## ASPRS 2013 Resource Directory



This Directory provides our membership, and the broader professional community, with a useful resource and an informative view of the leading companies and organizations in the remote sensing and mapping sciences. The Corporate Descriptions generally present an overview of the organization plus contact information.

Note that all of the material included in this Directory, along with real-time search capability for locating sustaining members by geographic area, product and/or service is also available online at http://www.asprs.org/sustaining\_mem\_search/

Corporate descriptions featured in the 2013 Resource Directory are provided by ASPRS Sustaining Members. We make every attempt to obtain updated information from our Sustaining Members. If you discover incorrect information anywhere in the 2012 Resource Directory, please let us know and we will correct it on the ASPRS web site.

If your organization would like to enjoy the benefits of being an ASPRS Sustaining Member, please go to http://www.asprs.org/membership/sustaining.html or contact our Membership Department for more information: 5410 Grosvenor Lane, Suite 210, Bethesda, Maryland 20814; 301-493-0290, ext. 104/109; fax 301-493-0208; sokhanh@asprs.org or members@asprs.org; www.asprs.org.

James Plasker

**Executive Director** 



3D Laser Mapping LTD

Bingham, Nottingham, UK www.3dlasermapping.com *Member Since: 2/2010* 

Aechelon Technology Inc.

San Francisco California www.aechelon.com *Member Since: 3/2012* 

Aerial Cartographics of America, Inc. (ACA)

Orland, Florida www.aca-net.com *Member Since: 10/1994* 

**Aerial Services, Inc.** Cedar Falls, Iowa

www.AerialServicesInc.com
Member Since: 5/2001

**Aero-Graphics, Inc.**Salt Lake City, Utah
www.aero-graphics.com

Member Since: 4/2009

**AeroMetric, Inc.** Sheboygan, Wisconsin www.aerometric.com *Member Since: 1/1974* 

AeroTech Mapping Inc.

Las Vegas, Nevada www.atmlv.com *Member Since: 8/2004* 

The Airborne Sensing Corporation

Toronto, Ontario, CANADA www.airsensing.com *Member Since: 1/2013* 

**AGFA Materials Corporation** 

Goose Creek, South Carolina

www.agfa.com

Member Since: 1/19

Member Since: 1/1990

Air Photographics, Inc. Martinsburg, West Virginia www.airphotographics.com Member Since: 1/1973

American Surveyor Magazine

Frederick, Maryland www.TheAmericanSurveyor.com *Member Since: 12/2004* 

**Applanix** 

A Trimble Company Ontario, Canada www.applanix.com Member Since: 7/1997

ASD Inc.

(formerly Analytical Spectral Devices)

Boulder, Colorado www.asdi.com *Member Since: 1/1998*  Axis GeoSpatial, LLC

Easton, Maryland www.axisgeospatial.com *Member Since: 1/2005* 

Ayres Associates, Inc.

Madison, Wisconsin www.AyresAssociates.com *Member Since: 1/1953* 

**BAE Systems** 

San Diego, California www.baesystems.com/gxp *Member Since: 7/1995* 

**BNP Media, Point of Beginning** 

Magazine

(formally POB Magazine)

Troy, Michigan www.bnpmedia.com Member Since: 7/2006

Bohannan Huston, Inc.

Albuquerque, New Mexico

www.bhinc.com

Member Since: 11/1992

**Booz Allen Hamilton** 

Mc Lean, Virginia www.boozallen.com *Member Since: 10/2004* 

Cardinal Systems, LLC

Flagler Beach, Florida www.cardinalsystems.net *Member Since: 1/2001* 

**Certainty 3D LLC** 

Orlando, Florida www.certainty3d.com *Member Since: 11/2012* 

COL-EAST, Inc.

North Adams, Massachusetts www.coleast.com *Member Since: 1/1976* 

**CRC Press - Taylor & Francis Group** 

Boca Raton, Florida www.crcpress.com *Member Since: 9/2006* 

**CRITIGEN** 

(formerly CH2M HILL) Redding, California www.critigen.com *Member Since: 1/1974* 

**DAT/EM Systems International** 

Anchorage, Alaska www.datem.com *Member Since: 1/1974* 

**Dewberry** Fairfax, Virginia

www.dewberry.com

Member Since: 1/1985

**DigitalGlobe** 

Longmont, Colorado www.digitalglobe.com *Member Since: 7/1996* 

**DMC** International Imaging Ltd.

Guildford, Great Britain www.dmcii.com *Member Since: 3/2008* 

**Dynamic Aviation Group, Inc.** 

Bridgewater, Virginia www.dynamicaviation.com Member Since: 4/2003

Eagle Mapping, Ltd

British Columbia, Canada www.eaglemapping.com *Member Since: 1/1999* 

Earth Eye, LLC

Orlando, Florida www.eartheye.com *Member Since: 7/2009* 

**Eastern Topographics** 

Wolfeboro, New Hampshire

www.e-topo.com Member Since: 8/1978

e-GEOS

Rome, Italy www.e-geos.it Member Since: 1/2013

**Environmental Research Incorporated** 

Linden, Virginia www.eri.us.com *Member Since: 8/2008* 

Esri

Research Institute, Inc.

Redlands, California www.esri.com *Member Since: 1/1987* 

**EXELIS** 

**Visual Information Solutions** 

Boulder, Colorado www.exelisvis.com *Member Since: 1/1997* 

Federal Geographic Data Committee

Reston, Virginia www.fgdc.gov

Member Since: 1/1998

Flatdog Media, Inc./Professional

Surveyor Magazine

(formally Reed Business-Geo) Frederick, Maryland

www.profsurv.com

Member Since: 1/1998



Fugro EarthData, Inc.

(formally EarthData, Inc.) Frederick, Maryland www.earthdata.com Member Since: 1/1994

Fugro Horizons, Inc.

(formally Horizons, Inc.) Rapid City, South Dakota www.fugrohorizons.com Member Since: 1/1974

GeoBC

Victoria, Bristish www.geobc.gov.bc.ca *Member Since: 12/2008* 

**GeoCue Corporation** 

(formerly NIIRS10, Inc.) Madison, Alabama info@geocue.com Member Since: 10/2003

**Geographic Resource Solutions** 

Arcata, California www.grsgis.com *Member Since:12/2006* 

**Geolas Consulting** 

Poing, Germany www.geolas.com *Member Since: 1/2002* 

Global Science & Technology, Inc.

Greenbelt, Maryland www.gst.com *Member Since: 10/2010* 

GRW Aerial Surveys, Inc.

Lexington, Kentucky www.grwinc.com Member Since: 1/1985

**Harris Corporation** 

Melbourne, Florida www.harris.com Member Since: 6/2008

HAS Images, Inc.

Dayton, Ohio www.hasimages.com *Member Since: 2/1998* 

**HyVista Corporation** 

Castle Hill, Australia www.hyvista.com *Member Since: 3/2010* 

ICAROS, Inc.

Rockville, Maryland www.lcaros.us Member Since: 2/2013

Innovative Technical Solutions, Inc. DBA NovaSol

Honolulu, Hawaii www.nova-sol.com *Member Since: 2/2013*  Intergraph (ERDAS Inc.)

Norcross, Georgia www.intergraph.com/geospatial

Member Since: 1/1985

Keystone Aerial Surveys, Inc.

Philadelphia, Pennsylvania www.keystoneaerialsurveys.com *Member Since: 1/1985* 

KLT Associates, Inc.

Peabody, Massachusetts www.kltassoc.com *Member Since: 11/1993* 

**Kucera International** 

Willoughby, Ohio www.kucerainternational.com *Member Since: 1/1992* 

Lead'Air, Inc.

(formerly Track'air BV) Kissimmee, Florida www.trackair.com *Member Since: 6/2001* 

LizardTech

Seattle, Washington www.lizardtech.com *Member Since: 10/1997* 

Magnolia River Geospatial

(formerly Aeroquest Optimal, Inc./

Optimal Geomatics) Huntsville, Alabama www.magnolia-river.com *Member since: 2/2006* 

Martinez Geospatial, Inc. (MTZ)

Eagan, Minnesota www.mtzgeo.com *Member Since: 1/1979* 

**MDA Information Systems LLC** 

(formerly MDA Federal Inc.)
Gaithersburg, Maryland
www.mdaus.com

Member Since: 1/1993 (rejoined in 2011)

Merrick & Company

Greenwood Village, Colorado www.merrick.com/gis Member Since: 4/1995

Michael Baker Jr., Inc.

Beaver, Pennsylvania www.mbakercorp.com *Member Since: 1/1950* 

Microsoft UltraCam Team (Vexcel Imaging, GmbH)

Graz. Austria

www.microsoft.com/ultracam *Member Since: 6/2001* 

**NASA Earth Science Division** 

Washington, DC

www.appliedsciences.nasa.gov Member Since: 1/2001

NewTech Services, Inc.

Sugar Land, Taxas www.nts-info.com *Member Since: 3/2006* 

**NGA-National Geospatial-Intelligence** 

**Agency-Bethesda**Bethesda Maryland

Bethesda, Maryland www.nga.mil

Member Since: 11/2008

**NOAA National Geodetc Survey** 

Silver Spring, Maryland www.ngs.noaa.gov *Member Since: 7/2009* 

**North West Group** 

Calgary, Canada www.nwgeo.com *Member Since: 1/1998* 

Northrop Grumman

Chantilly, Virginia www.northropgrumman.com

Member Since: 1/1989

**NSTec, Remote Sensing Laboratory** Las Vegas, Nevada

www.nstec.com

Member Since: 7/2005

Observera, Inc.

Chantilly, Virginia www.observera.com *Member Since: 7/1995* 

**Optech Incorporated** 

Toronto, Canada www.optech.ca Member Since: 1/1999

Panvion Technology Corp.

Edmonton, Alberta, Canada www.panvion.com

Member Since 12/2012

**PCI Geomatics**Ontario, Canda

www.pcigeomatics.com Member Since: 1/1989

Peregrine Aerial Surveys Inc.

Abbotsford, BC, CANADA

www.pasi.ca

Member Since: 4/2012

Photo Science, Inc.

Lexington, Kentucky www.photoscience.com *Member Since: 7/1997* 



Pickett & Associates, Inc.

Bartow, Florida www.pickett-inc.com *Member Since: 4/2007* 

Pictometry International Corp.

Rochester, New York www.pictometry.com *Member Since: 5/2003* 

Pinnacle Mapping Technologies, Inc.

Indianapolis, Indiana www.pinnaclemapping.com *Member Since: 7/2002* 

Premier Geospatial, Inc.,

**An IHS Company** Arvada, Colorado

www.premiergeospatial.com

Member Since 8/2006

**QCoherent Software LLC** 

Colorado Springs, Colorado www.qcoherent.com *Member Since: 9/2006* 

Radman Aerial Surveys

Sacramento, California www.radaerial.com *Member Since: 1/1971* 

Riegl USA, Inc.

Orlando, Florida www.rieglusa.com *Member Since: 11/2004* 

Robinson Aerial Survey, Inc. (RAS)

Hackettstown, New Jersey www.robinsonaerial.com *Member Since: 1/1954* 

Sanborn

Colorado Springs, Colorado www.sanborn.com *Member Since: 9/1984* 

Science Applications International

**Corporation**Mc Lean, Virginia www.saic.com

Member Since: 1/1987

The Sidwell Company

St. Charles, Illinois www.sidwellco.com *Member Since: 1/1973* 

**Spatial Information Solutions** 

Starkville, Mississippi www.spatialis.com *Member Since: 3/2010* 

**Spectral Evolution** 

North Andover, Massachusetts www.spectralevolution.com *Member Since: 10/2010* 

**Surdex Corporation** 

Chesterfield, Missouri www.surdex.com *Member Since: 1/1979* 

Surveying and Mapping (SAM), Inc.

Austin, Texas www.saminc.biz *Member Since: 12/2005* 

TerraSim, Inc.

Pittsburgh, Pennsylvania www.terrasim.com *Member Since: 9/2003* 

**Topcon Positioning Systems** 

Livermore, California www.topconpositioning.com *Member Since: 3/2010* 

Towill, Inc.

San Francisco, California www.towill.com *Member Since: 1/1952* 

**U.S. Geological Survey** 

Reston, Virginia www.usgs.gov *Member Since: 4/2002* 

University of Twente/Faculty ITC

[formerly International Institute for Geo-Information Science and Earth

Observation (ITC)] Enschede, Netherlands

www.itc.nl

Member Since: 1/1992

Urban Robotics, Inc.

Portland, Oregon www.urbanrobotics.net *Member Since: 3/2008* 

**USDA/National Agricultural Statistics** 

Service

Fairfax, Virginia www.nass.usda.gov *Member Since: 6/2004* 

VisionMap LTD

Tel Aviv, Israel www.visionmap.com *Member Since: 1/2010* 

Watershed Sciences, Inc.

Corvallis, Oregon

www.watershedsciences.com *Member Since: 7/2011* 

Wilson & Company, Inc., Engineers &

**Architects** 

Albuquerque, New Mexico www.wilsonco.com *Member Since: 3/2007* **Wiser Company, LLC** 

Murfreesboro, Tennessee

www.wiserco.com Member Since: 7/1997

Woolpert LLP

Dayton, Ohio www.woolpert.com *Member Since: 1/1985* 

**XEOS** Imaging Inc.

Quebec, Canada www.xeosimaging.com *Member Since: 11/2003* 



#### 3D Laser Mapping LTD

1A, Church Street Bingham, Nottingham, NF13 8AL **United Kingdom** +44-0-1949-838004; +44-0-870-121-4605 (fax) graham.hunter@3Dlasermapping.com www.3dlasermapping.com



3D Laser Mapping Ltd. specialises in creating systems for capturing, analysing and distributing geospatial business intelligence. In addition to our ground-breaking products StreetMapper and SiteMonitor, we develop bespoke solutions that enable our customers to operate efficiently in a rapidly growing geospatial marketplace.

Established in 1999, our technology draws on years of experience integrating laser scanners in innovative ways. Achieving unique solutions for the mining, mapping and modelling industries and through long-standing partnerships with leading suppliers at the forefront of their technology areas, we are able to deliver high value and dependable information to our customers.

Operating globally through offices in the UK, South Africa and Australia, we are able to provide front-line support to a prestigious list of clients and a network of distributors.

#### South African Office details:

3D Laser Mapping International Ltd (Inc in UK) 44 Hiddingh Road Bergyliet Cape Town 7945 South Africa +27 (0) 83 227-1823; +27 (0) 86 684-3758 (fax) Email: capetown@3dlasermapping.com

#### Australian Office details:

3D Laser Mapping International Pty Ltd 267 St. Georges Terrace Perth, WA 6000 Australia

Tel: +61 (0) 8 9261 7703

Email: perth@3dlasermapping.com

#### **American Office details:**

3D Laser Mapping International 4600 South Syracuse

9th Floor

Denver, Colorado 80237-2719

Tel: +1 720 214 3554

Email: denver@3dlasermapping.com

#### **Aechelon Technology Inc**

600 Townsend St, Ste 125W San Francisco CA 94103 (415) 255-0120; (415) 255-0129 (fax) http://www.aechelon.com



Aechelon Technology, Inc. is a leading provider of visual simulation image generators, associated geospecific visual and sensor databases, realistic 3D models and integration services for the US Government and Government Prime Contractors.

Throughout its thirteen year history, Aechelon Technology has maintained an unparalleled track record in program deliveries for the US Marine Corp, US Navy, US Air Force, US Army, Special Operations Command, US State Department Foreign Military Sales program and US Coast Guard, with all excellent Past Performance Evaluations.

Aechelon Technology's flagship products pC-NOVA™ established a new standard for realistic image generation and sensor simulation using large scale multi-spectral database processing and Aechelon Nexus™ centralized storage in tactical training, foreign-area familiarization, and mission rehearsal applications. Aechelon Technology products use only enterprise-quality commodity PC components, yet achieve performance far greater than custom, purpose-built systems.

#### Aerial Cartographics of America, Inc (ACA)

1722 West Oak Ridge Road Orlando, FL 32809-3910 (407) 851-7880; (407) 855-8250 (fax) info@aca-net.com www.aca-net.com



Aerial Cartographics of America, Inc. (ACA) is a full service professional aerial mapping firm that services the Southeast United States. Established in 1973, ACA's main mapping production facility is in Orlando, Florida with satellite production offices in Miami, Georgia, Kentucky and Maryland. ACA has built a reputation as one to the premier mapping firms excelling at precision mapping products. With a large staff of professionally licensed surveying and mapping associates, ACA has the extensive experience and knowledge to provide a full range of high quality products and services.

ACA's high profile projects include the I-4 corridor, I-95, I-75, I-275, I-595, I-10, Florida Turnpike, the Suncoast Expressway, the Sawgrass Expressway, and many Expressway Authorities throughout the state. For rail corridors they include Florida's High Speed Rail, Tri-Rail, Sun-



Rail and other commercial rail lines. For international airports the mapping & GIS projects include Miami-Dade, Ft Lauderdale, Orlando, Tampa, and Jacksonville as well as regional airports.

In addition to the precision mapping services for transportation, ACA is well known for its watershed mapping achievements for Districts like SFWMD, SWFWMD, & SJRWMD.

The list continues with notable mapping & GIS achievements for Department of Environmental Protection, Beaches & Shores, Seagrass & Vegetation Mapping, Forestry, Fish & Wildlife, Powerline Transmission, and Mines & Landfills

Our mission statement, "Going Beyond All Maps and Boundaries" describes how we strive for new ways to serve our customers with the most precise mapping products that meet their needs and exceed their expectations. ACA is totally committed to the future of aerial mapping and advancing solutions with the latest technologies

#### Aerial Services, Inc.

P.O. Box 336 Cedar Falls, IA 50613-1366 (319) 277-0436; (866) 800-4799 (fax) info@AerialServicesInc.com www.AerialServicesInc.com



Aerial Services, Inc. (ASI) is an integrated team of professionals providing premier services and products to government, utilities, engineers, and other geospatial customers. Based in the Iowa heartland for over 40 years, Aerial Services' Midwestern work ethic, cutting-edge technology, and experienced staff combine to harness the power of geographic information and provide solutions you need.

#### **Established Provider That Delivers**

Aerial Services, Inc. is an established provider of customized geospatial solutions. With an integrated team of professional technicians, Aerial Services will exceed your expectations while delivering on promises. Their experience with and mastery of emerging technology ensures your mapping project is accurate, on-time, and within budget.

#### Start To Finish They Make Your Life Easier

Aerial Services takes your mapping project from initial concept to final application. They'll start by working with you to determine your specific needs. Then, depending on your requirements, they'll deploy flight crews to acquire aerial photography, execute post-process of imagery, develop scale maps, output data for you and your colleagues to access, or create unique software to solve a problem. No matter what your project requires they will make it a success from start to finish or with any component in between.

#### Help You Need - When You Need It

Aerial Services works with you to ensure your mapping objectives are achieved. They'll ask the right questions to develop a plan of action that meets your needs. Then they will deliver on those promises. They know you'll have questions, so they are always accessible to answer

all of your inquiries. If changes in plans arise, they'll make it right by working with you to create an acceptable solution.

#### **Current Technology Solving Your Problems**

Technology is always evolving in the geospatial industry and so is Aerial Services. They embrace useful technology to increase the efficiency of your project. Plus, it allows them to provide value added options and develop custom software suites derived from technological advances. This foresight into what is next makes your investment more useful and ensures your organization is prepared for the future.

#### **Midwestern Mentality Means Success**

Located in the charming Midwestern town of Cedar Falls, Iowa, Aerial Services has become the largest small firm of their kind. This allows them to provide all of the services of the large geospatial providers with the attention to detail and personal service of smaller operations. Their four decades of experience backs up this claim with repeat customers from utility giants, engineer firms, all levels of government, and many other sectors.

#### Allow Aerial Services To Serve You

With a full line of quality geospatial products and services, an experienced crew of talented team members ready to serve you, and insight on tomorrow's technology today, Aerial Services stands out among the rest. Call Aerial Services to inquire about your custom geospatial solution. Allow Aerial Services to serve you and deliver the solution you need. Visit www.AerialServicesInc.com or call 319-277-0436 today.

#### Aero-Graphics, Inc.

40 West Oakland Avenue Salt Lake City, UT 84115 (801) 487-3273; (801) 487-3313 (fax) Kfrancis@aero-graphics.com www.aero-graphics.com



"Aero-Graphics provides comprehensive geospatial mapping services to clients across the United States. We were the first company in the Intermountain West to implement a fully digital mapping environment, and we have enhanced this capability through the acquisition of a large-format digital camera, a state-of-the-art LiDAR sensor, and helicopter platform for low altitude, high point density project requirements. Aero-Graphics owns and operates a full-time aerial acquisition service with multiple aircraft, allowing for complete control of its flight schedule. With professional land surveyors and certified photogrammetrists on staff, we ensure the highest quality mapping standards are adhered to. The latest LiDAR processing and softcopy systems are utilized to produce digital topographic mapping, bareearth and custom-classified point data sets, and orthorectified imagery for clients in government, civil engineering, mining, and utility sectors. As an industry leader, Aero-Graphics specializes in high-quality digital mapping delivered on schedule at competitive prices. We continue to strive to remain at the forefront of mapping technology, and thus provide clients with the best possible results.'



#### AeroMetric, Inc.

4020 Technology Parkway Sheboygan, WI 53082 (920) 457-3631; (920) 457-0410 (fax) asprs.ld@aerometric.com www.aerometric.com



AeroMetric is a full-service geospatial solutions company built on over eight decades of consistent, quality service and enduring client relationships. The firm offers a comprehensive range of mapping and GIS services including the latest in mobile, photogrammetric, lidar, satellite and airborne imaging technology and has earned a reputation for technical excellence, superior service and on-time delivery. More information about AeroMetric can be found at www. aerometric.com.

