ISPRS

2008

SCIENTIFIC PROGRAMME

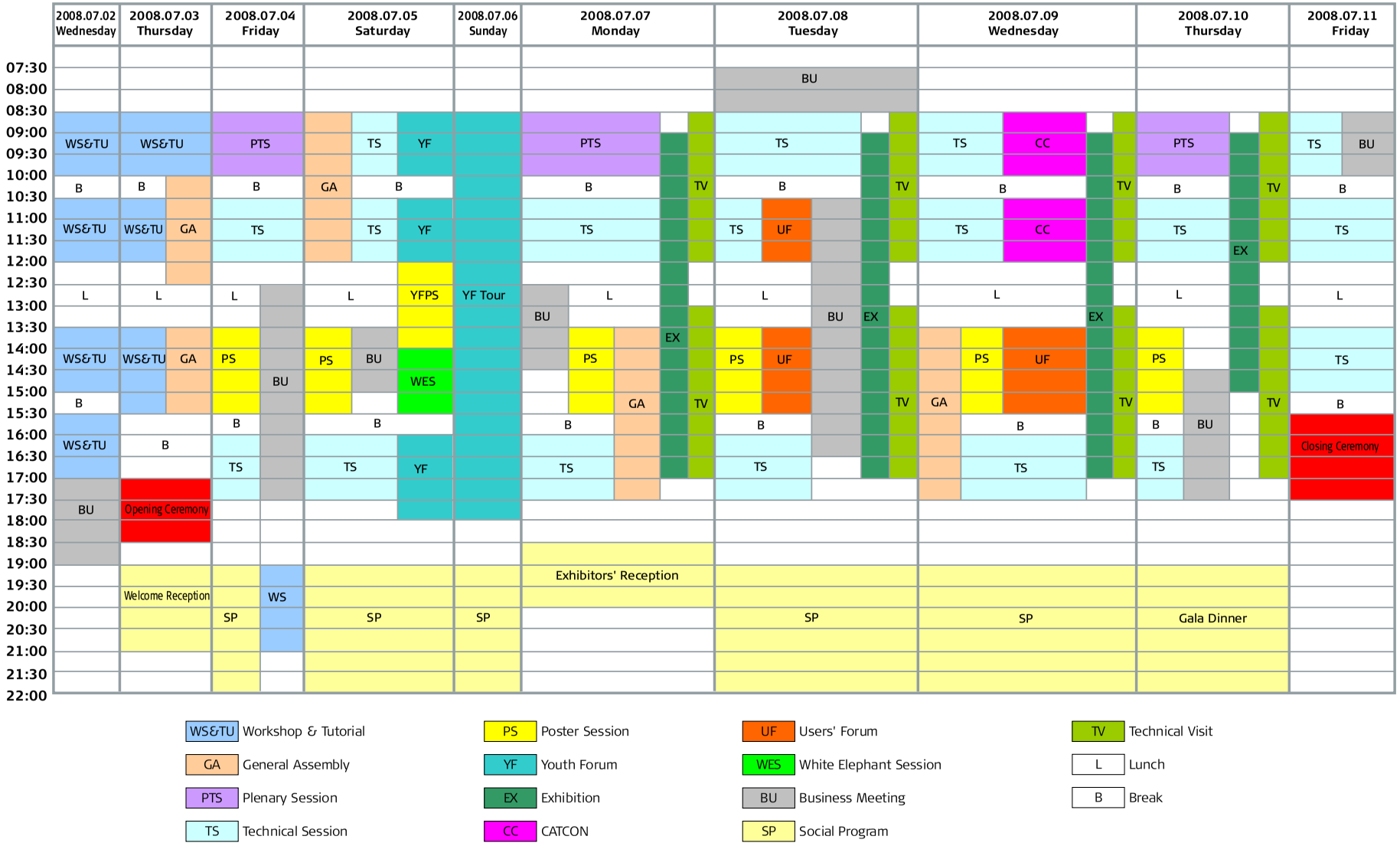
Overall Programme

Tutorials and Workshops

Reports of Technical Commission Presidents

Youth Forum

OVERALL PROGRAMME



ISPRS 154 Silk Road for Information from Imagery

TUTORIALS AND WORKSHOPS

Following Tutorials and Workshops were held on 2, 3 and 4 July 2008:

Tutorial

TU-1: Spatial Planning and Decision Support Systems
Chair: Ali Sharifi

TU-2: Modeling Uncertainties in Spatial Data and Analysis
Chair: John Shi

TU-3: Introduction to Terrestrial Laser Scanning
Chair: Derek D. Lichti

TU-5: Principles of Fuzzy Logic and Applications in GIS
Chair: Wolfgang Kainz

TU-6: Spatio-temporal Modeling, Analysis, and Data Mining
Chair: Abdülvahit Torun

TU-7: GIS Updating from Imagery and Collateral Data Sources
Chair: Christian Heipke

TU-8: GPS/INS Integration for Direct Georeferencing Applications
Chair: Naser El-Sheimy

TU-9: Introduction to Sensor Web and its Geospatial Applications
Chair: Steve Liang, Vincent Tao

TU-10: Information Extraction from High Resolution Optical Satellite Sensor
Chair: Karsten Jacobsen

Workshop

WS-1: ISO/TC211 and CEN/TC281 Standardization
Chair: Hans Knoop

WS-2: Landcover Classication Hormonization
Chair: Hans Knoop

WS-3: Air Quality and Health
Chair: Amy Budge

WS-4: Networks for Networks (NfN) 2008: Leveraging Global Partnerships in Geomatic Science and Engineering
Chair: Byung-Guk Kim (KLSG), Nicholas Chrisman(GEOIDE)

WS-5: Elsevier Workshop on How to Write Good Journal Papers

WS-6: Practical Steps Towards Global DEM Inter-operability
Chair: Jan-Peter Muller

