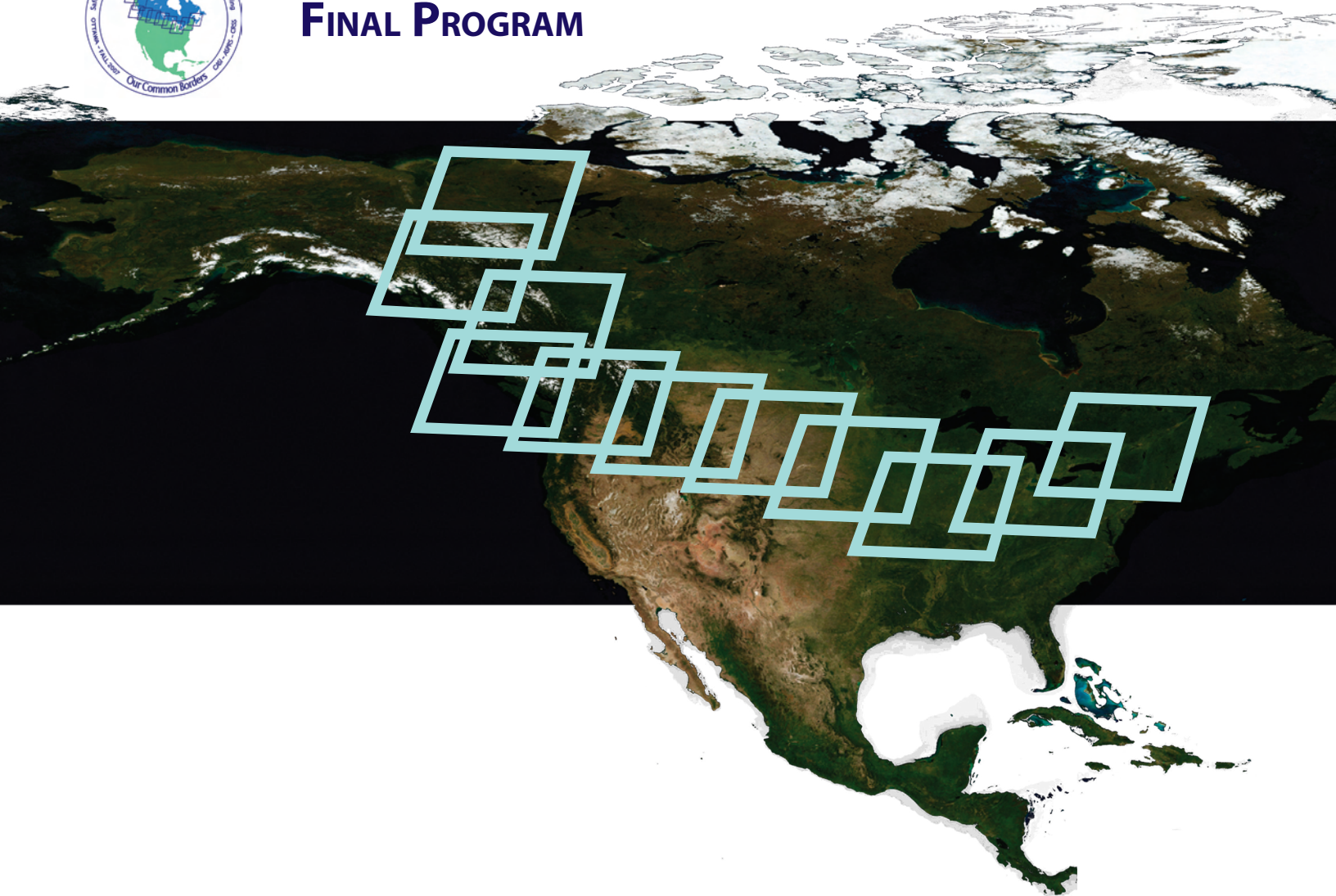




FINAL PROGRAM



CRSS/ASPRS 2007 SPECIALTY CONFERENCE

Our Common Borders —

Safety, Security, and the Environment through Remote Sensing

WESTIN HOTEL OTTAWA
OCTOBER 28 - NOVEMBER 1, 2007
OTTAWA, CANADA

CO-ORGANIZERS:



Table of Contents

Welcome Letter	3
Great Lakes Commission — Regional Data Exchange	4
Conference-at-a-Glance	5
ASPRS Committee/Board Meetings.....	6
Workshops.....	7
Curling Event.....	8
CRSS 2007 Annual General Meeting	9
Opening & Technical Sessions	10
General Session — GEO/GEOSS.....	13
General Session — Homeland Security and Public Safety — The Way Forward.....	17
General Session — Radarsat-2 Program.....	20
Exhibitors' Reception.....	12
CRSS Gold Medal Dinner	12
Poster Sessions.....	21
Exhibit Hall Floor Plan	23
Exhibitor Descriptions	24
Frequently Asked Questions	29
Hotel Floor Plans	30

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- Martin Wills**
Web Master, *ASPRS*



DEAR COLLEAGUES,

Welcome to Ottawa, the Capital of Canada, for this Specialty Conference which is a joint effort of the Canadian Remote Sensing Society and the American Society for Photogrammetry and Remote Sensing (CRSS/ASPRS). As geospatial professionals, we are often challenged by the constraints that borders impose on our work. The answers to the questions that we are asked must often transcend these borders, and that is what this Conference proposes to do. Through the mutual cooperation of our two Societies, many organizations, and friends, we hope to demonstrate that one's own interest doesn't need to end at a common border. Environmental, public safety, and homeland security issues - to name a few - demand that we work with our neighbors at the local, state, provincial, national, and international levels to build a foundation, apply the best technology, and leverage the best talent to solve our common problems.

We hope you will enjoy and support this unique endeavor. Its success is based on the efforts of many people to broaden our horizons, and is the harbinger of a new way of doing business. The Global Earth Observation System of Systems is well represented, as is the Global Spatial Data Infrastructure, supported by the Canada's GeoConnections and the U.S. Federal Geographic Data Committee; world-class technology, research, and exhibits from Canada, the U.S., and elsewhere; environmental remote sensing, including land cover and wetlands mapping; and new ways of building technological capacity for homeland security, public safety, and law enforcement. In addition to CRSS and ASPRS workshops, the Great Lakes Commission is holding its Regional Data Exchange (RDX) conference in conjunction with the CRSS/ASPRS Conference to share information about technologies and methods to study, monitor, map and manage the Great Lakes - St. Lawrence River system. Participants in the RDX are encouraged to stay for the entire CRSS/ASPRS Conference.

In particular, we would like to thank our distinguished keynote and plenary speakers from Canada and the U.S., Mark Corey, Assistant Deputy Minister of the Earth Sciences Sector, Natural Resources Canada, and Timothy Petty, Deputy Assistant Secretary for Water and Science, US Department of the Interior. They will be discussing the topic of "Harmonizing Geospatial Activities Across the World's Longest Common Border," at the opening session on Tuesday, October 30th. We would also like to thank the Technical Program Co-Chairs, Monique Bernier (University of Quebec) and Carolyn Merry (The Ohio State University); and the staff and volunteers from the Canadian Aeronautics and Space Institute (CASI), the Canadian Remote Sensing Society (CCRS) and the Central New York Region of ASPRS, as well as ASPRS staff and volunteers. By recognizing that our border is common to both sovereign nations, they are helping to overcome barriers to our ability to address the problems shared by our peoples.

We hope you take advantage of the opportunity provided by this Conference to enjoy the cosmopolitan delights of the Nation's Capital. And don't forget to visit the exhibit hall where many commercial, government and not-for-profit organizations will demonstrate the cutting edge geospatial technology, systems, techniques and applications from both North and South of our Common Border.

We look forward to seeing you at this exciting conference.

Sincerely,

Olaf Niemann
Canadian Conference Co-Chair
Chair of the Canadian Remote Sensing Society

Ed Freeborn
U.S. Conference Co-Chair
National Director, CNY ASPRS



Olaf Niemann



Ed Freeborn





Conference within a Conference...

...Monday, October 29, 2007

The Great Lakes Commission is collaborating with the American Society for Photogrammetry and Remote Sensing (ASPRS) and the Canadian Remote Sensing Society (CRSS) to provide you with this opportunity to learn and share information about technologies and methods to study, monitor, map and manage the Great Lakes - St. Lawrence River system.

The conference will include keynote speakers addressing the latest advancements in current regional and global observing systems and related technologies. It will also include breakout sessions with contributed papers covering a wide range of case studies and current activities showcasing the latest technologies and applications for managing and exchanging information relating to Great Lakes resources.

The conference is ideally placed at the beginning of a week of exciting events in Ottawa surrounding the ASPRS and CRSS 2007 Specialty Conference. Attendees can therefore take advantage of an impressive array of other conference opportunities to present their work, learn of recent advances in the field, network with others and explore a large exhibitor gallery.



The Great Lakes Commission is a binational public agency dedicated to the use, management and protection of the water, land and other natural resources of the Great Lakes-St. Lawrence system. In partnership with the eight Great Lakes states and provinces of Ontario and Québec, the Commission applies sustainable development principles in addressing issues of resource management, environmental protection, transportation and sustainable development.

Who should attend?

If you are interested in remote sensing, photogrammetry, geographic information systems, land and natural resources management, observing tools and techniques, and web-based technologies for real-time data and information acquisition and sharing – this conference is a MUST! Intended audience members include:

- Federal and state/provincial governments, academic and non-profit organizations that engage in data collection, development, storage and management that wish to explore new ways for regional information coordination;
- State/provincial/municipal information managers who oversee web and GIS technologies; and, are looking for new ideas and techniques; and,
- Great Lakes stakeholders who are interested in web and GIS tools to improve decisionmaking.

A separate registration fee is required for this day-long Conference within a Conference. For more information and ticket prices, visit <http://rdx.glc.org/07/>.

Great Lakes Regional Data Exchange 2007 Agenda

Monday, October 29

8:00 - 9:30 am	Opening Plenary: Transboundary Information Exchange Milo Robinson - FGDC Denis Poliquin - GeoConnections Greg Buehler - Open Geospatial Consortium
10:00 am - Noon	Breakout Sessions (visit rdx.glc.org/07 for full details) Ecological Monitoring and Reporting - I Online Geospatial Communities Observing Systems
Noon - 1:00 pm	Lunch Mary Altalo - Ocean.US
1:00 - 3:00 pm	Breakout Sessions (visit rdx.glc.org/07 for full details) Ecological Monitoring and Reporting - II Land Use Transformations Great Lakes Information Network - Metadata Workshop
3:30 - 5:00 pm	Discussion Panel: Directions in Data Transport Dr. Philip Bogden - GoMOOS and SURASCOOP Carroll Hood - Raytheon Dave McIlhagga - DM Solutions Group

CONFERENCE-AT-A-GLANCE

	6:30 am	7:00 am	8:00 am	9:00 am	10:00 am	11:00 am	12:00	1:00 pm	2:00 pm	3:00 pm	4:00 pm	5:00 pm	6:00 pm	7:00 pm	
Saturday, October 27th															
Executive Committee Meeting															
Sunday, October 28th															
Registration Hours															
ASPRS Committee Meetings															
Monday, October 29th															
Registration Hours															
ASPRS Board of Directors Meeting															
Great Lakes Commission Regional Data Exchange															
Workshops															
Curling Social															
Tuesday, October 30th															
Registration Hours															
Workshops															
Opening Session															
Technical Sessions															
CRSS 2007 AGM															
Poster Session															
Exhibit Hall Open															
Exhibitors' Reception															
CRSS Gold Medal Dinner															
Wednesday, October 31st															
Registration Hours															
ASPRS Sustaining Members Council															
ASPRS Student Advisory Council															
General Sessions															
Technical Sessions															
Poster Session															
Exhibit Hall Open															
Thursday, November 1st															
Registration Hours															
General Session															
Technical Sessions															
Poster Session															
Exhibit Hall Open															