#### AeroTech Mapping Inc.

2580 Montessouri Street, #104 Las Vegas, NV 89117 (702) 228-6277; (702) 228-6753 (fax) 1eotorrest@atmlv.com www.atmlv.com



AeroTech Mapping (ATM) has demonstrated photogrammetric expertise and capabilities on over 5,800 successful imaging and mapping projects throughout the greater Southwest, since 2002. Our dedication to client service coupled with our commitment to providing highly accurate and aesthetically pleasing products has allowed us to greatly expand our client base throughout the region. Time after time, ATM has proven to be an aerial mapping firm which is equipped with all the necessary tools and personnel to produce the highest quality aerial mapping products. At all times, we strive to exceed expectations in all areas, including communications throughout the life cycle of a project as well as scheduled deliveries of final products.

ATM is a company with innovative ideas created and staffed by personnel with many years of experience in the photogrammetric business. Our objectives are to provide sound, affordable solutions to our clients' photogrammetric needs. Our philosophy is to provide quality photogrammetric services and manage those activities with a senior level management team. This management team is comprised of a good mix of talented, aggressive, and proven aerial mapping professionals. Our staff has a diversified background that has established an outstanding reputation for providing quality products and services. ATM possesses the capabilities and technical knowledge

to provide quality services on all photogrammetric projects. It is our goal to assist and offer suggestions on our clients' needs and potential problems.

#### **AGFA Materials Corporation**

100 Challenger Road Ridgefield Park, NJ 07660-2105 (201) 373-4686; (201) 440-6794 (fax) richard.breitlow@agfa.com www.agfa.com



Agfa Materials Corporation provides a complete selection of aerial film products including color and black and white data capture films, copy films and papers, along with color and black and white processing chemistry. Agfa Materials offers: Apertune Image Enhancement software, enabling total image control and enhancement after scanning to improve your digital work flow. Agfa Materials provides consluting and technical support through our experienced North American aerial sales team.

#### The Airborne Sensing Corporation

555 Richmond Street West, Suite 912 Box 1008 Toronto, Ontario M5V 3B1 CANADA (416) 203-9858; (416) 203-9843 (fax) aschq@airsensing.com www.airsensing.com



The Airborne Sensing Corporation, operating since 1981, has been involved in a variety of aerial photographic survey and photo finishing projects. Over the past 30 years+ Airborne Sensing has developed from a one person sole proprietorship to a team of 10 permanent staff which includes aircrew, and survey specialists. Since our inception, we have conducted countless national and international aerial surveys for cadastral, coastal, corridor, resource, rural, urban, wildlife and utility purposes. Our work has taken us offshore, as well as over deserts, jungles and mountains.

Over the years Airborne Sensing has invested considerable sums in applied research resulting in being an earlier adopter of KGPS technology, KGPS/IMU direct geo-referencing, image scanning and large format digital frame camera technology. We also developed Canada's first Helicopter based Very Large Scale Photogrammetry capability, Recently we have tested simultaneous LIDAR/VEXCEL acquisition. Our services and products have consistently met and exceeded Municipal, Provincial & Federal Government standards for accuracy, quality and timeliness. Our outputs enable our clients to directly start compilation without them having to execute ground control or aerial triangulation. When called upon we can produce full orthos.

Our theatre of operations stretches from the Pacific, to the Arctic,



the Atlantic and south of the Equator. Our staff is capable of speaking reading and writing in 3 languages and we have experience in fly over 12 countries. Current aircraft include 2 Piper Aztecs, 1 Piper Navajo and 1 Gulfstream Commander 840. All aircraft are capable of flying over 25,000' ASL and one has a dual hatch for simultaneous LIDAR/PHOTOGRAMMETRY. The survey and sensing gear currently owned and operated by us includes VEXCEL ULTRACAM, APPLANIX POSAV, SOMAG GSM and NOVATEL GPS. Software includes ULTRAMAP, GRAFNAV/GRAFNET, POSPAC MMS/INPHO MATCH-AT and ORTHOVISTA, BINGO, GLOBAL MAPPER.

#### Air Photographics, Inc.

2115 Kelly Island Road Martinsburg, WV 25401-9472 (800) 624-8993; (304) 263-4583 (fax) info@airphotographics.com www.airphotographics.com



Air Photographics, Inc. (API), founded in August 1960, is a service-oriented aerial photography firm that specializes in precision aerial photography used for mapping purposes.

#### **Equipment & Services**

- · Four Twin-Engine GPS-Equipped Aircraft
- · Airborne GPS
- · Airborne IMU Data Collection & Processing Services
- · Leica RC-20 & RC-30 Cameras with FMC
- · Stabilized Camera Mounts
- Focal Lengths 3.5", 6", 12"
- · Leica/Helava DSW700 Photogrammetric Scanner
- · Full Service Custom Photo Lab

Air Photographics, Inc. (API) range of operations is primarily in the states east of the Mississippi River. We welcome the opportunity to fly photo missions throughout the continental United States.

API customers are predominantly mapping firms that use our services rather than maintain their own costly flight department, or call on us to supplement their own aerial photo capability.

Our aircraft are hangared at the Eastern West Virginia Regional Airport, an all-weather Air National Guard facility. Our 11,000 square foot flight office and photo lab are situated adjacent to the hangars, assuring fast turn-around for film processing and editing after completion of photo missions.

Leica, Inc. is our principal source for aerial cameras. We have 4 aerial mapping cameras, Two RC-30's and two RC-20 drives equipped with new 6" 'S' series lenses. We have one 12" lens and one 3.5" lens.

Flight line navigation and photo centering is achieved using a GPS flight management system.

We provide Airborne GPS data collection and post processing services. Our GPS receivers are Novatel dual frequency.

We also offer airborne IMU (Inertial Measurement Unit) data collection and processing services, using the Applanix POS/DG and POS/AV systems. Use of this service reduces the number of required ground control points, as well as aerial triangulation time, by providing omega, phi & kappa in the post-processed file.

Air Photographics, Inc. obtains imagery in a variety of media. Film types include black & white, color negative, color positive, false color

infrared, and black & white infrared. We also provide hand-held 12.8 mega pixel digital aerial photography.

The API aerial photo library is both current and historical, with some coverage dating back to 1948. Our custom photo lab produces Contact Prints and Film Diapositives. We offer precision photogrammetric scanning for softcopy and digital orthophoto applications.

Custom digital prints, available in color or black and white, are available up to  $44^{\circ} \times 80^{\circ}$ . We use archival inks on premium archival acid-free photo paper. Prints can be cropped to your specifications, color balanced, and retouched/restored.

Our success is attributed to our commitment to maintaining the highest standards of quality and service, using the best equipment available and a staff of experienced and dedicated employees.

#### The American Surveyor Magazine

905 West Seventh Street, #331 Frederick, MD 21701 (301) 668-8887; (301) 695-1538 (fax) publisher@theamericansurveyor.com www.TheAmericanSurveyor.com



The American Surveyor (www.theamericansurveyor.com), a magazine created by surveyors for surveyors, delivers to the reader's doorstep a one-of-a-kind publication that informs, educates, entertains, and inspires. More than twenty nationally known and respected licensed surveyors came together in late 2003 to provide content and help launch this publication. Drawing from forty years' of experience in all aspects of land surveying—from field to management, and technical support to journalism—editor and licensed surveyor Marc Cheves understands the profession from the ground up. Since the late 1970s he has worked with surveying technology and brings information to the readers that they simply won't find anyplace else. Cover to cover and issue to issue the contributing editors highlight topical news and information, technology breakthroughs, product reviews, business advice, industry trends, controversial issues, and challenges that lie ahead.

GlSuser.com (www.gisuser.com), launched on March 1, 2004, aims to become the largest independent GlS user community in the world, providing daily industry news updates, interviews with leading industry figures, product reviews and announcements, discussion forums, business and career opportunities, tutorials, data directories, and much more. Developed and managed by popular GlS media analysts, Glenn Letham and Richard Bremer, GlSuser.com is the next-generation online community resource for the geospatial technology user. The target audience ranges from enterprise GlS architects, GlS managers, corporate CEOs, application developers and analysts, to the casual desktop mapping enthusiast.

Spatial Media, owner of GISuser.com, is a subsidiary of Cheves Media, publisher of The American Surveyor magazine. The companies are strategically aligned to develop their "Spatial Communities" vision.



#### Applanix, A Trimble Company

85 Leek Crescent, Richmond Hill Ontario, Canada, L4B 3B3 905-709-4600 • Fax 905-709-6027 info@applanix.com www.applanix.com



#### **Corporate Overview**

Applanix was founded in 1991 on defense and aerospace industry expertise. With global reach and innovative engineering excellence recognized worldwide, the company's Position and Orientation Systems (POS™) are now the industry-standard for airborne, land, and marine survey applications. Since 2003, Applanix has been a wholly owned subsidiary of Trimble (NASDAQ: TRMB).

#### **Markets Served**

Applanix systems integrate precision GNSS with advanced inertial technology to provide uninterrupted measurements of the position, roll, pitch and true heading of moving vehicles. By combining GNSS and inertial technologies, Applanix offers a fully integrated, turnkey solution for high-productivity in-motion surveying, continuous positioning, direct data georeferencing, and robust mobile mapping.

#### Major Products for Photogrammetry and Remote Sensing

Using its industry-leading GNSS-Inertial technology, Applanix offers a number of key products:

- POS AV<sup>TM</sup> (Airborne Vehicles): GNSS-Inertial systems for Direct Georeferencing of airborne sensors. Purpose built for use with aerial cameras, line scanners, synthetic aperture radar, and LIDAR, POS AV improves the efficiency and reliability of aerial mapping.
- POSTrack™: GNSS-Inertial Direct Georeferencing and Flight Management System in a single, easy to use package.
- POSPac MMS: GNSS-Inertial post-processing software optimized for the airborne environment. Featuring the advanced Applanix SmartBase™ module and Applanix IN-Fusion™ technology.
- The Trimble Digital Sensor System (DSS): A turn-key medium format imaging systems, a key part of Trimble's aerial mapping product line (http://www.trimble.com/geospatial/aerial-mapping).

#### **Technical Support and Services**

Every product comes with Applanix' commitment to first-rate customer support. Whether you're looking for information on using your system with a new sensor, or simply need to outsource some data post-processing during a busy period, Applanix customer support is dedicated to helping you get the most value out of your product. At Applanix we understand the unique demands of aerial mapping – our goal is to keep you flying, and keep you successful.

#### **Facilities**

Applanix truly is a global company. In addition to the Head Office in Richmond Hill, Canada, Applanix is establishing regional sales and support offices in Europe and the United States to better meet current and future clients' needs. For customers in other regions, Applanix products are available through a worldwide network of sales agencies.

#### ASD Inc.

(Formerly Analytical Spectral Devices)

2555 55<sup>th</sup> Street, Suite 100 Boulder, CO 80301 (303) 444-6522, (303) 444-6825 (fax) sales@asdi.com www.asdi.com



ASD Inc. is the global leader in remote sensing and hyperspectral measurement solutions, providing unparalleled ground truthing results. Our new rugged, portable FieldSpec® 4 line of analytical instruments provides the freedom to rapidly collect high-quality spectra in the field. Trusted by top research experts at thousands of universities and research institutions, ASD's full-range spectrometers are used in more than 70 countries across the world. For more information, please visit www.asdi.com.

Products: FieldSpec® 4 and FieldSpec® HandHeld 2 spectroradiometers, corresponding spectroscopy software, and a wide array of sampling accessories.

#### Axis GeoSpatial, LLC

8600 Brooks Drive, Suite A Easton, MD 21601 (410) 822-1441; (410) 822-6225 (fax) jlahman@axisgeospatial.com www.axisgeospatial.com



Founded in 2001, Axis GeoSpatial is a multidisciplined, full-service photogrammetric aerial mapping firm specializing in providing and updating the core information required in GIS and engineering applications. Headquartered in Easton, Maryland with branch offices in Rochester, New York and Boulder, Colorado, we employ unparalleled project management and state-of-the-art technology using precision aerial imagery and specialized equipment. Employing a talented staff of geospatial experts specializing in GIS strategic planning, consulting, development and integration, we have assembled a team of geospatial professionals who have extensive experience in managing and performing citywide, countywide and regional mapping projects throughout the USA and abroad. Axis GeoSpatial is known for dependability, accuracy, and superior quality with a consistent track record in meeting technical requirements on-time and on-budget.

#### **Aerial Data Acquisition Services**

- · Conventional Aerial Photography/Fixed Wing Flight Services
- · Digital Aerial Mapping & Processing
- Helicopter Flight Services
- · Lidar Terrain Mapping



- · Black & White Photography
- · Color Photography
- Color Infrared Photography
- · Spot-Shots & Oblique Photography
- · Enlargements

#### **Photogrammetric Services**

- · Planimetric Mapping
- · Terrain Modeling & Topographic Mapping
- · Digital AeroTriangulation
- · Digital Ortholmagery
- · Data Review & Quality Assurance
- · High Resolution Film Scanning
- · Image Processing & Analysis
- Photointerpretation

#### **GIS Services**

- · GIS Strategic Planning, Development & Implementation
- E911 Mapping
- · Spatial Analysis & Impervious Area Calculations
- Suitability Modeling
- · Proximity Analysis
- · 3D & Topographic Mapping
- · CAD/GIS Translation
- · Database Design
- Training

#### **Mapping & GIS Solutions**

- Emergency Management
- · Public Works
- · Planning & Zoning
- Transportation
- Assessment
- · Homeland Security
- Forestry
- · Environmental Consulting
- · Defense

#### **Engineering Applications**

- · Long Range Planning
- · Sub-Division Planning & Design
- · Commercial & Residential Site Planning
- · Sewer & Water Design
- · Plant/Facility Planning & Management
- · Roadway Design
- Storm Water Management
- · Utility Management
- · ALTA Surveys
- · Landfill/Quarry Management
- · Topographic Surveys
- · As-Built Surveys
- · Volumetric/Quantity Calculations

#### **Ayres Associates**

1802 Pankratz Street Madison, WI 53704 (608) 443-1200; (608) 443-1250 (fax) ContrucciK@AyresAssociates.com www.AyresAssociates.com



Responding to the evolving needs of our clients – that's what we've been doing for half a century. And we've brought this client-focused philosophy to mapping projects around the country, from the dense urban areas of Atlanta to the lakes and woods of Wisconsin , from the complex river valley system of central California to the dynamic ecosystems of Florida 's coast

Need momentum to build a consortium? Large-scale, multi-entity projects are a smart, cost-effective way to acquire valuable spatial data. We've been a leader in mapping consortium formation.

And when it comes to utility corridor development, not only can Ayres Associates provide the mapping and imagery services so integral to these types of projects, but we also have the experience to manage them.

From data development to data distribution, Ayres Associates' ability to provide comprehensive spatial data services means clients enjoy the benefits of a single source for all of their mapping needs. In an industry characterized by frequent innovation, we never lose sight of the fundamentals: Mapping methods may change, but the importance of quality and reliability remains constant.

#### Services include:

- Aerial imagery acquisition
- · Planimetric and topographic mapping
- · Digital terrain modeling
- Digital orthophotography
- · Remote sensing
- · LiDAR
- · GIS consulting, training, and development
- GPS and conventional surveying

Geospatial mapping and imagery production is headquartered in our Madison, Wisconsin, office.



#### **BAE Systems**

10920 Technology Place San Diego, CA 92127 (858) 592-1046; Toll-free: (800) 316-9643; (858) 592-5003 (fax) socetgxp.support@baesystems.com www.baesystems.com/gxp

### BAE SYSTEMS

BAE Systems is an industry leader in developing geospatial technology, software and services. Our leading-edge technology and customer service, based on more than 40 years of experience, brings together a mission-focused, cost-sensitive and sustainable geospatial program.

The Geospatial eXploitation Products (GXP®) business builds software used to optimize workflows for large and small scale mapping applications with SOCET GXP and GXP Xplorer. Our Geospatial Products & Solutions Group (GP&S) specializes in providing geospatial imagery tools and solutions, exploitation, and advanced information technologies to support commercial, intelligence, and homeland security markets.

SOCET GXP encompasses the photogrammetric capabilities of SOCET SET® along with advanced image comparison and 3-D visualization to streamline production. Automatic Feature Extraction functionality works with LiDAR to extract accurate 3-D building features and trees from digital surface models (DSM). Enhancements to NGATE generate a DSM with sharp building edges and corners to produce high quality, high resolution stereo images. Developments in hyperspectral, multispectral and synthetic-aperture radar image processing enable real-time image classification integrated with geospatial tasks while advanced triangulation functionality uses data in its native format for increased accuracy.

GXP Xplorer and GXP Xplorer Mobile provide an environment to organize and share cataloged information from multiple data stores through Web-based connectivity. Integration with SOCET GXP delivers access to features and functionality for image processing and geospatial production.

Whether you work for a utility or transportation firm, a federal, state or local government agency, or our armed services, BAE Systems delivers innovative and reliable geospatial information and solutions. The GP&S line of business navigates you through the world of evolving sensor technology, conflicting software formats and massive data. We can build or acquire data, pull in and leverage existing best-of-breed Web and Cloud services, and we can develop and customize GIS desktop and server-based tools to meet your specific needs.

#### For more information, please contact:

#### **General Company Information**

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#### Geospatial eXploitation Products (GXP®)

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#### BNP Media, Point of Beginning Magazine

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Troy, MI 48084 (248) 362-3700 raskam@bnpmedia.com www.pobonline.com



Since 1975, Point of Beginning, also known as POB, has been serving the surveying and mapping profession as an informative national publication. In recent years, we've added electronic media including eNewsletters, a comprehensive website, digital magazines and an industry bulletin board, www.RPLS.com. As our mission states, we are dedicated to helping the geomatics industry succeed through our coverage of new applications and evolving technologies, practical solutions to surveying and mapping problems, and business, legal and educational issues. BNP Media publishes POB twelve (12) times per year with its main distribution in the United States. Our average BPA-qualified circulation per issue is 38,005.\* Target markets are high-level professionals in the surveying, mapping, engineering and related geomatics fields. POB is FREE upon request to qualified subscribers in the United States; foreign subscriptions are available for an annual fee. www.pobonline.com

\*December 2011 BPA Circulation Statement

#### Bohannan Huston, Inc.

Courtyard 1 7500 Jefferson St. NE Albuquerque NM 87109-4335 (800) 877-5332 ; 505.798.7988 (fax) dsandin@bhinc.com www.bhinc.com

### Bohannan A Huston

Bohannan Huston, Inc., a civil engineering and geospatial data services company, is a nationally recognized leader in all facets of Spatial Data Technologies. During more than 50 years of providing services to public and private clients, our firm has helped clients visualize projects, optimize resources, and realize the best solutions. Currently, we employ is approximately 180 employees strong with its main office located in Albuquerque, New Mexico and satellite offices in Las Cruces, New Mexico; and Denver, Colorado.

BHI is a recognized leader in all facets of Spatial Data Technologies. The highly trained spatial data team can survey and map a project, develop project data through a variety of interactive and automated processes, customize and develop software applications that address specific client needs, create virtual sites with digital visualizations and modeling, and solve project problems using digital imagery, presentation, and media tools. One of BHI's continual goals is to harness



the latest information technologies in order to ensure all clients are provided with the most accurate and useful information derived from the most appropriate source, whether that be aerial photography, satellite imagery, LiDAR, radar or multi-spectral.

BHI has made a commitment to shaping and guiding the future of technology through an investment of in-house software, CADD, web, information technologies, and graphic expertise. The firm has made a name for itself in the industry in the development of engineering software design tools. In addition, BHI offers CADD training and implementation services, and web development. The Information Technologies staff supports BHI internally, and is available to support client IT needs. Images PlusSM, using spatial and design data generated by the other two business units, takes a project to the virtually real world so client aspirations can be visualized.

#### **Booz Allen Hamilton**

8283 Greenboro Drive Mc Lean, VA 22102-4904 (703) 902-5000; (703) 735-3347 (fax) lafeir\_leonard@bah.com www.boozallen.com

### Booz | Allen | Hamilton

Booz Allen Hamilton has been at the forefront of management consulting for businesses and governments for more than 95 years. Providing consulting services in strategy, operations, organization and change, and information technology, Booz Allen is the one firm that helps clients solve their toughest problems, working by their side to help them achieve their missions.

Booz Allen is committed to delivering results that endure. For more than two decades, Booz Allen has used its imagery and geospatial information systems (GIS) experience to help meet the imagery, geospatial and cybersecurity needs of clients in national security, federal civil agencies, and commercial communities. Booz Allen provides dynamic imagery-based solutions to help decision makers and end users understand how imagery and GIS can contribute to economic, environmental, and security challenges around the world. The firm offers expertise in commercial remote sensing systems, and our team of professionals is skilled in advanced technology identification and assessment, imagery and geospatial support, imagery analysis and science, and laboratory infrastructure support.

Booz Allen provides effective imagery and geospatial data solutions for a full range of government and business applications. A recognized leader in using information technology to solve complex issues, Booz Allen helps clients achieve imagery-based solutions tailored to meet their specific geospatial information and application needs. With 25,000 employees on six continents, the firm generates annual sales that exceed \$5.59 billion. Booz Allen provides services to government and other public agencies. To learn more about the firm, visit the Booz Allen Web site at www.boozallen.com.

#### Cardinal Systems, LLC

701 N Oceanshore Blvd. Flagler Beach, FL 32136 (386) 439-2525; (386) 439-0259 (fax) info@cardinalsystems.net; www.cardinalsystems.net



Cardinal Systems, LLC, offers a variety of software modules for use by the many professions in the mapping community and is the result of over 20 years of development. Its flagship program, VrOne®, is a powerful mapping vector collection and editing system with Digital Terrain Modeling, batch processing, image handling, data translations and application overlaying.

