany.

Chaired by Prof. Manfred Ehlers of University of Osnabrueck in Germany, the Summit will bring together leading scientists from geoinformatics and global change research. It aims to foster the exchange of ideas, co-operation between so-far disjoint scientific fields and provide time for in-depth discussion.

Keynote speakers will cover relevant topics in geoinformatics, global change research, spatial data infrastructures, digital earth initiatives, and Earth observation activities, as well as the interaction between these fields.

The conference is being organised by the Society for Geoinformatics (Germany, Austria, Switzerland), the International Society for Digital Earth (ISDE), the GeoResearch Center (GFZ) Potsdam, the Potsdam Institute for Climate Change Impact, and the European Commission Joint Research Centre.

Visit www.isde-summit-2008.org for more information.

International Journal of Digital Earth

The International Journal of Digital Earth is asking for contributions. Published in collaboration with the International Society for Digital Earth (ISDE), the Journal is concerned with the science and technology of digital earth, and its applications in all major disciplines.

The journal covers a wide range of topics and contains primary research papers on basic science, techniques and applications, review articles, short technical notes and technical letters.

Prof. Guo Huadong from the Centre for Earth Observation and Digital Earth in China is the Journal's editor-in-chief.

Visit www.informaworld.com/IJDE for more information.

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Program of the Day

- ◆ **TS WG VIII/11 (2): Sustainable Forest and Landscape Management**
Time: 08:30-10:00
Room: (201B Conference Room)
- ◆ **TS WG VIII/5: Policies, Treaties and Data Access**
Time: 08:30-10:00
Room: (201C Conference Room)
- ◆ **TS WG I/5 (2): DEM Generation with Optical Spaceborne Systems**
Time: 08:30-10:00
Room: (305C Conference Room)
- ◆ **TS WG VII/5 (2): Processing of Multi Temporal Data and Change Detection**
Time: 08:30-10:00
Room: (305B Conference Room)
- ◆ **TS WG VI/5: Promotion of the Profession to Students**
Time: 10:30-12:00
Room: (201B Conference Room)
- ◆ **TS WG III/3 (2): Interpretation of LIDAR Data**
Time: 10:30-12:00
Room: (201C Conference Room)
- ◆ **TS ThS 23 (2): UAV for Mapping(2)**
Time: 10:30-12:00
Room: (305C Conference Room)
- ◆ **TS WG IV/1 (2): Spatial Data Infrastructure**
Time: 10:30-12:00
Room: (305B Conference Room)
- ◆ **TS WG I/2 (5): Geometric and Image Quality Advances in SAR**
Time: 13:30-15:00
Room: (201B Conference Room)
- ◆ **TS WG IV/4 (2): Landscape Modelling and Visualisation**
Time: 13:30-15:00
Room: (201C Conference Room)
- ◆ **TS WG VIII/2 (4): Disaster Risks Monitoring & Management**
Time: 13:30-15:00
Room: (305C Conference Room)
- ◆ **TS WG VIII/3 (2): Atmospheric, Climate and Weather Research**
Time: 13:30-15:00
Room: (305B Conference Room)
- ◆ **Closing Ceremony**
Time: 15:30-17:00
Room: (Convention Hall No1)

Technical Commission Vision

Technical Commission VI: Education and Outreach

There is growing awareness that the spatial processes affecting the sustainable development of our living environment are of a supra-national and even a global scale. It is clear that worldwide efforts are required to deal with these scientific problems. Geo-ICT plays an increasing role in the management of spatial processes by enabling the global scientific and professional community develop and implement tools to deal with these issues.

We also see with the globalisation of the economy the development of global delivery chains for Geo-ICT products and services. Partners in these chains must have a common understanding of the specifications and conditions for product and service delivery. This requires a global involvement in research and technology development and a global harmonisation of educational programs.

It is no longer possible for national economies to maintain sufficiently high investment levels over the full range of modern research sectors. This implies that national and regional priorities must be set for fields of interest. We will see increasing regional or even inter-continental spread of fields of expertise, initially in research, then in technology development and subsequently, in higher education.

These developments have a great impact on the world of professional and higher education. In the last ten

years, we have experienced the rapid internationalisation of education and with that, the development of various forms of cross-border education. The number of international partnerships providing joint educational programs is growing quickly. These partnerships provide a new setting for capacity development.

Parties generally participate in several partnerships simultaneously. There is a potential to upscale these agreements into multilateral regional or even global networks, in which decentralised supply chains for education services can develop. Different partners will have their own competences and fields of expertise; these can be combined into coherent educational programs or courses. Students can visit appropriate partners for various educational modules. Partnerships may also involve the transfer of credit points between educational institutions. Distance learning approaches are an important means of reducing travel costs for students.

These developments form an important context for the work plan of TC VI. Working groups will focus on instruments for cross border education, such as web-based education and e-learning facilities. Other working groups will look at the formulation of international curricula, quality assurance and accreditation of educational programs and credit transfer systems.

Martien Molenaar

Solution to SOA Approach to Geospatial Information Management.

ESRI has been a close sponsor and long supporter of the ISPRS, and ESRI ArcGIS is a familiar name amongst members of the ISPRS. As a world leading GIS software company, ESRI has made significant contribution and investment into the research, development and promotion for the use of geospatial technologies around the world.

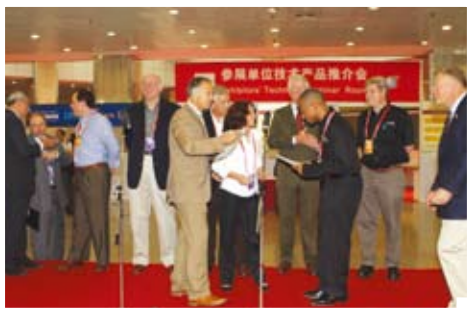
Latest generation of ESRI ArcGIS equipped with powerful imagery services, allowing organisations to quickly implement Service-Oriented Architecture (SOA). The advanced ArcGIS Server has extended image service capabilities, making it a powerful solution for managing and disseminating of large volumes of image data, with server based on-the-fly image processing.

ESRI ArcGIS provides the solution to Enterprise Image Management, enabling organization to manage, integrate and exploit large catalogs of rasters and imagery, allowing smooth access of imagery data from multiple locations, including multiple desktops and web applications.

The material was supplied by ESRI.

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ISPRS Foundation Raffle



Plenary Session



3-11 July 2008 Beijing, China

Gala Dinner



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The Eduard Dolezal Award



The Schwidewsky Medal



The Willem Schermerhorn Award



The Samuel Gamble Award