ASPRS COMMITTEE MEETINGS

SATURDAY, OCTOBER 27TH/SUNDAY, OCTOBER 28TH

Saturday, October 27th

Sunday, October 28th

ASPRS Business Meeting

Executive Committee

8:00 am to 5:00 pm

Room: Newfoundland

ASPRS Business Meetings

Division Directors

9:00 am to 10:00 am

Room: Nova Scotia

Committee Chairs

9:00 am to 10:00 am

Room: Newfoundland

Professional Practice Division

10:00 am to 12 noon

Room: Newfoundland

Membership Committee

10:00 am to 12 noon

Room: New Brunswick

Primary Data Acquisition Division

10:00 am to 12 noon

Room: Nova Scotia

Primary Data Acquisition Division — Digital Imagery Guidelines Committee

1:00 pm to 2:00 pm

Room: Nova Scotia

Photogrammetric Applications Division — Lidar Sub-committee

1:00 pm to 3:00 pm

Room: New Brunswick

Professional Practice Division — Standards Committee

1:00 pm to 3:00 pm

Room: Newfoundland

Primary Data Acquisition Division — Direct Georeferencing Committee

2:00 pm to 3:00 pm

Room: Nova Scotia

Journal Policy and Publications Committee

3:00 pm to 4:00 pm

Room: New Brunswick

Convention Planning and Policy Committee

3:00 pm to 5:00 pm

Room: Newfoundland

Remote Sensing Applications Division and Geographic Information Systems Division

4:00 pm to 5:00 pm

Room: New Brunswick

Electronic Communications Committee

4:00 pm to 5:00 pm

Room: Nova Scotia

By-Laws Committee

5:00 pm to 6:00 pm

Room: Nova Scotia

Division Directors

5:00 pm to 6:00 pm

Room: New Brunswick

Student Assistants Orientation

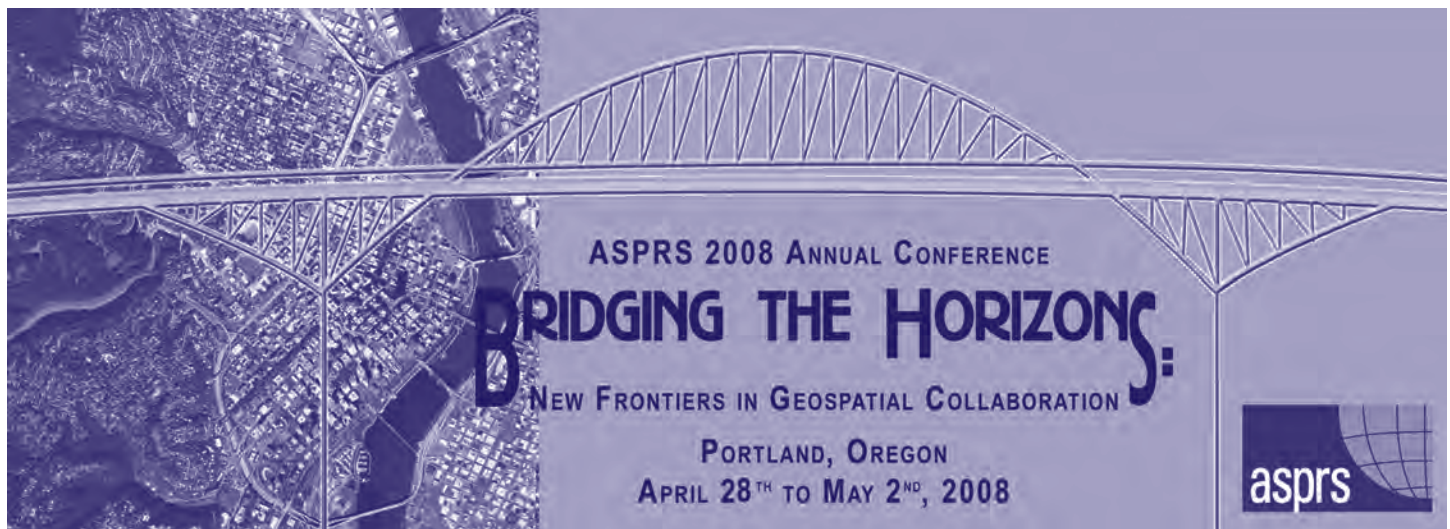
5:00 pm to 6:00 pm

Room: Newfoundland

Registration

4:00 pm to 7:00 pm

Level Two — Westin Ottawa Hotel



Registration

6:30 am to 5:00 pm
Level Four — Westin Ottawa Hotel

Presenters Room

8:00 am to 5:00 pm
Room: New Brunswick

Conference within a Conference

Great Lakes Regional Data Exchange

8:00 am to 5:00 pm
Room: Provinces

See page 4 for more information.

ASPRS Business Meeting

Board of Directors

8:00 am to 5:00 pm
Room: Les Saisons

Continuing Education Units (CEUs)

ASPRS, in conjunction with the University of Maryland, College Park, is pleased to offer ASPRS 2007 Specialty Conference workshop attendees the opportunity to earn Continuing Education Credits (CEUs). Attendees of ASPRS-sponsored workshops are eligible for CEUs if they attend any of the ASPRS-sponsored workshops, register on site for CEUs, and pay the processing fee of \$25 USD. For each workshop attended, one CEU for every 10 hours of eligible sessions attended is awarded to CEU registrants. (Full day workshops are eight (8) hours and receive 0.8 CEUs. Half day workshops are four (4) hours and receive 0.4 CEUs). Registration forms will be distributed during the workshops. Forms and payment are accepted on site at the Conference Registration Desk.

CEU participants will receive a certificate of completion awarded by the University of Maryland, College Park, approximately six weeks after the conference.

Please note: CEU's are awarded to ASPRS-sponsored workshop attendees **only**. CRSS workshops, Technical Sessions, General Sessions, Poster Sessions, or any other scheduled special event at this conference are not eligible for CEUs.

WS#1 — ASPRS

Preparing For ASPRS Certification

Professor Robert Burtch, *Ferris State University, USA*

Rakesh Malhotra, *North Carolina Central University, USA*

8:00 am to 5:00 pm, CEU .8

Room: British Columbia

INTERMEDIATE Workshop: Assumes participants have subject knowledge and are serious about taking the Certification Exam.

The purpose of this workshop is to prepare individuals who are planning to sit for the ASPRS Certification exams as a Certified Photogrammetrist or Certified Mapping Scientist in either Remote Sensing or GIS. The workshop will begin by explaining the purpose and form of the exam. It will then identify key topical areas that an applicant should be aware of prior to taking the exam. Topics will start with a review of the basic concepts and sample questions to show how they will be tested for on the exam. Finally, the workshop will try to identify resources in which exam takers should be aware of and study from in their preparation for the examination.

WS#2 — ASPRS

Emerging Technologies in Photogrammetry and Remote Sensing

Mike Renslow, *Renslow Mapping Services, USA*

Claire Kiedrowski, *KAPPA Mapping, Inc., USA*

8:00 am to 5:00 pm, CEU .8

Room: Ontario

INTERMEDIATE Workshop: This workshop provides an overview of emerging technologies and their impact on photogrammetry and remote sensing methodologies. The advance towards full digital mapping from start to finish, and the capacity to capture very large amounts of data supported by rapid processing and software will alter the way maps and imagery are produced in the near future. At the same time, active sensors, hand-held data collection devices, and feature extraction are changing fundamental mapping procedures and the way data is supplied to GIS.

Participants will receive an overview of the systems, technologies, and impacts on mapping in the next two to three years, as well as, the institutional issues involved in implementation.

WS#3 — CRSS

Practical Radar Polarimetry: Theory and Applications

Gordon Staples, *MDA Corporation, Canada*
Daniel DeLisle, *Canadian Space Agency, Canada*

8:00 am to 5:00 pm

Room: Alberta

INTERMEDIATE Workshop: Although the workshop will include a brief introduction to SAR, some knowledge of SAR and SAR applications will be assumed.

The objective of the workshop is to provide a point-of-entry for the user who is familiar with single channel radar data and applications, but is interested in polarimetric radar theory, analysis, and applications. The workshop will present radar polarimetry from a practical perspective, and to work from single-channel SAR to quad-polarized SAR. The approach is to build on fundamental radar principles, and to then add the various levels of polarimetric information. The workshop will provide an in-depth discussion of wave and scattering polarimetry, and target decomposition techniques. In addition, the advanced features of RADARSAT-2, with a focus on radar polarimetry are discussed. The workshop integrates theory with hands-on computer-based demonstrations. The objective of the demonstrations is to provide experience with the manipulation of quad-polarized data, and to augment the topics presented in the theory. The demonstrations also provide exposure to the various quad-polarized data analysis and visualization algorithms that are available. To compliment the theory section, an overview of polarimetry applications will be presented. The applications will cover many areas including agriculture, defence and security, forestry, geology, hydrology, ice, and marine surveillance.

WORKSHOPS/CURLING EVENT

MONDAY, OCTOBER 29TH

Continued from previous page

WS#4 — CRSS

Preparing for Change in the Geospatial World

Dr. Robert Ryerson, CMS, FASPRS, *Kim Geomatics Corporation, Canada*
E. Ann Blair

8:00 am to 12:00 noon

Room: Manitoba

INTRODUCTORY Management Oriented Workshop

This workshop will examine change management from the unique perspective of the geospatial world. Rapid change has characterized geospatial agencies in government as well as companies operating in the private sector. Whether it is the movement of larger companies into the business, dramatic changes in technology, or major shifts in government policy and funding, change has been coming to the geospatial industry at warp speed. In many cases this change has been a disruptive force – leading to chaos in the market as well as in government agencies attempting to respond to this change. Companies have gone under and government agencies have had their relevance questioned. There are tried and true methods that can be used to approach change to turn the rapidly changing environment from a threat to an opportunity.

Participants will be asked to complete a short optional questionnaire beforehand to allow the workshop team to better address their needs.

WS#5 — ASPRS

Putting It All Together: Integrating Imagery to Derive Information for Decision-making

Russell G. Congalton, *University of New Hampshire, USA*
Michael Palmer, *Sanborn, USA*

1:00 pm to 5:00 pm, CEU .4

Room: Manitoba

INTRODUCTORY WORKSHOP: This workshop is designed for the user who has some remote sensing and spatial data analysis experience but wishes to gain a broader understanding of what is currently available and how to determine which imagery to use for her/his specific needs.

There is an ever-increasing plethora of remotely sensed imagery available for use in spatial data analysis. New satellites with increasing spatial and/or spectral resolution are becoming commonplace. Airborne sensors and digital cameras offer many great opportunities. Advances in lidar and radar make these instruments viable tools today. Choices and confusion abound. This workshop is designed for those who wish to learn more about and appreciate the usefulness of this myriad of remotely sensed systems. It is for those who want to “put it all together” and see which systems or combination of systems provides the answer for their problems. The workshop begins with a presentation of the basic properties of all these remote sensing systems. Once the basics are well understood, several important factors must be considered when integrating the imagery to derive information. These factors include geometric registration, image mosaicing, radiometric correction, and quality control/accuracy assessment. Case studies and application examples will be used to demonstrate the utility (pros and cons) of each image type and to highlight situations where great synergy exists between multiple image sources. Every participant will leave this workshop with a greater appreciation of how to match their spatial analysis needs to the current wealth of remotely sensed imagery.

Social Event

Curling Social

6:00 pm to 10:00 pm
Royal Canadian Navy Curling Club

Hosted by the Canadian Remote Sensing Society – Ottawa Branch

Join us for an evening of fun with one of Canada’s national pastimes. Curling has been a favourite winter social activity in Canada for well over 200 years. The basics are easy to learn, and a quick introduction is generally all one needs to start playing.

We invite you to join us at the Royal Canadian Navy Curling Club. The evening starts at 6:00 pm with complimentary buffet and a cash bar. An introduction to curling with coaches provided by the RCN Club will start at 7:00 pm, games will start soon after and will continue until 10:00 pm. The coaches introduction will go over the basics of throwing and sweeping for beginners, and will discuss the key ideas behind the strategy of the game. The club will remain open until 11:00 pm.

Bus transportation will be provided from the Westin Hotel for those who do not wish to drive. Meet at the Hotel Main Entrance at 5:30 pm for bus transportation. The RCN Curling club is located at the south end of Ottawa’s Little Italy, an excellent place to explore to enliven your taste buds.

Full registration costs \$30USD per person playing, or \$10.00 USD per person for audience attendees (for those who would like to watch the game from the bar and enjoy the buffet). Curlers are expected to wear loose fitting pants and to provide their own footwear (sneakers that have been thoroughly washed and not worn off-the-ice are sufficient). Sliding tape and curling brooms will be provided.

By registering to play you acknowledge that (i) the sport of curling is played on ice and requires physical fitness; (ii) curling ice is slippery underfoot and you could be hurt if you fall; (iii) neither the RCN Curling Club nor the American Society for Photogrammetry & Remote Sensing nor the Canadian Remote Sensing Society can guarantee your safety, and; (iv) you assume all risks associated with participating in this curling event.

Registration

6:30 am to 5:30 pm
Level Four — Westin Ottawa Hotel

Presenters Room

8:00 am to 5:00 pm
Room: New Brunswick

WS#6 — ASPRS

Remote Sensing of Vegetation

Charles Olson, Professor Emeritus, *University of Michigan*, USA

8:00 am to 12:00 noon, CEU .4

Room: Alberta

INTRODUCTORY Workshop: Anyone involved in crop, forest or land-use monitoring, geo-botanical prospecting and/or modeling of energy upwelling from terrestrial features. No prior knowledge of plant morphology or physiology is assumed.

The goal of this workshop is to provide an examination of morphologic and physiologic factors affecting signals upwelling from vegetated areas and their influence on remotely sensed data in the visible, near-IR, middle-IR, thermal and microwave, with emphasis on the interaction of solar radiation with vegetation. No attempt is made to cover the many vegetation algorithms or specialized “vegetation maps” currently available.

WS#7 — ASPRS

Lidar for Terrain Mapping and Forest Studies

Qi Chen, *University of California*, USA

8:00 am to 12:00 noon, CEU .4

Room: Ontario

INTERMEDIATE Workshop

The goal of this workshop is to introduce the basic concepts of lidar, the popular and innovative methods for lidar data processing and information extraction, with a focus on terrain mapping and forest studies. The attendants will learn 1) the principles of lidar systems, 2) the typical lidar systems, sensors, software, data, and applications, 3) the general procedure for processing airborne lidar data, 4) the popular and innovative methods for lidar data filtering and terrain mapping for both urban and vegetated areas, 5) an overview of methods for extracting forest information at the stand and individual-tree levels, 6) an introduction of ground-based lidar, 7) the application of satellite GLAS data for forest mapping, and 8) the remaining challenges of lidar data processing and the advices of finishing your Lidar projects.

WS#8 — ASPRS

3D Display of Imagery, Lidar, GIS and Google Earth: Wall-Sized Stereoscopic Displays for Research, Exploration and Education

Matthew Dunbar, *University of Kansas*, USA
L. Monika Moskal, *University of Washington*, USA

8:00 am to 12:00 noon, CEU .4

Room: Les Saisons

INTRODUCTORY Workshop

The main objectives of the workshop are to introduce the participants to modern large-format stereoscopic display technologies, provide information on how such a system can be purchased or built with easily available projection and computer equipment, and demonstrate how they may be utilized for remote sensing-based research, exploration and education. A wide range of topics related to modern stereoscopic displays will be covered, including the creation of stereo data, sources of existing stereo data, software for displaying stereo data (e.g., WallView, StereoPhoto Maker, StereoMovie Maker, and ArcGIS), and the specific hardware required for stereoscopic viewing. Focused attention will be given to Lidar data display in stereo using free Lidar exploration software (FUSION) and operating Google Earth in stereo using a 3D navigation device. A stereoscopic projection system will be used throughout the workshop and participants will receive a workbook containing a variety of materials related to modern stereoscopic displays along with sample datasets and software on a data CD.

WS#9 — CRSS

Crafting Geospatial Data Policy to Satisfy Multiple Objectives

Dr. Robert Ryerson, CMS, FASPRS, *Kim Geomatics Corporation*, Canada
Dr. Stan Aronoff, *Kim Geomatics Corporation*, Canada

8:00 am to 12:00 noon

Room: Quebec

INTRODUCTORY Policy Oriented Workshop

This workshop will examine critical issues involved in developing policies for the distribution and use of geospatial data. Experience has shown that the way data policies are crafted affects the rate of development of local industry, the quantity and quality of public good activities undertaken using the data, returns and cost implications for the data provider, and the downstream financial returns from the use of geospatial data. Balancing these sometimes competing objectives is challenging. The choices made will depend on the objectives of the organization and the mandate they are charged with fulfilling. In the case of national or government agencies, data policies are most effective when they are in alignment with well-defined objectives for the development of geospatial analysis capabilities that support government policy objectives.