VrLiDAR, its newest module, allows the display and editing of LiDAR point data in 2D and true three-dimensional stereo. The four configurations available in VrLiDAR enable vector, symbol and text to be collected and edited using the extensive VrOne mapping tools which include over 200 commands and over 140 mapping applications. The 3D ViewPoint application allows the collection and editing of vector data using LiDAR point clouds without imagery in true 3D stereo. Real-time cursor draping to the LiDAR surface is available in this environment.

Other features are on-demand autocorrelation, DTM processing and image manipulation such as sampling, tonal balancing, splicing, feathering, simple rectification and orthophoto generation.

Cardinal's steadily growing list of clients includes many private companies as well as Local, State and Federal agencies. Our software is in use throughout North America and Europe as well as Central and South America and Asia. NASA uses the Vr Mapping Software for 3D analysis of the Space Shuttle while on orbit along with other specialized close range photogrammetric tasks.

Based in Flagler Beach, Florida, Cardinal continues to expand and enhance its suite of programs that interact and perform numerous software functions required in the surveying, engineering and mapping industry. Our products currently include VrOne, VrTwo, VrLiDAR, VrOrtho, VrMosaic, VrBalance, VrAirTrig, VrAdjust, VrVolumes and VrLite.

We offer in-depth comprehensive training in your offices or at our training facility in Florida and provide prompt, thorough support services. For more information, please visit our webpage at www.cardinalsystems.net.



#### **Certainty 3D LLC**

7039 Grand National Drive #100 Orlando, FL 32819 (407) 248-0160; (407) 641-9062 (fax) info@certainty3d.com www.certainty3d.com



Certainty 3D offers LiDAR data processing solutions for Riegl, Leica, Optech, Z&F, Faro and other systems. Certainty 3D's primary focus is the extraction of high quality CAD deliverables from point cloud and calibrated image data. Certainty 3D also offers freeware applications for LiDAR project planning, scheduling and cost estimation.

Certainty 3D's primary product is TopoDOT, a CAD application used to deliver value from LiDAR system data. TopoDOT empowers our users to extract high quality CAD deliverables from tripod, mobile and airborne LiDAR system data. TopoDOT offers the markets highest performance at a very low price--making it the market's best value.

The Certainty 3D team have been at the forefront of LiDAR systems application over the past 18 years. Certainty 3D was founded in 2011 as a spin-off from Riegl USA, a leader in LiDAR technology. The Certainty 3D team offers worldwide support, training and development capabilities from Orlando, Florida USA.

#### COL-EAST, Inc.

Post Office Box 347 Harriman & West Airport North Adams, MA 01247-0347 (800) 359-8676; (413) 663-3489 (fax) info@coleast.com www.coleast.com



Col-East, Inc., founded in 1952, has become a leader in providing the Northeastern US engineering and survey community with the highest quality digital mapping and orthophotography possible. In our view quality mapping includes a high degree of accuracy, careful attention to detail and completeness, and requires consideration of the needs of the client regarding delivery format and schedule.

Our clients range from individual landowners to the Federal Government and include foresters, architects, planners, surveyors, engineers, landscape architects, planners, attorneys and universities. Our work is used for conceptual planning through construction design for infrastructure work (roadway/highway and sewer/water construction or reconstruction), residential and commercial development, watershed studies, and environmental assessment and remediation.

We operate an Aero Commander 500B aircraft equipped with a Zeiss LMK 2000 camera, with gyro-stabilization and forward-motion compensation. Our flight crews have several decades of experience working in the congested airspace found in the northeastern United States. Flight planning, navigation and indexing are accomplished through GPS.

We operate our own black and white laboratory, equipped with Kodak Versamat film processor, Kodak 125 print processor, Actii Copius camera/enlarger, EPC UDS-1 contact printer, etc. In addition to supporting the mapping department the lab prints thousands of contact prints and enlargements each year from our extensive historical library of photography.

Since the early 1980's we have built an extensive library of current mapping photography on a speculation basis. The coverage extends from Massachusetts and Rhode Island to southern New Hampshire, central Connecticut and eastern New York. In addition to providing our clients with reasonably priced photo products it enables us to make the maximum usage of our short New England flying season and provide our clients with mapping on short notice during the rest of the year.

We perform our own digital aerotriangulation with a DVP-AT Work-station and AeroSys»AT software. Our seven stereoplotters include (3) KLT Atlas DSP WorkStations, (1) DVP Digital Softcopy WorkStation, (2) Kern DSR-11's, and a Zeiss C-120. Digital orthophotos are produced on our KLT DSP WorkStation. Scanning is performed on a Wehrli RM-1 Rastermaster. All mapping work is performed in the KLT ATLAS environment. Data is edited off-line and translated into delivery form according to instructions from the client using KLT and in-house translators.



#### CRC Press — Taylor & Francis Group

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CRC Press is a premier publisher of scientific and technical works, reaching around the globe to collect the latest essential reference material and the newest industry advances in GIS and make them available to researchers, academics, professionals, and students in a variety of accessible formats. Our collection of GIS, Remote Sensing and Photogrammetry resources are at the forefront of promoting knowledge and the latest information to those in the scientific community. Written by the best scientists and experts in their respective fields, CRC Press aims to provide the most useful and comprehensive content in the industry.

In addition, CRCnetBASE our powerful research platform has been adopted throughout the world at academic and corporate institutions. Made up of over 6000 online books that span over 40 disciplines, every month, we add new resources to each *netBASE* to provide upto-date, comprehensive information in an easy to use format.

We encourage you to visit our website www.crcpress.com to search our products and find out more about the valuable resources we offer. While there, you can sign up for e-alerts and special savings in your choice of subject areas.

#### CRITIGEN

(formerly CH2M HILL)

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Critigen is the world's largest privately-held spatial information consulting firm and a global leader in data management, technology integration and IT outsourcing. We leverage spatial location data, business intelligence tools, and award-winning cloud computing to drive positive financial results and enterprise collaboration for public and private clients. For nearly 20 years, Critigen has helped clients harness the power of data standards and near real-time database integration to access, organize and communicate mission-critical information. We are also a Platinum partner of ESRI and a Trimble Business Partner.

Formerly known as Enterprise Management Solutions (EMS), Critigen was created as the information management division of CH2M HILL's 64-year, \$6.3B engineering, consulting, and construction business to support their large-scale projects. EMS divested from CH2M HILL in 2009 and became Critigen.

Critigen's Geomatics Survey & Mapping (GS&M) highly experienced professionals consist of registered civil engineers, licensed land surveyors, ASPRS-certified photogrammetrists, GIS/LIS scientists, GIS analysts, digital imaging specialists, 3D stereo plotter operators, software programmers, and mapping technicians. Senior staff members average more than 20 years of experience and serve as client service managers, project managers, task managers, technical consultants, and quality control reviewers. Our staff has deep domain expertise in all aspects of spatial information management with project experience ranging from initial planning to final delivery. With comprehensive in-house mapping capabilities on land and underwater, Critigen can provide our clients with innovative solutions to meet the most demanding project requirements.

Critigen's GS&M professionals leverage the industry's latest hardware and software technologies and innovations. These systems include: resource and geodetic grade GPS receivers, digital softcopy workstations, LiDAR QA/QC and editing software, planimetric feature mapping, digital terrain modeling, topographic contour production, 3D laser scanning, and hydrographic surveying. Critigen vendors include products from ESRI, Bentley, Intergraph, Trimble, Lecia, Z/I Imaging, ERDAS, Autodesk, Microsoft, Oracle, Safe Software, and DAT/EM.

#### **DAT/EM Systems International**

8240 Sandlewood Place; Suite 101 Anchorage, AK 99507-3122 (907) 522-3681; (907) 522-3688 (fax) sales@datem.com www.datem.com



Since 1987 DAT/EM Systems International has been a leader in the development of world-class software for digital mapping and photogrammetry applications. Currently, DAT/EM serves over 500 photogrammetric and engineering firms as well as government agencies in more than 70 countries worldwide. DAT/EM employs highly technical, creative personnel and integrates cutting-edge technology. We take pride in a reputation for delivering quality systems and superior customer service, and in our commitment to developing and implementing state-of-the-art software and hardware solutions.



#### **Dewberry**

8401 Arlington Blvd. Fairfax, VA 22031-4619 (703) 849-0396; (703) 849-0182 (fax) dmaune@dewberry.com www.dewberry.com



## Dewberry

Dewberry is a leading professional services firm with a proven history of providing architecture, engineering, and management and consulting services to a wide variety of public- and private-sector clients. Recognized for combining unsurpassed commitment to client service with deep subject matter expertise, Dewberry is dedicated to solving clients' most complex challenges and transforming their communities. Established in 1956, Dewberry is headquartered in Fairfax, Virginia, with more than 40 locations and 1,800+ professionals nationwide.

Dewberry geospatial services combines subject matter expertise in the fields of photogrammetry, LiDAR, geodesy, emergency management, utilities, defense, environmental, and systems architecture with state-of-the-art technology and an ESRI Enterprise License Agreement (ELA) to provide one of the largest and most comprehensive commercial geospatial businesses in the United States.

Dewberry offers a full range of geospatial services including program management, geodesy, aerial acquisition & processing, LiDAR acquisition & processing, lidargrammetry, aerial triangulation, photogrammetric feature extraction, image analysis, surface modeling and analysis, digital orthophoto production, GIS systems architecture, data modeling, as well as geospatial business process consulting, facilities management, and application development. Dewberry also specializes in the independent quality assurance of geospatial products produced by other service professionals. Dewberry was presented with the ESRI Special Achievement in GIS Award in 2008 and the ESRI Business partner of the year in 2005.

Dewberry's subject matter experts form the core of its geospatial services business. The company's elevation experts have authored and edited the ASPRS textbook, "Digital Elevation Model Technologies and Applications: The DEM Users Manual" (1st & 2nd editions); the DEM chapter in ASPRS' textbook, "Digital Photogrammetry: An Addendum to the Manual of Photogrammetry;" the NGS' "National Height Modernization Study, Report to Congress;" and various elevation data guidelines and specifications for FEMA as well as the National Digital Elevation Program (NDEP).

#### **DigitalGlobe**

1601 Dry Creek Drive; Suite 260 Longmont, CO 80503 (800) 496-1225 or (303) 684-4561; (303) 684-4562 (fax) www.digitalglobe.com

# DIGITALGLOBE®

DigitalGlobe is a leading global provider of commercial high-resolution earth imagery products and services. Sourced from our own advanced satellite constellation, our imagery solutions support a wide variety of uses within defense and intelligence, civil agencies, mapping and analysis, environmental monitoring, oil and gas exploration, infrastructure management, Internet portals and navigation technology. With our collection sources and comprehensive ImageLibrary (containing almost three billion square kilometers of earth imagery and imagery products), we offer a range of on and offline products and services designed to enable customers to easily access and integrate our imagery into their business operations and applications. For more information, visit www.digitalglobe.com.

#### **DMC** International Imaging Ltd.

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DMCii is a UK company providing satellite imagery and derived products. DMCii provides access to a unique set of image products including the Disaster Monitoring Constellation of satellites, enabling the rapid revisit to any site once per day. 650 km swath multispectral imagery is collected at 22m and 32m. We also supply 4, 5.6 and 2.8m resolutions. Other products and services include derived products including land use maps, change detection imagery and mosaiced imagery for customised projects.

New satellites available in 2011 include 2.5 pan and 5m multispectral and additional 32m & 22m multispectral sensors.

DMCii imagery is available to US Government agencies through agreements with the US Geological Survey and also the US Department of Agriculture.



#### **Dynamic Aviation Group, Inc.**

1402 Airport Road Post Office Box 7 Bridgewater, VA 22812-0007 (540) 828-6070; (540) 828-4031 (fax) sscates@dynamicaviation.com www.dynamicaviation.com



Dynamic Aviation is an international leader in delivering airborne data acquisition services. With more than 75 aircraft operating from twenty locations on four continents, we deliver specially modified aircraft, experienced flight crews, and reliable maintenance services you need to ensure that your mission takes flight.

Dynamic Aviation provides aircraft and aviation infrastructure to both public sector agencies and commercial organizations with exacting data needs, but lacking adequate aviation assets and expertise. We provide the aerial platform and experienced flight crew; you provide the aerial cameras and sensor payloads. Our fleet of specially configured aircraft can easily accommodate most sensor payloads, allowing virtually unlimited data acquisition applications.

With Dynamic Aviation as your partner, you can allocate your capital resources to technology rather than aviation. Our comprehensive flight management services ensure that you have a cost-effective and reliable solution to your airborne data acquisition requirements.

Airborne Data Acquisition Benefits:

- The right platform—Versatile and reliable, our mission-proven Beechcraft King Air fleet is ideal for acquiring airborne data and can be modified to accommodate existing and emerging technologies
- Extensive sensor experience—Our knowledge of a wide array of instruments and current technologies makes the installation of your equipment fast, easy, and secure
- High availability—Our dedicated airborne data acquisition fleet, professional pilots and crew, and uncompromising technicians and service personnel are ready when you are

At Dynamic Aviation, we know how critical it is to deliver innovative aircraft solutions that meet the complexities and challenges of your mission. You can count on us for the precise airborne assets you need to meet your unique requirements.

To learn more about Dynamic Aviation and its flight services, please visit the company's website at www.dynamic aviation.com/airborne. htm or contact Steve Scates at sscates@dynamicaviation.com or (540) 828-6070 extension 3503

#### Eagle Mapping Ltd.

Suite 201 – 2071 Kingsway Avenue Port Coquitlam, BC V3C 6N2 CANADA (877) 942-5551; (604) 942-5951 (fax) info@eaglemapping.com www.eaglemapping.com



**Eagle Mapping** delivers high-quality digital mapping, data and imagery tailored to your unique needs. Eagle Mapping's new Riegl VQ480 LiDAR sensor and new DiMAC Ultralight+ 60 mega pixel digital camera system enable Eagle Mapping's consultants more options than ever before to offer turnkey mapping solutions for diverse industry sectors. Consultative specialists work closely with you, combining industry, technology and languages to answer your specific business challenges.

#### You choose:

- ${\mbox{\format}}$  Business Use, Industry, Language, Scale, Resolution and Format...
- · Volumes, Drainage, Contours or Breaklines...
- For access corridors, development, exploration, environmental studies, investors or industrial operations?

#### We Deliver

With our high quality deliverables you can reference data, analyze projects in 3D, visualize terrain and communicate your results to business partners and investors.

Leverage worldwide capacity, capability, and collaboration to create competitive advantage.

Eagle Mapping has successfully provided support to our clients since 1985.

#### Digital Mapping, Data and Imagery Services:

- 3D Fly-Through Presentations
- · Aerial Photography
- GIS Data Conversion
- Global Positioning Surveys
- Hard Copy to Digital Conversion
- · LiDAR Acquisition and Processing
- · Orthophoto Mosaics
- · Photogrammetric Compilation
- · Satellite Imagery
- · Scanning and Aerotriangulation
- Topographic Maps

#### **Branch Office:**

Eagle Mapping, Inc. City: Bellingham State: Washington Country: USA (360) 927-0414; (604) 942-5951(fax)

rcope@eaglemapping.com



#### Earth Eye, LLC

3680 Avalon Park Blvd, Suite 200 Orlando, FL 32828 (407) 382-5222; (407) 382-5420 (fax) mromano@eartheye.com www.eartheye.com



Quite simply at Earth Eye our passion is to provide our clients with unique innovative solutions utilizing the latest remote sensing technologies. Our modular airborne and mobile platforms take advantage of multi-sensor technologies comprised of LiDAR, EO, hyperspectral, and thermal imaging sensors to provide a wide array of high quality mapping and remote sensing products and solutions for our clients. With improvement in our forefront we strive for excellence every day!

#### **AIRBORNE**

Simultaneous capture of LiDAR, Digital Color, and Hyperspectral data from our integrated platform. Development of hydro-enforced topographic data sets, orthophotography, and hyperspectral analysis for design, engineering, and many other scientific applications.

#### MOBILE

Simultaneous capture of LiDAR, video, and high resolution pavement camera data for DOT and other large scale mapping applications requiring survey accurate terrain and derivative products. Development of high accuracy terrain models for pavement applications and crack rating to DOT standards.

Earth Eye LLC is a subsidiary of Data Transfer Solutions a national firm headquartered in Orlando , Florida . Earth Eye has offices throughout Florida and regional offices in Texas, North Carolina , New Hampshire , and Colorado . The firm specializes in providing precision Terrestrial, Mobile , and Airborne LiDAR, Multispectral/hyperspectral imaging, and other remote sensing products and services.

#### **Eastern Topographics**

Post Office 970, 495 Center Street Wolfeboro, NH 03894-0970 (603) 569-2400; (603) 569-8200 (fax) mail@e-topo.com www.e-topo.com



**EASTERN TOPOGRAPHICS (E-TOPO®)** is a full service aerial mapping firm based in the Lakes Region Area of New Hampshire that has been providing high quality accurate mapping for engineering and surveying consultants since 1977. We specialize in the production of high quality, engineering level detail topographic mapping. Our turn around times lead the industry, with projects under 30 acres delivered within three business days, and projects up to 100 acres delivered within ten business days. Our flight crews have logged several thousand hours of cartographic aerial mapping in the difficult terrain and climatic conditions often encountered in the northeast

region. Our photogrammetrists / mapping technicians are intimately familiar with the topography, ground surface conditions, foliage, and cultural features found in the northeastern United States.

**E-TOPO**® has extensive experience specific to aerial photography and digital photogrammetric mapping, employing high standards and quality control measures that continue to assure the accuracy of our mapping. All mapping is compiled under the immediate supervision and direction of Photogrammetrists certified by the American Society of Photogrammetry and Remote Sensing. GPS ground control services are also available and are provided by our in-house Licensed Land Surveyors.

Aerial photography is captured with two company owned and one seasonally leased Cessna 206 aircraft — all 3 are configured specifically for aerial mapping. E-TOPO also maintains a complete black and white photo lab and hi-res scanner.

Digital photogrammetric mapping is compiled on six (6) first order analytical KERN DSR15s, each collecting data utilizing KLT/ATLAS & TIN software at individual PC work-stations. Primary collection methodology is Digital Terrain Modeling (DTM) including breaklines and spot elevations. Digital orthophotography is produced utilizing our KLT/Atlas Softcopy station.

**E-TOPO®** has continued to build an in-house library of stock low altitude (mostly 1"=400'-500') aerial photography suitable for accurate two foot (2') contour mapping. This library photography is exposed only during the optimum spring months with high sun angle and complete defoliation. E-TOPO®'s readily available library of stereo imagery covers much of the northeast and is comprised of more than 300,000 exposures. Imagery is available for viewing and free downloads on our website (www.e-topo.com).

#### e-GEOS

Via Cannizzaro, 71 00156 ROME ITALY +390640791 info@e-geos.it www.e-geos.it



**e-GEOS**, an ASI (20%) / Telespazio (80%) company, is a leading international player in the geo-spatial business. e-GEOS offers a complete range of products and services in the Earth Observation and in the geo-spatial application domains, based on both optical and radar satellites as well as on aerial surveys. The company employs more than 300 people and operates through the Earth Observation centres in Matera (Italy) and Neustrelitz (Germany). As the European hub for VHR (Very High Resolution) data, **e-GEOS** grants unique access to the COSMO-SkyMed, GeoEye-1, IKONOS, Radarsat, Envisat, QuickBird and WorldView and IRS satellites.

In particular, COSMO-SkyMed represents a tremendous competitive advantage as it opens up a new era of operational applications. The COSMO-SkyMed earth observation programme of the Italian Space Agency and the Italian Ministry of Defence, based on a constellation of four VHR SAR satellites, provides all-weather, day and night, world-wide radar data acquisitions. **e-GEOS** exploits COSMO-SkyMed data to offer near-real-time monitoring services and large-



area mapping capabilities, in combination with its existing product and services portfolio, which comprises solutions for key vertical markets including emergency management, maritime surveillance, agriculture & forestry, cadastre, environmental protection, oil & gas, utilities and industries.

**e-GEOS** is part of the Telespazio (Finmeccanica/Thales) group, operating the largest civil space infrastructure in the world, at the Fucino Space Centre, providing unrivalled service capacity. **e-GEOS** can rely on the specific know-how and market presence of the various companies within the group, such as GAF and Euromap, Aurensis/Telespazio Iberica, Telespazio Argentina, that enrich its competitive advantages and provide synergies in the product chain and for market development at international level.

#### **Environmental Research Incorporated**

5267 John Marshall Hwy, Suite C Linden, VA 22642 (540) 636-4460; (540) 636-2628 (fax) info@eri.us.com www.eri.us.com



Environmental Research, Inc. (ERI), a woman-owned small business founded in 1993, is a full service geospatial company specializing in current and historical imagery analysis, photogrammetry, geographic information systems, and litigation support for environmental investigations and natural resource mapping.

ERI services include the acquisition and stereoscopic analysis of aerial photographs and other remotely sensed data ranging from the 1930's to the present. Depending on the focus of the analysis, a full range of remotely sensed data can be used, including black & white, color, and color infrared aerial photographs; thermal infrared aerial imagery; and multi-spectral satellite imagery.

Applications for ERI's current and historical imagery analyses include:

- Industrial Site & Pre-Site Characterization, including the Identification of Storage, Treatment, Disposal, and Release Activities
- · Land Use/Land Cover Mapping
- · Wetland Mapping and Drainage Analysis
- · Point and Nonpoint Contamination Source Inventories
- · Ordnance Impact Area Mapping
- Failing Septic Systems Mapping
- Underground Fire Mapping
- Natural Resource Mapping
- Erosion Studies
- Groundwater Seeps & Springs Analysis

Building on years of image and geospatial data integration experience, ERI utilizes leading edge software to produce multi-theme, multi-source GIS datasets. Our GIS personnel have extensive experience using the Leica Photogrammetry Suite and ERDAS Imagine software to orthorectify and mosaic current and historical aerial imagery, generate 3-D visual illustrations of current and historical photogrammetric data, and to georeference maps and other spatial data. Through on-screen digitizing, we generate aerial imagery analyses and GIS datasets using ESRI ArcView and ArcGIS software.