Friday 4 July 2008

08:30 10:00	**Plenary Session 1 (PTS-1)** (Convention Hall No.1)	
10:00 10:30	COFFEE BREAK	
10:30-12:00	**TS WG I/2 (1)** SAR Applications (Convention Hall No.2A) **TS SS-4** Modern Navigation and Earth Observation (Convention Hall No.2B) **TS WG V/1 (1)** Industrial Vision Metrology - Calibration & Verification (Convention Hall No.2C) **TS SS-1** Operation and International Coordination for Earth Observing Systems (201A Conference Room)	**TS WG VII/2 (1)** Information Extraction from SAR Data (201B Conference Room) **TS WG II/1 (1)** Spatio-temporal Modeling (305C Conference Room) **TS ThS-5** Component-Based GIS (305B Conference Room) **TS WG VI/1** Educational Frameworks and Methodologies (307 Conference Room)
12:00 13:30	LUNCH	
13:30-15:30	**PS WG I/1** Standards, Calibration and Validation **PS WG I/3** Multi-platform Sensing and Sensor Networks **PS WG I/6** Small Satellites **PS ICWG IC I/V** Autonomous Vehicle Navigation **PS WG II/1** Spatio-Temporal Modeling **PS TC III (Vol. III/A)** Photogrammetric Computer Vision **PS WG IV/1** Spatial Data Infrastructure **PS WG IV/2** Image-Based Geo-Spatial Information Management **PS WG V/1** Industrial Vision Metrology Systems and Applications **PS WG VII/1** Fundamental Physics and Modeling **PS WG VII/2** Information Extraction from SAR Data	**PS WG VII/7** Innovative Problem Solving Methodologies for Less Developed Countries **PS ICWG VII/IV** Derivation of Global Data, Environmental Change and Sustainability Indicators **PS WG VIII/1** Human Settlements and Impact Analysis **PS SS-1** Operation and International Coordination for Earth Observing Systems **PS SS-2** Digital Earth- Status and Trends **PS SS-3** Spaital Data Infrastructure (SDI) and Spatial Information Grid (SIG) **PS SS-4** Modern Navigation and Earth Observation **PS SS-6** Geo-Information for Disaster Mapping **PS SS-10** Standards and Standardization of Geo-Spatial Information **PS SS-17** Western Area Mapping and 1:50000 Database Updating in China with High Resolution Imagery

15:30 16:00	COFFEE BREAK	
16:00-17:30	**TS WG III/1** Automatic Orientation Methods (Convention Hall No.2A) **TS ThS-1** Sensor Networks and Homeland Security (Convention Hall No.2B) **TS SS-14** Digital Olympics (Convention Hall No.2C) **TS WG VII/6(1)** Remote Sensing Data Fusion (201A Conference Room)	**TS WG VII/1** Fundamental Physics and Modelling (201B Conference Room) **TS WG IV/1(1)** Spatial Data Infrastructure (305C Conference Room) **TS SS-11** CARTOSAT-SAP (305B Conference Room) **TS WG IV/7** Extraterrestrial Mapping (307 Conference Room)
19:00 21:00	**Workshop 5 (WS-5)** Elsevier Workshop on How to Write Good Journal Papers (Convention Hall No.2A)	

Saturday 5 July 2008

08:30-10:00	**TS WG IV/6 & ThS-8** Location Based Services (Convention Hall No.2A) **TS SS-15** Future of Geographic Information Science (Convention Hall No.2B) **TS WG VIII/2 (1)** Public Health (Convention Hall No.2C) **TS ICWG I/V** Autonomous Vehicle Navigation (201A Conference Room) **TS WG II/2** Spatial Reasoning, Analysis, and Data Mining (201B Conference Room) **TS WG I/2 (2)** Full-waveform and Multi-pulse LiDAR (307 Conference Room)	**YF-Opening Ceremony** (305C Conference Room) **YF-1** Multisource and Multiscale Data Acquisition (305C Conference Room) **YF-2** From Image to Information (305B Conference Room)
10:00 10:30	COFFEE BREAK	
10:30-12:00	**TS WG VIII/8** Polar and Alpine Research (Convention Hall No.2A) **TS WG I/5 (1)** Sensor Orientation of Optical Spaceborne Sensors (Convention Hall No.2B) **TS ThS-9** Realtime and Incremental Updating of Core Databases (Convention Hall No.2C) **TS WG VI/6** Special Interests Group "Technology Transfer Caravan" (201A Conference Room) **TS WG IV/5 (1)** Web-based Geo-information Services and Applications (201B Conference Room) **TS WG II/7 (2)** Quality of Spatio-temporal Data and Models (307 Conference Room)	**YF-3** Spatio-temporal Modeling and Representation (305C Conference Room) **YF-4** Geospatial Information Service and Applications (305B Conference Room)

12:00 13:30	LUNCH	**12:00 14:00**	**YF-Interactive Session**
13:30-15:30	**PS ThS-1** Sensor Networks and Homeland Security **PS ThS-3** DEM Generation with High Resolution Optical Satellite Sensors **PS ThS-23** UAV for Mapping **PS WG II/2** Spatial Reasoning, Analysis, and Data Mining **PS WG III/1 & ThS 22** Automation in Image Orientation and Image Analysis **PS WG IV/3** Automated Geo-spatial Data Acquisition and Mapping **PS WG IV/4** Landscape Modelling and Visualisation **PS TC VI** Education and Outreach **PS WG VII/3** Information Extraction from Hyperspectral Data **PS SS-12** Observation and Monitoring of Polar Regions **PS SS-13** Education and Capacity Building in Geomatics	**14:00-15:30**	**YF-White Elephant Session** (305 Conference Room)
15:30 16:00	COFFEE BREAK		
16:00-17:30	**TS WG ICWG V/I** Integrated Systems for Mobile Mapping (Convention Hall No.2A) **TS WG VIII/11 (1)** Sustainable Forest and Landscape Management (Convention Hall No.2B) **TS WG VIII/12 (1)** Geological Mapping, Geomorphology and Geomorphometry (Convention Hall No.2C) **TS WG VII/4 (1)** Advanced Classification Techniques (201A Conference Room) **TS ThS-18** Change Detection (201B Conference Room) **TS SS-7** Global Monitoring for Environment and Security (GMES) (201C Conference Room) **TS WG V/3 (1)** Terrestrial Laser Scanning - Orientation (307 Conference Room)	**16:00-18:00**	**YF-Panel Session** How to Get Involved in the Society and Enter upon a Successul Career for Young Professionals (305 Conference Room) **YF-Student Consortium Assembly** (305 Conference Room) **YF-Closing and Award Ceremony** (305 Conference Room)