Participants will be asked to complete a short optional questionnaire beforehand to allow the workshop team to better address their needs.

**Canadian Remote Sensing Society
Annual General Meeting**

12:00 noon to 1:00 pm
Room: British Columbia

Agenda

- | | |
|--|--|
| 1. Introduction / Call to Order | 5. Expansion of the Membership |
| 2. Report of the CRSS Chair and Executive Committee | 6. Plans and Suggestions for Future Symposia and Workshops |
| 3. Report of the Editor of the <i>Canadian Journal of Remote Sensing</i> | 7. Nomination and Election of Officers |
| 4. Report of the Students Representative | 8. Other Business |
| | 9. Adjournment |

A light lunch will be served.

Open to all CRSS Members

Opening Session

1:00 pm to 2:00 pm
Room: Provinces

Harmonizing Geospatial Activities Across the World's Longest Common Border

Mark Corey, Assistant Deputy Minister, *Earth Sciences Sector, Natural Resources Canada*, Canada



Mark Corey

Mark Corey previously was Vice-President / ADM of The Leadership Network (part of the Treasury Board Portfolio); ADM, Market and Industry Services Branch at Agriculture and Agri-food Canada; and Associate ADM, Operations Sector at Industry Canada. He has held several positions with NRCan, including Director General, Mapping Services Branch; Director, Geodetic Survey of Canada; Director, Products and Services Division; and Director, Strategic Planning.

Corey is a graduate of the University of Western Ontario, where he obtained Bachelor's and Master's degrees in Political Science. He was a course participant in the Advanced National and International Studies Program at the National Defence College in Kingston.

Timothy R. Petty, Deputy Assistant Secretary for Water and Science, *U.S. Department of the Interior*, USA

Timothy R. Petty is the Department of the Interior's Deputy Assistant Secretary for Water and Science. In this position, he assists the Assistant Secretary with oversight of the U.S. Geological Survey. Petty, a hydrogeologist with private and public sector experience, worked in the private sector for more than 10 years in California and Indiana as a geologist and a hydrogeologist specializing in structural geology, aquifer testing, ground water well installation, environmental risk assessment, underground water contamination and cleanup. He also worked for a non-profit educational organization in Russia for four years, providing logistical and strategic support for educational conferences. Upon his return to the U.S., Petty served as a senior analyst at the U.S. Department of Energy, assisting the director of Nonproliferation National Security, and most recently, he worked for the U.S. Senate to enhance communications systems using advanced technology resources. Petty has a Master's degree in Executive International Business Management from the University of Maryland's University College and a Bachelor's degree in Geosciences from Purdue University.

Presentation of the 2007 William T. Pecora Award

The William T. Pecora Award is presented by the U.S. Department of the Interior (DOI) and the U.S. National Aeronautics and Space Administration (NASA) to individuals and groups that make outstanding contributions toward understanding the Earth by means of remote sensing. The 2007 individual Pecora Award will be presented during the Opening Session by DOI and NASA representatives.

The award was established in 1974 to honor the memory of Dr. William T. Pecora, former Director of the U.S. Geological Survey and Under Secretary, Department of the Interior. Dr. Pecora was a motivating force behind the establishment of a program for civil remote sensing of the Earth from space. His early vision and support helped establish what we know today as the Landsat satellite program.

Exhibit Hall

1:00 pm to 7:00 pm
Confederation Ballroom

Poster Session

1:00 pm to 7:00 pm
Confederation Ballroom

Beverage Break in Exhibit Hall

2:00 pm to 2:30 pm
Confederation Ballroom

Technical Sessions

2:30 pm to 3:45 pm

Session 1

Role of the Committee on Earth Observation Satellites (CEOS) in GEO (Group on Earth Observations)

Moderator: Barbara J. Ryan, CEOS Chair, *U.S. Geological Survey*, USA

Room: Quebec

CEOS – the Satellite Component of GEO

Barbara J. Ryan, CEOS Chair, *U.S. Geological Survey*, USA

CEOS Activities at the Canadian Space Agency

Daniel De Lisle, *Canadian Space Agency*, Canada

Enhancing Satellite Observations for Climate – Responding to the Global Climate Observing System (GCOS) Implementation Plan

Jean-Louis Fellous, CEOS Executive Officer, *CNES/ESA*, France

The CEOS Constellations — A Framework for Building the Space Component of GEOSS

DeWayne Cecil, *National Aeronautics and Space Administration*, USA

Session 2

Homeland Security and Public Safety I — Introductory Panel – Building Capacity to Link Practitioners with Remote Sensing and Geospatial Technology

Moderator: Ed Freeborn, *L-3 Communications*, GSI, USA

Room: Ontario

Government, Industry, and Academia Partnerships that Listen to Requirements, and Build What is Needed

Todd Macuda, *Institute for Aerospace Research*, National Research Council, Canada

Ed Freeborn

Enabling Technology through Collaborative Partnerships with the End User

Stephen Young, *Selex Airborne and Sensor Systems*, USA

The Geospatial Working Group, a Forum for Coordinating GEOINT Standards for the National System for Geospatial Intelligence

Mark Demulder, *National Center for GEOINT Standards, National Geospatial-Intelligence Agency*, USA

The Secure Border Initiative (SBI) and SBI-net Current Infrastructure and Program Areas, Part I — How Industry Can Work with the Government and Prime Contractor

Alan Runyan-Beebe, *Monitron LLC*, USA

Session 3

Cross-Border Applications of Remote Sensing

Moderator: Bert Guindon, *Canada Centre for Remote Sensing, Natural Resources Canada*, Canada

Room: British Columbia

Monitoring Environmental Treaty Compliance using Earth Observing Data

Shaïda Johnston, *NASA Goddard Space Flight Center*, USA

A Role for Remote Sensing in Integrated Land Use and Transportation Planning

Bert Guindon, *Canada Centre for Remote Sensing, Natural Resources Canada*, Canada

Isobel Heathcote and Ying Zhang

Assessing Population Movement during the Israel-Lebanon Crisis of 2006 using DMSP Imagery

Maria J. Garcia Quijano, *Florida Atlantic University*, USA

Daniele Cerra, Antonio de la Cruz, Marcin Mielewczyk, and Gracia Joyanes

Mapping Insect Defoliation using Multi-Temporal Landsat Data

Sylvia Thomas, *Canada Centre for Remote Sensing, Natural Resources Canada*, Canada

Alice Deschamps, Robert Landry, Joost van der Sanden, and Ron Hall

Session 4

Snow Cover Mapping

Moderator: Karem Chokmani, *Institut National de la recherche scientifique (INRS-ETE)*, Canada

Room: Alberta

Validation of a Weighted Algorithm for Estimating Snow Water Equivalent Over a Fractional Snow Cover

Kim R. Turchenek, *University of Regina*, Canada

Joseph M. Piwowar and Chris Derksen

Historical Snow Mapping over Eastern Canada using Daily NOAA-AVHRR and SSM/I Data for the Validation of the Canadian Regional Climate Model

Karem Chokmani, *Institut National de la Recherche Scientifique (INRS-ETE)*, Canada

Monique Bernier, Alain Royer, Maxime Turcotte, Lisa-Marie Pâquet and Yves Gauthier

Estimation of Snow Correlation Length using Near Infrared Digital Photography

Ally Touré, *Université de Sherbrooke*, Canada

Kalifa Goïta, Alain Royer, Christian Mätzler, and Martin Schneebeli

Snow Water Equivalent Retrieval in a Sub-Arctic Environment of the North of Quebec from Space-borne Passive Microwave Observations

François Vachon, *Université de Sherbrooke*, Canada

Kalifa Goïta, Danielle De Sève and Alain Royer

Session 5

Panel Discussion — Airborne Digital Mapping

Moderator: Brian Huberty, *U.S. Fish and Wildlife Service*, USA

Room: Les Saisons

Sponsored by Primary Data Acquisition Division (PDAD). Organized by Brian Huberty, U.S. Fish & Wildlife Service

Aerial Imaging is in a period of rapid growth and change with new technologies, new customers, and new missions. This is a select panel of digital camera manufacturers and operators from across North America to talk about the highlights and a few pitfalls of these new airborne digital mapping cameras.

Panelists

Mike Claassen, *Groupe Alta*, Canada

Dave Stonehouse, *Verimap*, Canada

Eric Liberty, *Applanix*, Canada

Qassim Abdullah, *Fugro EarthData*, USA

Technical Sessions

4:15 pm to 5:30 pm

Session 6

The CEOS Constellations — The Space Component of GEOSS

Moderator: DeWayne Cecil, *National Aeronautics and Space Administration*, USA

Room: Quebec

The CEOS Constellation for Atmospheric Composition

M.L. Melo, *Canadian Space Agency*, Canada

J. Langen

The CEOS Constellation for Land Surface Imaging

G. Bryan Bailey, *U.S. Geological Survey*, USA

The CEOS Constellation for Ocean Surface Topography

Stan Wilson, *National Oceanic and Atmospheric Administration*, USA

Francois Parisot

The CEOS Constellation for Precipitation

Erich Stocker, *National Aeronautics and Space Administration*, USA

Session 7

Homeland Security and Public Safety II — Airborne and Satellite Imagery for Disaster Preparedness and Response

Moderator: Kari Craun, *U.S. Geological Survey, National Geospatial Technical Operations Center*, USA

Room: Ontario

This invited session will promote US/Canadian partnerships as a follow-on and extension to previous ASPRS-sponsored Imagery and Geospatial Data in Disaster Response sessions. A prime focus will be on the International Charter, Space and Major Disasters.

Introduction and Update on Progress

Kari Craun, *U.S. Geological Survey, National Geospatial Technical Operations Center*, USA

Overview of the International Charter

Ahmed Mahmood, *Canadian Space Agency*, Canada

Overview of Charter Products used in Emergency Response

Brenda Jones, *U.S. Geological Survey*, USA

Overview of NRCAN's Task of Creating Standard Emergency Response Products

David McCormack, *Canadian Hazards Information Service, Natural Resources Canada*, Canada

Session 8

Panel Discussion — The Effect of North American Policies on Commercial Remote Sensing

Moderator: Tahara Moreno, *National Oceanic and Atmospheric Administration, USA*

Room: **Les Saisons**

Organized by Kay Weston, National Oceanic and Atmospheric Administration, USA

For the North American remote sensing industry to achieve commercial success, there must be certainty, predictability and transparency in the policies that govern the industry. Panelists from the U.S. and Canada will discuss their nation's individual commercial remote sensing regulations and policies from both the perspective of the companies that must follow these policies and the governments that must develop and monitor them. The current state of the industry and how each country's commercial remote sensing policy affects the industry will be discussed.

Panelists:

John Hornsby, *MacDonald Dettwiler and Associates Limited, Geospatial Services, USA*

Phillip Baines, *Science and Technology, Foreign Affairs and International Trade Canada, Canada*

Kay Weston, *National Oceanic and Atmospheric Administration, USA*

Matthew O'Connell, *GeoEye, USA*

Jill Smith, *DigitalGlobe, USA*

Session 9

Land Cover Mapping Systems

Moderator: Kevin Smith, *Ducks Unlimited, Canada*

Room: **Alberta**

St. Lawrence Observing System (SLOS)

Guy Aube, *Canadian Space Agency, Canada*

Y. Crevier

Coastal Change Analysis: Completion of a National Baseline

Nate Herold, *NOAA Coastal Services Center, USA*

Development of Inventory and Modeling Products to Support International Conservation Programs across Western Canada and Alaska

Kevin Smith, *Ducks Unlimited, Canada*

Xiangyue Wei, Alain Richard, Glenn Mack, and Eric Butterworth

Southern Ontario Land Resource Information System (SOLRIS) – From Concept to Production – Challenges in Producing a Regional Ecological Land Classification (ELC)-based Land Cover Product

Ian Smyth, *Ontario Ministry of Natural Resources, Canada*

Richard Mussakowski

Session 10

Advancing Remote Sensing Applications with Hyperspectral Technologies

Moderator: H. Peter White, *Canada Centre for Remote Sensing, Natural Resources Canada, Canada*

Room: **British Columbia**

Hyperspectral Remote Sensing Algorithms for Retrieving Forest Chlorophyll Content from Leaf to Canopy Level

Yongqin Zhang, *University of Toronto, Canada*

Jing M. Chen and John R. Miller

Off-nadir Impacts on Deriving Biophysical Properties from Hyperspectral Data

H. Peter White, *Canada Centre for Remote Sensing, Natural Resources Canada, Canada*

Abdel Abuelgasim

Improved Site-specific Herbicide Management using Artificial Neural Nets and Hyperspectral Image Data

Peter R. Eddy, *University of Lethbridge, Canada*

A.M. Smith, B.D. Hill, C.A. Coburn, D.R. Peddle, and R.E. Blackshaw

Derivative Indices to Estimate Chlorophyll Content with Hyperspectral Remote Sensing

Jincheng Gao, *Kansas State University, USA*

Douglas G. Goodin

ASPRS Meeting Schedule

ASPRS 2008 Annual Conference
Oregon Convention Center/Doubletree
Hotel Lloyd Center
Portland Oregon
April 27 - May 2, 2008

ASPRS 2008 Fall Conference
The William T. Pecora Memorial Symposium
Adams Mark Hotel
Denver, Colorado
November 17 – 20, 2008

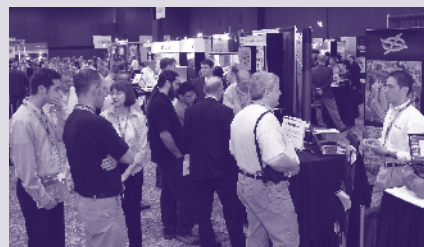
ASPRS 2009 Annual Conference
75th Anniversary of ASPRS
Baltimore Marriott Waterfront Hotel,
Baltimore, Maryland
March 8 – 13, 2009

ASPRS/MAPPS 2009 Fall Conference
Crowne Plaza Hotel
San Antonio, Texas
November 16 – 19, 2009

ASPRS 2010 Annual Conference
Town and Country Hotel
San Diego, California
April 26 – 30, 2010

Save the dates!!!