ERI utilizes both softcopy and analytical stereoplotting capabilities, providing a wide range of photogrammetric products generated from current and historical photographs that include:

- · Planimetric Maps
- · Topographic Maps
- · Digital Terrain Models/Digital Elevation Models
- Orthophotographs
- · Volumetric Surveys
- · Low Altitude Helicopter-Based Mapping

The professional analysts at ERI have conducted hundreds of environmental forensic investigations to support CERCLA/RCRA cost recovery, environmental insurance claims, natural resource damage assessments, and federal government enforcement and defense. Through our well-established methodology of integrating current and historical imagery analysis, photogrammetry, GIS, and 3-D illustrations, we strive for the highest degree of accuracy, scientific objectivity, and completeness.

#### Esri

380 New York Street Redlands, CA 92373-8100 (909) 793-2853; (909) 793-5953 (fax) info@Esri.com www.esri.com



Esri helps organizations map and model our world. Esri's GIS technology enables them to effectively analyze and manage their geographic and imagery information and make better decisions. Organizations are supported by an experienced and knowledgeable staff and an extensive network of business partners and international distributors.

We provide educational services, user support, and professional consulting services ranging from needs assessments to system design and implementation services. Our goal is to promote geospatial awareness and help our users make more effective decisions.

#### **Capability**

Founded in 1969, Esri is a financially stable, privately owned corporation with a policy of zero debt. Private ownership means no stockholders forcing short-term decisions at the expense of long-term objectives. We maintain a high commitment to research and development, budgeting about 20 percent of our annual revenue, leading to new and powerful advances in our software.

#### Why Choose GIS from Esri?

Esri software is used by more than 350,000 organizations worldwide including:

- · Most U.S. federal and national mapping agencies
- · All 50 U.S state health departments
- Each of the 200 largest U.S. cities
- More than 24,000 state and local governments worldwide
- · More than two-thirds of Fortune 500 companies
- · More than 7,000 colleges and universities
- · Many others in dozens of industries

We are committed to listening to our users and routinely incorporate user feedback and recommendations in our product releases. We gather this feedback from sources including ArcGIS Ideas (ideas.arcgis. com), user group meetings, conferences, traditional technical support channels, beta and holistic testing programs, and online forums. Our users have always helped shape the direction of our software, and this relationship has made ArcGIS technology the standard in GIS.



#### **EXELIS**

**Visual Information Solutions** 

4990 Pearl East Circle Boulder, CO 80301 (303) 786-9900; (303) 786-9909 (fax) info@exelisvis.com www.exelisvis.com

### **EXELIS**

**Visual Information Solutions** 

**EXELIS** Visual Information Solutions provides integrated software solutions that provide timely and accurate information from geospatial imagery. ENVI is the premier software solution for processing and analyzing geospatial imagery used by scientists, researchers, image analysts, and GIS professionals around the world. ENVI is built on a powerful development language, IDL, allowing its features and functionality to be easily extended or customized to fit specific applications. ENVI's full-suite of tools utilizes the latest technology for feature extraction, orthorectification, change detection, classification and atmospheric correction.

- Extracting Features from Images with ENVI: Using ENVI you
  can quickly and accurately locate, extract, and identify features of
  interest in imagery. ENVI is flexible so you can modify parameters
  and data at any stage of the process, allowing you to get the
  specific information you need from your imagery and make more
  informed decisions.
- Automated Image Analysis Workflows in ENVI: ENVI includes unique step-by-step workflows that walk you through previously complex image analysis tasks. With the automated workflows in ENVI you'll get information from imagery quickly and easily.
- Integration with ESRI's ArcGIS®: ENVI makes it seamless to update a GIS with current information from geospatial imagery by delivering advanced image analysis tools directly from the ArcGIS desktop and server environments.
- Empower Your Organization with Image Analysis: ENVI for Arc-GIS® Server is a new, server-based software product that works seamlessly with ArcGIS® Server, providing functionality to create, manage, and distribute ENVI's advanced image processing and analysis tools and models over the enterprise or Web and deliver them to desktop, mobile, and Web applications.
- Rapid Image Delivery with IAS: Image Access Solutions (IAS) gives you the ability to deliver and explore geospatial imagery data where and when you need it so you can make critical decisions quickly and easily. IAS combines advanced image compression and delivery technologies to provide imagery intelligence products in seconds, not hours even over constrained bandwidths.

### Outside Experts that Can Assess, Develop, and Deploy Custom Solutions

 The EXELIS Visual Information Solutions Professional Services Group provides exceptional solutions to the most complex technological issues. We integrate advanced technologies with expertise in data and imagery challenges to help users solve problems through the use of geospatial imagery and scientific data. Our professional consultants have extensive knowledge across many industries and are capable of assessing, developing, and implementing solutions for your unique challenges.

Combined with a host of integrated support services, including training, consulting, and a Web-based ENVI user community, **EXELIS** Visual Information Solutions offers superior software products to help professionals access, analyze, and disseminate data and imagery. Visit: www.exelisvis.com for more information.

#### Federal Geographic Data Committee

12201 Sunrise Valley Drive MS 590 USGS National Center Reston, VA 20192-0001 (703) 648-4150; (703) 648-5755 (fax) fgdc@fgdc.gov www.fgdc.gov



The Federal Geographic Data Committee (FGDC) is an interagency committee that promotes the coordinated development, use, sharing, and dissemination of geospatial data on a national basis. This nationwide effort is known as the National Spatial Data Infrastructure (NSDI). The NSDI is a physical, organizational, and virtual network designed to enable the development and sharing of this nation's digital geographic information resources. In support of the NSDI, the FGDC is coordinating the deployment of a Geospatial Platform capability to promote discovery, access, and portfolio management of national geospatial data resources.

The Office of Management and Budget (OMB) established the FGDC in 1990 and rechartered the committee in its August 2002 revision of Circular A-16, "Coordination of Geographic Information and Related Spatial Data Activities." The FGDC, its subcommittees, and working groups are composed of representatives from the Executive Office of the President, and Cabinet level and independent Federal agencies. The Secretary of the Department of the Interior chairs the FGDC, with the Deputy Director for Management, Office of Management and Budget (OMB) as Vice-Chair. Numerous stakeholder organizations participate in FGDC activities representing the interests of state and local government, industry, and professional organizations.

#### Flatdog Media, Inc./Professional Surveyor Magazine

20 West Third Street Frederick, MD 21701 (301) 682-6101; (301) 682-6105 (fax) neil@profsurv.com www.profsurv.com



*Professional Surveyor Magazine* is North America's leading source of information on emerging technologies and business strategy for geospatial professionals, including land and hydrographic surveyors, photogrammetrists, lidar and remote-sensing specialists, and GIS professionals. Published with it are the print supplements Aerial Mapping and Surveyor's Red Pages and the e-newsletters Pangaea and Field Notes.



### Fugro EarthData, Inc. (formerly EarthData)

7320 Executive Way Frederick, MD 21704 (301) 948-8550; (301) 963-2064 (fax) info@earthdata.com www.fugroearthdata.com



For more than 50 years, Fugro EarthData has crafted mapping and GIS solutions for natural resource management, urban planning, national defense, and engineering customers, among others. Our acquisition-to-production resources and continual technology investments enable us to efficiently deliver state-of-the-art geospatial solutions. As a member of the international Fugro group of companies, we also have the unique ability to combine our core offerings with an expanded range of onshore and offshore surveying services. Working with customers across the globe, Fugro EarthData is turning spatial data into knowledge. www.fugroearthdata.com

#### Fugro Horizons, Inc.

4350 Airport Road Rapid City, SD 57703 (605) 393-8300; (605) 393-8310 (fax) sales@fugrohorizons.com www.fugrohorizons.com



Established in 1968, Fugro Horizons, Inc. has specialized in providing, end-to-end, leading edge photogrammetric and remote sensing services for a wide array of applications including environmental, engineering, mining, GIS, hydrology, transmission, and transportation. Fugro Horizons is part of Fugro NV, a worldwide leader in the collection, processing, and interpretation of data related to the earth's surface. While our footprint is truly global, maintaining our local and regional presence throughout the US signals our commitment to the domestic market. Working with existing and perspective customers, we will continue to expand our services, develop new geospatial technologies, broaden our geographic reach, and better serve existing and future customers.

#### GeoBC

3400 Davidson Ave., 3rd Floor Victoria, BC V8Z 3P8 CANADA (250) 952-6581; (250) 952-4188 (fax) ESS.Info@gov.bc.ca www.geobc.gov.bc.ca



GeoBC, a branch within the Ministry of Forests, Lands and Natural Resource Operations, is responsible for cCreating and managing geospatial information and products as well as provides consultation services across all natural resource sector (NRS) agencies.

While this may sound like a complicated and purely technical role, in practice the group has four very tangible areas of focus directly tied to NRS business functions:

- to create and maintain a standard set of base spatial data (e.g. roads, hydrology, terrain, etc.) with the goal of progressively making this information open and accessible for use by all,
- providing assurance for two of the Provincial Crown land registries, the information repositories of Provincial rights and obligations specifically Tantalis and the Integrated Land and Resource Registry (ILRR),
- offering Crown land research expertise to other government agencies, both rights-granting and otherwise, and;
- offering a service for custom solutions to NRS business issues (e.g. developing mapping products and visualization for avalanche awareness, providing assistance to treaty teams, spatial design and project management support for clean energy projects, etc.),

In short, if an NRS business area has any concerns about or interest in the concept of "place" then GeoBC is involved in some way; whether indirectly through the open provision of the authoritative base information or directly by involving mapping, analysis and land research specialists from the branch.

Of specific interest to those ASPRS members, GeoBC manages the following base, or foundational data:

#### 1. Geospatial Reference Services

The Geospatial Reference (GSR) group defines and manages the geographic coordinate system that underlies all support surveying, mapping and georeferencing activities.

#### 2. Base Mapping Products and Services

The GeoBC Atlas Services is a program to provide a common digital framework for the various land information retrieval systems by using a common standards and specifications for data capture. Programs and initiatives of the GeoBC Atlas include the provincial digital base-mapping program; geographical names; digital road atlas, freshwater atlas and the provincial orthophoto production program.

#### 3. Air Photo and Digital Imagery Services

Air Photo and Digital Imagery Services is responsible for:

Acquisition, coordination and management of airborne remote sensing data, including aerial photography, airborne imagery and satellite imagery.



b. Aerial photo reproduction, archival and warehouse/library services

#### 4. Crown Land Ownership Parcels

Land Records Services is responsible for recording and managing information regarding the nature, ownership, extent, and location of rights and interests in Crown land. This group provides land record services, which include:

 a. Compilation and maintenance of a comprehensive mapping of all real properties and related spatial information including political and administrative boundaries.

Reference: GeoBC Website ... http://www.geobc.gov.bc.ca/

#### **GeoCue Corporation**

9668 Madison Blvd., Suite 202 Madison, AL 35758 (256) 461-8289; (256) 461-8249 (fax) info@geocue.com www.geocue.com



GeoCue Corporation is a software development and consulting services company with the following core businesses:

- Development of the GeoCue product family of geospatial process management software tools
- CuePacs® to realize specific workflows such as DMC™ post-processing, LIDAR data processing and other domain specific workflows
- Consulting services to assist customers with custom implementations of GeoCue-managed geospatial workflows
- LIDAR vertical business through which we supply tools (Terrasolid, LIDAR 1 CuePac, MMS CuePac, LP360), training, support and workflows for end-to-end LIDAR processing in the mobile and airborne markets.

Through our GeoCue product line, we are dedicated to creating tools and techniques for improving geospatially organized processes. Our mission is to move the world of workstation-centric production to enterprise systems. This means that production shops should be able to work on large projects with many technicians without worrying about the minutia of locating data, finding software, tasking technicians and determining which particular set of software programs to execute to produce the desired output product.

Through our LIDAR business unit, we offer the complete range of tools, training and support for companies engaged in all aspects of airborne and mobile LIDAR data processing. We are the North American sales and support center for Terrasolid, the world's leading LIDAR processing tools. Through QCoherent Software LLC, a GeoCue subsidiary company, we offer a range of tools for LIDAR data exploitation and management for stand-alone and ESRI® environments. We offer a broad range of on-site training plans from specialty topics to full end-to-end "bootstrap" production training.

Our relationships with our customers date back over the three decades of the migration of geospatial processing from paper systems to all digital workflows. These relationships are characterized by direct honesty and a commitment to making our customers successful over the long term. Our goal is to establish and maintain mutually profitable relationships with our clients.

#### **Geographic Resource Solutions**

1125 16<sup>th</sup> St., Suite 213 Arcata, CA 95521 (707) 822-8005; (707) 822-2864 (fax) grs@grsgis.com www.grsgis.com



Geographic Resource Solutions (GRS) was founded in 1989 to provide superior technical and consulting services to the international GIS and Remote Sensing community.

We at GRS are proud of our continued success in providing GIS and remote sensing services of exceptional quality. Our dedication to the needs of our clients and our technical expertise are demonstrated by the loyalty of our clientele. We are selective about the work we attempt, but we are flexible, innovative and can effectively adapt the unforeseen challenges of GIS projects. Our significant experience with a variety of GIS applications and software enable us to design solutions and ensure the success of our clients' projects.

Our clients include progressive local, state, federal, and private organizations that are involved in a wide variety of disciplines:

- · Forest Management
- · Biomass Inventory
- Ecological Assessment
- Wildfire Prevention & Risk
- · Wildland Resource Management
- · Energy & Petroleum
- · Wildlife Management
- · Public Utilities
- · Municipal Planning
- Transportation
- · Assessment & Land Records
- · Environmental Assessment.

**Image Classification** - GRS has developed and refined our Discrete Classification process for developing detailed and accurate land cover data that is unparalleled in the industry. Our specialized algorithms and techniques enable the development of complex natural and cultural features from satellite and airborne imagery, including detailed descriptive and quantitative landcover attributes including cover, size, biomass, and wildland fuels.

Our unique methods, sensitivity to our clients' needs, and successful project work, combine to make GRS a recognized leader in the commercial image processing community.

**Field Data Collection and Inventory** - GRS has designed and developed field data collection methods and sampling tools that have become widely accepted and used in vegetation/ecological assessments. Our *GRS Densitometer* is used throughout the world for vegetation cover estimation and canopy cover estimation. GRS has developed data recording and summary software integrated with GPS and hand-held GIS.

**GIS Consultation** - GRS provides expert consultation for design, implementation, and maintenance of complex GIS installations. GRS instructors work closely with our clients to develop and present customized GIS training for ESRI, Intergraph, and MapInfo products. GRS consultants also provide software design and development including



custom GIS applications, workflow automation, data validation, and GIS analyses.

**GIS Analysis and Modeling** - GRS consultants and analysts design and implement complex resource and predictive models for analyzing wildfire hazard, biomass, harvest, transportation, watershed, wildlife habitat, vegetation condition, wildfire-fuels, and land cover data sets. Our clients use these models and their results for hazard prediction and mitigation, resource planning, resource litigation, and environmental compliance.

**Data Services** - GRS performs advanced technical data services to improve the quality and functionality of our clients' data. GRS specializes in the transition of data from legacy systems and formats into state-of-the-art spatial databases. These services include data validation, translation, digital conversion, cleaning, automation, and design.

**Web GIS Mapping** - Many of our clients want to present and serve their spatial data in an intranet or Internet environment. GRS designs interactive GIS web sites using both commercial and open-source development environments such as ArcIMS, GeoMedia WebMap, and MapServer.

### Corporate Locations California, USA

Geographic Resource Solutions 1125 16th Street, Suite 213 Arcata , CA 95521 (707) 822-8005 info@grsgis.com www.grsgis.com

#### Alaska, USA

Geographic Resource Solutions 700 West 41st Avenue, Suite 200 Anchorage , AK 99503 (907) 563-9511 info@grsalaska.com www.grsgis.com

#### **Geolas Consulting**

Bahnhofstr. 36d D-83677 Reichersbeuern GERMANY +49-8041-7939752; +49-8041-7939753 (fax) mailbox01@geolas.com www.geolas.com



GeoLas Consulting is an engineering firm and service provider specialized on Airborne Laser Mapping (lidar). With over 14 years of experience in the development of lidar systems, lidar survey operations, and data processing, we provide first hand expertise and services for this exciting technology, helping our customers to map the world in 3D.

Our background in topographic lidar system development reaches back to the early 1990s when we presented the first airborne imaging lidar in Europe. We have since pursued the design and deployment of advanced lidar hard- and software giving us deep understanding of the technology and operational requirements.

#### **OUR SERVICES INCLUDE:**

- · Technology consulting and training
- · System integration support
- Development of lidar processing software (filtering, feature extraction, data quality enhancement, project management, quality control)
- Development of advanced topographic and bathymetric lidar systems
- Distributor and training for TerraSolid lidar software products
  Based on our in-depth knowledge of lidar system technology
  and operations we provide training, project support, and consulting services to our customers to help them make the most of lidar
  technology, and to avoid common pitfalls.

We team up with industry partners for the development of advanced lidar systems, and innovative post-processing tools.

#### Global Science & Technology, Inc.

7855 Walker Drive, Suite 200 Greenbelt, MD 20770 (301) 474-9696; (301) 474-5970 (fax) frontdesk@gst.com www.gst.com



GLOBAL SCIENCE & TECHNOLOGY, INC.

Headquartered in Greenbelt, Maryland, Global Science & Technology, Inc. (GST) also has offices in: Arlington, Virginia; Fairmont, West Virginia; Asheville, North Carolina; and Boulder, Colorado.

GSt provides service in the fields of science, engineering, Information Technology (IT), and technical support to government, industry, and academic clients. Our major clients include NOAA, National Weather Service (NWS), NASA Goddard Space Flight Center, and NASA Headquarters. We provide system and software design, development, engineering, test and integration for the NOAA Comprehensive Large Array-Data Stewardship System (CLASS). We also support the Climate Data Record (CDR) Program at the National Climatic Data Center (NCDC). For the National Weather Service, we have taken the lead in developing a mobile weather data system called MoPED or Mobile Environmental Data Platform System. We are also managing the creation of a National Mesonet.

Our work for NASA includes the development of the Earth Observing System Data Information System (EOSDIS) Clearing House (ECHO). We also developed the NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES). Other NASA-related work includes support of the NASA Goddard Space Flight Center Scientific Visualization Studio (SVS), Direct Characterization Laboratory (DCL), and the Direct Readout Laboratory (DRL).

We are investigating a new concept called the Terrestrial Ecosystem Dynamics (TerEDyn) mission. This project will significantly advance Earth System Science by documenting, with an unprecedented combination of spatial and temporal resolution, terrestrial ecosystems dynamics as affected by human activities and natural events.

GST has built a global reputation for serving clients through effective technology utilization and an intense customer focus. Our passion for innovation, tempered by years of real-world business experience, has made us a technology solution provider of choice for Government and industry alike. We pride ourselves on the public and private partnerships we have built and maintained since 1991.



#### **GRW** Aerial Surveys, Inc.

801 Corporate Drive Lexington, KY 40503-5401 (859) 223-3999; (859) 519-4507 (fax) kmeyer@grwinc.com www.grwinc.com



GRW is an award-winning mapping firm, among the nation's leading providers of geospatial services for federal, state, municipal, and private clients. Established in 1976, we provide highly accurate, cost efficient services, including the following:

- · Aerial Photography, ABGPS, IMU
- · LiDAR (Aerial, Terrestrial, and Mobile)
- GPS Surveying
- Photogrammetric Mapping
- · DEM/DTM
- Digital Orthophotography
- · GIS Data Conversion, Programming
- · GIS Design and Implementation

A subsidiary of GRW Engineers, Inc., our company was founded by Mr. G. Reynolds Watkins. Our founder's insistence on technical excellence and close, personal service lives on as the guiding principle at GRW. With over 225 professionals, GRW has offices centrally located in Kentucky, Indiana, Ohio, Tennessee, and Texas. We have the resources and expertise to ensure the successful delivery of your project. For more information, please visit www.grwinc.com, or contact GRW at (800) 432-9537.

#### **Harris Corporation**

1025 W. Nasa Blvd Melbourne, FL 32919 (321) 724-3448; (407) 984-6353 (fax) khowald@harris.com



Harris is an international communications and information technology company serving government and commercial markets in more than 150 countries. Headquartered in Melbourne , Florida , the company has approximately \$5.5 billion of annual revenue and more than 15,000 employees — including nearly 7,000 engineers and scientists. Harris is dedicated to developing best-in-class assured communications® products, systems, and services.

Harris has over 25 years experience in the processing and generation of geospatial intelligence products, systems and services. Whether it's Earth-based or space-based, commercial, or government, Harris has researched, designed, and delivered proven technology and products. This legacy of experience includes expertise in the fields of image processing and registration, imagery derived product production, information management and visualization.

Harris is a pioneer in developing leading-edge, multisensor / multisource data visualization, data fusion, high resolution digital

surface models, and 3D urban models. MET®, RealSite™, LiteSite™, InReality™, and TrueTerrain™ are just some of the Harris brands that are setting the standard for Geospatial Intelligence data products. Harris information management systems and portals for archival, search, retrieval and dissemination of video and imagery products have a user community numbering in the many thousands. FAME™, Active Catalog, GeoSTAR™ and GeoDART™ are just a few of our most recent developments in this arena.

Harris continues to develop faster and more efficient tools and processes for developing on-demand imagery derived products in the tactical environment. In addition to advancing our image processing techniques, our internal research and development efforts focuses on the automation of production processes for rapid turn-around product generation. Combined with our expertise in designing, developing and managing communications networks, we are focused on the timely and relevant delivery of Geospatial Intelligence to wherever it is needed – anytime, anywhere.