Monday 7 July 2008

08:30 10:00	**Plenary Session 2 (PTS-2)** (Convention Hall No.1)	
10:00 10:30	COFFEE BREAK	
10:30-12:00	**TS SS-3** Spatial Data Infrastructure (SDI) and Spatial Information Grid (SIG) (Convention Hall No.2A) **TS WG III/2 & ICWG III/V** Image Sequences and Surfaces (Convention Hall No.2B) **TS WG VIII/1 (1)** Human Settlements and Impact (Convention Hall No.2C) **TS SS-13** Education and Capacity Building in Geomatics (201A Conference Room)	**TS WG IV/5 (2)** Web-based Geo-information Services and Applications (201B Conference Room) **TS ThS-3** DEM Generation with High Resolution Optical Satellite Sensors (305C Conference Room) **TS WG IV/3 (1)** Automated Geo-spatial Data Acquisition and Mapping (305B Conference Room) **TS WG I/2 (3)** Accuracy Validation of Lidar Data (307 Conference Room)
12:00 13:30	LUNCH	
13:30-15:30	**PS WG I/2 (1)** SAR Systems **PS WG II/3** Multiple Representations of Image and Vector Data **PS WG III/2 & ICWG III/V** Image Sequences and Surfaces **PS WG III/3 (1)** Lidar Sensing and Interpretation **PS WG IV/5** Web-based Geo-information Services and Applications **PS WG IV/6 & ThS-8** Location Based Services	**PS WG V/2** Cultural Heritage Documentation **PS WG VII/4** Advanced Classification Techniques **PS WG VIII/3** Atmospheric, Climate and Weather Research **PS SS-7** Global Monitoring for Environment and Security (GMES) **PS SS-11** CARTOSAT-SAP
15:30 16:00	COFFEE BREAK	
16:00-17:30	**TS WG II/3 (1)** Multiple Representations of Image and Vector Data (Convention Hall No.2A) **TS WG I/1** Standards, Calibration and Validation (Convention Hall No.2B) **TS WG IV/9 (2)** Mapping from High Resolution Data (Convention Hall No.2C) **TS WG V/2 (1)** Modeling of Cultural Heritage Objects (201A Conference Room)	**TS WG VI/2** E-learning (201B Conference Room) **TS WG VII/2 (2)** Information Extraction from SAR Data (305C Conference Room) **TS ThS-17** Geo-information Contribution to Sustainability Indicators (305B Conference Room) **TS SS-8 (1)** From National Mapping to a European Spatial Data Infrastructure (307 Conference Room)

Tuesday 8 July 2008

08:30-10:00	**TS WG I/3** Multi-platform Sensing and Sensor Networks (Convention Hall No.2A) **TS WG II/4** Spatial Planning and Decision Support Systems (Convention Hall No.2B) **TS WG III/3 (1)** Lidar Sensing and Data Analysis (Convention Hall No.2C) **TS Session of ISPRS Prize for Best Papers by Young Authors (1)** (201A Conference Room)	**TS WG VIII/6** Coastal Management Ocean Colour and Ocean State Forecasting (201B Conference Room) **TS ThS-19** Integrated Coastal Zone Management (305C Conference Room) **TS WG I/4 (1)** Geometric Properties of Current Digital Camera Systems (305B Conference Room) **TS WG ICWG VII/IV** Derivation of Global Data, Environmental Change and Sustainability Indicators (307 Conference Room)
10:00 10:30	COFFEE BREAK	
10:30-12:00	**TS ThS 23** UAV for Mapping(1) (Convention Hall No.2A) **TS WG V/2(2) & ThS-13** Documentation of Cultural Heritage Sites (Convention Hall No.2B) **TS SS-2** Digital Earth - Status and Trends (Convention Hall No.2C) **TS Session of ISPRS Prize for Best Papers by Young Authors (2)** (201A Conference Room) **TS WG ICWG II/IV** Dynamic and Multi-dimensional Systems and Applications (201B Conference Room) **TS WG V/1(3)** Industrial Vision Metrology - Applications (305C Conference Room) **TS ThS-11** Early Warning Systems for Natural Hazards (305B Conference Room)	**UF-1** Production Chain for New Imaging Sensors: Problems and Solutions (Convention Hall No.3)
12:00 13:30	LUNCH	

13:30-15:30	**PS WG I/2 (2)** LiDAR Systems **PS WG II/4** Spatial Planning and Decision Support Systems **PS WG II/5** Communication and Visualization of Spatial Data **PS WG II/6** System Integration and Interoperability **PS WG III/3 (2)** Lidar Sensing and Interpretation **PS WG III/4** Automatic Image Interpretation for City-Modeling **PS WG IV/7** Extraterrestrial Mapping **PS WG IV/8** Spatial Data Integration for Emergency Services **PS WG IV/9** Mapping from High Resolution Data **PS WG V/3** Terrestrial Laser Scanning **PS WG VII/5** Processing of Multi-Temporal Data and Change Detection **PS SS-9** Cultural Heritage Recording and Silk Road	**UF-2** Thematic Information Extraction from Images (Convention Hall No.3)
15:30 16:00	COFFEE BREAK	
16:00-17:30	**TS WG VIII/3 (1)** Atmospheric, Climate and Weather Research(1) (Convention Hall No.2A) **TS SS-16** Terrestrial Laser Scanner Calibration Techniques (Convention Hall No.2B) TS WG V/4 Virtual Reality and Computer Animation (Convention Hall No.2C) **TS SS-6** Geo-information for Disaster Mapping (201A Conference Room)	**TS WG IV/2** Image-based Geospatial Information Management (201B Conference Room) **TS WG VII/6 (2)** Remote Sensing Data Fusion (305C Conference Room) **TS SS-9** Cultural Heritage Recording and Silk Road (305B Conference Room) **TS WG V/3 & ThS 15** Terrestrial Laser Scanning - Modelling (307 Conference Room)

