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From Our Members



A Report on the 13th International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision (WSCG'2005)

Pilsen - Bory, Czech Republic from January 31 - February 4, 2005

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The 13th International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision (WSCG'2005) was held in Pilsen, Czech Republic. It was organized by the Center of Computer Graphics and Visualization at the University of West Bohemia. The conference was hosted by the University of West Bohemia at the Pilsen - Bory Campus.

A total of more than 150 participants from over 15 countries such as Czech Republic, Turkey, Germany, France, Belgium, Finland, Italy, Spain, USA, UK, China, and Japan participated in the conference. Officials from the University of West Bohemia and various institutions of University of West Bohemia as well as a number of staff members and research students attended the conference.

Two keynote speeches were delivered. One of them was by Stuart Ferguson from Queen's University of Belfast, U.K.: *Adapting Computer Game Technology to Build a Surgical Simulator* and the other one was by James T. Klosowski from IBM, USA: *Scalable Visualization using Commodity Clusters: Challenges and Solutions.*



The profile and the topics for the conference was:

- Levels of Details (Algorithms etc.)
- Parallel & Distributed Graphics
- Computer Aided Geometric Design
- Graphics Architecture & Visualization HW
- Image Based Rendering
- Mathematical Aspects of Graphics

- Global Illumination,
- Ray Tracing, Radiosity
- Computational Geometry,
- Surface Meshing, Modeling,
- Constraint Motion, Simulation
- Virtual Reality & VR Interaction
- Viewing Dynamic World
- Morphing & Warping
- Visualization
- Computer Vision & Image Processing
- Pattern Recognition
- WWW Technologies, Hypermedia
- Human Computer Interface (Graphical & Vision, Haptic)
- CAD/CAM & GIS Systems
- Education Aspects
- Animation
- Applications

A total of 264 paper submissions were received where 48 of them were accepted as journal or full conference papers, 45 of them were accepted as short papers and 40 of them were accepted as posters. There were three sessions whereas two of them was running in parallel. One of them was for journal or full conference papers, the other one was for the short papers. Full papers were scheduled into 9 sessions and short papers were scheduled into 5 whereas poster sessions were held during the 3 coffee breaks.



The objective of the conference is to bring together the scholars, researchers, professionals and the scientific communities who are working on the computer graphics and visualization technologies. It has provided an invaluable forum for the exchange of ideas and development in these technologies.

The next WSCG conference is expected to be held on February 6 - 10, 2006 and it will certainly be hosted in Czech Republic again. All of the conference proceedings including the journal and full papers, short papers and posters can be viewed online at conference web page: <http://wscg.zcu.cz>.



A Report on Map India 2005 & Geomatics 2005

By *Ayon Kumar Tarafdar*, e-mail: ayon@gisdevelopment.net

Map India 2005 was the 8th Annual International Conference and Exhibition in India, in the field of geographic information technologies like GIS, GPS, Aerial Photography and Remote Sensing. With a mission of foster the use and spread of geospatial content in India and beyond, Map India 2005, in three days of discussions and deliberations, brought together the key stakeholders in the geospatial domain - researchers, students, academia, policy makers, government departments and the industry - onto one platform. Map India 2005, held on 7th - 9th February 2005 at Taj Palace Hotel, Delhi, was jointly organized by the GIS Development, Centre for Science, Development and Media Studies (CSDMS), Survey of India and the Indian Society of Geomatics. The Annual Convention of the Indian Society of Geomatics (ISG) - Geomatics 2005 was held in conjunction with Map India in these three days.

The Theme

Map India 2005 had a theme of 'Back to Basics' and tried to highlight the major achievements and pitfalls in the growth of Geospatial sciences in India. It attempted to

portray and assess the potential of the physical infrastructure and utility sector in the geospatial domain. Map India 2005 had a sub theme of 'GIS Industry In India: Moving up the value chain'. Geomatics 2005 had a theme of 'Geomatics technologies for bridging the digital divide'.