For more information on Harris Corporation, visit www.harris.com. For Geospatial Intelligence specific information please visit www.geoint.harris.com.

#### HAS Images, Inc.

136 North St. Clair Street; Suite 300 Dayton, OH 45402-1739 (937) 222-3856; (937) 222-2443 (fax) info@hasimages.com www.hasimages.com



HAS Images, Inc. is a veteran-owned small business that provides services to aerial survey companies, engineering and mapping firms, environmental consulting firms, government agencies, and other organizations that use aerial and space imagery in their research and design projects.

We are the only aerial photo lab with six Kodak RT aerial film processors, configured to process the new generation of black and white and color aerial films.

In addition to the finest film processing equipment, HAS Images maintains a calibrated Kodak Type 1b sensitometer to provide accurate sensitometric data for all film emulsions.

Our reproduction capabilities include the specialized equipment to make a complete range of conventional products from aerial films. Our digital services include image scanning with geometric precision using a LH Systems DSW 700 and Vexcel VX 4000 image scanners, rectification, mosaicing, and color hard-copy output to  $48^{\circ}\times96^{\circ}$  using the Cymbolic Sciences Light Jet 5000 RS large format digital printer. To assure only quality products are delivered we use and sell the HAS Film Cleaning System. This table top unit is designed to clean the emulsion and base in a single pass. An optional static elimination kit can also be purchased.

With our goal to be a one-stop shop, we have become an authorized dealer of Kodak Aerial products. This gives us the ability to fully meet our customer demands.

Having the most advanced laboratory equipment available is important, but it's HAS people who make the difference. They bring professional expertise to evaluating photographic processing systems, equipment calibration and maintenance, photographic reproduction techniques, quality control procedures and effluent management.



They understand the technical vocabulary, product applications, and quality assurance demands of the photogrammetric and remote sensing industries.

If you have questions or need additional information about our capabilities, services, film cleaner or Kodak aerial products, just call Gail, Ed, Tiffiny, Ken, or Harry.

#### **HyVista Corporation**

11/10 Gladstone Road Castle Hill, NSW 2154 AUSTRALIA 612 8850 0262; 6102 9899 9366 (fax) Hvc@hyvista.com www.hyvista.com

#### ICAROS, Inc.

1445 Research Blvd., Suite 150 Rockville, MD 20850 (703) 819-5244 info@icaros.us www.lcaros.us



Icaros, Inc. is a comprehensive aerial geospatial solutions provider of turnkey, state-of-the-art technology products, software, services and training to a multitude of clients worldwide.

Our private sector customers include some of the biggest and best organizations in precision agriculture/forestry, energy, and strip mining. Public sector customers include both domestic and foreign government agencies involved in homeland security, surveillance & emergency response, flight training/simulation, and military mission planning.

Icaros' remote sensor systems provide collection capabilities for RGB (true color), NIR (near infrared), TIR (thermal infrared) and we are a pioneer in developing oblique aerial imagery solutions. Our systems are portable and easily installed on almost any small aircraft, to include UAVs. We've developed powerful mission and flight planning software to ensure collection accuracy.

Icaros' photogrammetric processing software and flight management software provide our customers with detailed, actionable aerial maps and imagery to support a wide variety of applications. Our software can be used to process almost any sensor system, and can process large bundle-blocks of images (10,000+).

Icaros can deliver complete solutions including 3D models for planning and training, orthomosaics, digital elevation models (DTMs, DSMs), overlayed thermal and RGB for near true-color images photographed at night or under poor lighting conditions, and 3D models from orthophotography and oblique imagery.

### Intergraph (ERDAS Inc.)

5051 Peachtree Corners Circle Suite 100 Norcross, GA 30092 (770) 776-3400; (770) 776-3698 (fax) info@erdas.com www.erdas.com



Intergraph is the leading global provider of engineering and geospatial software that enables customers to visualize complex data. Businesses and governments in more than 60 countries rely on Intergraph's industry-specific software to organize vast amounts of data to make processes and infrastructure better, safer and smarter. The company's software and services empower customers to build and operate more efficient plants and ships, create intelligent maps, and protect critical infrastructure and millions of people around the world.

Intergraph operates through two divisions: Process, Power & Marine (PP&M) and Security, Government & Infrastructure (SG&I). Intergraph PP&M provides enterprise engineering software for the design, construction, operation and data management of plants, ships and offshore facilities. Intergraph SG&I provides geospatially powered solutions including ERDAS technologies to the public safety and security, defense and intelligence, government, transportation, photogrammetry, and utilities and communications industries. Intergraph Government Solutions (IGS) is an independent subsidiary for SG&I's U.S. federal and classified business.

Intergraph is a wholly owned subsidiary of Hexagon AB, (Nordic exchange: HEXA B) and (Swiss exchange: HEXN). For more information, visit www.intergraph.com and www.hexagon.com.

#### University of Twente/Faculty ITC

[formerly International Institute for Geo-Information Science and Earth Observation (ITC)]

PO Box 217-7500 AE Enschede 7500 AE THE NETHERLANDS NETHERLANDS +31 53 4874211; +31 53 4874200 (fax) lurvink@itc.nl www.itc.nl



At the International Institute for Geo-Information Science and Earth Observation (ITC), knowledge of geo-information management is readily available and is continually being developed and extended. By means of postgraduate education, research and project services, we contribute to capacity building in emerging countries and countries that are economically and/or technologically less advanced. In doing so, considerable attention is paid to the development and application



of geographical information systems (GIS) for solving problems. Such problems can range from determining the risks of landslides, mapping forest fires, planning urban infrastructure, and implementing land administration systems, to designing a good wildlife management system or detecting environmental pollution.

The key words characterising our activities are geo-information management, worldwide and innovative. We concentrate on earth observation, the generation of spatial information, and the development of data integration methods. Furthermore, we provide tools that can support the processes of planning and decision making for sustainable development and the alleviation of poverty in emerging economies. Based in Enschede, in the east of the Netherlands, ITC is the largest institute for international higher education in the country.

#### **RESEARCH**

The ITC Research Programme develops cutting-edge knowledge and innovative approaches in geo-information science and earth observation. The programme addresses applications of geospatial data for space and resource management and the provision of geospatial data for the user community.

#### **EDUCATION**

More than 19,000 course participants from over 170 countries have followed ITC courses since 1950. With almost 60 years of extensive experience and a dedicated scientific staff with a wide range of expertise, ITC is one of the world's foremost professional training establishments in the field of geo-information science and earth observation.

Over the years, ITC has developed a wide selection of degree, diploma and certificate courses in the field of geo-information science and earth observation. These courses are offered in the Netherlands, online and abroad by ITC itself or by ITC in collaboration with reputable qualified educational organisations.

#### **ADVISORY SERVICES**

To accommodate the rapidly changing demand for capacity building and institutional strengthening, ITC offers a flexible package of training and project services tailored to the needs of its clientele in terms of content, duration and location.

The aim of institutional development – by far the most important type of project service carried out by ITC – is to establish and/or improve the institutional set-up and capability of educational and professional organisations specialising in geo-information handling and earth observation.

#### Keystone Aerial Surveys, Inc.

Northeast Philadelphia Airport Post Office Box #21059 Philadelphia, PA 19114-0559 (215) 677-3119; (215) 464-2889 (fax) info@kasurveys.com www.kasurveys.com



**Scope of Business:** National and International Primary Aerial Data Acquisition

Keystone Aerial Surveys, Inc. (Keystone) specializes in providing quality aerial surveys and platforming services throughout North America, including Mexico, Canada, and the Caribbean. We have four geo-strategic locations; Philadelphia, PA (headquarters), Tyler, TX, Benson, AZ and Los Angeles, CA. The Flight Department has experience collecting airborne imagery at high and low altitudes in several formats including film (color positive, color negative, color infrared, black and white, black and white infrared) and digital (RGB, NIR, 4-band), high and low oblique-photography and LiDAR. Keystone also collects and processes both Airborne GPS (ABGPS) and Inertial Measurement Unit (IMU) data.

Keystone operates 19 aircraft, 13 metric camera systems, 4 large format digital sensors and 2 LiDAR systems. Seven of Keystone's employees are ASPRS Certified Photogrammetrists/Technicians and employs flight crews consisting of pilots and operators along with fully equipped and staffed photo lab and IT Department for extensive post processing support.

With over 49 years of aerial survey knowledge and the experience gained through managing and acquiring over 350 individual large-scale digital projects for various clients throughout the United States, Keystone is uniquely positioned to acquire aerial imagery collection projects with various requirements while ensuring the timely delivery of the best possible product.

With a large resource of survey crews, aircraft, and the latest sensors and GPS navigation technology, Keystone is able to maximize the benefit from limited weather and sun angle. The IT Department designs and supports unique software and processes to expedite post processing while maintaining the quality expected from Keystone.

Please contact us directly or visit our web page @ www.KASurveys.com for more information.

#### **Geographic Locations**

#### KAS - Benson, Arizona

2200 W. Aviation Drive Benson, Arizona 85602

Phone: (520) 508-3359; Fax: (520) 423-3888

KAS - Los Angeles, CA

10300 Airpark Way, Hangar #5 Los Angeles, CA 91331

Phone: (818) 842-5127; Fax: (818) 485-8550

KAS - Tyler, Texas

209 Airport Drive, Hangar #4

Tyler, TX 75709

Phone: (903) 600-1310; Fax: (903) 642-0057



#### KLT Associates, Inc.

100 Corporate Place Peabody, MA 01960-3809 (978) 536-9100; (978) 536-9100 (fax) sales@kltassoc.com www.kltassoc.com



ATLAS provides a fully integrated system for collecting, editing, and retrieving geographic information, softcopy stereo data collection, manipulation of TINs (Triangular Irregular networks) and production ortho rectification of aerial, satellite and digital imagery, including the new digital cameras such as ADS40 or DMC. A fully integrated and automated AT (Aerial Triangulation) system is available for even the most difficult mapping projects.

The ATLAS tool suite provides extensive mosaicing capabilities and a powerful photogrammetric tool set.

Today's ATLAS represents the latest generation of KLT Associates' industry standard digital mapping software. Earlier versions of ATLAS include MAPS300 (distributed by KERN Instruments), MAP/CE (available from LEICA AG Switzerland) and EDIT300 (through Carl ZEISS) programs.

ATLAS, which are used worldwide by private photogrammetric companies and government mapping agencies alike. Supporting KLT's own digital softcopy workstation, ATLAS/DSP (Digital Stereo Plotter), as well as a wide range of analog / analytical stereoplotters, and digitizing tablets for 2-D and 3-D map exploitation. ATLAS/DSP can also provide a direct interface to CAD systems such as Microstation, where all ATLAS tools are used for orientation and project management, and data collection is within the Microstation environment.

ATLAS was written specifically to handle the problems of digitizing geographic data, interactively editing both graphic and non-graphic attribute information, and then gaining access to the database by attribute codes and ground coordinates for bi-directional data flow. Attribute codes can be maintained bi-directional for map maintenance and map update projects.

Using image correlation routines ATLAS/AT (Aerial Triangulation) and ATLAS/ATM (Automatic Terrain Modeling) ease the burden of operator measured DEMs (Digital Elevation Models) and photo-byphoto tie point and pass point AT measurements.

ATLAS/AT's Interactive point analysis eases the tasks involved with identifying and editing bad or questionable AT points, providing the ability to edit and change point and performing a new adjustment on-the-fly. Extensive math models are provided for the import of satellite sensors.

ATLAS/TIN provides tools for real world terrain modeling. Solids modeling, fly-troughs, and image draping represent some of the functions used in the TIN package for interactive terrain modeling and terrain visualization. ATLAS/TIN is the kernel application for ATLAS/ORTHO.

ATLAS/ORTHO is an extensive set of tools for radiometric, geometric, rectification, and mosaicing of digital imagery. ATLAS/ORTHO is a fully automated process for the production and manipulation of ortho rectified imagery.

Each ATLAS application has an extensive set of BATCH routines to insure and /or build data integrity, reducing the interactive time needed by an operator in any given data set or task.

ATLAS data (vector and/or raster) files are easily converted and/or provided in industry standard formats for use with other CAD, GIS, and mapping systems, like ARC/INFO, AutoCAD, or Microstation.

#### **Kucera International**

38133 Western Parkway Willoughby, OH 44094-7589 (440) 975-4230; (440) 975-4238 (fax) map@kucerainternational.com www.kucerainternational.com



Kucera International Inc. is a leading provider of high quality, costeffective aerial mapping and related geomatic services to government and private entities throughout the US and abroad.

Kucera's in-house capabilities and experience include digital and film-based aerial photography, vertical and oblique aerial imaging, digital and photographic image reproduction, airborne and ground-based GPS control surveying, aerial lidar and remote sensing, film and map scanning/digitizing, softcopy and analytical aerotriangulation and stereocompilation, digital terrain and surface modeling, first and second generation digital orthophotography, new and updated digital planimetric and topographic mapping, cadastral and land use/landcover mapping, geospatial data conversion and distribution, 2D and 3D GIS/modeling, utility/infrastructure surveys/inventories, E911 mapping/addressing, mobile ground mapping and laser scanning, volumetric surveys, historical aerial image research and mapping, change detection, photogrammetric and GIS programming, and civil and environmental engineering.

For aerial data acquisition, Kucera operates a fleet of aircraft oufitted with latest-generation aerial camera, lidar, multispectral and thermal sensor, and airborne GPS/IMU in-flight georeferencing systems. Kucera's ground data acquisition is accomplished with geodetic grade GPS receivers, mobile mapping/GIS systems, and a variety of conventional survey instruments and land and watercraft, Photogrammetry, mapping, and digital imaging are performed on dedicated digital and analytical photogrammetric and image processing systems. For GIS and geospatial data conversion, Kucera operates current versions of all major raster/vector GIS and CAD platforms.

Kucera's staff of 90 consists of experts in photogrammetry, surveying, remote sensing, engineering, CAD, GIS, computer science, photography/imaging, geography, forestry, geology, natural resources, planning, business communications, marketing, and a variety of related disciplines. The staff includes licensed/certified photogrammetrists, surveyors, engineers, GIS specialists, and computer technicians. The average individual experience level of Kucera's staff is over 15 years.

Kucera is a longstanding corporate sustaining member of ASPRS, MAPPS, and a variety of state and local GIS, surveying, and mapping organizations. Kucera is channel partner with Google Earth and GeoSpan/GeoVista mobile/oblique imaging services.



#### Lead'Air, Inc.

(formerly Track'air BV)

113 S Hoagland Blvd. Kissimmee, FL 34741 (407) 343-7571; (407) 343-7572 (fax)

info@trackair.com www.trackair.com



Lead'Air Inc., located on the Kissimmee airport, FL, is an affiliate of Track'Air in the Netherlands. Lead'Air manufactures and installs aerial navigation and surveying equipment for use in airplanes and helicopters.

Lead Air has developed an exceptional ability to provide their customers with dedicated resources to research and design completely custom solutions with unsurpassed speed and cost.

#### LizardTech

1008 Western Ave., Suite 200 Seattle, WA 98104-1090 (206) 652-5211; (206) 652-0880 (fax) info@lizardtech.com www.lizardtech.com



Since 1992, LizardTech® has delivered state-of-the-art software products for managing and distributing massive, high-resolution geospatial data such as aerial and satellite imagery and LiDAR data. LizardTech pioneered the MrSID® technology, a powerful wavelet-based image encoder, viewer, and file format and now has offices in Seattle, Denver, London and Tokyo. LizardTech is a business name of Celartem Technology Inc. For more information about LizardTech, visit www.lizardtech.com.

#### Magnolia River Geospatial

(formerly Aeroquest Optimal, Inc./Optimal Geomatics)

4975 Bradford Drive, Suite 100 Huntsville, AL 35806 (256) 882-7788; (256) 882-7774 (fax) contact@magnolia-river.com www.magnolia-river.com



Magnolia River is a customer focused, quality driven company that provides a wide array of infrastructure and geospatial solutions. Areas of expertise include pipeline, energy, GIS, surveying & mapping, and software products. Magnolia River is a certified woman-owned business, whose customers include federal, state, and local government agencies and commercial companies. *Magnolia River - Customer focused - Quality solutions*.

#### Martinez Geospatial, Inc. (MTZ)

2915 Waters Road, Suite 100 Eagan, MN 55121 (651) 686-8424; (651) 686-8389 (fax) Gil@mtzgeo.com www.mtzgeo.com



Scope of Business: Photogrammetric & Orthophotography, Land Surveying, High-Definition Laser Scanning, 3-D Spatial Modeling, and 2-D/3-D Graphics & Visualization services

Founded in 1974, Martinez Geospatial, Inc. (MTZ) is a geospatial service provider located in Minneapolis, Minnesota, offering Photogrammetry & Orthophotography, Land Surveying, High-Definition Laser scanning, 3-D Spatial Modeling, and 2-D/3-D Graphics & Visualization services to public and private sector clients nationwide. MTZ is minority-owned and certified throughout the United States with various governmental agencies as a Disadvantaged Business Enterprise (DBE), Minority Business Enterprise (MBE), and/or Small Business Enterprise (SBE).

With nearly four decades of photogrammetry and orthophotography experience, MTZ has earned a reputation in the mapping industry for staying at the forefront of technological advancement. MTZ staff includes American Society for Photogrammetry and Remote Sensing (ASPRS) Certified Photogrammetrists, licensed professional land surveyors, and a certified pilot and flight instructor. Backed by that expertise, MTZ has become the trusted provider of geospatial/mapping services to a diverse client base across North America.

MTZ provides planning, surveying, mapping, and consulting services for aviation, road & rail, energy, land development, and architectural & structural engineering projects from coast to coast. MTZ takes particular pride in its vast experience with Department of



Transportation (DOT) and Federal Aviation Administration (FAA) projects. Building on a tradition of genuine client relationships, consistent protocols, and custom services, MTZ always promises the foremost excellence in product quality and service.

For More Information, Please contact: General Company Information

Contact: Mr. Gil Martinez Phone: (651) 686-8424 Email: Gil@mtzgeo.com

#### **MDA Information Systems, LLC**

820 W, Diamond Avenue Suite 300 Gaithersburg, MD 20878 (240) 833-8200; (240) 833-8201 (fax) info@mdaus.com, www.mdaus.com



MDA Information Systems LLC is a U.S. company that provides efficient and advanced information solutions to government and commercial customers in three specialty areas. The Geospatial Solutions Division uses remote sensing, GIS, multi-source data, and large volume image and data processing technology to provide cutting edge intelligence and information products and analysis services. The ISR Division leverages MDA's world-leading multi-mission ground system experience to provide fixed and transportable remote sensing satellite ground systems. The Weather Services Division has been providing unique weather information products and services for energy and agriculture applications for over 30 years.

#### Merrick & Company

5970 Greenwood Plaza Blvd. Greenwood Village, CO 80111 (303) 751-0741; (303) 745-0964 (fax) info@merrick.com www.merrick.com/gis



Merrick & Company, an employee-owned professional services firm, provides comprehensive, client-focused land information services, including image acquisition (aerial and satellite), surveying (conventional, GPS, and ABGPS), Light Detection and Ranging (LiDAR), digital photogrammetry, digital ortho processing, precision cadastral mapping, utility network automation, GIS database design, and GIS application programming.

Merrick 's GeoSpatial Solutions Team, a pioneer in the field, utilizes leading edge processes and technologies to cost-effectively customize data collection, editing, and translation to meet any specifications and GIS format requirement. The company's services frequently involve custom application programming, integrating the most efficient hardware and software systems. Merrick 's strong alliances with numerous software providers enable its Geospatial Solutions Team to create fully customized, short- and long-term data management solutions.

Merrick 's combination of experienced personnel, survey equipment and computer resources enable the precise tailoring of each mapping project's approach. The company's in-house capabilities (GPS surveying, LiDAR, digital cameras, aerial triangulation, stereo compilation, CAD and GIS) allow for a completely integrated team under a single project manager.

#### Michael Baker Jr., Inc.

4301 Dutch Ridge Road, Box #280 Beaver, PA 15009-9600 (724) 495-7711; (724) 495-4112 (FAX) GIT@mbakercorp.com www.mbakercorp.com/gis



Baker's Geospatial Information Technology (GIT) organization is a powerhouse of experience and resources with over 300 GIS, survey, mapping and Information Technology professionals across North America. Baker has assisted hundreds of government agencies and public/private industry clients in implementing complex enterprise GIS solutions, including: Consulting, Database Development, Application Design & Development, Data Acquisition & Processing, Aerial and Mobile LiDAR, Surveying & Mapping, Systems Integration, Asset Management, Data Access & Visualization, Staffing Support and GeoLink®, our patented GIS/GPS Field Mapping software.

We offer our customers project management, project planning, aerial and mobile LiDAR capture and processing, aerial imagery, GPS surveys, topographic mapping, digital terrain modeling, and digital orthophotography. Baker provides expertise in the use of LiDAR for cost effective production of digital terrain surface models, capturing planimetric features, and creating 3D models for design and visualization

- We assist our clients to address business problems in today's complex world
- · We integrate new technologies and techniques
- · We implement robust, scalable, and proven solutions
- We bring vast knowledge and experience to our clients
- · We deliver best-in-class solutions

Our Geospatial team is committed to advancing our competitive technological edge. Our customers trust Baker to fulfill their most challenging requirements.

Michael Baker Jr., Inc. (Baker) is a wholly owned, subsidiary of the Michael Baker Corporation, headquartered in Pittsburgh, PA. Baker's markets of focus include Transportation, Defense, Federal Agencies, State and Local Government, and Pipelines & Utilities. Services span the complete life cycle of infrastructure and managed asset projects. With more than 3,300 employees in over 90 offices across the United States and internationally, Baker is consistently ranked by Engineering News-Record among the top 10% of the 500 largest U.S. design firms.