Wednesday 9 July 2008

08:30-10:00	**TS WG III/4** Building Detection and Reconstruction (Convention Hall No.2A) **TS WG IV/4 (1)** Landscape Modelling and Visualisation (Convention Hall No.2B) **TS WG VII/5 (1)** Processing of Multi-Temporal Data and Change Detection (Convention Hall No.2C) **TS WG II/1 (2)** Spatio-temporal Modeling (201A Conference Room) **TS SS-12** Observation and Monitoring of Polar Regions (201B Conference Room) **TS WG V/2 (3)** Surveying Technologies in Archaeological and Architectural Documentation (201C Conference Room) **TS WG I/6** Small Satellites (307 Conference Room)	**CC-1** Computer Assisted Teaching CONtest - CATCON(1) (305 Conference Room)
10:00 10:30	COFFEE BREAK	
10:30-12:00	**TS SS-10** Standards and Standardization of Geo-spatial information (Convention Hall No.2A) **TS SS-17** Western Area Mapping and 1:50000 Database Updating in China with High Resolution Imagery (Convention Hall No.2B) **TS WG II/7 (1)** Quality of Spatio-temporal Data and Models (Convention Hall No.2C) **TS WG IV/3 (2)** Automated Geo-spatial Data Acquisition and Mapping (201A Conference Room) **TS WG VIII/12 (2)** Geological Mapping, Geomorphology and Geomorphometry (201B Conference Room) **TS WG VII/4 (2)** Advanced Classification Techniques (201C Conference Room) **TS ThS-7** 3D City Modeling (307 Conference Room)	**CC-2** Computer Assisted Teaching CONtest - CATCON(2) (305 Conference Room)

12:00 13:30	LUNCH	
13:30-15:30	**PS WG I/4** Airborne Digital Photogrammetric Sensor Systems **PS ThS-2** Medium Format Cameras **PS WG II/7** Quality of Spatio-Temporal Data and Models **PS ICWG II/IV** Dynamic and Multi-Dimensional systems and Applications **PS ThS-4** High performance visualization **PS ThS-6** Emerging Technologies for Display and Visualization **PS WG III/5** Models and Algorithms for Road Extraction and Traffic Monitoring **PS WG V/4:** Virtual Reality and Computer Animation **PS WG V/5** Development in Image Sensor Technology **PS WG V/6** Medical Image Analysis, Human Motion and Body Measurement **PS ICWG V/I** Integrated Systems for Mobile Mapping **PS WG VII/6** Remote Sensing Data Fusion **PS WG VIII/2** Hazards, Disasters and Public Health **PS WG VIII/4** Management of Tropical Environments Research **PS WG VIII/12** Geological Mapping, Geomorphology and Geomorphometry	**UF-3** On-demand Geo-spatial Data Updating, Integration and Web-based Geo-spatial Information Service (Convention Hall No.3)
15:30 16:00	COFFEE BREAK	
16:00-17:30	**TS WG IV/8** Spatial Data Integration for Emergency Services (Convention Hall No.2A) **TS WG V/5** Development in Image Sensor Technology (Convention Hall No.2B) **TS WG VIII/9** Arid Lands, Land Degradation and Desertification (Convention Hall No.2C) **TS WG VIII/4** Management of Tropical Environments Research (201A Conference Room)	**TS WG VI/3** International Cooperation and Capacity Building (201B Conference Room) **TS WG VIII/1 (2)** Urban Components Classification (305C Conference Room) **TS SS-19** Recording and Documenting the Acropolis of Athens - From Classical Ancient Greece to Modern Olympics (305B Conference Room) **TS WG VIII/2 (2)** Land Slides and Earthquaques (307 Conference Room)

Thursday 10 July 2008

08:30 10:00	**Plenary Session 3 (PTS-3)** (Convention Hall No.1)	
10:00 10:30	COFFEE BREAK	
10:30-12:00	**TS WG VII/3** Information Extraction from Hyperspectral Data (Convention Hall No.2A) **TS WG VI/4** Internet Resources and Datasets (Convention Hall No.2B) **TS SS-8 (2)** From National Mapping to a European Spatial Data Infrastructure (Convention Hall No.2C) **TS WG V/6** Medical Image Analysis, Human Motion and Body Measurement (201A Conference Room)	**TS ThS-20** Public Health (201B Conference Room) **TS WG III/5** Road Extraction and Traffic Monitoring (201C Conference Room) **TS WG II/3 (2)** Multiple Representations of Image and Vector Data (305C Conference Room) **TS ThS-21** 3D Modelling in Forestry Applications (305B Conference Room)
12:00 13:30	LUNCH	
13:30-15:30	**PS WG I/5** Geometric Modeling of Optical Spaceborne Sensors and DEM Generation **PS ThS-7** 3D City Modeling from Image and Laser Range Data **PS ThS-9** Realtime and Incremental Updating of Core Databases **PS ThS-11** Early Warning Systems for Natural Hazards **PS ThS-17** Geo-Information Contribution to Sustainability Indicators **PS ThS-18** Change Detection **PS ThS-19** Integrated Coastal Zone management	**PS WG VIII/6** Coastal Management Ocean Colour and Ocean State Forecasting **PS WG VIII/7** Water Resources Security and Management **PS WG VIII/8** Polar and Alpine Research **PS WG VIII/9** Arid Lands, Land Degradation and Desertification **PS WG VIII/10** Precision Farming and Sustainable Food Production **PS WG VIII/11** Sustainable Forest and Landscape Management
15:30 16:00	COFFEE BREAK	
16:00-17:30	**TS WG II/6** System Integration and Interoperability (Convention Hall No.2A) **TS ThS-2** Medium Format Cameras (Convention Hall No.2B) **TS WG I/2 (4)** New Commercial Systems and Technologies (Convention Hall No.2C) **TS SS-18** Global DEM Interoperability (201A Conference Room)	**TS ThS-16** New Approaches and Tools for Education and Capacity Building (201B Conference Room) **TS WG VIII/2 (3)** Floods and Drought (305C Conference Room) **TS WG V/1 & ThS 12** Industrial Vision Metrology - Systems & Design (305B Conference Room)