Participation

The 3-day high profile participation once again reinstated the significance and role of the Map India platform in India and its surrounds of fusing the needy with the providers. Map India 2005 had a record crowd in its history. The conference had 1631 delegates including 473 visitors, who attended the 3-day conference and Geomatics 2005. Delegates attended various seminars and technical sessions; each designed and conducted by domain specialists and experts. Of the total registered 1158 registered delegates, 1117 were from India and 41 from overseas. Delegates represented 25 countries of the world. In all, 245 authors and co-authors were among the participants. The conference accepted 371 papers in total and 229 papers were presented on the floor, during the confer-

ence. In total, 40 exhibitors displayed their products and services. There were 4 exhibitors from the government sector and rest from the private sector.

Map India 2005 also had the opportunity to have a large Canadian delegation with large government and industry representation that reinstated the emerging Indo-Canadian strong ties in the domain of geospatial sciences and services. The conference witnessed the august presence and address of Her Excellency Lucie Edwards, the High Commissioner of Canada.

Inauguration

The inauguration started with a packed hall of over 700 people. The two-hour inauguration had some very crucial speakers that elaborated on various challenges and prospects of the industry and almost every speaker touched upon the theme and emphasized their understanding of the industry's trends and the theme of 'back to basics'. The occasion was graced by Ms Sheila Dikshit, the Chief Minister of Delhi; Ms Lucie Edwards, High Commissioner of Canada; Dr M P Narayanan, President CSDMS; Dr Prithvish Nag, Surveyor General of India; R S Pawar, Chairman, NIIT India; K K Singh, Chairman & Managing Director Rolta India Ltd; and Dr Ravi Gupta, Director, CSDMS.

Special Address

Tad Murty, President, Tsunami Society, Canada gave a special address on the opening day where he touched upon the available tools and techniques in the GIS industry that can avert losses of any future consequences of shoreline disasters. Another special address on the first day was by Mr. Kapil Sibal, Minister of Science and Technology, Government of India. He addressed a packed hall of over 400 and spoke at length of his views of the mapping sector giving glimpses of his vision of how this industry might shape up. He told the audience that the long awaited map policy and the NSDI policy has been passed by some of the highest authorities of the country and now awaits final round of approval.

Keynote Sessions

Technology Trends - I

This popular and noteworthy keynote on the first day was chaired by A R Dasgupta, Deputy Director, Space Application Centre, India. The session had two key presentations, with each elaborating the growing needs of geospatial market and Asia in particular. Dr Terrance Keating, Executive Vice President, Z/I Imaging, Intergraph talked of various mapping and surveying techniques available with Intergraph coupled with the complete solutions of GIS that the organisation has to offer. His emphasis was on the importance of fast changing urban development and the need to map these changes to monitor. Bhupinder Singh, Managing Director, Bentley Systems talked of the concept different tools in a single platform and mentioned that in the coming days one need to think of addressing multiple complex problems at a time.

Technology Trends - II

Chaired by P Venkatram, Advisor, JLets Technologies, this session had three main speakers. The session started with Brad Schmidt, International Sales Manager, PCI Geomatics speaking about the way the industry is growing despite various challenges and odds. He implied upon the vast areas of growth taking into account the long way yet to go in terms of development in Asia. He also mentioned about the different offering of PCI Geomatics and the way these offering have evolved in terms of the need of the geospatial community. Dharendra Kumar, Country Category Manager, Hewlett Packard, talked of the foray of HP in the geospatial market. The final speaker C B Mishra, GM, CMC Ltd pointed out that the potential of geospatial technology trends in India is still to see its full form.