Branch Offices - Contacts Michael Baker Jr., Inc.:

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#### Michael Baker Jr., Inc. (Jonathan Soulen, Operations Manager)

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#### Michael Baker Jr., Inc. (Aaron Morris, Operations Manager)

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Phone: (601) 607-8752; Fax: (601) 607-8701

#### RBF Consulting [A Baker Company] (Greg Helmer, PLS)

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Phone: (949) 472-3505, Fax: (949) 472-8373

### Microsoft UltraCam Team (Vexcel Imaging, GmbH)

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www.microsoft.com/ultracam



With its operations based in Graz, Austria, and sales and support teams in North America, Microsoft's UltraCam business unit brings more than two decades of photogrammetry expertise to Microsoft's Bing Maps business unit. The division is responsible for the highly successful line of UltraCam digital aerial mapping systems that include the UltraCamLp, UltraCam Falcon and UltraCam Eagle digital photogrammetric sensors. Rounding out the UltraCam mapping systems offering is the UltraMap workflow software system for processing UltraCam imagery to Level 02 and Level 03 quality data, and with features that include distributed processing with automated load balancing, automated project-based color balancing, and additional quality control tools.

#### **NASA Earth Science Division**

300 E. Street S.W. Washington, DC 20546 (202) 358-1599; (202) 358-3098 (fax) elbert.l.cox@nasa.gov www.appliedsciences.nasa.gov



Benchmarking the use of Earth System Science Results for Decision Support.

The Earth Science Applications theme of the NASA, conducted within the Earth Science Enterprise (ESE), benchmarks practical uses of NASA-sponsored observations from Earth observation systems and predictions from Earth science models. NASA implements projects that carry forth this mission through partnerships with public, private, and academic organizations. These partnerships focus on innovative approaches for using Earth science information to provide decision support that can be adapted in applications worldwide.

The ESE program focuses on applications of national priority to expand and accelerate the use of knowledge, science, and technologies resulting from the ESE goal of improving predictions in the areas of weather, climate, and natural hazards. The approach is to enable the assimilation of Earth Science model and remote sensing mission outputs to serve as inputs to decision support tools in integrated system solutions.

The outcomes are manifest in enhanced decision support and the impacts are projected to be manifest in significant socio-economic benefits for each of the national applications. NASA ESE has identified twelve (12) national applications with partner federal agencies and national organizations that can be served by the results of NASA aerospace research and development of science and technologies through integrated system solutions.

For more details on NASA's Vision and Mission; Science and Technology Returns, please visit our web site at http://www.earth.nasa.gov/eseapps/approach.html



#### NewTech Services, Inc.

P.O. Box 16301 Sugar Land, TX 77496-6301 (281) 573-8029, (281) 573-8030 (fax) nts@nts-info.com www.nts-info.com



New Tech Services, Inc. specializes in the Marketing of pre-owned mapping equipment and a Flight Planning Program. The company was established in 1991; since then we have been providing quality, personalized service to an increasing list of satisfied customers all over the word.

NTS is selling used Planes, Aerial Film and Digital Cameras, LiDAR and Lab Equipment etc. We have over 20 years of experience.

NTS sells a powerful, 3d flight-planning tool to assist in calculating the exact amount of images needed for the next job anywhere in the world, accurately and cost efficient. TopoFlight will reduce the time to produce a professional quote by more than half. The TopoFlight Viewer is used as an index and permanent record of each image and can be freely distributed and used as an impressive marketing tool for the client's archive. The customer's Logo is imprinted on each image. A demo can be downloaded for free from the Website and tested on your PC. Version 8 is available now, with either a Hardlock or Softlock for a PC or Server.

The "Navigator" is a Flight Management System to navigate the Aircraft and trigger the Camera at pre-defined positions. TopoFlight Products are marketed worldwide and sold in over 20. Credit Cards are accepted.

Contact our office anytime at nts@nts-info.com. We look forward to hear from you. More information is available at www.nts-info.com or www.TopoFlight.com Call: 1-281-573-8029 Se habla español. Llámenos.

"Ahead With Smart Tools - TopoFlight - The Standard in 3D Flight Planning "  $\,$ 

#### **NGA-National Geospatial-Intelligence**

Agency-Bethesda 4600 Sangamore Road Bethesda, MD 20816 (703) 735-2639 NARPPO@NGA.mil www.nga.mil



The National Geospatial-Intelligence Agency (NGA) is a Department of Defense combat support agency and a member of the national Intelligence Community (IC). NGA develops imagery and map-based intelligence solutions for U. S. national defense, homeland security and safety of navigation.

NGA has major facilities in the Washington, D.C. and St. Louis, MO, areas. The Agency also fields support teams worldwide.

#### **OUR ROLE IN THE INTELLIGENCE COMMUNITY**

NGA is the IC's principal producer of and advisor for GEOINT. The agency provides timely, relevant and accurate geospatial intelligence in support of national security objectives. The term "geospatial intelligence" (GEOINT) means the exploitation and analysis of imagery and geospatial information to describe, assess and visually depict physical features and geographically referenced activities on the Earth. Geospatial intelligence consists of imagery, imagery intelligence and geospatial (e.g., mapping, charting and geodesy) information. GEOINT uses imagery to make sense of volumes of data and information. GEOINT builds the bridge from information to intelligence-from decision to action.

Information collected and processed by NGA is tailored for customerspecific solutions. By giving customers ready access to geospatial intelligence, NGA provides support to civilian and military leaders and contributes to the state of readiness of U.S. military forces. NGA also contributes to humanitarian efforts, such as tracking floods and disaster support, and to peacekeeping.

#### **COMBAT AND HUMANITARIAN SUPPORT**

As a Department of Defense combat-support agency, NGA provides the warfighter with precise, timely GEOINT data, information and products.

Accessibility and usability are our watchwords as we continue to focus on moving data to people, instead of moving people to data.

In addition to supporting combat operations, NGA also supports disaster relief and homeland defense operations by providing GEOINT data, products and analyses to lead federal agencies and first responders.



#### **NOAA National Geodetc Survey**

1315 East West Highway Silver Spring, MD 20910 (301) 713-2663; (301) 713-4572 (fax) info\_center@ngs.noaa.gov; www.ngs.noaa.gov



NOAA's National Geodetic Survey (NGS) is responsible for defining, managing, and providing public access to the National Spatial Reference System (NSRS), a consistent national coordinate system that provides the foundation for mapping and charting; state boundaries; transportation, communication, and land records systems; and numerous scientific and engineering applications. NSRS provides an extremely accurate geographic framework throughout the United States and

its possessions; without it, bridges and tunnels might not meet in the middle, planes might land next to—rather than at—airport runways, and trains might speed toward one another on the same track at the same time. NGS develops standards and guidelines for conducting field surveys and helps to coordinate surveying methods among federal government agencies.

#### **NGS ALSO:**

- · locates obstacles and aids air travel;
- · defines the national shoreline;
- conducts training workshops and information forums throughout the United States;
- · provides technical advisors to improve local surveying capabilities;
- helps to improve precise positioning instruments and procedures.
- conducts research in geosciences, including earth orientation, absolute gravity, satellite geodesy, and related fields;
- monitors grants, contracts, and transfers of funds to universities, private organizations, and other agencies for cooperative research projects;
- maps the coastal zone and waterways of the United States and its possessions, providing a vital service to the marine transportation industry and the stewards of the coastal environment;
- publishes and distributes earth science data and technical publications; and
- maintains a website that provides a wealth of free information.

### LEARN MORE ABOUT NOAA'S NATIONAL GEODETIC SURVEY BY CONTACTING NGS:

On the Web: www.ngs.noaa.gov By e-mail: info\_center@ngs.noaa.gov

By phone: 301-713-3242, or fax 301-713-4172

By mail : National Geodetic Survey, N/NGS12, 1315 East West

Highway, Station 9202, Silver Spring, MD 20910

#### **BRANCHES:**

NOAA NGS N/NGS32 Systems & Quality Assurance Branch NOAA NGS N/NGS32 - Requirements Brance and NOAA NGS N/NGS33 Applications Branch

#### North West Group

5438-11<sup>th</sup> Street NE; Suite 212 Calgary, AB T2E 7E9 CANADA

(403) 295-0694; (403) 295-2444 (fax) Toll Free Phone: 1-800-661-6782 Toll Free Fax: 1-888-840-1440

info@nwgeo.com www.nwgeo.com



#### NORTH WEST GROUP

North West Group is a leading provider of high-quality aerial mapping and related spatial data services throughout Canada, the U.S. and international markets. Since 1988, innumerable complex projects, to various technical specifications, have been completed around the world. North West is based at the Calgary International Airport, Calgary, Alberta, Canada.

#### Services include:

- · Digital imagery and LiDAR acquisition a
- · Digital imagery processing
- · LiDAR processing
- · Internet based imagery and LiDAR delivery

North West owns and operates six twin-engine aircraft specially modified and equipped for remote imagery and LiDAR acquisition, including four Cessna Conquest 441 turbo-props and a Cessna 406 Twin Caravan. North West owns six Leica ADS80 digital imaging sensors and a Leica ALS50-II LiDAR sensor.

North West has been ISO certified since 1998 and is a sustaining corporate member of ASPRS and MAPPS. For more information, please visit our website at www.nwgeo.com

#### Other Location

North West Group,Inc. 600-17 Street, Suite 2800 South Denver, Colorado, USA 80202

Phone: (303) 832-4232; (303) 860-0742 (fax)



**Northrop Grumman** 

15036 Conference Center Drive Chantilly, VA 20151 (703) 633-8300; (703) 449-7636 (fax) geoint@ngc.com www.northropgrumman.com

#### NORTHROP GRUMMAN

Northrop Grumman has over 40 years of experience developing comprehensive suites of geospatial intelligence solutions to help protect and secure the nation. The company provides all services, from tactical ground sensors to airborne collection to tactical air surveillance, and is uniquely positioned at every level to respond to their customers' unique requirements.

Northrop Grumman's geospatial portfolio includes leading-edge technological services and solutions for geospatial data acquisition, LiDAR collection and processing, photogrammetric services, airborne imaging, surveying, mapping, and advanced sensors.

Northrop Grumman solutions enhance customers' applications through superior intelligence gathering and mission planning, routing and logistics, execution monitoring, physical asset tracking, exploration of "what if" scenarios, data exploitation via advanced analytics and dissemination, highly integrated databases and sensor networks, and secure C2 systems.

Using a broad range of end-to-end geospatial capabilities, combined with a continuous desire to present customers with relevant solutions that ensure full interoperability and control in the world of geospatial information and intelligence, reinforces our position – mission success depends on incorporating sophisticated geospatial solutions into government, military, intelligence, homeland security and commercial IT infrastructures.

Northrop Grumman is a leading global security company whose employees provide innovative systems, products, and solutions to government and commercial customers worldwide, through five business sectors focused on aerospace, electronics, information systems, shipbuilding and technical services.

#### **NSTec, Remote Sensing Laboratory**

P. O. Box 98521 - RSL - 09 Las Vegas, NV 89193 (702) 295-8001; (702) 295-8648 (fax) willaj@nv.doe.gov www.nstec.com

The Remote Sensing Laboratory (RSL) is operated by National Security Technologies LLC (NSTec) for the Nevada Site Office, National Nuclear Security Administration. The laboratory is located at Nellis Air Force Base with operations at Andrews Air Force Base in Maryland. The RSL is a center for advanced technologies, focused on the scientific, technological, and operational disciplines necessary to ensure the success of national security missions. RSL has a world-wide reputation for developing and customizing state-of-the-art instruments and producing standard-setting technologies in remote sensing. Multispectral scanner systems and specially modified aircraft are used in acquiring a wide range of environmental data. RSL has designed and maintains Geographical Information Systems (GIS) databases for the entire USDOE complex.

#### Observera, Inc.

3856 Dulles South Court, Suite 1 Chantilly, VA 20151-1693 (703) 378-3153; (703) 378-3166 (fax) info@observera.com www.observera.com



Observera, Inc. is a high technology small business that specializes in sophisticated geospatial processing and analysis technology for a broad spectrum of government and civilian customers. Observera supports our customers with advanced geographic information and image processing services and products. Observera's background in developing advanced imaging technologies for U.S. Government military and intelligence programs is also used to help civilian and commercial customers take advantage of the latest high-quality commercial imaging capabilities. Our experience extends across many imagery types, including photographs, electro-optical, infrared, synthetic aperature radar (SAR), polarimetric, and multispectral/hyperspectral data.

Our core technologies include digital photogrammetry, sensor modeling, image registration, spectral processing, feature extraction, classification, terrain model processing, imagery analysis, decision support systems and GIS.

#### **OBSERVERA'S PRIMARY BUSINESS AREAS ARE:**

- Photogrammetry, Sensor Models and Imagery System Engineering
- · Imagery & Geospatial Data Analysis and Quality Assessment
- · Algorithm Development & Optimization
- Independent Evaluation of 3rd Party Tools, Sensors, Techniques, and Algorithms.
- · Automated Geospatial Processes
- · Steamlined Imagery Workflows

#### **OUR SERVICES**

#### SUBJECT MATTER EXPERTISE

Observera delivers a rich understanding of the core remote sensing disciplines, as well as superior services in Geospatial imagery.

#### WORKFLOW OPTIMIZATION

Observera delivers broad-based analysis of workflow efficiency using our scientific, analytical and technical understanding of geospatial processes. We believe that workflow optimization must start with a thorough understanding of the current and desired concepts of operations and end results.

#### INDEPENDENT EVALUATIONS

We offer services across the full evaluation lifecycle, including requirements development and analysis, planning, experiment design, site selection, reference data acquisition and generation, assessment, analysis, and reporting.

#### RESEARCH AND DEVELOPMENT

Our focus is applied R&D, with specific research in areas related to automation of important geospatial processes and improving the user experience when it comes to geospatial and imaging tools.



#### **OUR PRODUCTS**

In addition to our services, Observera is both a developer and valueadded reseller of geospatial information products.

#### CONTINUUM™

Continuum™ allows interaction between temporal representations of data elements and their geospatial representations. For example, selecting an object in the timeline highlights it in the map viewer and vice versa. The tool allows the user to subscribe to data from various data stores. The timeline viewer allows simultaneous, multiple scale views of the temporal information data, which can simultaneously show minutes to centuries, if desired.

#### GENIE PRO® 2.0

An adaptive automatic feature extraction (AFE) software application that can be used to search and classify remotely sensed imagery. The software uses techniques from statistical machine learning theory and evolutionary computation theory – also known as genetic programming – to perform robust and customized AFE in multispectral, hyperspectral, panchromatic, and multi-instrument fused imagery.

#### **Optech Incorporated**

300 Interchange Way Vaughan, Ontario, L4K 5Z8 CANADA (905) 660-0808; (905) 660-0829 (fax) inquiries@optech.ca www.optech.ca



Optech is the world leader in the development, manufacture and support of advanced lidar and camera survey instruments. Optech offers both standalone and fully integrated lidar and camera solutions in airborne mapping, airborne bathymetry, mobile mapping, terrestrial laser scanning, mine cavity monitoring, and industrial process control, as well as space-proven sensors.

Optech provides a complete line of aerial digital cameras, both large and medium format, with Optech's patented True Forward Motion Compensation. Optech's CS-series aerial digital cameras—standalone or lidar-integrated—are rugged, high-precision, metric imaging systems with camera control, INS integration and image processing, enabling single and multi-sensor solutions that combine visible, multispectral and infrared modules into integrated payloads.

Optech lidar sensors operate in environments ranging from under the Earth to land, sea, air and beyond—into space. NASA included an Optech lidar sensor on its Phoenix Mars Lander; data from the sensor played a key role in discovering frozen water on Mars. For airborne applications, Optech developed the world's first commercial airborne laser terrain mapper, now known throughout the world as **ALTM**<sup>TM</sup>. Available in both application and platform-dependent configurations, Optech Orion and Pegasus ALTMs offer the greatest flexibility and efficiency available. The **Optech CZMIL**, an integrated lidar/imagery bathymetry system, automatically generates information products for the coastal zone.

The **Optech Lynx Mobile Mapper™** generates survey-grade lidar and image data from moving vehicles—at highway speeds. Lynx integrates the latest innovations in lidar sensors with multiple perspective lidar imaging and best-in-class imaging, navigation, product warranty and support.

The **Optech ILRIS Terrestrial Laser Scanner** is a fully portable, laser-based ranging and imaging system for the commercial survey, engineering, mining and industrial markets. The **ILRIS-LR** Long-Range model delivers the ultimate solution for mining applications such as volume calculations, slope analysis, change detection, rock fall analysis, discontinuity data collection and more.

Developed for underground mining environments, the **Optech CMS Cavity Monitoring System** delivers a fast, accurate, 3D surveying solution. The CMS collects thousands of accurately located points to determine a cavity's size, orientation and volume, and to create detailed engineering drawings.

Whether it's a high-altitude wide area mapping project, a low-altitude power line survey, or a small payload, low-power platform requirement, Optech delivers complete data collection solutions for a full range of application and installation scenarios.

#### Panvion Technology Corp.

6507 - 148 St Edmonton, AB T6H 4J4 CANADA (780) 989-5409; (780) 989-5409 (fax) tmili@telus.net www.panvion.com

#### **PCI Geomatics**

50 West Wilmot Street; Suite 200 Richmond Hill, ON L4B 1M5 CANADA 905-764-0614; 905-764-9604 (fax) info@pcigeomatics.com www.pcigeomatics.com



For over 28 years, PCI Geomatics has provided world-leading software solutions allowing users to extract timely and accurate information from geospatial imagery.

Integrated Software for Remote Sensing and Image Processing: PCI Geomatics' flagship software, Geomatica® breaks down the conventional divisions in traditional remote sensing, spatial analysis, photogrammetry, cartography, web and development tools by providing everything in a single, integrated environment.

**Integration with ESRI's ArcGIS®**: Geolmaging Tools for ArcGIS® is a suite of ArcGIS extensions offering accurate and efficient means of correcting raw imagery, opening new doors for the integration of remotely sensed imagery into GIS software. Geolmaging Tools are built on PCI's automated image correction and analysis technology and offers ease of use for even the non-photogrammetrist.

**Automated, High-Performance Solutions:** Geolmaging Accelerator (GXL) is a high-performance GPU computing solution for automated RPC aerial satellite orthorectification and automated pansharpening. By optimizing PCI's automated workflows, traditional image-processing is elevated to industrial-strength production.

**Real-Time Geospatial Collaboration:** GeoConference® is a live geospatial meeting system that operates via the Internet and facilitates connections to standard GIS and mapping systems, allowing data to be viewed simultaneously from many remote locations.



PCI Geomatics' award-winning technology is used by GIS professionals, scientists, researchers, educational institutions, and image analysts around the world and addresses a wide variety of industry applications, including the environment, agriculture, security and intelligence, aerospace and defense, and satellite receiving stations.

PCI Geomatics is headquartered in Toronto, Canada with worldwide facilities in Gatineau, Quebec, Canada; Arlington, Virginia, United States; Redlands, California, United States; Alexandria, Virginia, United States; Edinburgh, Scotland; and Beijing, China. PCI products and solutions are distributed through a direct sales force, international resellers, and third party partners.

#### Peregrine Aerial Surveys Inc.

#4 1276 Tower Street Abbotsford, BC V2T 6H5 CANADA (888) 940-2230; (604) 859-2230 (fax) info@pasi.ca; www.pasi.ca



Peregrine Aerial Surveys offers a highly-capable and reliable aerial survey and mapping service to western Canada and United States. We have the equipment, expertise and personnel to complete all aspects of a given contract, from initial flight planning through flight acquisition and post processing, including aerial triangulation, mosaicking, orthophoto production, as well as producing specialized products such as NDVI (normalized difference vegetation index).

#### Camera

Peregrine's primary data acquisition equipment is a state-of-the-art, large-format digital camera: a 230 megapixel DMCII 230 from Intergraph. This camera is new to the market, and provides a unique advantage over other large-format systems: it has a single large black and white sensor. Other cameras create one large black and white image by merging images taken from several different sensors together, creating a significant possibility for error during merging. These other systems also do not take the images at the same time, causing an 'artificial photo center'. The DMCII 230's 5 sensors (B&W, red, blue, green and IR) are all synchronized to fire at the same time, thereby generating data in which individual pixels can be compared between sensors or combined to generate a single large image.

The DMCII 230 is capable of acquiring very accurate data, with a pixel size of 10 cm flown at 1000 m ( $\sim$ 3500'), 5 cm if flown at 700m (2,300'), and even a pixel size as small as 2 cm can be achieved by flying at 500m (1600'). This capability means that a larger area can be captured in a single photo, reducing flight time and production costs while increasing the accuracy of the final product.

#### **Photo Science**

523 Wellington Way, Suite 375 Lexington, KY 40503-1394 (859) 277-8700; (859) 277-8901 (fax) rstarr@photoscience.com www.photoscience.com



Founded in 1974, Photo Science is a full-service Geospatial Solutions firm, specializing in aerial imaging and data collection, aerial and mobile LiDAR acquisition and processing, photogrammetric mapping, GIS, remote sensing, surveying, and systems integration services. Headquartered in Lexington, Kentucky, we employ nearly 200 professional and technical staff in nine facilities nationwide who are devoted exclusively to providing geospatial services to federal, state, and local agencies, as well as private sector customers. We have a strong group of professionals, including multiple ASPRS Certified Photogrammetrists, Professional Land Surveyors, Professional Surveyor and Mappers, Certified GIS Professionals, and Professional Engineers, with many years of experience in all facets of geospatial solutions.