Social Events



attendees a great time to see old friends and make new ones. Light hors d'oeuvres and beverages will be served.

Exhibitors' Reception

5:30 pm to 7:00 pm
Confederation Ballroom

This conference highlight is sponsored by the exhibiting companies and provides an excellent opportunity to see the latest products and services offered to the industry by the world wide suppliers. Also, the reception affords all

Canadian Remote Sensing Society — Gold Medal Dinner

7:30 pm to 11:00 pm
Mother McGinty's Irish Pub, 67 Clarence Street

Come celebrate achievement in Canadian remote sensing at this colourful pub in the heart of Ottawa's famous Byward Market! An easy 10-minute walk or 2-minute cab ride from the Westin Hotel. What better way to spend an evening than with an excellent meal together with your colleagues and friends in the relaxed atmosphere of Mother McGinty's. All are welcome -- capacity is 125, so please purchase your ticket early. For more information, visit <http://www.casi.ca/>.

Ticket price: \$75 CND

Registration

6:30 am to 5:00 pm
Level Four — Westin Ottawa Hotel

Presenters Room

8:00 am to 5:00 pm
Room: New Brunswick

Exhibit Hall

9:30 am to 5:00 pm
Confederation Ballroom

General Session

8:30 am to 9:30 am
Room: Provinces

Group on Earth Observations (GEO)/Global Earth Observation System of Systems (GEOSS)

GEO Progress and Prospects – Realizing the Goal of a Coordinated, Comprehensive, and Sustained Earth Observation System of Systems

Helen M. Wood, U.S. Group on Earth Observations Co-Chair and GEOSS Integration Manager & Senior Advisor, *National Oceanic and Atmospheric Administration, USA*

Earth observation technologies can be used to improve the quality of life in communities at all levels – towns, states, regions and countries. The need for improved Earth observations is an international priority. Wood will describe the current state of GEOSS and the upcoming GEO Ministerial Meeting, where participants will discuss the sharing and applied usage of global, regional and local data from satellites, ocean buoys, weather stations and other surface and airborne Earth observing instruments. She will also describe the efforts of the U.S. Group on Earth Observations (USGEO) to develop the Integrated Earth Observation System (IEOS). Near-term opportunities for U.S. investment have been identified in the areas of drought, early warnings for disaster reduction, air quality, ocean observations and land observations. As progress is made in GEOSS implementation, there will be implications and opportunities for space and ground operations supporting Earth observing systems in both the public and private sectors.



Helen M. Wood

Helen M. Wood is Global Earth Observation System of Systems (GEOSS) Integration Manager for the U.S. National Oceanic and Atmospheric Administration (NOAA). She co-chairs and represents NOAA on the U.S. Subcommittee on Global Earth Observation (USGEO) under the U.S. National Science and Technology Council (NSTC), and is charged with providing strong leadership in the area of integrated Earth observations to support high priority societal benefits. Wood was Secretariat Director for the ad hoc intergovernmental Group on Earth Observations (GEO) for two years, where she managed activities leading to the development of the GEOSS 10-year Implementation Plan. Wood is a recognized leader in activities aimed at reducing disaster losses and improving economic vitality through the improved use of science and technology. She holds a BS in Mathematics and an MS in Computer Science.

Canadian GEO Progress and Prospects

David Grimes, *GEO Principal for Canada, Canada*

Canada's vast oceans, inland waters, land surfaces, and atmosphere require a wide array of measurements and surveillance in order to monitor and understand their current condition, and to predict their future states. The Canadian Group on Earth Observations (CGEO) was established to provide the federal governance framework for the coordination of Canada's Earth observation initiatives. Grimes will describe the coordinating role of CGEO, principal activities and initiatives, and recent accomplishments from both a domestic and international perspective. The CGEO initiative to develop a Federal Earth Observation Strategy will be highlighted as an integrating process to realize the vision of a healthy, safe and prosperous Canada through sustained and coordinated Earth observation. Grimes will also discuss Canada's role and expected outcomes for the international GEO Ministerial Summit in Cape Town, South Africa on November 30th, 2007.



David Grimes

David Grimes is the Assistant Deputy Minister, Meteorological Service of Canada, Environment Canada, and is the Group on Earth Observations (GEO) Principal for Canada. He has over 30 years of scientific, research and management experience in Environment Canada. He has held a significant number of challenging positions and assignments over the years ranging from operations to science to policy and has been a Director General in MSC for 15 years for a number of posts – Canadian Climate Center, Policy, Services, Predictions and Partnerships. Grimes has extensive educational experience in the domains of science and management (MBA level), a BSC – Physics, Mathematics and Meteorology, and is a Certified Professional Meteorologist.

Poster Session

9:30 am to 5:00 pm
Confederation Ballroom

Beverage Break in Exhibit Hall

9:30 am to 10:00 am
Confederation Ballroom

Technical Sessions

10:00 am to 11:30 am

Session 11

Overview and Status of GEO/GEOSS

Moderator: David Grimes, *GEO Principal for Canada, Canada*
Room: Quebec

The Road to the 2007 GEO Earth Observation Summit IV and Ministerial Summit — Progress in Building GEOSS

Douglas Muchoney, *Group on Earth Observations Secretariat, USA*

GEOSS Architecture — Building the Framework for GEOSS

Ivan DeLoatch, *U.S. Geological Survey, USA*
Douglas Nebert

Understanding User Needs for Earth Observation Information — The Role of the GEO User Community

Stuart Salter, *Canada Centre for Remote Sensing, Natural Resources Canada, Canada*

Development Solutions for GEOSS and IOOS Implementation

Carroll Hood, *Raytheon IIS, USA*

Session 12

Homeland Security & Public Safety III — Operations and Evaluation

Moderator: Todd Macuda, *Institute for Aerospace Research, National Research Council, Canada*

Room: Ontario

Detection and Recognition: Using Sensors in Border Enforcement Operations

Chris McBryan, *Royal Canadian Mounted Police, Integrated Border Enforcement Teams, Canada*

The Role of Sensors and Support Technologies in Airborne Law Enforcement Operations

Scott Healey, *Royal Canadian Mounted Police, Canada*

US National Grid Standard and the Military Grid Reference System, Coordinating US and Canadian Practitioners

Tom Terry, *US Marine Corps, USA*

The Importance of Flight Test and Evaluation in the Development of Airborne Technologies for Border Enforcement

Greg Craig, *National Research Council, Canada*

Robert Allison

Session 13

Trans-Border Cooperation — Spatial Data Infrastructure Collaboration

Moderator: Douglas Nebert, *Federal Geographic Data Committee, USA*

Room: British Columbia

Organized by Alan R. Stevens, *Global Spatial Data Infrastructure Secretariat, USA*

FGDC/Geoconnections Promoting Cross Border Collaboration

Milo Robinson, *Federal Geographic Data Committee, USA*

Federal Geographic Data Committee, Global Spatial Data Infrastructure Association Promoting International Collaboration

Alan R. Stevens, *Global Spatial Data Infrastructure Secretariat, USA*

Sharing Location-based Information in the Public Safety and Security Community Using the CGDI

Ken Marshall, *Natural Resources Canada, Canada*

Philip Dawe

Session 14

Technology — Laser Scanning

Moderator: Brad Ysseldyk, *Optech Incorporated, Canada*

Room: Alberta

Methods of Angular Displacement Transformation of a Laser Beam in Circular Scanning

Polkanov Jury Alekseevich, *Belarus*

Sounding of the Environment using a Low Power Continuous Source

Polkanov Jury Alekseevich, *Belarus*

Crucial Factors in Surveying with 3D Laser Scanners

Ehab Mina, *Survey Research Institute, Egypt*

Mobile Scanning

Brad Ysseldyk, *Optech Incorporated, Canada*

Session 15

Wetlands

Moderators: Robert Helie, *Environment Canada*

Brian Huberty, *U.S. Fish and Wildlife Service, USA*

Room: Les Saisons

A Cross-border Mapping Program to Support Regional and Continental Wetland and Waterfowl Conservation Planning in the Boreal Forest: An Example Project from the Northwest Territories

Chad Delany, *Ducks Unlimited, Inc., USA*

Dan Fehring, Frederic Reid, Aaron Smith, Kevin Smith, Ruth Spell, Al Richard, and Eric Butterworth

Mapping and Restoration of Wetland Communities within the Missouri River Floodplain

Clayton Blodgett, *Missouri Resource Assessment Partnership, USA*

Ronald Lea

Monitoring Wetland Area along the St. Lawrence River: Current State and Recent Evolution

Guy Letourneau, *Environment Canada, Canada*

Martin Jean

SOLRIS: Case Study of an Adaptive Approach to Wetland Mapping in Southern Ontario

Adam Hogg, *Ontario Ministry of Natural Resources, Canada*

Joel Mostoway

ASPRS Business Meetings

Sustaining Members Council

10:30 am to 11:30 am

Room: Manitoba

Student Advisory Council

11:30 am to 12:30 pm

Room: Manitoba

Technical Sessions

12:30 pm to 1:45 pm

Session 16

Examples of Successful GEO/GEOSS Accomplishments

Moderator: Bruce K. Quirk, *U.S. Geological Survey, USA*

Room: Quebec

GEONETCast — An Operational Service Delivering Data and Products Based on the use of Communication Satellites

Richard Fulton, *National Oceanic and Atmospheric Administration, USA*

GEOSS Pilot: Web Portal, Clearinghouse, Services

George Percivall, *Open GIS Consortium, USA*

GEOSS in the Americas: A Framework for Collaboration

Mike Manore, *Canadian GEO Secretariat, Canada*

Landsat Data Continuity Mission

Bruce K. Quirk, *U.S. Geological Survey, USA*

CRSS Planned Symposia

International Circumpolar Remote Sensing Conference

Whitehorse, Yukon
June 2-5, 2008

International SPOT Image Users Group Conference

Lethbridge, Alberta
July 14-17, 2009

Canadian Association of Geographers Annual Meeting

Regina, Saskatchewan
Late May 2010

Association Québécoise de Télédétection (AQT) Congress

Sherbrooke, Québec
2011

Session 17

Homeland Security & Public Safety IV — Technology

Moderator: Ed Freeborn, *L-3 Communications, GSI, USA*

Room: Ontario

Fusing Mobile Land, Sea and Air Lidar Information

Paul Mrstik, *Terrapoint, USA*

High Precision Cross-border 3-D Mapping

Hugh MacKay, *Intermap Technologies Corporation, USA*

Employing Automatic Target Recognition (ATR) to Validate Space-Based-Radar (SBR) Signatures of Maritime Targets Paired with Automatic Identification System (AIS) Data

Ryan A. English, *Defence R&D Canada, Canada*

Paris W. Vachon and John Wolfe

The National Center for GEOINT Standards Geospatial Working Group's Work on Developing a Common Sensor Model

Mark Demulder, *National Center for GEOINT Standards, National Geospatial-Intelligence Agency, USA*

Session 18

Trans-border Cooperation on North American Metadata Profile

Moderator: Alan R. Stevens, *Global Spatial Data Infrastructure Secretariat, USA*

Room: British Columbia

Organized by Alan R. Stevens, Global Spatial Data Infrastructure Secretariat, USA

FGDC and North American Metadata Profile Implementation Activities

Douglas Nebert, *Federal Geographic Data Committee, USA*

North American Profile Metadata: Content, Structure, and Register

Raphael Sussman, *Land Information Ontario, Canada*

David Danko and Jean Brodeur

Harmonizing Canadian/USA Spatial Data via the North American Profile — Spatial Metadata

Harold Moellering, *The Ohio State University, USA*

Raphael Sussmann, Mohamed Habbane, Jean Brodeur, David Danko, and Sharon Shin

Session 19

Ecology

Moderators: Brian Brisco, *Canada Centre for Remote Sensing, Natural Resources Canada, Canada*

Norman Bliss, *U.S. Geological Survey, USA*

Room: Alberta

Invasive Species Spread Modeling using Multi-resolution Remote Sensing Data

Le Wang, *University at Buffalo, The State University of New York, USA*

Jose Sylvan

Mapping the Near-surface Temperature, Freezing and Thawing Indices of Continuous Permafrost Area with Moderate Resolution Imaging Spectroradiometer (MODIS)

Sonia Hachem, *Laval University, Canada*

Michel Allard and Claude Duguay

Modelling Ecosystem Performance in the Yukon River Basin — A Borderless Approach

Norman B. Bliss, *SAIC — U.S. Geological Survey, USA*

B. Brisco, B. Wylie, J. Murnaghan, J. Rover, L. Short, L. Tieszen, and L. Zhang

A Remote Sensing Based Park Ecological Integrity Observing System (Park-EIOS)

Robert Fraser, *Canada Centre for Remote Sensing, Natural Resources Canada, Canada*

Ian Olthof, Darren Pouliot, Donald McLennan, Jean Poitevin, Paul Zorn, Jeremy Kerr, Shusen Wang, Eric Young, Justin Quirouette, and Mike Sawada

Session 20

Panel Discussion — Trends in Digital Aerial Imaging Technology

Moderator: Gregory Stensaas, *U.S. Geological Survey, USA*

Room: Les Saisons

Sponsored by the ASPRS Primary Data Acquisition Division (PDAD). Organized by Greg Stensaas, U.S. Geological Survey, USA

Aerial Imaging is in a period of rapid growth and change with new technologies, new customers, and new missions. This session will report on the status of quality assurance and standardization efforts within the US and Canada, current and future trends in aerial data acquisition and application, and the calibration of sensors available in today's market.