Friday 11 July 2008

08:30-10:00	**TS WG I/4 (2)** Radiometry and Future Prospects of Digital Camera Systems (Convention Hall No.2A) **TS WG II/5** Communication and Visualization of Spatial Data (Convention Hall No.2B) **TS WG IV/9 (1)** Mapping From High Resolution Data (Convention Hall No.2C) **TS WG VIII/7** Water Resources Security and Management (201A Conference Room)	**TS WG VIII/11 (2)** Sustainable Forest and Landscape Management (201B Conference Room) **TS WG VIII/5** Policies, Treaties and Data Access (201C Conference Room) **TS WG I/5 (2)** DEM Generation with Optical Spaceborne Systems (305C Conference Room) **TS WG VII/5 (2)** Processing of Multi-Temporal Data and Change Detection (305B Conference Room)
10:00 10:30	COFFEE BREAK	
10:30-12:00	**TS WG VIII/10** Precision Farming and Sustainable Food Production (Convention Hall No.2A) **TS ThS-10** Lunar Exploratory Missions (Convention Hall No.2B) **TS ThS-6** Emerging Technologies for Display and Visualization (Convention Hall No.2C) **TS ThS-4** High Performance Visualization (201A Conference Room)	**TS WG VI/5** Promotion of the Profession to Students (201B Conference Room) **TS WG III/3 (2)** Interpretation of LIDAR Data (201C Conference Room) **TS ThS-23 (2)** UAV for Mapping(2) (305C Conference Room) **TS WG IV/1 (2)** Spatial Data Infrastructure (305B Conference Room)
12:00 13:30	LUNCH	
13:30-15:00	**TS ThS-14** 3D Cameras (Convention Hall No.2A) **TS WG VII/7** Innovative Problem Solving Methodologies for Less Developed Countries (Convention Hall No.2B) **TS ThS-22** Automation in Image Analysis (Convention Hall No.2C) **TS WG V/3 (3)** Terrestrial Laser Scanning – Application (201A Conference Room)	**TS WG I/2 (5)** Geometric and Image Quality Advances in SAR (201B Conference Room) **TS WG IV/4 (2)** Landscape Modelling and Visualisation (201C Conference Room) **TS WG VIII/2 (4)** Disaster Risks Monitoring & Management (305C Conference Room) **TS WG VIII/3 (2)** Atmospheric, Climate and Weather Research (305B Conference Room)
15:30 17:30	**Closing Ceremony** (Convention Hall No.1)	

REPORTS OF TECHNICAL COMMISSION PRESIDENTS ON XXI ISPRS CONGRESS

Technical Commission I, Image Data Acquisition - Sensors and Platforms

Alain Baudoin, Commission I President (France)

The seven working groups of TC I are contributing almost 100 papers in oral sessions and 200 posters to the Congress. A large number of these presentations are related to WG I/2 (SAR and LiDAR systems), showing the increasing interest for these techniques. The fast development of LiDAR was demonstrated in a plenary presentation by Juergen Dold from Leica Geosystems. Within the last year, the accuracy has been improved by a factor of four and the time of the survey has been cut by a factor ten. At the same time, the cost has decreased and the systems have become more portable and versatile. New SAR processing techniques were presented in one of our sessions. Another presentation from Jose Achache demonstrated the interest in enhancing co-ordination of space-borne, airborne and terrestrial acquisition systems. This is the goal of GEOSS, the Global Earth Observation System of Systems, proposed by GEO, the Intergovernmental Group on Earth Observation. GEO is a collection of 74 countries and 51 organisations working together for the benefit of society. International collaboration was also covered in the Special Session SS-1 on Operation and International Co-ordination for Earth Observing Systems.

Technical Commission II, Theory and Concepts of Spatio-Temporal Data Handling and Information

Wolfgang Kainz, Commission II President (Austria)

Technical Commission II in its present form was introduced at the Istanbul Congress 2004 to express the increased focus of the ISPRS on GIS and geographic information science. Together with Technical Commission IV, both commissions concentrate on the theoretical (TC II) and practical (TC IV) aspects of geo-information. Technical Commission II comprises seven working groups and one inter-commission working group with TC IV. The working groups address major issues in geo-information science. These include spatio-temporal modelling, spatial reasoning, analysis and data mining, multiple representations, visualisation, spatial decision support, system integration and interoperability, quality and uncertainty of spatial data and models, and 3D and dynamic data handling. The penetration of GIS technology in an increasing number of areas leads us to believe we need more theory on spatial modelling, interoperability and visualisation. This is evident from the tremendous rise of services like Google Earth and Microsoft Virtual World. These services have a widespread impact on society and the way we deal with spatial information. Could anyone imagine 10 years ago that we would be able to virtually visit any place on Earth? 3D visualization is becoming more common, but there are many issues and challenges. Quality propagation through spatial analysis, spatial decision support with highly complex data, interoperability of heterogeneous systems and geo-sensor networks are several examples that pose interesting questions of ontology and data-handling. Over the last four years the working groups of TC II have addressed many of these questions in symposia and workshops. These issues were also considered at the TC II Symposium GICON 2006, which was organized as a joint event of Indian Society of Remote Sensing, International Cartography Association and International Geographical Union. Three volumes of proceedings were published – one for each society. One of the WG symposia resulted in Volume 5 of the ISPRS book series on Advances in Spatio-Temporal Analysis, edited by X. Tang, Y. Liu, J. Zhang and W. Kainz. Several of the WG officers wrote contributions to the 2008 ISPRS Congress Book. Our findings are also available in the congress proceedings. After a thorough review, process papers have been selected for oral or poster presentation. Nearly 200 papers are published in the archives. M. Kokla, secretary of WG II/6, will receive the Best Paper by Young Authors award. It is expected that under the new TCP, the commission will continue the work started in the first four years of strengthening the ISPRS in the field of geo-information science. It will continue to raise the profile of the ISPRS as a society that spans the whole range of spatial data handling and addresses the needs of modern society.