Photo Science has dedicated the resources to maintain stateof-the-art equipment to stay current in this dynamically evolving industry. Our expanded aerial collection capability is now one of the largest in the nation. The company owns and operates 13 aircraft; both medium- and large-frame digital cameras that include 5 Z/I Imaging Digital Mapping Cameras, 1 Leica RCD30 Oblique Digital Camera System, 1 Vexcel UltraCamX Digital Mapping Sensor, and 1 Applanix DSS-439 Digital Sensor System. Coupled with our 4 Optech Gemini ALTM LiDAR Sensors, 2 Leica ALS70 LiDAR Sensors, 2 Leica ALS50-II LiDAR sensors, 1 Optech Lynx V200 Mobile Mapping System, conventional film cameras, softcopy photogrammetric workstations, and GPS technology; Photo Science truly delivers integrated mapping solutions with a fully-digital production work flow process. Additionally, Photo Science's GIS consulting, design, and data development professionals support our client's geospatial application requirements.

Photo Science possesses the capacity, professional qualifications, and experience needed to support the geotechnical industries. Our services include the full spectrum of:

- Aerial Imaging and Data Collection
- · Photogrammetric Mapping
- Geographic Information Systems
- · Remote Sensing
- · System Integration
- Surveys

#### **Other Locations**

#### **Photo Science**

Norcross, Georgia, USA (770) 564-9843; (770) 279-9568 (fax) jsimmons@photoscience.com

#### **Photo Science**

St. Petersburg, Florida, USA (727) 576-9500; (727) 576-9600 (fax) gflorence@photoscience.com



#### **Photo Science**

Colorado Springs, Colorado, USA (719) 646-9141 sraber@photoscience.com

#### **Photo Science**

Emeryville, California, USA (510) 834-2001; (510) 834-2101 (fax) dkelley@photoscience.com

#### **Photo Science**

Mission, Kansas, USA (913) 981-9602 (fax) dchapman@photoscience.com

#### Pickett & Associates, Inc.

475 South First Avenue Bartow, FL 33830 (863) 533-9095; (863) 534-1464 (fax) mapping@pickett-inc.com www.pickett-inc.com



Pickett and Associates, Inc. is a privately owned Florida based corporation that excels in providing high quality professional surveying and mapping services. Together, Pickett employees have created a company that celebrates 50 years of success.

Centrally located in Bartow, FL, Pickett offers an encompassing range of surveying and photogrammetry services tailored to meet our client's needs. Our vision is long-term and our expectation is to provide professional services to our clients through expertise, innovative solutions, honesty and integrity.

Today, Pickett is led by Mr. John M. Clyatt, P.S.M. As President and Principal in Charge, John has continued the tradition of excellence envisioned by our founder from the inception. A third generation surveyor, John has been in the surveying profession since 1976 and has held a Florida Professional Surveyor & Mapper license since 1984.

Our survey department, led by Greg Prather, Vice President, Director of Surveying, Florida licensed Surveyor and Mapper, is proficient and highly experienced in providing a wide array of ground and hydrographic surveying services utilizing the industry's most advanced equipment.

Pickett's photogrammetry department was created in 1995 as a natural extension to the services we provide. In charge of the photogrammetry department is T. Jeffrey Young, Vice President, Director of Photogrammetry, licensed Surveyor & Mapper in FL, SC and VA, and an ASPRS Certified Photogrammetrist. Pickett became the first surveying and photogrammetry firm in Florida to provide all types of photogrammetry services in a completely digital environment.

Our photogrammetry staff is kept current in the latest, state of the art equipment, software and services. The capability to fly and acquire aerial photography and all photogrammetry services under one roof allows Pickett to continue to provide consistent quality and accuracy.

#### Pictometry International Corp.

100 Town Center Drive, Suite A Rochester, NY 14623-4260 (888) 771-9714-0096; (585) 486-0098 (fax) info@pictometry.com www.pictometry.com



Pictometry International Corp. is the leading provider of geo-referenced aerial, oblique imagery and measuring software. Currently used by counties in 49 states across America, Pictometry is widely recognized as the provider of visual information systems for county 9-1-1, emergency management, tax assessment, and GIS departments. With applications in insurance, construction and navigation, our solutions are also marketed around the world by distinguished technology licensees.

Pictometry's proprietary image capture process produces Pictometry® Intelligent Images®. These images combine the power of oblique imagery with measuring capabilities to enable users to See Everywhere, Measure Anything, Plan Everything®.

Unlike traditional geospatial information systems which use orthogonal imagery to provide roof top views of a location, Pictometry's oblique image system captures imagery from an angle to reveal greater locational detail in high resolution, 3D-like detail. Imagery is captured from north, south, east, west and overhead views and each pixel is geo-referenced to enable measuring capabilities. Combined, these features provide users with up to 12 views of every square foot of an imaged area and the ability to accurately measure rooftops, lots, trees etc. — directly on the imagery — using an assortment of measuring tools for distance, area, height, pitch and more.

Easy to use and easy to integrate with other mapping systems, Pictometry solutions enhance productivity, improve decision making and dramatically reduce the cost and lost productivity associated with unnecessary travel to job sites and properties.

The Pictometry image library is continually updated and continues to grow. Currently, this library contains images of nearly 75% of the populated U.S. providing users with the added benefit of comparing property changes captured in imagery collected over time. Pictometry imagery and related software products can be downloaded and utilized in the office or accessed online using Pictometry Online® and web services.



Pinnacle Mapping Technologies, Inc.

8021 Knue Road, Suite 113 Indianapolis, Indiana 46250 (317) 585-2011; (317) 585-2014 (fax) rmking@pinnaclemapping.com www.pinnaclemapping.com



Pinnacle Mapping Technologies, Inc., a woman-owned and veteranowned small business, provides a broad range of photogrammetric and GIS services to clients in the private and public sectors. Our biggest strength is our people. We have seen what works and what does not; what emerging technologies to embrace and which ones to avoid. The net result is a small, dynamic company that can change its production very easily without distraction from corporate objectives or bureaucracy. At Pinnacle, we bring together our large company technical knowledge base within a smaller organization. Our customers feel like they are working with a large company that is in tune with quality assurance and customer satisfaction, they receive first-rate mapping products and they spend only a fraction of the cost a large company would charge for those services.

Pinnacle's staff includes ASPRS Certified Photogrammetrists, GISCI Certified GIS Professionals, Professional Land Surveyors, as well as numerous experienced Stereoplotter Compilers, Digital Orthophoto Technicians, Digital Cartographers, GIS/CAD Analysts and most importantly, a team dedicated to product Quality Assurance. Our staff is committed to customer satisfaction in every regard and to delivering high quality, easy-to-use geospatial data products.

#### **SERVICES**

- · Aerial Photography (Digital and Frame)
- · Lidar Acquisition & Processing
- · Mapping-related Geodetic Survey Services
- Film Scanning & Aerial Triangulation
- · Topographic and Planimetric Feature Extraction
- · Digital Orthophotography
- · GIS & CAD Data Modeling
- · GeoDatabase Design and Migration
- GIS Implementation Planning
- Web-GIS Application Development & Implementation

Premier Geospatial, Inc.

An IHS Company 15000 W. 64th Avenue

Arvada, CO 80007 (303) 302-8600; (303) 302-8601(fax) www.premiergeospatial.com info@premiergeospatial.com



PremierGeo provides custom aerial imagery and LIDAR acquisition, orthoimage rectification, Digital Surface Model generation, Land Survey services, GIS, and Mapping services. We take pride in our reputation for delivering on-time, cost-efficient geospatial solutions to a diverse client base of government and industry leaders for over a decade. Our Leica ADS40 (SH51) digital sensors utilize advanced 3-line scanner "push broom" airborne remote sensing technology to capture color (RGB) and color infrared (CIR) image data simultaneously in a single fly-over. In addition to collecting digital, high-resolution multispectral aerial imagery, we collect and process LIDAR data for the generation of detailed surface models to meet a variety of applications. We also are leaders of precision scanning and orthorectification of historical aerial photography and offer value-added remote sensing services.

PremierGeo's proven methodologies, innovative technologies and advanced parallel-processing computing infrastructure allow us to process tens of thousands of square miles of imagery and orthoimages each month. PremierGeo's flight crews have thousands of flight hours experience, enabling highly efficient, accurate and timely mission execution, while achieving superior image quality. Rigorous quality control and quality assurance measures ensure we provide the best, most accurate solutions to support your analysis and critical decisions.



#### **QCoherent Software LLC**

1880 Office Club Pointe Colorado Springs, CO 80920-5002 (719) 386-6900; (719) 272-8051 (fax) info@qcoherent.com www.qcoherent.com



QCoherent Software is the innovative provider of high-capacity, integrated Limitless LIDAR™ software tools. We are a company whose founders have a wide array of expertise with LIDAR and the mapping sciences. Our extensive knowledge of LIDAR and GIS software has initially been focused on the need for an ESRI extension for viewing and analyzing LIDAR data. These efforts culminated in the development of LP360 which has been exceptionally well received. The success of LP360 confirms that QCoherent Software's mission of providing powerful LIDAR software targeted at day-to-day operations is "spot-on".

#### LP360 benefits and features:

Virtually limitless LAS data architecture (load thousands of LAS files into ArcGIS without encountering performance issues)

- · Integrated extension for ArcMap/ArcCatalog
- · Requires only a standard ArcView license
- Creates a LIDAR data layer in ArcMap
- · ArcMap-enabled LIDAR layer properties
- · Specialized viewing controls and filters tailored for LIDAR data
- Optimized 3D/profile viewer
- Extensive import and export functionality including cross-section, slope, aspect and hillshading
- · End-user focused with easy-to-use controls
- · GIS Fusion blends imagery or other data layers with LIDAR
- $\boldsymbol{\cdot}$  ASCII to LAS import wizard (Merge other ASCII data with LIDAR
- Sonar, photogrammetric DEM, etc.)
- QA/QC Tools (including RMSE wizard)
- GIS Fusion™
- Dynamic on the fly TINing in LP360 3D viewer and ArcGIS data window
- On the fly contour interpolation
- Filter by elevation/ elevation masking
- · LAS statistics/access LAS header information
- · LAS Arctoolbox tools (reprojection, scale, and shift)
- Tripod/ground based LIDAR Integrator
- · SILC (Spectral Imagery LIDAR Composite) colorization LAS display
- · LP360 Classify

#### Radman Aerial Surveys

6220 24<sup>th</sup> Street Sacramento, California 95822 (916) 391-1651; (916)391-6537 (fax) Radaerial@aol.com www.radaerial.com

Radman Aerial Surveys, a certified small business and certified woman-owned mapping firm, is celebrating its twenty second year serving clients in the Western United States.

Our photogrammetric services include aerial photography, aerotriangulation, digital topographic and planimetric mapping, film scanning and digital orthophotography.

We specialize in high accuracy design scale mapping using analytical plotters for highways, electrical transmission lines, gas, water and sewer lines, land development projects, landfills, wastewater treatment plants, prisons and ALTA surveys. Softcopy plotters are used for the generation of orthophotography products.

Our facility located at Sacramento's Executive Airport hosts our two Cessna 206 turbo-charged aircraft. We also maintain a traditional photographic laboratory for black and white and color products and state of the art scanning equipment.

Radman's ability to provide full service, in-house capability, using our own photogrammetrists, pilots, aerial photographers and support staff to execute our mapping services assures our clients excellent quality control and timely completion of projects.

We are your complete mapping provider. Whether your project is large or small our project managers can help find the right solution for your needs.

#### Riegl USA, Inc.

7035 Grand National Drive Suite 100 Orlando, FL 32819 (407) 248-9927; (407) 248-2636 (fax) info@rieglusa.com www.rieglusa.com



With over nineteen years' experience, RIEGL USA delivers cuttingedge technology in quality airborne, mobile and stationary terrestrial laser scanning solutions. RIEGL USA is recognized as the performance leader in airborne scanning, hydrographic, mobile mapping, mining, and terrestrial based industries. From your initial purchase, to integration of the systems, as well as training and support, RIEGL USA stands out as an industry leader. The key factor to RIEGL USA's success is complete reliability and customer support.



#### Robinson Aerial Survey, Inc. (RAS)

One Edgeview Drive Hackettstown, NJ 07840-4003 (908) 813-3900; (908) 813-3967 (fax) lutzk@robinsonaerial.com www.robinsonaerial.com



Robinson Aerial Surveys, Inc., (RAS) has been providing a comprehensive range of aerial photography and photogrammetric base mapping services since 1936. RAS has its own photographic laboratory, digital and analytical mapping systems, and CAD workstations making it a fully integrated mapping facility.

RAS has significant experience in meeting our clients' needs in a full range of aerial photography and mapping applications. Our clients include land surveyors, engineers, developers, government agencies, utility companies, planners, attorneys, and corporations of all sizes and interests.

#### PROJECT APPLICATIONS INCLUDE:

- · Highway and rail design and construction
- · Residential and commercial land development
- · Flood plain definition
- · Environmental / historical studies
- · Construction progress mapping
- GIS base mapping
- · Development / Feasibility mapping
- · LIDAR Post-processing & Classification

### EXPERIENCE COMBINED WITH A WIDE RANGE OF APPLICATIONS

Robinson Aerial Surveys has a dedicated team of Certified Photogrammetrists, Stereo Compilers, CAD Specialists, Photo Lab Technicians and Licensed Land Surveyors. All of our professional and senior technical staff has between 15 to 30 years of experience in the photogrammetry profession.

#### RAS PROVIDES THE FOLLOWING SERVICES:

- Aerial photography and Low Altitude Mapping Photography (LAMP)
- · Digital Aerial Imagery
- Airborne GPS
- · LIDAR Acquisition & Post-processing
- · GPS Photo Control
- · Digital photogrammetric mapping
- $\cdot \ Aerial \ triangulation$
- · GIS Base Mapping
- Photographic lab services, scaled enlargements, historical photo archives
- · CAD production in MicroStation and AutoCAD platforms
- Digital Terrain Model (DTM) development
- · Digital Ortho-photography
- · Scanning services

Client satisfaction is the driving force behind our efforts. It is our mission to provide innovative and cost effective solutions to our clients. Our commitment to creating accurate mapping products delivered on schedule and within budget has been the foundation of our success for over 70 years.

#### Sanborn

1935 Jamboree Drive, Suite 100 Colorado Springs, CO 80920 (719) 593-0093; (719) 528-5093 (fax) information@sanborn.com www.sanborn.com



With a rich tradition of mapping dating back to 1866, Sanborn is a comprehensive geospatial solutions company. Sanborn provides geographic and location-based information from data capture through design and development of custom applications including; systems integration, spatial analysis, and modeling. Leveraging a history of remote sensing capabilities, Sanborn delivers high-quality products and services from traditional ground surveys, cadastral mapping, aerial surveys, photogrammetry and imagery analysis, to LiDAR; aerial/terrestrial/mobile, advanced web-based information systems, and state of the art 3D visualization systems. Sanborn has multiple offices partnering with customers worldwide to ensure their success in all geospatial endeavors. For more information, visit www. sanborn.com

### Science Applications International Corporation Space and Geospatial Intelligence Business Unit

Selwyn "Chip" Ferguson 14668 Lee Road Chantilly, VA 20151 (703) 676-.9210; (703) 944-6175 (fax) Selwyn.j.ferguson@saic.com www.saic.com



SAIC is a FORTUNE 500® scientific, engineering, and technology applications company that uses its deep domain knowledge to solve problems of vital importance to the nation and the world, in national security, energy and the environment, critical infrastructure, and health. The company's approximately 45,000 employees serve customers in the U.S. Department of Defense, the intelligence community, the U.S. Department of Homeland Security, other U.S. Government civil agencies and selected commercial markets. Headquartered in McLean, Va., SAIC had annual revenues of \$10.8 billion for its fiscal year ended January 31, 2010. For more information, visit www.saic. com. SAIC: From Science to Solutions®



#### The Sidwell Company

675 Sidwell Court St. Charles, IL 60174-3492 (630) 549-1000; (630) 549-1111 (fax) info@sidwellco.com www.sidwellco.com



Since its founding in 1927, Sidwell has built a tradition of providing highly accurate mapping and GIS solutions to clients in government and private industry. For nearly 50 years Sidwell has provided photogrammetric mapping services, and has performed thousands of photogrammetric projects, ranging in application from those for small development sites to municipalities, counties, large federal and international projects.

Sidwell is an employee-owned firm specializing in aerial imagery, geospatial services, photogrammetry, GIS planning, design and implementation, software development; data conversion and cadastral database development. Professional Services offered by Sidwell support a variety of applications including real estate assessment, public works, civil engineering, and emergency response dispatch. Sidwell serves clients nationally, and is an ESRI Business Partner. In addition, Sidwell is the Midwest Distributor of Ashtech Professional GPS products.

#### SIDWELL'S PHOTOGRAMMETRIC SERVICES INCLUDE:

- · Precision Aerial Photography
- · Digital Aerial Image Capture
- · Airborne GPS
- · Aerial Film Scanning
- · Ground Control Surveys and Monumentation
- Analytical Aerial Triangulation
- · Terrain Modeling and Topographic Mapping
- · Planimetric Feature Extraction
- · LiDAR
- · Digital Orthophotography
- Volumetric Inventory
- GIS development and training

The company's team of photogrammetric specialists includes numerous Certified Photogrammetrists and Licensed personnel with direct experience in the production of large-scale mapping projects. Sidwell maintains its own flight department featuring survey aircraft and various precision aerial mapping cameras.

As a distributor of Ashtech Professional products, Sidwell can provide clients with full range of professional GPS solutions which include both GIS mapping and survey grade receivers.

#### **Spatial Information Solution**

1 Research Blvd., Sutie 105 Starkville, MS 39759 (662) 323-0202; (662) 323-8229 (fax) cgohara@gri.msstate.ed www.spatialis.com

Spatial Information Solutions, Inc. (SIS), of Starkville, Mississippi, was formed in 2006 as a spin-off company from Mississippi State University (MSU) to accelerate the commercial release of novel map accuracy software technologies. Map Accuracy Tools™ are easy-to-use software tools that determine the accuracy of photography used to make maps, detect changes in photos for rapid map updates, and enable the rapid and effective assurance of accurate map data.

Accuracy Analyst™ (version 2.0), the flagship product in the family of Map Accuracy Tools, simplifies and standardizes the process of accuracy assessment of aerial or satellite image data, loading images and analyzing accuracy rapidly. Data providers and their customers appreciate the use of Accuracy Analyst to effectively assure and communicate the quality of new data in quantitative, reproducible ways, so that maps may be updated using new images without uncertainty or delays.

The user-friendly interface and native features of Accuracy Analyst mean that 30 minutes of training are enough to prepare staff to effectively use this software to efficiently and automatically conduct tasks that currently depend upon lengthy, complex, and expensive services, so that they can map with confidence.

SIS technologies replace traditional manual map accuracy verification, quality assurance, and content management methods with leading technology software applications that deliver significant benefits through savings in costs and time, improving the quality and content of map data, and reducing uncertainties in the decision-making so vital to our rapidly changing world.

The Mississippi Seed Fund, established by the Mississippi Legislature to provide high tech start-up companies with access to capital, selected SIS as the first company to receive a second round of investment, because SIS achieved all goals and company milestones in its first round of funding, including commercial release of the first product, Accuracy Analyst. For more information, visit http://www.spatialis.com/.

#### Spectral Evolution

1 Canal Street, Unit B1 Lawrence, MA 01840 (978) 687-1833; (978) 945-0373 (fax) info@spectralevolution.com www.spectralevolution.com



SPECTRAL EVOLUTION Full Range UV-VIS-NIR Spectrometers, Spectroradioradiometers and Spectrophotometers are used worldwide for many lab and field assignments due to their reliable, robust, rugged yet lightweight design and user-friendly features including: 100% photodiode array construction for low noise & reliable battery operated performance; fast, full spectrum measurements with no moving gratings; integral dark shutter and autoexposure for convenient scans.

SPECTRAL EVOLUTION Spectrometers and Speactroradiometers also feature:



- Full range 350-2500nm all photodiode operation with InGaAs and Si arrays- for both portable & lab models (280-2500nm models also available)
- Reliable fixed grating based optics with no internal fiber optics or moving parts to jam or break in the field.
- · Spectral radiance and irradiance calibration
- · One touch use- autoexposure & autoshutter
- · Lens, fiber, sphere and diffuser inputs
- · Wireless Bluetooth operation- with laptop or PDA
- Lightweight– all units weigh less than 8lbs with removable, rechargeable Li-lon battery.

SPECTRAL EVOLUTION maintains a facility in Lawrence, Massachusetts which houses all operations including, design, prototyping, manufacturing and in-house repair facilities for the instruments that it markets and sells worldwide, either through direct sales, OEM sales or through distributor agents. SPECTRAL EVOLUTION also maintains state of the art spectral, spectral radiance and spectral irradiance calibration facilities for periodic calibration of customer equipment in the UV, VIS, NIR and SWIR wavelength regions. See our website at www.spectralevolution.com for more information.

#### **Surdex Corporation**

520 Spirit of St. Louis Boulevard Chesterfield, MO 63005-1002 (636) 368-4400; (636) 368-4401 (fax) info@surdex.com www.surdex.com



For more than half a century, Surdex's talented staff of industry professionals has provided the experience and knowledge to serve a client base of federal, state and local governments, as well as private companies in the engineering, surveying, forestry, and oil and gas exploration and transmission industries.

Our full service photogrammetric production facility allows us to control every phase of the project, from acquisition with our fleet of seven company-owned aircraft fitted with the latest in aerial photographic technology, including three Digital Mapping Cameras, five aerial film cameras, and a LiDAR sensor, through final product generation and delivery. Our end-to-end capabilities ensure product quality and performance. Our highly experienced in-house crew of FAA-certified aircraft mechanics allows us to meet our schedules by increasing aircraft flight time and productivity.

We utilize the science and art of photogrammetry to provide the fastest, most accurate mapping data for our clients. We have the resources to provide clients with high quality images for their mapping needs. Give us the opportunity to produce your next project.