Panelists:

George Lee, *U.S. Geological Survey, USA*

Paul Quackenbush, *British Columbia Base Mapping and Geomatic Services, Canada*

Eric Liberty, *Applanix Corporation, Canada*

Ayman Habib, *University of Calgary, Canada*

Technical Sessions

2:00 pm to 3:15 pm

Session 21

North American Earth Observation Activities

Moderator: Mike Manore, *Canadian GEO Secretariat, Canada*

Room: Quebec

GEO and North American Activities of the United Nations Environment Programme (UNEP)

Ashbindu Singh, *UNEP Division of Early Warning and Assessment — North America, USA*

The North American Environmental Atlas

Peter Paul, *Partnerships, Natural Resources Canada, Canada*

The North American Land Change Monitoring System

Collin Homer, *U.S. Geological Survey, USA*

The North American Drought Monitor and the Path to a Global Drought Early Warning System

Jay Lawrimore, *National Oceanic and Atmospheric Administration, USA*

Session 22

Data Development – 1

Moderator: Mohamed Mostafa, *Applanix Corporation, Canada*

Room: Ontario

SmartBase™ — An Efficient New Tool for Aircraft Positioning using Continuously Operated Reference Stations for Mapping Applications

Mohamed Mostafa, *Applanix Corporation, Canada*

Edith Roy and Xue-Fen Zhang

A Comparison of Drainage Basin Attributes Derived from Three Independent DEM Sources

Chris Hopkinson, *Applied Geomatics Research Group, Canada*

Masaki Hayashi, Karen Miler, and Derek Peddle

Spatial Modeling of Urban Areas — A Transferable Approach Based on Remote Sensing Image Data

Matthias S. Moeller, *Austrian Academy of Science, Austria*

Elisabeth Schoepfer

GPS Orbital Prediction using Artificial Neural Networks

Hamad Yousif, *Ryerson Canada, Canada*

Ahmed El-Rabbany

Session 23 Spatial Data Infrastructure

Moderator: David Goodenough, *Canadian Forestry Service, Natural Resources Canada, Canada*

Room: Alberta

Utah GIS Coordination with Federal, State, and Local Organizations

Cindy Clark, *Utah's Automated Geographic Reference Center, USA*

Canadian Forest Geospatial Data Infrastructure

David G. Goodenough, *Natural Resources Canada, Canada*

Hao Chen, Liping Di, Andrew Dyk, Aimin Guan, and Randall Sobie

Merging Enterprise Data with Public Data in Desktop Applications

Kenyon Waugh, *Valtus Imagery Services, USA*

Canadian and U.S. Cooperation for the Development of Standards and Specifications for Emerging Mapping Technologies

Ayman Habib, *University of Calgary, Canada*

Anna Jarvis, Mohannad Al-Durgham, Paul Quackenbush, and Gregory Stensaas

Session 24 Land Cover Mapping — Forestry

Moderator: Joost van der Sanden, *Canada Centre for Remote Sensing, Natural Resources Canada, Canada*

Room: British Columbia

Monitoring Forest Health Conditions with High-spatial Resolution Remotely Sensed Imagery

Sam Coggins, *University of British Columbia, Canada*

Nicholas Coops and Michael Wulder

Rapid Response to Mapping Wind Throw using Segmentation and High Resolution Data for Forest Inventory Updating

Ian Sinclair, *Ontario Ministry of Natural Resources, Canada*

Ulf Runesson

Monitoring of Insect-induced Aspen Defoliation with MERIS

Joos van der Sanden, *Canada Centre for Remote Sensing, Natural Resources Canada, Canada*

Alice Deschamps, Sylvia Thomas, Robert Landry, and Ron Hall

Satellite Land Cover Mapping of Canada's Forests: Completion of EOSD Land Cover

Michael Wulder, *Canadian Forestry Service, Natural Resources Canada, Canada*

Jeff Dechka, Morgan Cranny, André Beaudoin, Joan Luther, Ron Hall, David Goodenough, and Don Leckie

Session 25 Panel Discussion — Airborne Lidar Mapping Technology

Moderator: Robert Eadie, *Intermap Technologies, Inc., USA*

Room: Les Saisons

Sponsored by the ASPRS Primary Data Acquisition Division (PDAD). Organized by Robert Eadie, *Intermap Technologies, Inc.*

Industry experts will present the latest information on lidar sensor technology and Digital Elevation Model (DEM) data production work flow. State-of-the-art elevation mapping technology will be discussed for a better understanding of the critical factors in digital elevation data acquisition and production for various mapping applications.

Panelists:

Don Carswell, *Optech, Inc., Canada*
Roman Kathofer, *TopoSys GmbH, USA*
Ron Roth, *Leica GeoSystems GIS & Mapping, USA*

Mike Watry, *QCoherent Software, USA*
Stuart Blundell, *Visual Learning Systems, Inc., USA*

Beverage Break in Exhibit Hall

3:15 pm to 4:00 pm
Confederation Ballroom

WHAT IS ISPRS?

"ISPRS is an international NGO devoted to the development of international cooperation for the advancement of knowledge, research, development and education in the Photogrammetry, Remote Sensing and Spatial Information Sciences (P&RS&SIS), their integration and applications, to contribute to the well being of humanity and sustainability of the environment."

The ISPRS membership comprises national organizations and professional Societies representing over 100 nations and regions covering all continents.

Principal Activities are:

- 1- Facilitating excellence in R&D and the use of proper and appropriate technologies in P&RS&SIS.
- 2- Initiating and coordinating research through eight Technical Commissions.
- 3- Holding International Symposia and Congresses at regular intervals.
- 4- Ensuring worldwide circulation of news, records of discussion and the results of research by publication of the ISPRS Journal, the International Archives of the Photogrammetry, Remote Sensing, Spatial Information, Sciences, ISPRS Book Series and ISPRS Highlights.

for more information visit www.isprs.org

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General Session

4:00 pm to 5:00 pm
Room: Provinces

Homeland Security and Public Safety — The Way Forward

Public Security Science and Technology Process Development at Defence R&D Canada

Andrew Vallerand, Director Public Security Technical Program,
Defence R&D Canada, Canada

Defence Research and Development Canada is developing a process that integrates government, academia, and industry in Canada and the U.S., that will allow the Public Security Technical Program to “be the premier forum for bi-national collaboration in Science and Technology that advances our national Public Safety and Security strategies.” He will address key Public Security Science and Technology issues relevant to Canadian, US, and international security and public safety state-of-the-art and needs, and identify ways forward in these critical areas.



Andrew Vallerand

Andrew L. Vallerand is the Canadian Principal Leader of the NATO Modeling and Simulation Group. As Head of Future Forces Synthetic Environment Section at DRDC Ottawa, Dr Vallerand managed two emerging and well exploited programs of Capability Production & Management Science & Technology (S&T) as well as Modeling & Simulation S&T.

As Director S&T Human Performance-3 in DRDC Corporate, he built the Human Systems Integration Program, and he was the Project Director of the large CA/US Advanced Distributed Mission Training Technology Demonstration project, a simulation project presently exploited by the CF-18 community.

He is Adjunct Professor at Carleton University at the Dept of Systems and Computer Engineering as well as Laval University School of Medicine.

International Charter on Space and Major Disasters

Brenda Jones, Disaster Response Coordinator, and International Charter, Space and Major Disasters Executive Secretariat, *U.S. Geological Survey, USA*

The International Charter on Space and Major Disasters represents a joint effort by global space agencies to put resources at the service of rescue authorities responding to major natural or man-made disasters. The Charter is based on voluntary contributions, by all parties, of Earth observation satellite data. Each member agency has demonstrated its commitment to using space technology to serve humankind when it is most in need of assistance, providing a basis for anticipating and managing potential or actual crisis.

Since November 2000, the Charter has been activated more than 100 times to assist in global emergencies, such as floods, fires, landslides, typhoons, volcanic eruptions, oil spills, tsunamis, hurricanes, earthquakes and civil accidents. With a low response time of 38 to 48 hours and by facilitating high reliability data, the Charter has proven the effectiveness of using space information for emergency management.



Brenda Jones

Brenda Jones began her career at EROS in May 1976, as a Production System Analyst responsible for incorporating new image processing techniques in the Center’s rapidly evolving digital data production system. In subsequent positions Jones took on additional management, product development, and quality assurance responsibilities. Since March 2002, Jones has served as EROS’s Disaster Response Coordinator. In this capacity, she has been instrumental in the design and development of EROS’s web-based Hazards Data

Distribution System as well as being one of EROS’s primary points-of-contact, coordinator, and respondent for providing remotely sensed and other geospatial data sets to the domestic and international emergency response data user community.

ASPRS Honorary Member Award



Dean Merchant will receive an Honorary Member of the American Society for Photogrammetry and Remote Sensing Award, the highest award an ASPRS member can receive. There are only 25 living Honorary Members of the Society at any given time. Initiated in 1937, this life-time award is given in recognition of individuals who have rendered distinguished service to ASPRS and who have attained distinction in advancing the science and use of the geospatial information sciences. It is awarded for professional excellence and for at least 20 years of service to ASPRS. Merchant has been a member of ASPRS since January 1956.

Registration

7:30 am to 11:30 am
Level Four — Westin Ottawa Hotel

Presenters Room

8:00 am to 11:30 am
Room: New Brunswick

Technical Sessions

8:30 am to 9:45 am

Session 26

Panel Discussion — Rapid Response Imaging

Moderator: Mohamed Mostafa, *Applanix Corporation*, Canada

Room: Les Saisons

Sponsored by the ASPRS Primary Data Acquisition Division (PDAD). Organized by Mohamed Mostafa, Applanix Corporation, Canada

This session provides a focus to illustrate the use of photogrammetric multi-sensor system technology in the Rapid Response Applications area. Experts from NOAA, NRL and DND will share their experience and describe the importance of geospatial information in their daily activities through their practical experience in the Rapid Response field.

Panelists:

Jon Sellers, *NOAA*, USA
Jason Woolard, *NOAA*, USA
Vickie Childers, *Naval Research Lab*, USA
Sgt. Bill Kidman, *Canadian Department of National Defense*, Canada

Session 27

Water Quality

Moderator: Wang Shusen, *Canada Centre for Remote Sensing, Natural Resources Canada*, Canada

Room: Ontario

Ecological Assimilation of EO Products for Ecosystem Assessment Studies

Wang Shusen, *Canada Centre for Remote Sensing, Natural Resources Canada*, Canada

Alexander Trishchenko, Richard Fernandes, Song Guo, Brian Brisco, Xiaomin Sun, and Na Mi

Hyperspectral Data of Water Quality Parameters Spectral Analysis: Area Under Spectral Curve Indicator

Pariwate Varnakovida, *Michigan State University*, USA

Narumon Wiangwang, Jianguo Qi, and Joseph P. Messina

Object Oriented Classification of Digital Airborne Data for Benthic Habitat Mapping

Kass Green, *The Alta Vista Company*, USA

Chad Lopez and B. Stevenson

Operational Monitoring of Water Quality over Lake Winnipeg Using Satellite Remote Sensing Data

Tom Hirose, *Noetix Research Inc.*, Canada

Jianguo Liu, Greg McCullough, Klaus Hockheim, Michael Stainton, Mark Kampfer, and John Bennett

Session 28

Land Use/Land Cover Mapping – 1

Moderator: John Iames, *U.S. Environmental Protection Agency*, USA

Room: Quebec

Land Use Monitoring in the St. Lawrence River Valley — Current State and Recent Evolution

Guy Letourneau, *Environment Canada*, Canada

Great Lakes Basin Land-cover Data: Issues and Opportunities

John Iames, *U.S. Environmental Protection Agency*, USA

Ross Lunetta

Use of Landsat Imagery for Evaluating Land Cover / Land Use Changes for a 30-Year Period for the Lake Erie Watershed

Mark Seidelmann, *The Ohio State University*, USA

Carolyn J. Merry

NLWIS Land Cover Classification

René Chénier, *Agriculture and Agri-Food Canada*, Canada

Thierry Fiset, Matt Maloley, Ryan Ogston, Bahram Daneshfar, Pierre-Yves Gassser, Shahid Khurshid, Yimei Zhang, and Raymond Jahnce

Session 29

Land Cover Mapping — Forestry - 2

Moderator: Chris Hopkinson, *Applied Geomatics Research Group*, Canada

Room: British Columbia

Analysis of Spectral Trajectories for Characterizing Forest Disturbance and Recovery Related to Current and Historic Infestations of Mountain Pine Beetle

Steve Gillanders, *University of British Columbia*, Canada

Michael Wulder, Nicholas Coops, Trisalyn Nelson and Nick Goodwin

Mapping Spatio-Temporal Variations in Mixed Forest Leaf Area Index with Airborne LiDAR

Chris Hopkinson, *Applied Geomatics Research Group*, Canada

Laura Chasmer

Application of Multi-resolution Satellite Imagery to Map Ericaceous Shrub Dominated Woodland in Northeastern Quebec

Olivier van Lier, *University of Sherbrooke*, Canada

Richard Fournier and Robert Bradley

Structural and Age Related Influences on Light Use Efficiency at a Boreal Jack Pine Chronosequence for MODIS Gross Primary Productivity Validation

Laura Chasmer, *Queen's University*, Canada

Harry McCaughey, Paul Treitz, A. Barr, A. Black, and A. Shashkov

Session 30

Technology — Radarsat/SAR

Moderator: Ridha Touzi, *Canada Centre for Remote Sensing, Natural Resources Canada*, Canada

Room: Alberta

Multi-polarized SAR Application to Land Cover Mapping in the Mountainous Three Gorges Area, China

Zhaohua Chen, *University of Western Ontario*, Canada

Jinfei Wang

IntelliSMART: An Operational Tool for Soil Moisture and Surface Roughness Estimation using SAR Data

Sacha Veillette, *GlobVision Inc.*, Canada

N. Nejad, A. Sen, E. Sobhani, C. Serele, M. Sahebi, S. Veillette, A. Garabedian, H. McNairn, F. Charbonneau, and S. Deschamps

Surface Water Mapping with RADARSAT

B. Brisco, *Canada Centre for Remote Sensing*, Canada

N. Short, J. van der Sanden, R. Landry and D. Raymond

Polarimetric Radarsat-2 for Wetland Mapping and Monitoring

Ridha Touzi, *Canada Centre for Remote Sensing, Natural Resources Canada*, Canada

A. Deschamps, R. Gauthier, and R. Rother

Exhibit Hall

9:30 am to 11:30 am
Confederation Ballroom

Poster Session

9:30 am to 11:30 am
Confederation Ballroom

Beverage Break in Exhibit Hall

9:45 am to 10:00 am
Confederation Ballroom

Technical Sessions

10:00 am to 11:15 am

Session 31

Data Development – 2

Moderator: David Aldred, *University of Western Ontario*, Canada

Room: Les Saisons

Extraction of Digital Elevation Model from Stereo Satellite Data

Asim Daud Rana, *Punjab University*, India
Hamma Gilani and Urooj Saeed

Object-oriented Image Classification for Urban Building Boundary Extraction from IKONOS Imagery