GIS Industry in India: Moving up the Value Chain

Two important presentations attempted to gauge the Indian GIS Industry. B V R Mohan Reddy, Chairman and Managing Director, Infotech Enterprises Ltd., talked at a conceptual level interspaced with examples of various Indian case studies. He mentioned that a 'value pyramid' is broadly classified into three layers. The lowest layer being the primary layer involves data centric work, and organizations involved in data centric activities. The middle layer involves application centric activities and mostly can be addressed by software applications and utilities. The top most layer of the pyramid is representative of the solution centric organizations that mostly work in the consulting mode. Rajesh Kalra, Executive Vice President, RMSI, followed with a thought provoking speech. He classified the overall GIS Industry into 5 basic types. He significantly pointed out that perhaps the GIS Industry of India are still solving problems of places outside India and for our own problems we happen to look outwards.

GI As Public Utility

This crucial session had two speakers. The session started with Mohammed Abdulla AlZaffin, the Head of the GIS Centre, Dubai Municipality. His insightful speech told us about the way the Dubai Municipality has revolutionized the use of geographic information in Dubai and UAE. He mentioned with various case studies that GIS and GI has become a public utility in that region. Absence of these services, even for a day, generates honest complaints. This is close to a situation where GI can be something close to a public utility. Ravi Gupta, Director, CSDMS gave an eloquent perspective, whereby he compared key utility sectors in India and drew an analogy with the mapping sector. He talked about the airlines, power, cement, telecom and road sector and how the related industries have transformed.

Technical Sessions, Seminar, Workshop and Student Session

Technical sessions and student sessions of Map India 2005 had over 200 presentations in the three days. There were a huge number of posters in the poster sessions too. Various significant topics were covered in the sessions as

follows – Water Resources, Geology and Mineral Resources, Disaster Management, Agriculture, Web GIS, Environmental Planning, Marine GIS and Coastal Zone Management, Forestry, Analytical Frameworks in GIS, Emerging Applications, Image Analysis, Health, GPS and Education. The event also had a seminar on the 'Infrastructure Development' focusing on Urban Planning, Utility and Transportation. There was also a workshop on 'eLearning Environments for GIScience Education'. A special session was held for students providing them with an opportunity to present their initiatives, innovations and viewpoints for the mapping community.

Geomatics 2005

The Indian Society of Geomatics (ISG) had its inaugural and plenary session on Day 2. Four key speakers touched on the topic of bridging the digital divide. After the welcome address by IC Matieda, Secretary, ISG, the floor was taken by Mr A R Dasgupta, the President of ISG and Deputy Director Space Application Centre (SAC) India. He delivered the Presidential Address tracing the history of the ISG and the key issues in the current market of geomatics.

Geomatics2005 had the ISG Millennium talk and a number of technical sessions over the next two days. The ISG Millennium series of talk had two lectures this year. A K Mukherji, Ministry of Environment & Forest, New Delhi, talked of various areas of environmental management and sustainable development. Professor Michael Blakemore, I-DRA, UK, spoke of a digital divides that is in our mind-sets and activities.

National Workshop on Cadastral Survey and Mapping

The Map India 2005 also had the opportunity to have the National Workshop on Cadastral Survey and Mapping being held in its conjugation. This important workshop was held in parallel and was organized by the Survey of India and the Department of Science and Technology, Government of India.

Dinner Receptions

Canada organised the Exhibitor Reception on the 1st day followed by a Dinner Reception hosted by PCI Geomatics & NRCAN, Canada. A Gala Dinner and cultural programme was hosted on the 2nd day by Intergraph

Mapping and Geospatial Solutions. Padma Bhusan recipient Professor V S Ramamurthy, the secretary to the Department of Science and Technology, Government of India, gave a Guest Address in the dinner. He gave a speech spanning various issues of the geospatial sector in India and Asia. He emphasized on the need for research, indigenous development and the significant role of education.

Exhibition

Spanning over an area of around 1800 sqm, the exhibition of Map India was inaugurated on 7th morning. The hugely successful exhibition, had 40 exhibitors thronged the large space, which was distributed in 4 halls. National and international organizations representing the government, the academia and the commercial private sectors displayed their services and products. The exhibition was coupled with technology shows, sponsored dinners and networking time periods.