Technical Commission III, Photogrammetric Computer Vision and Image Analysis

Wolfgang Förstner, Commission III President (Germany)

Curious about how 3D city models are generated from laser point clouds? Interested to know how roads can be identified from videos? Want to get your hands on algorithms you always found were not working well enough? Then you are in the middle of the research being undertaken by TC III. As photogrammetrists, we are among the few thousand researchers in the fast-growing field of computer vision, that is, the field concerned with making computers see. The efforts of TC III's six working groups have yielded interesting results. Automation of close range bundle adjustments, where only control points require manual interaction, was developed. The generation of highly detailed surface models constructed from images has advanced to a point where images are becoming an interesting alternative to LiDAR. The direct access to 3D information from LiDAR systems has triggered a large amount of research, including research into increased morphological quality for digital elevation models, ease of 3D-reconstruction for large build-up areas, and detailed analysis of forest areas.TC III found that information density can be increased by the availability of intensity and waveform, enabling more detailed classifications. Also, the interpretation of aerial and terrestrial images successfully grasped techniques from pattern recognition and machine learning, especially for the modelling of road networks and façade structures. Finally, the analysis of video sequences is becoming a hot topic, especially for the highly challenging and relevant task of so-called 'simultaneous localisation and mapping', both from the ground and air, using UAVs. You can expect fascinating developments from Commission III in the near future.

Technical Commission IV, Geodatabases and Digital Mapping

Shailesh Nayak, Commission IV President (India)

Maps have been an effective means of representing information for the last 2000 years. The development of space, geospatial, computing and communication technologies has significantly altered the acquisition, organisation, analysis and dissemination of information. A major issue is updating databases routinely. Databases on a variety of themes have been produced at the global, national and local levels. They have been effectively used for resource management, climate change and environmental protection. We are developing techniques to update these databases automatically. The recent availability of high resolution stereo data from aerial and satellite platforms has revolutionised data acquisition and provided an opportunity to develop techniques for automatic data extraction. Image databases with high temporal resolution are expanding, especially for ocean applications. Developments in visualisation allow us to display landscapes and seascapes virtually, and to depict both global and local processes. The use of GIS to access, analyse and disseminate spatial data has enhanced web-based services. Advancements in grid computing-facilitated web GIS allows us to more efficiently manage massively distributed computing/ storage resources. Open-source software provides new, cost-effective solutions to web-based geospatial information and services. Location- based services enable wired and wireless users to integrate geospatial information in developing a solution. The continuing development of open standards and interoperability opens up enormous potential for sharing scientific data. In the future, data will be supplied to the variety of users and to common web-based and location based service standards. Database application and service development for the benefit of society encompasses many critical areas: disaster management, climate modelling, natural resource management and ecosystem protection are only some of these areas. The effective use of geospatial technology has driven the development of early warning centres, especially for tsunamis. It has also fuelled dramatic improvements in disaster and emergency response. Geospatial technology has been used for data acquisition, organisation, representation, visualisation, analysis, modelling and dissemination of advisories, including the generation of hazard or risk maps. Rescue and relief operations rely on the collection, integration and analysis of data – including 3D data – within the first few hours or days. A number of missions to explore the resources of our solar system are currently underway. The data supplied by these missions has started a new chapter in the mapping of extra-terrestrial systems and the creation of web-based spatial databases. The Beijing Congress will witness the culmination of research by TC IV working groups. It reflects the current state of knowledge in the field of geospatial technology and applications.

Technical Commission V, Imaging and Laser Scanning Techniques

Hans Gerd Maas, Commission V President (Germany)

ISPRS Commission V is dealing with imaging and laser scanning techniques in a wide range of application fields, including industrial and engineering metrology, cultural heritage documentation, virtual reality 3D data acquisition, robotics, 3D motion analysis, quantitative medical imaging, biometry and many more. Most of these fields stand for market segments with a rapidly growing demand for automated, fast, efficient, reliable and precise 3D measurement techniques. A central issue in many developments is the integration of sensor technology with reliable data processing schemes to generate precise and highly automated online or real-time photogrammetric measurement systems. In addition to all sorts of digital cameras – high resolution, high speed, central perspective, panoramic, hemispheric, telecentric, etc. – Commission V clientele are increasingly using terrestrial laser scanners and novel 3D-cameras. The advent of these devices has also boosted the interest in 3D point cloud processing and image analysis techniques.

Technical Commission VI, Education and Outreach

Kohei Cho, Commission VI President (Japan)

TC VI deals primarily with educational matters related to photogrammetry, remote sensing and the spatial information sciences. The technological advancements in these three fields are numerous. Amateur photography, internet-based information services such as Google Earth and car navigation are widely used by the public today. The growth in interest in these applications is matched by increasing technical and educational needs. Education and training are no longer restricted to a few years of university, generally speaking. Rapid advancements in technology have increased the importance of lifelong education in our fields. The internet and e-learning play significant roles in lifelong education. Despite the growing availability of educational materials and e-learning courses, it is not easy for beginners and students to find appropriate educational materials. Promoting online information to the public will help to widen recognition and acceptance of e-learning material. WG VI/2 on e-learning undertook the project Analysis of E-Learning Software and Guidelines for Quality Assurance in Photogrammetry, Remote Sensing and GIS. The results were reported the Congress. This is a first step towards developing a quality assurance process to strengthen confidence in, and acceptance of, e-learning in university programs.

TC VI has also organised the educational software contest CATCON5 (9 July) at the Congress, to promote development of free educational software in our technical fields.

TC VI is also responsible for providing education and capacity-building opportunities. WG VI/3 on International Cooperation and Capacity Building has organised a number of sessions on capacity building at the various international meetings. The Special Interest Group on Technology Transfer Caravan has provided annual study opportunities to students and young scientists of various countries. Like a travelling caravan, ISPRS experienced professionals visit different countries to teach quality seminars. This method has proven quite effective. Promotion of students is another important focus of TC VI. At the ISPRS Congress in Istanbul in 2004, the Student Consortium (SC) was set up under TC VI as the first official student organisation within the ISPRS. WG VI/5 on Promotion of the Profession to Students was established to support the Consortium. WG VI/5 and the SC jointly organised three successful summer schools from 2004 to 2008. The SC published a number of newsletters and expanded its international network.

Students presented their papers the 2nd Youth Forum (YF), hosted on 5 July of this year's Congress. During the YF panel session, SC statutes and officers were approved. The Congress is an opportunity for students to learn about ISPRS processes. This is a valuable experience for active SC members, who may become leaders of our society in the future.