David Aldred, *University of Western Ontario*, Canada

Jinfei Wang

RapidOrthoTM — The Next Generation Ortho-rectification for Rapid Response

Mohamed Mostafa, *Applanix Corporation*, Canada

Alan Ip, Joe Kosofsky, and Joe Hutton

The Promise and the Reality of Automation in Linear Feature Extraction

Raad A. Saleh, *Harrisburg University of Science and Technology*, USA

Session 32

Homeland Security and Public Safety V — Partnerships

Moderator: Todd Macuda, *Institute for Aerospace Research, National Research Council*, Canada

Room: Ontario

An International Geospatial Data Partnership that Addresses State, Provincial, and Local HLS, Public Safety, and Law Enforcement Requirements

Michael Lee, *Federal Geographic Data Committee's Homeland Security Working Group (FGDC HSWG)*, USA

Building the Bi-national Foundation for a U.S.-Mexico Border GIS Database

TBD

High Resolution Imagery Projects in Ontario — Partnerships that Work

Mike Robertson, *Ministry of Natural Resources*, Canada

The Secure Border Initiative (SBI) and SBI-net Current Infrastructure and Program Areas, Part II — SBI Structure, Relationships and Background

Alan Runyan-Beebe, *Monitron LLC*, USA

Session 33

Land Use/Land Cover Mapping – 2

Moderator: Richard Mussakowski, *Ontario Ministry of Natural Resources*, Canada

Room: Quebec

Urban Environmental Monitoring from Satellite Data

Qiyun Tan, *University of Western Ontario*, Canada

Jinfei Wang

Urban Mapping Based on Landsat Image Structural Feature Extraction and Spatial Reasoning

Bert Guindon, *Canada Centre for Remote Sensing, Natural Resources Canada*, Canada

Change Detection Approach to Updating Land Cover and the Development of a Monitoring Capability

Richard Mussakowski, *Ontario Ministry of Natural Resources*, Canada

Multiple Spatial Resolution Change Detection for Large-area Mapping

Alysha Pape, *University of Saskatchewan*, Canada

Steven Franklin

Session 34

Land Cover Mapping — Agriculture

Moderator: Anne Smith, *Agriculture and Agri-Food Canada*, Canada

Room: British Columbia

Evaluation of Resourcesat-1 AWiFS Data for Producing an Agricultural Crop Inventory for Canada

Catherine Champagne, *Agriculture and Agri-Food Canada*, Canada

Heather McNairn, Jiali Shang, and David M. Johnson

Establishing a Baseline of Recent Grassland Variability Along the Saskatchewan-Montana Border

Joseph Piwowar, *University of Regina*, Canada
Jessica Henderson

Using Earth Observation to Monitor No-till Practices over Agricultural Crops in Eastern Ontario and Prince Edward Island

Anna Pacheco, *Agriculture and Agri-Food Canada*, Canada

Heather McNairn, Delmar Holmstrom, and Eric Gauthier

Determination of Rangeland Biomass using Landsat from 1997 to 2003

Ofer Beeri, *John D. Odegard School of Aerospace Sciences*, USA

Rebecca Phillips and Albert B. Frank

Session 35

Lidar Technology

Moderator: Devin Kelley, *HJW GeoSpatial, Inc.*, USA

Room: Alberta

A Comparison of Lidar Terrain Data with Autocorrelated DSM Extracted from Digitally Acquired High Overlap Photography

Devin Kelley, *HJW GeoSpatial, Inc.*, USA

Thomas Loecherbach

Identification of Partial Canopies using First and Last Return Lidar Data

Rafael Loos, *University of Victoria*, Canada

Fabio Visintini and Olaf Niemann

Integrating Technologies on Airborne Lidar Platforms to Maximize ROI

Albert Iavarone, *Optech Incorporated*, Canada

Airborne Lidar Accuracy: From Instrument Specifications to Accuracy Standard

R. Valerie Ussyshkin, *Optech Incorporated*, Canada

Brent Smith

General Session

11:30 am to 12:30 pm

Room: Provinces

Radarsat-2 Program

RADARSAT-2: Earth Observation Data for the Canadian Government

Daniel De Lisle, *Canadian Space Agency, Canada*

The new era of synthetic aperture radar (SAR) sensors will allow the acquisition of high resolution and multi-polarization images. RADARSAT-2 will be the most versatile commercial SAR Earth observation system with a high spatial resolution mode of 3 meters and a fully polarimetric mode that will be available on an operational basis. In addition, the advancement in satellite technology don't only profit the imaging modes, other innovations on RADARSAT-2, such as high downlink power or onboard digital recorders will also increase the quality of the service and products. RADARSAT-2 represents a unique collaboration between government and industry. In addition to the commercial benefits, the Government has a vital interest in the public good aspects of RADARSAT-2. The CSA has committed to objectives that pertain to natural resource management, environmental monitoring, support of Canadian sovereignty in the Arctic, and support to security policy around the world.

This paper will briefly present RADARSAT-2 and its imaging capabilities, and will focus on the activities that the Canadian Government has undertaken to optimize the use of RADARSAT-2 in support of its mandate and priorities. It will specifically address the EO Data Utilization Plan, Applications Development Support Programs and the RADARSAT-2 Data Management Plan.

Overview of the RADARSAT-2 System and SAR Products

Gordon Staples, *MDA Corporation, Canada*

The RADARSAT-2 spaceborne SAR sensor incorporates a suite of advanced features designed to meet the needs of end-users. The first section of this presentation provides an overview of the RADARSAT-2 space segment and ground segment. The space segment will outline the RADARSAT-2 imaging modes and highlight the high resolution and polarimetry modes. In addition, the development of new RADARSAT-2 imaging modes will be discussed. The ground segment will discuss how the RADARSAT-2 system has been optimized for rapid satellite tasking, fast data processing, and near-real time data delivery.

The second section of this presentation will provide an overview of the RADARSAT-2 products with specific focus on the polarimetric data formats and products. The polarimetric products are discussed from the perspective of the information that can be extracted to meet a variety of end-user needs. In addition, software tools that are available for the extraction of polarimetric information will be discussed.

Radarsat-2 – Innovative Satellite SAR Technology for Earth Observation Applications

Joost van der Sanden, *Canada Centre for Remote Sensing, Canada*

In this session we assess how RADARSAT-2's technical enhancements in terms of polarization, spatial resolution, look direction and orbit control will impact the potential utility of its data products for selected applications in the fields of agriculture, cartography, disaster management, forestry, geology, hydrology, oceans, and sea and land ice. Our assessment relies on bibliographic sources and, in particular, case studies drawn from ongoing applications development work.



Daniel De Lisle

Daniel De Lisle graduated from the University of Sherbrooke with a degree in Earth Observation and has completed several graduate courses in Oceanography. He has more than 20 years of experience using satellite imagery. During these years, he has worked at the Canada Centre for Remote Sensing in Ottawa, taught at the Université du Québec in Rimouski & l'Université Senghor in Alexandria, Egypt. De Lisle also received a 2-year scholarship to study in Japan. His

main interest is to investigate coastal erosion problems from space. De Lisle joined the Canadian Space Agency five years ago and is responsible for the applications development using the RADARSAT-2 satellite, scheduled for launch this fall.



Gordon Staples

Gordon C. Staples received the MSc degree in physical oceanography and the BSc degree in honors physics from the University of British Columbia. He joined MDA in 1993 and is currently Senior Technology Manager, Research and Development, for Geospatial Services. In this role, Staples is responsible for RADARSAT-2 polarimetry research, management of research projects, development and delivery of radar training, and strategic technical initiatives. He is currently

serving on the Canadian National Committee of the International Radio Science Union, and is Program Manager for the RADARSAT-2 Science and Operational Applications Research Program.



Joost van der Sanden

Joost van der Sanden received formal undergraduate and postgraduate education in forestry and remote sensing from the Wageningen University in The Netherlands and the University of Aberdeen in Scotland. Following completion of his PhD in 1997 he has worked, first as a postdoctoral fellow and then as a research scientist, at the Canada Centre for Remote Sensing from Natural Resources Canada. van der Sanden co-chairs the RADARSAT-2 Applications Working Group of the Government of Canada and has led the compilation of two comprehensive RADARSAT-2 applications reports.

POSTER SESSIONS

The posters will be on display in the Confederation Ballroom from 1:00 pm on Tuesday, October 30th to 11:30 am on Thursday, November 1st. Poster presentors will be available for an interactive session during the Exhibitors' Reception on Tuesday, October 30th from 5:30 pm to 7:00 pm.

Data Development

Investigating the use of Geographic Information System (GIS) and Spatial Information System (SIS) in Developing an Intelligent Transport System (ITS)

Sayed Javed Ahmad, *University of Chittagong*, India

Mohammad Shahadat Hossain

Hyperspectral

Multifunctional Active Hyperspectral Sensor: Concept and Principles

Andre Samberg, *AVAPROedu/Training and Consulting*, Iceland

Land Cover Mapping — Agriculture

Extraction of Vegetation Information in Qinghai Lake region via ASTER

Jian Ji, *Chengdu University of Technology*, China

Yang Wunian, Qin Zhongjian, and Yuan Ye

A Remote Sensing Approach to Delineation of Agricultural Fields and Natural Herbaceous Areas for Grizzly Bear Habitat Management

Adam Collingwood, *University of Saskatchewan*, Canada

Xulin Guo, Steven E. Franklin, and Gordon Stenhouse

SPOT Satellite Imagery and Neural Network Trees for Agricultural Land Cover Classification in Southern Alberta

Anne Smith, *Agriculture and Agri-Food Canada*, Canada

Bernard D. Hill, Gary Larson, and T. Hulstein

Biophysical and Spectral Characteristics of Selected Shrub Types in the Canadian Mixed Prairie

Arun Govind, *University of Saskatchewan*, Canada

Xulin Guo and Scott Bell

Quantifying Agricultural Vulnerability to Drought Using Remote Sensing Estimated Yield: a Case Study in Southern Alberta

Anne Smith, *Agriculture and Agri-Food Canada*, Canada

Xiaomeng Ren and Wei Xu

Land Cover Mapping — Forestry

Multiple Forward Mode Canopy Reflectance Model Inversion for Overstory Forest Biomass

Scott A. Soenen, *University of Lethbridge*, Canada

Ronald J. Hall, Derek R. Peddle, and Craig A. Coburn

Automatic Mapping Tree Structures using Multi-angle Digital Aerial Images

Kongwen Frank Zhang, *York University*, Canada

Baoxin Hu and John Miller

Mapping Forest Inventory Attributes across Coniferous, Deciduous and Mixedwood Stand Types in the Northwest Territories from High Spatial Resolution Quickbird Satellite Imagery

Ron J. Hall, *Natural Resources Canada, Canadian Forest Service*, Canada

R.S. Skakun

MFM Canopy Reflectance Modeling and Normalised Burn Ratio Assessment of Pre-fire Overstory Canopy Structure and Post-fire Burn Severity at the Lost Creek Fire, Alberta Rocky Mountains

Derek R. Peddle, *University of Lethbridge*, Canada

Ronald J. Hall, Chris D. Jackson, Scott S. Soenen, Mark Gibb, and Dan Juhlin

Mapping Boreal Forest Wildfire Burn Scars from Satellite Imagery

Jadah Follitt, *The University of Western Ontario*, Canada

Micha Pazner and Jinfei Wang

Land Use/Land Cover Mapping

Multi-resolution Object Based Segmentation and Multi-platform Classification Workflows for Rural Land use Mapping in Southern Ontario

Ian Sinclair, *Ontario Ministry of Natural Resources*, Canada

Natalie Coultice

Mapping Alteration Mineral with Hyperion and ASTER Data in Peru

Yuddy Ramos, *Université de Sherbrooke*, Canada

Stéphane Peloquin

The Automated Multitemporal Updating through Signature Extension (AMUSE) for Generating Land Cover Time Series

Ian Olthof, *Canada Centre for Remote Sensing, Natural Resources Canada*, Canada

Robert Fraser and Darren Pouliot

Building Change Detection in Urban Environment Based on Shadow Analysis

Mario Beauchemin, *Canada Centre for Remote Sensing, Natural Resources Canada*, Canada

Ko B. Fung

Application of Southern Ontario Land Resource Information System Mapping for Delineating Natural Heritage Systems

Danijela Puric-Mladenovic, *Ontario Ministry of Natural Resources*, Canada

Silvia Strobl

Monitoring a Continent with High Resolution Imagery

John Ahlrichs, *RapidEye*, Germany

Klaus Schelling and Frederik Rothenhaeusler

A Multiresolution Method for Unsupervised Change Detection

Mario Beauchemin, *Canada Centre for Remote Sensing, Natural Resources Canada*, Canada

Ko B. Fung

Technology — Lidar

A Wrapped-Surface Reconstruction Method of Lidar Points to Identify Tree Crown Attributes

Akira Kato, *University of Washington*, USA

L. Monika Moskal, Mark Swanson, Peter Schiess, and Donna Calhoun

Clustering Method for Road Extracting from Lidar Points of Urban Areas

Choi Yun Woong, *Chonbuk National University*, South Korea

Jang Young Woon and Cho Gi-Sung

Lidar Toolkit Comparison to Traditional Lidar Processing Software

Trevor Milne, *Nova Scotia Community College*, Canada

Tim Webster

Continued on page 22

POSTER SESSIONS

Structural and Topographic Influences on Water Fluxes using Airborne Lidar and a Footprint Model Parameterisation at a Mature Jack Pine (*Pinus banksiana*) Forest in Saskatchewan, Canada

Laura Chasmer, *Queen's University*, Canada

A. Barr, A. Black, C. Hopkinson, K. Kljun, H. McCaughey, and P. Treitz

Lidar Measurements for the Short-term Forecast of Meteorological Stability

Polkanov Jury Alekseevich, Belarus

Wetlands

Study of Peatlands – Aqualyse in the Area of the Hydroelectrical Complex LaGrande using Satellite Panchromatic Images of Very High Resolution

Maria Dissanska, *INRS-ETE*, Canada

Monique Bernier and Serge Payette

Miscellaneous

Medium-format Digital Cameras: A Study into the Calibration and Stability Analysis