Valedictory

The Valedictory Session had Dr P Nag (Surveyor General of India), Dr A Kaushal (ISG) and Dr M P Narayanan (President, CSDMS) as the key panelists. The Chief Guest to the session was Mr S Reghupati, Minister of State for Home Affairs, Government of India. He spoke about the various activities a nation needs to undertake to evolve a safe, healthy and forward-looking society. He talked to homeland security and disaster management as the two key areas of work. In view of that he mentioned about the immense possibility of the geographic information technologies. Mr Suresh Prabhu, Member of the Parliament of India talked of his long association with GIS and related tools in developing his constituency. He emphasized the need for conferences like Map India. The session ended with a short film on a project named - Mapping the Neighbourhood by the students of Almora, India, the Government of India and CSDMS. In the end Ravi Gupta ended the conference with the AWARD ceremony of Map India 2005. In summation Map India 2005 was an event that was able to provide a platform to share the needs, the supply, the latest developments and the concerns in the field of geospatial sciences to a huge gathering of distinguished people and organisations. It initiated discussions on 'geographic information' and in the process left significant pointers that may be evolved as mandated guidelines.

ASPRS Holds Very Successful 2005 Annual Conference

The ASPRS 2005 Annual Conference was held at the Marriott Waterfront Hotel in Baltimore, Maryland, from 7-11 March 2005 with over 1500 attendees. This year's



conference, "Geospatial Goes Global: From Your Neighborhood to the Whole Planet," was opened with a keynote address from Dr. Chip Groat, director, U.S. Geological Survey. Groat's remarks included discussion of the Earth Observation Summit Activities, the goals of which are to create agreements among the space faring



ASPRS Board 2005.

nations to integrate their Earth observation programs more effectively and data to benefit all nations' understanding and management of the planet.

Fourteen workshops were offered on the two days preceding the conference, and covered a wide array of topics including *Hyperspectral Image Processing and Feature Extraction: Maximizing Geospatial Information Retrieval*; *Fundamentals of Geodesy in GPS Surveying Applications*; and *Utilization/Integrations of Lidar for Mapping and GIS*, plus two workshops on *Preparation for ASPRS Certifications*. User group meetings were also held on Monday and Tuesday by Applanix Corporation, EAGLE Mapping, ESRI, INPHO, Intergraph, NIIRS10, Inc., PCI, RSI, and The MathWorks.

Plenary sessions opened the conference on Thursday, March 10 and Friday March 11. Thursday's session includ-



Karen Schuckman delivering her speech.

ed an addresses delivered by Alan R. Stevens, FGDC, on the "Relevance of a Global Spatial Data Infrastructure: A Developing World Perspective" and Karen Schuckman, ASPRS 2005-2006 President, on "Mapping the Way for the Next Generation of ASPRS," along with Jack Dangermond, ESRI, whose remarks were directed to "Can Distributed GIS Efforts Become a Global System?" On Friday, Paul Rooney, FEMA, and Bertram Beaulieu, NGA, spoke about "Geospatial Preparedness for Homeland Security."

With over 400 technical papers covering many diverse topics including "Geospatial Data for Urban Planning and Decision-Making – International Experiences," "DEM Technologies and Applications: Alternatives for Surface Modeling," "Alternative to Traditional Photogrammetry," this conference provided excellent educational opportunities to all in the industry. Over 80 percent of the attendees completing the evaluations rated the technical papers in the good to excellent range. Comments included "The conference was spectacular," "A very good conference with a well-balanced mix of exhibitors," "Good coverage of topics."

The Education Special Sessions which dealt with "Education in the Geospatial Sciences" covered a wide gambit from K-12 to the University level collaboration with national laboratories, to "Grand Challenges in GIScience: A University/Industry Perspective" panel discussion. The final session addressed "GIScience Employment Trends in Homeland and National Security." Attendees reported these were extremely informative sessions with much needed details presented. The area devoted to job postings and resumes was heavily used throughout the conference.