#### Surveying and Mapping (SAM), Inc.

4801 Southwest Parkway Parkway Two, Suite 100 Austin, TX 78735-8832 (512) 447-0575; (512) 326-3029 (fax) sam@saminc.biz www.saminc.biz



Surveying And Mapping, Inc. (SAM, Inc.) uses the latest technology to deliver precision mapping products to support client needs. As a leader in full-service geospatial solutions, SAM, Inc. offers in-house surveying; mobile, terrestrial and airborne LiDAR; photogrammetry; GIS; and engineering services.

As one of the largest providers of geospatial data solutions, SAM, Inc. has the tools and skills to develop efficient and customized solutions for projects of any scale. With more than 350 employees and growing, the breadth and depth of our available workforce allows us to accomplish very large projects on accelerated schedules. Our extensive network, processing and resources offer scalability to ensure quality and timely delivery of products.

#### Airborne LiDAR

SAM, Inc. owns and operates a Trimble Harrier 68i Airborne Laser Scanner that can be deployed from either a helicopter or fixed-wing aircraft. The Trimble Harrier 68i is the most advanced LiDAR scanning system on the market.

#### **Mobile LiDAR**

SAM, Inc. was an early adopter of Mobile LiDAR, an innovative mapping solution that incorporates advanced LiDAR sensors, cameras and position/navigation to collect survey-quality point data quickly and accurately. This non-invasive mapping system is ideal for civil engineering firms or government agencies managing rail, roadways, waterways, electric and design-build projects.

#### Photogrammetry & GIS

SAM, Inc.'s fully digital mapping department is led by a team of ASPRS-certified photogrammetrists supported by experienced technicians outfitted with the latest industry hardware and software technology. As an ESRI Authorized Business Partner, we provide complete turnkey GIS solutions.

#### Surveying

Our professional land surveyors utilize the latest dual-frequency GPS surveying receivers, fully robotic total stations and tablet PC data collectors to provide a full range of surveying, construction staking, HDS laser scanning and mobile mapping services.

#### **Engineering Services**

Our engineering capabilities include a full range of construction phase services. We provide Subsurface Utility Engineering and Utility Coordination and use the latest sensing technologies for accurately mapping underground utilities. Our wholly-owned subsidiary, SAM-CS, Inc., provides services for construction inspection, contract administration, material quality, specifications and QA/QC management.



#### TerraSim, Inc.

One Gateway Center, Suite 2050 420 Fort Duquesne Blvd Pittsburgh, PA 15222 (412) 232-3646; (412) 232-3649 (fax) info@terrasim.com www.terrasim.com

# TERRASIM

TerraSim, Inc. develops advanced software solutions for geospatial technologies. We provide our customers with innovative products for the rapid creation of complex visualizations derived from geospatial source data. TerraSim products support customers in diverse markets, including defense modeling and simulation, site modeling for intelligence preparation, and civil applications for 3D visualization.

Our products support the entire geospatial processing chain. As a geospatial content generation company, we support a number of industry standard formats to allow our customers to integrate diverse information sources into their own applications and end user solutions. Our innovative source data processing technology, coupled with the use of parallel processing on Windows workstations, provides our customers with the highest performance at the lowest fixed cost.

#### TerraSim 3D visualization software products:

TerraTools® supports the advanced processing of cartographic vector data, 3D object models, and remotely sensed imagery compiled into highly accurate 3D visualizations of real world environments. TerraSim introduced the first commercial use of integrated triangulated irregular networks (ITINs) in 1996. ITINs have since been adopted as the modeling and simulation industry standard terrain representation for high fidelity 3D geospatial visualizations.

TerraTours® employs TerraSim's GISLink technology, which allows users to link multimedia objects to geographic features in 3D visualizations for interactive query and display of collateral or geo-referenced data. TerraSim can help you deliver compelling 3D applications to your customers.

#### Source data preparation software products:

RoadMAP from TerraSim® is a powerful road network extraction system that automates the linear feature extraction process. Based on cutting-edge research in image processing and computer vision, RoadMAP detects, delineates, and attributes roads and other linear features.

DEMTools from TerraSim® is a digital elevation model (DEM) management tool enabling rapid and accurate fusion of multiple DEMs from a variety of sources. DEMTools provides complete control over DEM extent, post spacing, and coordinate system.

#### **Topcon Positioning Systems**

7400 National Drive Livermore, CA 94551 (925) 245-8300; (925) 245-8591(fax) information-tps@topcon.com www.topconpositioning.com



Topcon Positioning Systems is a worldwide leading developer and manufacturer of precision positioning equipment and offers the widest selection of innovative precision GPS systems, mobile GIS data collection solutions, lasers, optical surveying, and machine control products. From inner city utility projects to rural telecommunications projects, Topcon Positioning Systems creates innovative technology solutions that give a decidedly competitive edge to end-users. Topcon has focused on developing an array of integrated positioning and automation technologies to meet the constantly changing demands facing GIS, construction, remote sensing, surveying, agriculture, utilities and law enforcement professionals worldwide.

For applications such as corridor mapping, asset inventory, and utility infrastructure Topcon's innovative mobile mapping solutions can improve data workflows and increase production. The vehicle-mounted IP-S2 system can map data at normal travel speeds for roadway mapping projects, power electric corridor or any assessment and roadside feature inventory. The IP-S2 HD mobile mapping system captures 1.3 million points per second, covering features up to 100m away. A 360 degree digital camera is included providing spherical images at fixed distance intervals. Through the integration of 360° images and high density point clouds, users get a superior dataset for easy feature recognition and quick data extraction.

Topcon's GLS-1500 scanner is lightweight, cable free and designed for quick and hassle-free setups. While other laser scanners take two people to setup and operate, the GLS-1500 is a one-person instrument. The GLS-1500 captures data at a range of 500 ft (150m) to a typical surface, and with an extended range to 1100 ft (330m) for more reflective surfaces.

Combining cutting edge hardware and software, Topcon offers a complete end-to-end solution for a variety of applications. With Topcon simplify your workflow and just scan, extract, and deliver.

#### Towill, Inc.

2300 Clayton Road, Suite 1200 Concord, CA 94520 (925) 682-6976; (925) 682-6390 (fax) dawn.antonucci@towill.com www.towill.com



Towill is a leading provider of geomatics services and technologies, including land surveying, aerial photography, terrestrial and airborne LiDAR, digital photogrammetric mapping, volumetrics, and geographic information systems (GIS). Towill also provides specialty services such as tunneling surveys and industrial metrology. Towill's



competitive edge is our 58 years of experience in successfully providing a broad range of geomatics engineering services, coupled with the philosophy that it is our role to understand the specific needs of our clients and design practical solutions to meet their unique requirements.

Building on a successful business established in 1955, Towill has grown into an industry leader with approximately 100 employees in nine offices located throughout California. Colorado, and Texas. Our corporate headquarters is located in Concord, California. A key to Towill's success over the years has been our commitment to effectively utilize new technologies to our clients' advantage. We have invested over \$5M in modern hardware and software to ensure that we can provide our clients with the most accurate, cost-efficient, and timely services available. Towill has assembled a multi-disciplined staff with the experience and qualifications to perform multiple roles, giving our clients a broad depth and range of skills to meet all of their project needs. The evidence that our formula works is demonstrated by our high rate of repeat clients and referrals. Over 85% of Towill's business comes from repeat clients, resulting in over \$72M in fees over the last five years. As technology grows and new markets emerge, our clients will continue to benefit from Towill's commitment to quality and innovation – and the expertise of a proven team who is on your side to meet the challenges ahead.

#### **U.S.** Geological Survey

12201 Sunrise Valley Drive 517 National Center Reston, VA 20192

Douglas Spencer: (703) 648-4462; (703) 648-5939 (fax)

dspencer@usgs.gov

http://remotesensing.usgs.gov



The U.S. Geological Survey (USGS), established by Congress in 1879, serves the Nation as the science agency for the Department of the Interior. The USGS' mission is to provide reliable scientific data and information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life. As the Nation's largest water, earth, and biological science agency, the USGS collects, monitors, analyzes data and information, and provides scientific understanding about natural resource conditions and issues. The diversity of our scientific expertise enables us to carry out large-scale, multidisciplinary investigations and provide impartial scientific information to resource managers, planners, and other customers.

For decades, USGS has been a world leader in providing remotely sensed data and demonstrating its scientific applications. In 2002, the USGS reaffirmed its commitment to remote sensing science by establishing the Land Remote Sensing (LRS) Program with three major components: satellite missions; products, data preservation, and access; and research and applications. USGS acquires, processes, archives, and distributes Landsat and other satellite and airborne remotely sensed data products to users worldwide. USGS operates and manages the Landsat satellite missions and manages the Nation's archive for the world's largest collection of civilian remotely sensed data covering the Earth's landmasses.

The USGS provides all Landsat data in the U.S. archive, and other remotely sensed data, at no cost to the user through down load, internet-based connection. The archive includes millions of satellite

images and aerial photographs that are used by researchers and operational land managers in both the public and private sectors, to understand natural resources, hazards, and long-term changes. The LRS Program conducts and sponsors research in collection, access, distribution, and applications of remotely sensed land data from current and future data sources. Scientists and engineers sponsored by the LRS Program are investigating new types of satellite systems and sensors, studying promising new data sources, developing new data acquisition programs and sources, and assessing the potential for new data applications.

The USGS Land Remote Sensing Program is a key partner in the Landsat Data Continuity Mission (LDCM.) Operational control of LDCM will be transferred to the USGS and renamed Landsat 8 after NASA has successfully established the satellite in a polar orbit. LDCM is scheduled for launch in February 2013, ensuring the continuity of data acquisition that begun by Landsat satellites forty years ago.

#### Urban Robotics, Inc.

33 NW First Avenue, Suite 200 Portland, OR 97209 (503) 224-9239; (503) 210-1910 (fax) rfi@urbanrobotics.net www.urbanrobotics.net



Urban Robotics, Inc. provides cutting edge software and hardware solutions for intelligence, surveillance and reconnaissance (ISR) and remote sensing applications. Products include aerial EO and NearIR digital sensor systems, high performance aerial and ground computer clusters, and automated algorithms for generating fast turn-around orthorectified maps:

**SENSOR SYSTEMS:** The PeARL Sensor System is a high end airborne EO and NIR frame sensor. A typical installation includes an aggregate 84 MegaPixel RGB 12-bit/channel sensor cluster. When combined with a Wulfpack Aerial Cluster, it is capable of near real time optimization and registration of imagery.

**COMPUTER CLUSTERS:** The Wulfpack ground and aerial clusters are high performance computer systems designed for the challenging field environments associated with military aircraft and ground installations. These Intel-based 100+ CPU core clusters are customized for low-power, low-weight, and rugged environments. Custom Urban Robotics developed software infrastructure fully utilizes the cluster's computational muscle for near-real-time advanced processing of frame and video based imagery in the air or on the ground.

**ALGORITHMS:** Urban Robotics specializes in high-end, distributed image processing algorithms and software packages for advanced GIS applications, including algorithms for georeferencing, mosaicing and 3D extraction. The algorithms have been tuned to support a number of source sensors including EO, NIR, FLIR, and SAR imagery, and can output in a variety of formats including Google Earth, GeoTIFFs, and DOQQs.

Urban Robotics customers include federal agencies, military forces and private corporations. With products in place and onsite supported around the world, Urban Robotics has a proven track record of bringing advanced technologies quickly into deployed products.



#### **PRODUCTS & SERVICES**

- PeARL Sensor Systems Digital RGB/NIR EO Frame Aerial Sensors
- Wulfpack Aerial and Ground Stations Multi core computer clusters and software for advanced real-time image processing
- Orthorectification and Mosaicing Service Fast, large area processing of EO/NIR/FLIR imagery into orthorectified and mosaiced map data to be viewed in applications such as Google Earth and ArcGIS
- Algorithm and Engineering Services Custom software development for C4ISR applications

#### **USDA/National Agricultural Statistics Service**

3251 Old Lee Hwy Rm 305 Fairfax, VA 22030 (703) 877-8000; (703) 877-8044 (fax) hq\_rdd\_gib@nass.usda.gov www.nass.usda.gov



The National Agricultural Statistics Service (NASS) provides timely, accurate, and useful statistics describing virtually every facet of U.S. Agriculture. These statistics are obtained through hundreds of annual surveys and the Census of Agriculture, the latter being conducted every five years. Since the 1980's, NASS has used satellite imagery to enhance its survey program. The GeoSpatial Information Branch currently directs four applications of remote sensing in NASS:

- Area Sampling Frame Construction: Each year NASS randomly samples, through site visits, approximately 11,000 tracts of land to estimate agricultural activity across the United States. NASS uses Landsat data and digital ortho-photography to identify areas for sampling, and also uses printed aerial photography for actual field enumeration. Selected statewide area frame strata shapefiles are available at http://www.nass.usda.gov/research/stratafront2b.htm.
- Cropland Data Layer (CDL): NASS introduced a new web portal for interactive visualization, web-based data dissemination and geospatial queries for the Cropland Data Layer (CDL). The CDL uses medium resolution multi-spectral satellite data, such as Landsat, Disaster Monitoring Constellation (DMC) or Resourcesat AWiFS, to identify crop types and measure acreages across the nation. This imagery is used to generate crop-specific statewide land cover products that can be analyzed for changing agricultural trends or historical research. These data products are available through the NASS geospatial portal at http://nassgeodata.gmu.edu/CropScape or from the GeoSpatial Data Gateway at http://datagateway.nrcs.usda.gov/.
- Vegetation Condition Imagery: The Normalized Difference Vegetation Index measures vegetation vigor, and is derived from Advanced Very High Resolution Radiometer (AVHRR) data from National Oceanic and Atmospheric Administration weather satellites. NASS maps this index on various spatial scales to help USDA officials monitor crop conditions throughout the country. The data is processed annually during the growing season at http://www.nass.usda.gov/Charts\_and\_Maps/Vegetation\_Condition\_Images/.

 Crop Yield Program: NASS is operationally estimating crop yields via remote sensing. The primary satellite used is NASA's Moderate Resolution Imaging Spectroradiometer (MODIS.) Various survey inputs are used to model the crop yields which are used in determining NASS's official estimates. Currently estimates are done in the Heartland for the major corn and soybean states at the state, district and county levels.

#### VisionMap LTD

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VisionMap LTD. is a leading provider of state-of-the-art digital automatic aerial survey and mapping systems. The A3 system is a solution comprised of a camera and an automatic ground processing system. A3 supports coverage of extremely large scale areas, providing accurate, high resolution imagery in RGB& NIR bands, with fast turnaround time from acquisition to final products. The A3 large format camera design allows flexible operation in altitudes between 3-30k feet, providing typical image acquisition rates of thousands of square kilometers a day. The complimentary A3 processing system can automatically process hundreds to thousands of square kilometers a day and provide aerial triangulation, DSM, Orthophoto mosaic and stereo models.

Since A3 go to market in 2009, VisionMap systems have been successfully deployed worldwide. VisionMap's customers, among the industry leading companies, have been able to reduce operational costs, complete projects within weeks and increase the profitability of any aerial survey project. The flexibility of the camera enables operation on various platforms, and allows straight forward control of the resolution versus coverage tradeoff. The system is also designed to support disaster management applications, capable of providing accurate products within a short time without relying on DGPS stations, ground control points or existing DEM.

The A3 large format aerial camera provides high image resolution with high acquisition productivity using 300 mm focal length optics. For example, in a single day of flight, A3 camera can acquire more than 5000 km2/15 cm GSD or 15, 000 km2/25 cm GSD in 4 bands. The A3 innovative metric camera design, with extremely wide field of view (110 degrees), captures each point from several angles, providing both oblique and vertical imagery from a single flight. A3 camera collects more imagery in less flight time, resulting in less operational costs and fast products delivery.



#### Watershed Sciences, Inc

517 SW 2nd St., Suite 400 Corvallis, OR 97333 (541) 752-1204; (541) 752-3770 (fax) faux@watershedsciences.com www.watershed Sciences



Watershed Sciences, Inc. (WSI) is an Oregon-based company specializing in airborne remote sensing and analysis throughout North America, including airborne LiDAR, thermal infrared imagery (TIR), digital image, feature extraction, data sampling and analyses, and water quality modeling. We acquire data in coastal, valley, and mountain environments both urban and remote for a wide variety of applications. Our professional staff specializes in applied GIS and remote sensing with a focus on accurate high-resolution data products. WSI offers a suite of remote sensing services, including:

- · Airborne LiDAR (fixed and rotary wing)
- · Digital Imagery Hyperspectral, Multispectral and Natural Color
- · Data Sampling and GIS Analysis
- · Feature Extraction/Image Analysis
- · Bathymetric Data
- · Water Quality Modeling
- · GPS Survey

We have acquired airborne data for a diversity of landscapes including some of the most rugged terrain in North America. Common applications of our data include floodplain hydrological modeling and mapping, forest inventory, landslide detection, geothermal exploration, glacial mapping, FEMA assessments, transmission line mapping, emergency response, habitat assessments, change detection studies, engineering design, thermal structure and dynamics of streams, and 3D visualization. Our data go through a rigorous quality control protocol and multiple inspections to ensure the most representative models of the project area are delivered. Using our GIS capabilities, we additionally offer services in utility mapping, feature extraction, vegetation classification, data sampling, inventory assessments, and modeling to gain maximum utility in the data we acquire. WSI website: www.watershedsciences.com

#### Wilson & Company, Inc.,

Engineers & Architects 4900 Lang Lang Ave. NE Albuquerque, NM 87109 (505) 348-4000; (505) 348-4155 (fax) mapinfo@wilsonco.com www.wilsonco.com



Offering complete expertise to our clients, when and where they need it distinguishes the heart of Wilson & Company's team of professionals. Our staff works collectively to go beyond the typical expectations and we have found that every successful project enjoys higher relationships between the owner, designer, and interested

partners. We achieve success through the shared ownership of the challenges, expectations, and missions of the project.

As with any team, our members have been positioned according to their talents and expertise. Photogrammetrists, surveyors, and GIS experts encompass our lineup. Each individual's commitment to the profession and industry is revealed in his or her training, licenses, certifications, and professionalism. Complementing our team is a collection of state-of-the-art equipment. Together, they work simultaneously to grow our capacity, strength, and ability to provide comprehensive geospatial-related products and services.

Without exception, Wilson & Company delivers quality results. Every level of project delivery incorporates professional standards and a hands-on effort. Building a strong rapport with our clients, business partners, and employees has produced Wilson & Company's 75+ year legacy.

As a full-service A/E firm, Wilson & Company also employs transportation, railroad, electrical, mechanical, structural, industrial processes, and environmental engineers, planners, and architects. Wilson & Company has been in continuous practice since 1932, and maintains 17 offices in nine states.

#### **COMPANY PRODUCTS/SERVICES**

Engineering Aerial Photography
Architecture Construction Management
Surveying Transportation Planning

Mapping

#### Wiser Company, LLC

237 W Northfield Blvd, Suite 200 Murfreesboro, TN 37129 (615) 896-7375; (615) 890-7016 (fax) aekitchens@wiserco.com www.wiserco.com



Founded in 1996, Wiser provides engineering, architectural, construction management and geospatial mapping services to a multitude of federal, state and local government agencies. In the United States, Wiser is a leading provider of defense and intelligence related services to the federal market sector. Internationally, our expertise supports our clients' intelligence, military and relief missions by arming personnel on the ground with critical information when it matters most.

On the geospatial mapping side, the firm specializes in image analysis, 2D/3D feature extraction, digital elevation models, terrain analysis and modeling, cartographic finishing, and 3D modeling and simulation. We have extensive experience in both digital data production, and the creation of hard copy cartographic products.

Wiser has extensive experience as a contributor to the Multinational Geospatial Cooperative Program. We have a proven track record for producing quality data, accepted as first-time right by the NGA.



#### **Woolpert LLP**

409 East Monument Avenue Dayton, OH 45402-1261 (937) 461-5660; (937) 461-0743 (fax) jeff.lovin@woolpert.com www.woolpert.com



Established in 1911, Woolpert is a premier design, geospatial and infrastructure management firm that has provided photogrammetry and remote sensing services to federal and local/state clients for decades. One of the largest privately held geospatial firms in the country, our photogrammetric services include analog, digital, and thermal aerial imagery acquisition; aerial and ground-based mobile LiDAR; conventional, GPS, hydrographic, and subsurface surveying services; traditional photogrammetry and advanced remotes sensing; 3-D modeling; automated feature extraction; full-service GIS consulting services; and custom application development.

#### **XEOS** Imaging Inc.

2750 Einstein Suite 200 Quebec City, QC G1P 4R1 CANADA (418) 780-2155; (418) 780-0713 (fax) info@xeosimaging.com www.xeosimaging.com



## High Resolution Aerial Imagery

XEOS Imaging Inc. is a North American leader in high resolution aerial photography offering solutions to its customers by helping them simplify the management of linear infrastructures and territories. It specializes in corridor markets (pipelines, power lines, highways and railroads) and the small-medium areas (urban centers, forestry and mines). XEOS aerial services become powerful tools for the pre-design, design, construction and maintenance of infrastructure projects. XEOS Imaging is ISO 9001-2008 certified. Throughout the years, it was granted many awards for its technology (Association of Canadian Engineering Consulting Companies) and for its human resources management (Mercuriades Awards from the Quebec Provincial Chamber of Commerce). XEOS Imaging is present in Quebec City (Canada), Houston (Texas) and San Juan (Puerto Rico).

#### **XEOS** Imaging Inc. products include:

- · Single Images
- · Seamless Ortho Mosaics
- · Stereo-Photogrammetric Models
- · Web Based Interactive Cartography
- · Photogrammetric Point Clouds
- LiDAR
- · DEM/DSM and Contours Lines