Ayman Habib, *University of Calgary*, Canada

Anna Jarvis, Stephen Griffiths, and Davor Gugolj

When Computers Can't Do It

Charles Olson, *University of Michigan*, USA

Using Remote Sensing for Landscape Scale Change Detection of a Northern Peatland

David Boschman, *University of Regina*, Canada

Joe Piwowar

Harbour Monitoring with Synthetic Aperture Radar (SAR) imagery

Jeff Secker, *Defence R&D Canada*, Canada

Michael Robson and Paris W. Vachon

NRCan Emergency Radiological/Nuclear Airborne Response

Laurel Sinclair, *Natural Resources Canada*, Canada

Ken Ford and Brad Harvey

Image to Vector Data Matching in Support of Geocoding Earth Observation Imagery

Jack Gibson, *Canada Centre for Remote Sensing*, *Natural Resources Canada*, Canada

Stefan Nedelcu

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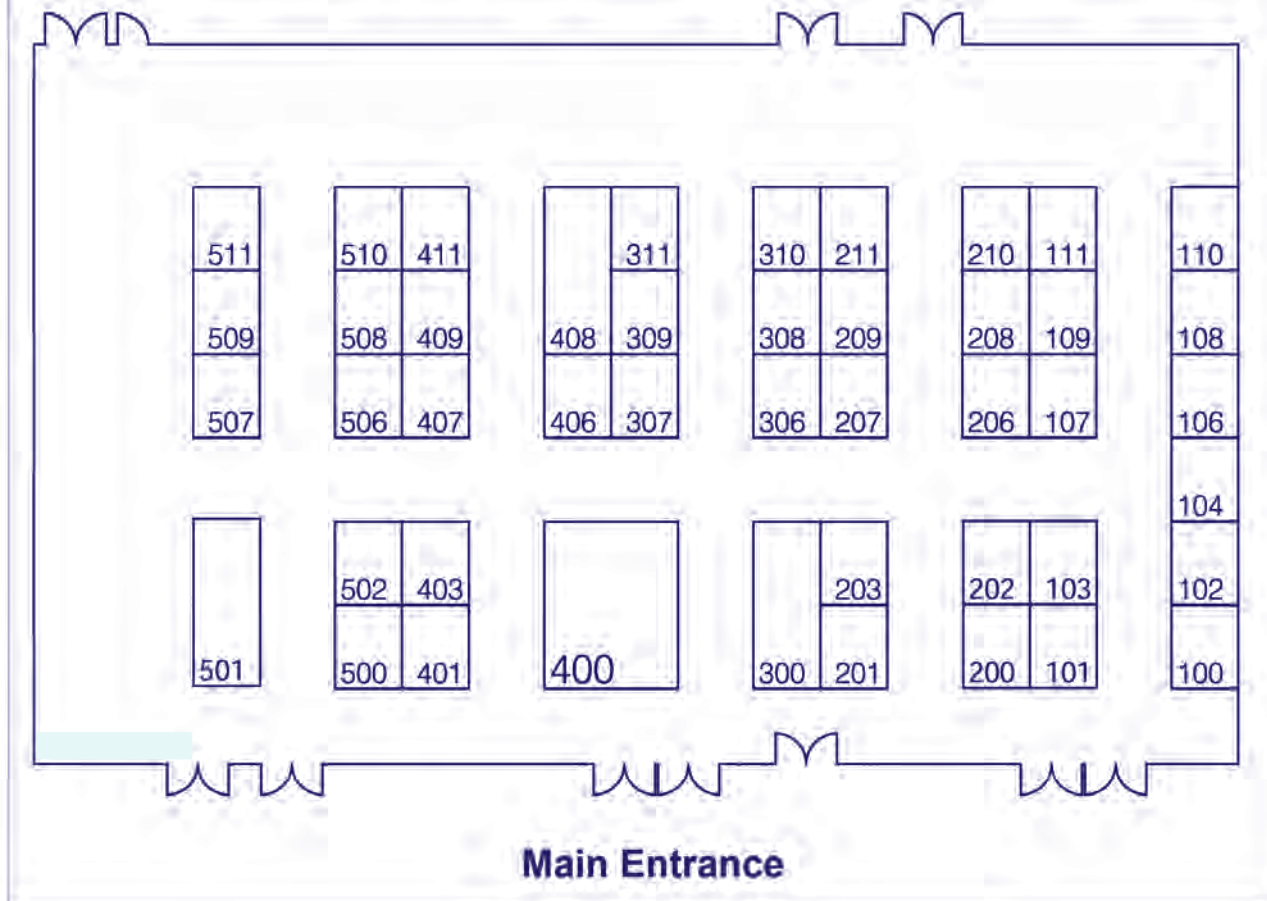
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CRSS/ASPRS 2007 Fall Conference Confederation Ballroom - Westin Hotel - Ottawa



Exhibitor	Booth #	Exhibitor	Booth #	Exhibitor	Booth #
American Geological Institute.....	109	First Base Solutions	409	North West Geomatics/ Valtus Imagery Services	106
Applanix Corporation	407	GPS World.....	109	Optech Incorporated	400
ASPRS	408	Groupe ALTA	103	Overwatch Geospatial-VLS.....	310
BAE Systems*	300	Intergraph	200	PCI Geomatics	307
Canadian Remote Sensing Society.....	208	Intermap Technologies	403	Photonics Spectra.....	109
Canadian Space Agency.....	107	ITRES Research Limited.....	510	Professional Surveyor Magazine/ GIS Monitor	109
Canal Geomatics	201	ITT Visual Information Solutions	406	Riegl USA, Inc.	309
Cardinal Systems, LLC.....	401	Kim Geomatics Corporation	411	Terrapoint Canada, Inc.	209
DAT/EM Systems International.....	506	Leica Geosystems	501	The American Surveyor.....	109
DIMAC SYSTEMS s.a.r.l. DIMAC Systems, LLC	500	LizardTech	508	TopoSys Topographische	308
Directions Magazine	109	Microsoft Corporation.....	100	U.S. Geological Survey Land Remote Sensing Program	101
Dynamic Aviation	306	National Geospatial-Intelligence Agency (NGA).....	311	Western Air Maps, Inc.	104
E. Coyote Enterprises, Inc.....	207	Natural Resources Canada	507		
ESRI Canada	108	Natural Resources Canada/ Geoconnections.....	509		
Federal Geographic Data Committee	206				

Exhibitor list as of September 11, 2007

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The Canadian Remote Sensing Society (CRSS) is a not-for-profit scientific and technical organization. Founded in 1973 as a constituent Society of the Canadian Aeronautics and Space Institute, the mission of CRSS is to advance the art science, technologies and applications of remote sensing. Since its inception, CRSS provides a focus for promoting Canadian capabilities and disseminating technical remote sensing information through national and international conferences and workshops, and via the SCI-listed *Canadian Journal of Remote Sensing*.

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Federal Geographic Data Committee

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Booth 206

The Federal Geographic Data Committee (FGDC) is an interagency committee promoting coordinated acquisition, processing, use, and dissemination of geospatial data, nationally. This nationwide effort is known as the National Spatial Data Infrastructure (NSDI), a physical, organizational, and virtual network designed for sharing digital geographic information resources. FGDC secretariat supports the Secretary of the Interior, with building the NSDI. The activities are hosted by the National Geospatial Programs Office of the U.S. Geological Survey.

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(714) 338-6700; (714) 338-6717 (Fax); www.gpsworld.com

Booth 109

GPS World is the most complete source for business, technical, product, news and information about the GPS, Galileo and GLONASS markets in all media. Website navigation and email newsletters are segmented by vertical market so you get just the information you need for your specific application. GPS World's blended media platform is the industry's only searchable and application-specific knowledge base of GPS and related technologies that's mapped to the market and the needs of the industry's core purchasing audience.

Groupe ALTA

607, 6e avenue de l'Aéroport
Québec, (Québec) G2G 2T4 Canada
(418) 667-1913; (418) 266-3114 (Fax); www.groupealta.com

Booth 103

In business for over 50 years, Groupe ALTA is a North American leader in the field of aerial photography, lidar, mapping and GIS. Its fleet, one of the largest in the industry, flies high-performance aircraft equipped with the latest generation of photographic devices used for cartography. Groupe ALTA's expertise has grown to cover all aspects of surveys and mapping and its suite of photogrammetric software, DVP-GS, is now sold in 85 countries around the world.

Intergraph

P.O. Box 240000
Huntsville, AL 35824 USA
(256) 730-2000 or (800) 345-4856 (US Toll Free) (256) 730-2048 (Fax)
www.intergraph.com

Booth 200

Intergraph's earth imaging products offer open solutions to acquire, use, manage, and distribute imagery from a variety of sources – supporting the entire project life cycle for data acquisition and exploitation. Intergraph provides complete systems for producing maps, digital terrain models, and other geographic data that government, military, and commercial organizations need to preserve data precision. Intergraph's pioneering technology includes the first large-format digital aerial framing camera, as well as film cameras, scanners, and flight and sensor management systems.

Intermap Technologies

8310 South Valley Highway, Suite 400
Englewood, CO 80138 USA
(303) 708-0955; (303) 708-0952 (Fax); www.Intermap.com

Booth 403

Intermap Technologies™ is creating uniform 3D digital models of the earth's surface and building a library of affordably priced elevation data and geometric images of unprecedented accuracy. The company is proactively remapping entire countries and building uniform national databases, called NEXTMap®. Demand for NEXTMap® data is growing as these datasets quickly enable a wide range of innovative geospatial applications emerging within the GIS, civil engineering, automotive safety, insurance risk management, and personal navigation device industries.

ITRES Research Limited

3553 31st Street, NW
Calgary, AB T2L 2K7 Canada
(403) 250-9944; (403) 250-9916 (Fax); www.itres.com

Booth 510

ITT Visual Information Solutions

4990 Pearl East Circle
Boulder, CO 80301 USA
(303) 786-9900; (303) 786-9909 (Fax); www.itvis.com

Booth 406

ITT Visual Information Solutions presents ENVI, the premier software solution for reading, exploring, preparing, analyzing, and sharing information from remotely sensed imagery and data. Key features include automatic registration of multiple images, orthorectifying, anomaly detection, feature identification, image classification, and vegetation analysis. New products include the Feature Extraction module for extracting features from high-resolution pan and multispectral imagery, and the SARscape modules, which allow users to read, process, analyze, and output popular SAR data.

Kim Geomatics Corporation

Box 1125
Manotick, ONT, K4M 1A9 Canada
(613) 692-0185; (613) 692-6613 (Fax); www.kimgeomatics.com

Booth 411

Leica Geosystems

5051 Peachtree Corners Circle
Norcross, GA 30092 USA
(770) 776-3400; (770) 776-3500 (Fax); www.gi.leica-geosystems.com

Booth 501

Leica Geosystems Geospatial Imaging offers a range of workflow solutions for photogrammetry, mapping, remote sensing, catalog management and exploitation of geospatial imagery. Enterprise organizations use this imagery as the basis for generating information for both education and decision-making processes. Those who use Leica Geosystems products every day trust them for their precision, seamless integration, interoperability and superior customer support. Geospatial imaging solutions from Leica Geosystems - when it has to be right.

LizardTech

1008 Western Ave., Ste. 200
Seattle, WA 98104 USA
(206) 652-5211; (206) 652-0880 (Fax); www.lizardtech.com

Booth 508

Since 1992, LizardTech has delivered state-of-the-art technology for managing and distributing massive, high-resolution digital content. Government and non-government organizations have benefited from the company's software products and technologies. LizardTech pioneered MrSID® and sits on the Technical Committee of the Open Geospatial Consortium (OGC) for the purpose of extending the capabilities of JPEG 2000 to geospatial applications, driving cross-platform interoperability and rapid Internet distribution for geospatial imagery. LizardTech's geospatial line of products includes GeoExpress, Express Server and Spatial Express

Microsoft Corporation

1690 38th Street
Boulder, Colorado, 80301 USA
(303) 546-1300; (425) 936-7329 (Fax); www.microsoft.com/virtualearth

Booth 100

Microsoft is dedicated to helping organizations augment their business operations through innovations that enhance decision making and reduce response time. Its Virtual Earth mapping platform allows organizations to build business intelligence solutions to visualize their data, enhance decision making and reduce response time. The Virtual Earth program includes photogrammetric product offerings, most notably the former Vexcel UltraCam-X large format digital aerial camera, for aerial mapping customers and to enhance the Virtual Earth platform with best-of-breed imagery.

National Geospatial-Intelligence Agency (NGA)

12310 Sunrise Valley Drive
Reston, VA 22101 USA
(703) 755-5919; www.nga.mil

Booth 311

NGA is a major combat support agency of the Department of Defense and an integral member of the Intelligence Community. NGA provides timely, relevant, and accurate geospatial intelligence (a combination of imagery, imagery intelligence, and geospatial information) to the military warfighter and our nation's civilian senior policy and decision makers. NGA's geospatial intelligence provides the knowledge foundation our customers need for planning, decision, and action.

Natural Resources Canada

580 Booth Street -15th Floor
Ottawa, ONT K1A0E4 Canada
(613) 995-0947; www.nrcan.gc.ca

Booth 507

Natural Resources Canada/Geoconnections

580 Booth Street -15th Floor
Ottawa, ON K1A0E4 Canada
(613) 995-0947; www.nrcan.gc.ca

Booth 509

North West Geomatics/Valtus Imagery Services

5438 11 Street NE, Suite 212
Calgary AB, Canada T3E 7E9
(403) 295-0694 - (403) 295-2444 (Fax)
www.nwgeo.com and www.valtus.com

Booth 106

North West Geomatics and Valtus Imagery Services provide end-to-end solutions for the collection, processing, management and delivery of earth information in the form of aerial photography, satellite imagery, elevation information and related data. The companies have a 30 year track record of helping customers gain a better understanding of the geographies they serve. Our solutions are recognized for technological innovation, reliability and our steadfast commitment to delivering high quality imagery directly to the desktop.

Optech Incorporated

300 Interchange Way, Vaughan
ON, L4K 5Z8, Canada
(905) 660-0808; (905) 660-0829 (Fax); www.optech.ca

Booth 400

Optech is a world leader in advanced laser-based survey instruments. Optech products offer client-driven solutions in topographic mapping, hydrographic applications, laser imaging, space-based atmospheric monitors and landing/docking systems, and industrial rangefinders.