An Exhibit Hall of more than 80 booths showcased the latest in products and services of suppliers worldwide. Exhibit Hall traffic was brisk during the entire conference. Sales of exhibit space at the 2006 Annual Conference in Reno were vigorous on the last day of the conference indicating the success of this year's event.

A Classified Session consistent with the overall conference theme took place on Tuesday, 8 March at the National Geospatial Intelligence Agency Headquarters in Bethesda, Maryland. This session dealt with an innovative perspective on integration and analysis of satellite imagery and geospatial data. Technical Tours to State of Maryland Emergency Operations Center directed at GIS, Emergency Management and Homeland Security; NASA-Goddard Space Flight Center focused on USGS Landsat and NASA EOS Terra, Aqua and Aura Satellite Operations; and the National Security Agency National Cryptologic Museum took place throughout the week.



Gavel.

The ASPRS tradition of honoring members who have contributed greatly to the field and to the Society continued this year with Memorial Addresses for Duane Brown and

Hugh B. Loving, John Brown, Duane's son, and Roy Mullen respectively, gave these presentations.

Numerous awards were made throughout the conference to many deserving recipients including an ASPRS Fellow, student scholarships, and ASPRS Region awards. Among these were the newly established BAE Systems Award and the Kenneth J. Osborn Memorial Scholarship.

Several social events rounded out this premier conference for 2005, including the ASPRS Potomac Region Opening Reception, *A Taste of Baltimore*, the Exhibitors' Reception, and *An Evening at the National Aquarium in Baltimore*.

Founded in 1934, ASPRS is an international professional organization of 6,000 geospatial data professionals. ASPRS is devoted to advancing knowledge and improving understanding of the mapping sciences to promote responsible application of photogrammetry, remote sensing, geographic information systems and supporting technologies. For additional information about ASPRS, visit our web site at www.asprs.org.

Prof. Dr-Ing. Wolfgang Förstner Receives 2005 ASPRS Photogrammetric Award (FAIRCHILD)

The 2005 Photogrammetric Award (Fairchild) is awarded to Prof. Dr-Ing Wolfgang Förstner in honor of his major contributions to the science of photogrammetry, by helping to establish the increasingly important ties between photogrammetry, digital image processing, and computer vision. The award will be presented during the upcoming ASPRS 2005 Annual Conference in Baltimore, Maryland, March 7-11.

Educated at the Technical University of Stuttgart and Stuttgart University, Förstner received his Dr-Ing.habil. in 1989. From 1977 until 1989 he was an associate professor at the Institute of Photogrammetry, Stuttgart University, and since 1990, has been a full professor for Photogrammetry and the director of the Institute for Photogrammetry at Bonn University. Förstner has been responsible for a number of major theoretical and practical innovations. His theoretical analysis and empirical verification of the accuracy of differential image matching showed the potential of achieving accuracies below 0.1 pixel and the dependence of the accuracy on the textural content of the image. One of his most well-known accomplishments is the development of the Förstner operator, an interest operator which can be used to identify unique points in an image and also to obtain local image descriptors, including classification into junctions and circular symmetric features. His recent work has been directed toward the integration of statistical techniques such as error propagation and statistical test-

ing, widely used in photogrammetry, into projective geometry formulations. This integration promises to add a rigorous statistical basis to many of the current computer vision algorithms and to provide a more formal basis for many photogrammetric operations.

Förstner is currently (2004-2008) President of ISPRS Commission III, and has served as Vice-President of the German Association for Pattern Recognition (DAGM) and as President of Commission F "Fundamental Problems in Photogrammetry" of the European Organization of Experimental Photogrammetric Studies. He has been on the editorial boards of several technical journals, including ISPRS Journal of Photogrammetry & Remote Sensing, GIM International Journal for Geomatics, and *Zeitschrift für Photogrammetrie und Fernerkundung*, and has served as Chair, Co-chair, or on the program committee of numerous conferences.