Technical Commission VII, Thematic Processing, Modelling and Analysis of Remotely Sensed Data

John van Genderen, Commission VII President (The Netherlands)

TC VII is presenting more than three hundred papers at the congress, in oral technical sessions, special sessions, theme sessions, and poster sessions. Four volumes of proceedings have been produced to publish the papers being presented in Beijing. Highlights of the papers being presented include:

1. Rapid developments in SAR remote sensing data sources, such as the high resolution RADARSAT-2 from Canada, the COSMO-Skymed SAR satellite from Italy (the highest SAR spatial resolution system in the world, providing detailed images of the earth under all weather conditions), and the German TerraSAR. The launch of these satellites has driven much research in image and data fusion methodologies. The recent Sichuan earthquake is a good example of how SAR data, along with other data sources, can be used to greatly assist relief efforts in difficult terrain and adverse weather conditions.
2. Fundamental physics to enable a better understanding of the geophysical parameters which influence the signals recorded by remote sensing sensors.
3. New image processing algorithms and analysis techniques which show that rapid progress has been made in image classification methods, going from traditional/conventional pixel-based techniques to advanced context-based and texture-based classification procedures. Other important presentations cover change detection methods. These range from global change studies using temporal data sets to local change detection algorithms, moving target detection (e.g. vehicles and security applications) to methods for monitoring changes in urban growth, forest decline and land use. Over the past four years, TC VII has organised more than 25 conferences, workshops and other activities around the globe. These events were attended by more than 4000 participants. This is a significant achievement, given the fact that TC VII was established only four years ago. The ISPRS Council is to be applauded for its decision to establish this Commission. Over the next four year period, TC VII will no doubt grow and advance the ISPRS mission to promote remote sensing methodological research around the world.

Technical Commission VIII, Remote Sensing Applications and Policies

Ammatzia Peled, Commission VIII President (Israel)

Remote sensing is the acquisition of information about properties of objects or phenomena without physical contact. This science is related to detection of electromagnetic radiation in very narrow spectral bands, over a wide range of the electromagnetic spectrum. Photography was the main remote sensing technique for many years, where photogrammetry was the only known image processing and data collection tool. Today, Earth observation by data acquisition from space-borne satellites is a typical method of data collection. Looking ahead, we believe that around 10 to 15 satellites will be launched in as many years. Each new satellite will serve as a platform for a new scanning observation system; each new system will manifest progressively better resolutions, both spectral and geometrical. In some cases, there is also an increase in the radiometric resolution. Once, remote sensing was done by capturing the moment on black and white or colour film. Today, it is common to collect data digitally by dividing the captured scene into a mesh of small equal-size picture elements known as pixels. The basic application of remote sensing is classification. This means the detection of different phenomena; the recognition of typical spectral, spatial and logical characteristics of different objects or groups of objects; and the identification of each feature according to a methodological, hierarchical, fuzzy or other logic in a time or frequency domain in dimensional or parametric

space. This requires high levels of image understanding, robotic vision and advanced mathematical algorithms. This must in turn be combined with a comprehensive understanding of the dimensional characteristics of the image's textural undulations and deviations. Nothing is done without deep knowledge about the characteristics of the phenomena. This knowledge may come from personal experience or the calibration processes performed by the data providers. It may also be gathered through advanced methods such as GIS-driven logic, where existing old spatial information data bases are used to automatically calibrate any new data. This allows us to update the very same vector data bases as automatically as possible. TC VIII working groups are focused on many remote sensing applications including: impact analysis of human settlement; hazards and disasters; public health; air pollution; coastal zone management; polar, alpine and cryogenic research; land degradation; desertification and arid lands. TC VIII also deals with issues related to: management of tropical zones; policies, treaties and data access; water security; precision agriculture; sustainable forest; landscape management; geological mapping and geomorphology. The newly formalised Commission VIII will present at this Congress over 25 oral and posters sessions. Three theme and two additional special sessions will serve as platforms to introduce the state-of-the-art in remote sensing applications. We expect that the technical meetings and discussions will launch new and challenging ideas for our next term.

YOUTH FORUM

The 3rd ISPRS Student Consortium Summer School, themed Acquisition, Processing and Representation of 3D Geospatial Information was held at Nanjing Normal University (26 June - 1 July). Jointly hosted by the Biannual Chinese Doctoral Students Forum in GIS, the two events gathered over 200 lecturers and participants from around the world.

The five-day program included theoretical lectures on 3D geospatial information, a Young Author session, and a technical visit to the Jiangsu provincial Bureau of Surveying and Mapping. The program was organized by the Key Laboratory of Virtual Geographical Environment at the School of Geographical Science.

Scientific learning aside, participants cited the reception party as a highlight of the program. Participants were greeted with a warm reception from students of the Nanjing Normal University and enjoyed cultural performances, folk songs and an evening of laughter.

The summer school has been a great success. Participants, organisers, lecturers and students had fruitful discussions on scientific research and the future of the profession. Many great friendships were built and research ideas were exchanged, giving prospects to fruitful international cooperation in the future.

YOUTH FORUM AT THE XXI CONGRESS, 2008, BEIJING

The Youth Forum was a dedicated special Congress activity under the auspices of Technical Commission VI "Education and Outreach" and in particular the WG VI/5 "Promotion of the Profession to Students" and the related ISPRS Student Consortium (SC). It was organised for the second time during the ISPRS congress and aimed at providing a platform within the Congress for young scientists to present their scientific work, come in contact with advanced scientists and professionals, discuss organizational matters of the Student Consortium and exchange cultural experiences and promote mutual understanding and friendship.

The Opening Ceremony in the morning was followed by technical sessions, poster session, panel session, Student Consortium Assembly and a closing ceremony. In addition, a contribution from the Spatial Interest Group on Technology Transfer Caravan was given in so called White Elephant Session. The second day, excursion to the Great Wall was organized. The agenda of the youth forum was as follows:

July 5, 2008
- Opening Ceremony
- Technical Sessions
- White Elephant Session and Panel Session
- SC General Assembly
- Closing Ceremony

July 6, 2008
- Trip to Great Wall

Opening Ceremony

The Youth Forum started with the Opening Ceremony, chaired by the TC VI President Prof. Kohei Cho. On the behalf of the Congress Director, Prof. John Trinder, 1st ISPRS Vice President welcomed the participants. Welcome addresses with some introductory words about the mission and activities of the Working Group VI/5 and the Student Consortium gave Mojca K. Fras (WG VI/5 chair) and Cemal Özgur Kıvılcım (SC chair).