Overwatch Geospatial - VLS

1719 Dearborn Ave.
Missoula, MT 59801 USA
(406) 829-1384; (406) 829-3593 (fax)

Booth 310

PCI Geomatics

50 West Wilmot Street
Richmond Hill, ON L4B 1M5 Canada
(905) 764-0614; (905) 764-9604 (Fax); www.pcigeomatics.com

Booth 307

PCI Geomatics is a world-leading developer of geospatial software, specializing in remote sensing, digital photogrammetry, spatial analysis, cartographic production, and automated production systems. With our trusted Geomatica® brand, PCI Geomatics provides all the image-centric solutions necessary to meet the expectations of a large and expanding industry. For 25 years, PCI Geomatics and its reputation has grown as a result of innovative leadership, strong technology partnerships, active geomatics community involvement, and dedication to our customers.

EXHIBITOR DESCRIPTIONS

Photonics Spectra

2 South Street
Berkshire Common
Pittsfield, MA 01201 USA
(413) 499-0514; (413) 442-3180 (Fax); www.Photonics.com/spectra

Booth 109

Photonics Spectra is the leading photonics magazine serving industries that use photonic technology: lasers, imaging, fiber optics, optics, electro-optics, and photonic component manufacturing. It presents the latest news articles and in-depth reports on photonics technology. It is distributed free to those who use or apply photonics.

Professional Surveyor Magazine/GIS Monitor

Reed Business Geo, Inc.
100 Tuscanny Drive, Suite B-1
Frederick, MD 21702-5958 USA
(301) 682-6101; (301) 682-6105 (Fax); www.profsurv.com

Booth 109

Professional Surveyor Magazine, is the premier U.S. resource for surveying, mapping, engineering, GPS, and GIS professionals. Monthly features include technology, hands-on solutions, business management, project stories and more. Reed Business Geo, Inc. also publishes *GIS Monitor*, a popular weekly online newsletter that provides coverage and analysis of the GIS industry. RBI-Geo (Netherlands) publishes *GIM* and *Hydro* as well as other trade journals. Both companies are part of Reed Elsevier.

Riegl USA, Inc.

7035 Grand National Drive, Suite 100
Orlando, FL 32819 USA
(407) 248-9927; www.rieglusa.com

Booth 309

Riegl is the global leader in the innovation of LiDAR technology for airborne survey. Its scanners provide high accuracy and efficient scanning with Sensor Integration. Portable and rugged, Riegl scanners are unrivaled in reliability under demanding environmental conditions. During the last decade Riegl's research and development as well as dedication to the industry have revolutionized corridor and wide-area mapping of terrain and vegetation with a unique feature: digitization of echo waveform of each measurement with the new Riegl LMS-S560 Airborne Laser Scanning System.

Terrapoint Canada, Inc.

1 Antares Drive
Ottawa, ON K2E 8C4 Canada
(613) 820-4545; (613) 820-9772 (Fax); www.terrapoint.com

Booth 209

The American Surveyor

905 W. 7th St., #331
Frederick, MD 21701 USA
(301) 620-0784; (301) 695-1538 (Fax); www.theamericansurveyor.com

Booth 109

The American Surveyor is the **only** national magazine for land surveyors that is owned and operated by a licensed surveyor. Editor Marc Cheves leads a stellar team of nationally recognized industry professionals who share valuable expertise and insight on business, technology, GPS, real property case law, current legislation, controversial issues, education, product reviews, fascinating history, and much more.

TopoSys Topographische

Systemdaten GmbH
0049 7351/47402-0; 0049 7351/47402-31 (Fax); www.toposys.com

Booth 308

TopoSys GmbH was founded in 1996. Through our dual role as an established sensor operator within Europe and Lidar system manufacturers, TopoSys enjoys a unique position. Our customers and partners tremendously benefit from the access to this unique know-how from our sensor operation to map production and consulting services in customer-specific applications. Since 2007, TopoSys North America Inc., located in Denver Colorado, serves as a sales and support center with knowledgeable staff for our Lidar systems in North America.

U.S. Geological Survey Land Remote Sensing Program

517 National Center
Reston, VA 20192 USA
(703) 648-4567; (703) 648-5939 (Fax); <http://remotesensing.usgs.gov>

Booth 101

The mission of USGS Land Remote Sensing Program is to be the Nation's primary source of remotely sensed land data and applications, and to lead in defining the future of land remote sensing. Program objectives are to: (1) acquire remotely sensed datasets and define and develop future satellite missions; (2) ensure preservation of and access to remotely sensed land data; and (3) expand the understanding and applications of remote sensing.

Western Air Maps, Inc.

9401 Reeds Road
Overland Park, KS 66207 USA
(800) 643-5177; (913) 652-9933 (Fax); www.westernair.com

Booth 104

Successful geospatial projects depend on timely and accurate geospatial information. Western Air Maps, Inc. was founded on a principle of providing our clients with quality imagery and mapping solutions. In every geospatial project, we blend traditional mapmaking and surveying skills with the latest technological solutions. Our dedication to quality is demonstrated by consistent repeat business and referral. WAM provides professional services in primary data acquisition, GPS surveying, GIS, LiDAR processing, data extraction, and much more.

FREQUENTLY ASKED QUESTIONS

How do I get help in an Emergency?

Contact an ASPRS staff person or pick up any hotel house phone and ask for Security. Give all details of the emergency including the location.

Where is the CRSS/ASPRS Conference Registration Desk?

The ASPRS Conference Registration Desk is located on Level Four of the Westin Ottawa Hotel.

What are the Conference Registration Desk Hours?

Sunday, Oct. 28	4:00 pm to 7:00 pm
Monday, Oct. 29	6:30 am to 5:00 pm
Tuesday, Oct. 30	6:30 am to 5:45 pm
Wednesday, Oct. 31	6:30 am to 5:00 pm
Thursday, Nov. 1	7:30 am to 11:30 am

Note: Once the Conference Registration Desk is closed for the day, materials will not be available until the following morning.

What are the Exhibit Hall Hours?

Tuesday, Oct. 30	1:00 pm to 7:00 pm
Wednesday, Oct. 31	9:30 am to 5:00 pm
Thursday, Nov. 1	9:30 am to 11:30 am

Are Workshops included with the registration fees?

No. Workshops require individual registration and a separate fee in addition to the general conference registration fees. Availability is based on space. We do not reserve spaces without full payment in advance and there is no waiting list. Workshop registrations must be postmarked by September 28, 2007. ASPRS reserves the right to cancel any workshop if the minimum number of registrations is not received by September 28, 2007. On-site registration will be available for confirmed workshops with available space.

Is the Great Lakes Regional Data Exchange included in the conference registration?

No. A separate fee is being charged for this event. Please see page 4 of this program for complete details.

What should presenters do after they register?

ALL PRESENTERS MUST CHECK-IN IN THE PRESENTERS' ROOM (New Brunswick Room – 4th Fl.) - AS SOON AS THEY ARRIVE AT THE CONFERENCE. A Master Program will be posted. Please put your initials and cell phone number or hotel room number beside your name on this Master Program. This will be our way of knowing that you have arrived and that we don't have a no-show situation.

Do presenters bring their own laptops?

Yes, ASPRS does not provide laptops or desktop computers, laser pointers or flip charts for speakers. However, projectors and screens will be provided in all meeting rooms.

Do Presenters have a Preparation Room?

Yes, the New Brunswick Room, 4th floor, has been reserved for you. The room will be available on a first come basis from 8 am to 5 pm Tuesday October 30 and Wednesday, October 31 and 8:00 am to 11:30 am, Thursday, November 1 for rehearsal only. This room will be equipped with an LCD projector and screen. All presenters must bring their own laptops for all presentations.. We encourage all presenters to review their materials prior to their presentation.

Do Moderators need to check-in?

Yes, after you pick up your registration materials, go to the Presenters Preparation Room (New Brunswick Room, 4th floor). A Master Program will be posted. Please put your initials and cell phone number or hotel room number beside your name on this Master Program. We are asking the presenters to do the same thing. This will be our way of knowing that moderators and presenters have arrived and that we don't have a no-show situation.

Prior to your session, check back in the Presenters Preparation Room to confirm that all of your presenters have arrived at the conference (by checking on the Master Program).

Is there an ASPRS/CRSS staff office in the hotel?

Yes, the CRSS/ASPRS staff office is located in the Prince Edward Island Room on the Fourth Floor of the Westin Hotel.

Where should Student Assistants report?

All Student Assistants should check in with the Coordinator in the CRSS/ASPRS Staff Office (Prince Edward Island Room on the Fourth Floor of the Westin Hotel) at least 15 minutes before their scheduled start time.

Will there be a Press Room?

Yes, a room will be provided for use by members of the press who have registered for the conference. All attendees are encouraged to place applicable press releases in this room for distribution to the press. Please check with the Conference Registration Desk for the location.

Why do I need a badge?

You paid your registration fee and your badge is proof of it. For entrance to the keynote, general and technical sessions, and Exhibit Hall, you need to wear your name badge.

What if I forget or lose my badge?

A charge of \$5 will be made for replacement of lost badges.

Why do I need tickets for certain events?

Your tickets are proof of payment for certain events and must be presented at the collection point. Lost tickets will not be replaced.

How can I visit the Exhibit Hall if I am not registered for the conference?

Daily Exhibit Hall badges may be purchased at the ASPRS/CRSS Registration Desk in The Westin Ottawa Hotel. Everyone entering the Exhibit Hall must have a name badge, including children over 12 years of age. Children under 12 years of age are not permitted in the Exhibit Hall at any time due to insurance and safety regulations.

Will it be possible to post resumes and job openings?

Yes, posting boards are provided in the Exhibit Hall for all resumes and job openings. Please bring multiple copies of all postings to allow interested parties to take one and check the board frequently for new materials.

How do I contact other Conference attendees?

A message board is located in the Conference Registration Area – 4th floor.

How can someone from outside the hotel contact me?

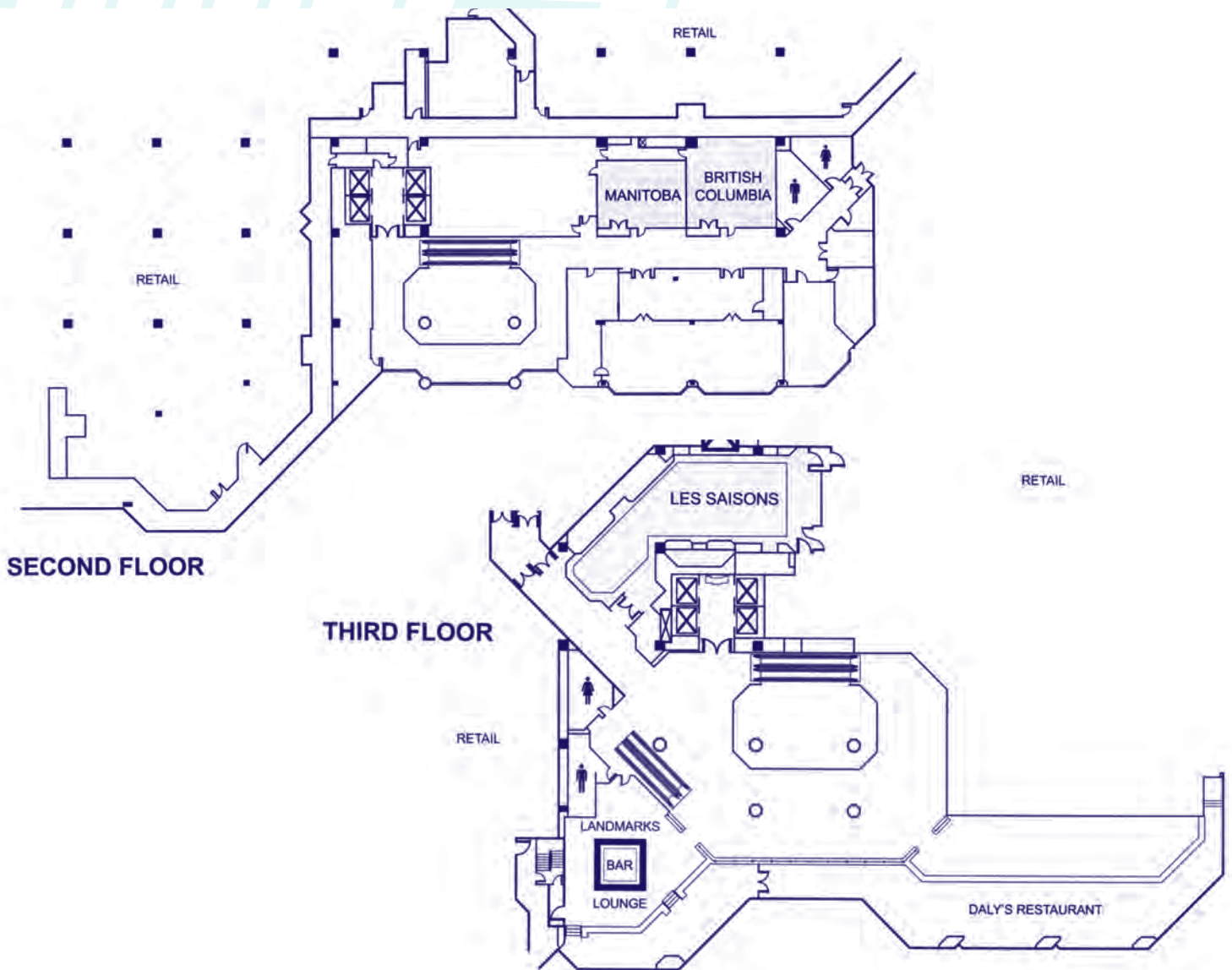
Messages cannot be personally delivered to Conference attendees due to the varied schedules of everyone in attendance. Messages can be left in the rooms of those staying at The Westin Hotel through the hotel telephone operator. Packages and fax messages can be sent to individuals staying at the hotel. (Please remember that all parcels coming from outside Canada must clear Canadian Customs before they can be delivered.) They should be addressed to the individual at the following address:

The Westin Ottawa
11 Colonel By Drive
Ottawa, Ontario K1N9H4
CANADA
(613) 560-7000; (613) 560-7359 (Fax)

Is there a Lost and Found?

Please contact Hotel Security through the hotel house phones for all lost and found items.

HOTEL FLOOR PLANS



FOURTH FLOOR