As a professor, he has supervised over 110 Diplom-theses and 15 doctoral theses. He made major contributions to the recently-published Fifth Edition of the ASPRS Manual of Photogrammetry and has contributed several chapters to other books. His papers have been published in a wide range of technical journals, including statistical and computer vision journals outside the field of photogrammetry. He is a multiple winner of the DAGM award and was the recipient of the Gino Cassini Award of the International Society

for Photogrammetry and Remote Sensing (ISPRS) in 2000. In the commercial arena, he has developed concepts for commercial software such as InduSurf (marketed by Carl Zeiss), and Match-T and InJect, both sold by INPHO.

This brief listing of his accomplishments can only suggest the breadth of Förstner's contributions; this Photogrammetric Award is intended to attest to the quality and depth of his work and his impact on the field of photogrammetry.

The Photogrammetric Award (Fairchild) was established in 1943 to stimulate the development of the art of aerial

photogrammetry in the United States. This award was originally sponsored by the Loral Fairchild Corporation and is now supported by Lockheed Martin. It includes an engraved plaque.

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Report on Joint Conferences on Urban Remote Sensing

By Maik Netzband (for the organizing committee)

The third International Symposium Remote Sensing and Data Fusion over Urban Areas (URBAN 2005) and the fifth International Symposium Remote Sensing of Urban Areas (URS 2005) were hosted 14 – 16 March 2005 at Arizona State University (ASU) in Tempe, Phoenix, AZ, USA.

For the first time, both conferences were held together outside Europe in the United States. Until now they have met in Germany, Italy and Turkey and have attracted primarily a European audience of remote sensing specialists. With 137 participants from 20 countries (Northern America, Europe, Asia and Africa) a diverse and well-informed group of scientists interested in the wide-ranging aspects of urban remote sensing has been attracted.

Urban remote sensing has become an important and well recognized scientific subject in recent years. High resolution, multi-spectral and stereoscopic digital remotely sensed imagery has enabled new research. This fact found its expression in a multi aspect scientific program ranging from single building detection to the analysis of regional landscape fragmentation caused by urbanization.

The URBAN 2005 conference organized technical sessions in the subjects of: New Data and Sensors: High Resolution Spaceborne SAR for Urban Areas, Hyperspectral and LIDAR as well as New Innovative Concepts, Building Extraction, Urban Structure Detection and Change, Urban Land Cover Change, Advanced Image Processing, Vehicle Detection and Classification, Hyperspectral Urban Remote Sensing, Image Registration and Orthorectification, Advanced Image Processing and Road Detection and Automatic Road Extraction.

The URS 2005 conference covered the following topics: Urban Climatology, Remote Sensing Applications to Social



Group photo 'Urban Remote Sensing' conferences in Tempe, AZ, USA 2005.

Science, Remote Sensing Applications to Urban Planning, Remote Sensing Applications to Urban Conservation, Special session on Worldwide Urban Monitoring, Remote Sensing for Urban Development, Remote Sensing for Monitoring Urban Growth Patterns and Urban and Peri-Urban Ecology.

Three high quality keynote addresses given by Curt Davis (Electrical & Computer Engineering University of Missouri, USA), John Jensen (Department of Geography at the University of South Carolina, USA), and Brenda Smith (Geospatial Manager at the U.S. Environmental Protection Agency) highlighting and emphasizing various aspects of the legacy and recent developments of satellite technology, image processing, application and policies relevant and important for urban remote sensing.

A survey among the participants showed that the new concept of the organizing the two conferences commonly has been accepted and appreciated. It will be continued in a two years rhythm, so we are looking forward to meet all interested remote sensing scientists next time in Paris, France, in the spring of 2007.