Technical Sessions

The technical sessions consisted of four oral sessions (two in parallel) and one poster session. From 90 received extended abstract, 20 papers were accepted for oral presentation. Each technical session was moderated by a chair and a co-chair. Two Best Paper Awards and three Best Poster Paper Awards have been selected by the judging committee and granted at the closing ceremony of the Youth Forum.

White Elephant Session

The aim of the White Elephants Session was to transfer knowledge and experience of the prominent professors (called White Elephants) to young generation. The session topics were: **"Ph.D. Thesis Writing"** by Prof. Armin Grun, ETH, Switzerland, **"Project Proposal Writing"** by Emeritus Prof. Gottfried Konecny, Hannover University, Germany, and **"How to prepare a good Oral Presentation"** by Emeritus Prof. Shunji Murai, University of Tokyo, Japan. These fundamental techniques and lessons are essential for young generation, particularly Ph. D Students.

The aim of the panel session that followed the White Elephant Session was to provide young students a face-to-face communication opportunity with acknowledged experts. The theme was **"Getting involved in the Society and entering upon a successful career for young professionals".** The panel was presided over by the Student Consortium representatives. The invited speakers were Prof. Shunji Muraj from University of Tokio, Japan, and Prof. Vincent Tao, Department of Earth and Space Science and Engineering, York University, Canada. They gave their vision to the topic, based from their personal experience. Students had many questions to them and in the discussion also Prof. Gottfried Konecny and Prof. Armin Grun gave valuable contributions.

The ISPRS Student Consortium Assembly, chaired by the WG VI/5 secretary Anka Lisec, was attended by over hundred participants who had interest in the ISPRS SC activities. On behalf of the ISPRS Council (2004-2008), who had provided exceptional support to the Student Consortium activities in the past period, Ian Dowman, the ISPRS President, Orhan Altan, the ISPRS Secretary General, and Manos Baltsavias, the ISPRS 2nd Vice President participated in the ISPRS SC Assembly.

A short introduction about the past ISPRS Student Consortium activities and experiences was given by Mojca K. Fras (WG VI/5 chair) and representatives of the ISPRS Student Consortium: Cemal Özgur Kıvılcım, Krzysztof Stere ńczak, Ahmet şengul and Kyaw Sann Oo. This short introduction was meant to inform young researchers, young scientists as well as professors and representatives of the ISPRS who are interested in the ISPRS SC activities and attended the SC Assembly about past achievements and future prospects of the ISPRS Student Consortium.

One of the most important issues of the Student Consortium Assembly was to approve proposed ISPRS Student Consortium Statue, the contents of which had already been the topic of several reconciliation of viewpoints, provided by the Council members, TC VI and WG WI/5 officers and representatives of the Student Consortium. Due hard work in the past and agreement from the ISPRS Council, the statute of the ISPRS Student Consortium was approved by the ISPRS SC Assembly participants with some small changes. The ISPRS Student Consortium got with this turning point in organisation the new structure. According to the approved statute and based on past active work of some students, young researchers, the proposal for the first ISPRS Student Consortium board was introduced, which was also approved by common consent:

- Cemal Özgur Kıvılcım, SC chair
- Krzysztof Stere ńczak, SC Co-Chair
- Urša Kanjir, SC Secretary
- Gregor Stavbar, SC Publication
- Ahmet şengul, SC webmaster

In addition to the ISPRS SC board members, the regional coordinators are proposed in the new statute, which are responsible for providing information to students and young researchers on the regional levels. With such an organizational structure and active SC members the future of the ISPRS SC is unquestioned bright, which was also one of the conclusions of the ISPRS president prof. Ian Dowman in his speech.

Closing Ceremony

The closing ceremony was chaired by Prof. Emmanuel Baltsavias, 2nd Vice President ISPRS and Prof. Kohei Cho, TC VI President. Awards have been presented to the following winners:

- YF Best Paper Awards (with financial donation of 1,000 SFr. per paper, by Leica Geosystems AG, Switzerland):

• Hannes Puschel, Martin Sauerbier, Herni Elsenbeiss: A 3D Model of Castle Landenberg (CH) from Combined Photogrammetric Processing of Terrestrial and UAV-Based Images

• Wang Yusheng, Holger Weinacker, Barbara Koch, Krzystof Sterenczak: LiDAR Point Cloud-based Fully Automatic 3D Single Tree Modelling in Forest and Evaluations of the Procedure

- YF Best Poster Awards:

• Natalia Boroviec: Building Extraction From ALS Data Based on Regular and Irregular Tessellations

• Sascha Klonus: Comparison of Pan-sharpening Algorithms for Combining Radar and Multi-spectral Data

• Gao Liang, Ban Yifang: Investigations of SAR Polarimetric Features on Land-Cover Classification

Trip to Great Wall

As the activities of the ISPRS Student Consortium and relevant ISPRS Working Group emphasize also the social, intercultural dimension of the professional and scientific international cooperation, the second day of the Youth forum (July 6, 2008) was dedicated to this important issue of the Student Consortium. On Sunday, the excursion to the Great Wall was organized for students, young researchers as well as Professors. An unbelievable sunny morning greeted merry group of participants who enjoyed walking the Great Wall and admiring the beauty of the landscape in surroundings. The exursion was one more great opportunity to deepen the ties of friendship and feel old historical heart beat of China.

In the evening when our legs already felt the greatness of Great Wall most of students went to visit famous Beijing Market with dishes that exceed even the most daring imaginations.

The Congress as a whole was an opportunity for students to learn about ISPRS processes and the Youth Forum was a very intensive and focused event. The interest for the event and participation was very good. This was a valuable experience for active SC members, who may become leaders of our society in the future. The organization of the 3rd YF in the next Congress 2012 in Melbourne is thus highly expected.

Mojca K. Fras
Anka Lisec
Urša Kanjir