

BASICS TO LIDAR WORKSHOP SERIES

CENTENNIAL ABC All registered conference delegates welcome

The ILMF Workshop Series is aimed at providing novice operators, their managers and potential purchasers of equipment with an understanding of the basic principles and fundamental benefits and technology associated with LIDAR.

MONDAY JANUARY 23, 2012

| | | | |
|----------------------|---|---|---|
| <p>2.00 - 3.00pm</p> | <p>Optech Lynx <i>Daina Morgan</i> Product Manager Lynx Mobile Mapper Optech, Canada</p> |  | <p>In today's economy, companies want the best possible return for their money. They expect accurate survey-grade data and need quick, efficient and relatively easy data collection. The growth of mobile mapping systems and software has added more features to deliverables, shortened project timelines, and improved data quality. This workshop will include discussions on present projects, mobile mapping practices, applications, technology trends in system development, and surveying solutions.</p> |
| <p>3.20 - 4.20pm</p> | <p>High resolution point clouds <i>Steve du Plessis</i> Director Photogrammetry Intergraph ERDAS, USA</p> |  | <p>High resolution point clouds, such as those produced by Leica ALS LIDAR sensors or with stereo imagery processing software like LPS eATE, can provide excellent data sources for examining change over time in above-ground features such as buildings, trees and other types of vegetation. Of particular interest is the identification of illegal construction activity, the addition of new floors to buildings, or damage incurred during earthquakes and other disasters. By using multi-date point cloud layers, these types of change can be efficiently identified and mapped. Such analysis is generally not as simple as differencing imagery from the two dates. Variations between the images can be caused by slight geometric mismatch between images from different acquisition dates, errors in the data returns, or natural differences caused by vegetation growth or wind direction. These factors can contribute to the detection of large amounts of inconsequential change throughout the area of interest, resulting in too many false positives for the analysis to be of any practical use. However, by conducting object-based analysis of the data – analyzing meaningful objects rather than working point by point – software algorithms can rapidly and accurately detect and map only the changes of interest to the customer.</p> |
| <p>4.20 - 5.20pm</p> | <p>Mobile mapping systems LIDAR basics <i>Richard Rybka</i> 3D Mobile Mapping Specialist Topcon, USA</p> |  | <p>This workshop provides an understanding of mobile mapping systems technology, including system core components, available sensors, and additional hardware that formulates a complete system. Overview of data collection, processing, data calibration methods, and system accuracy is explained, along with business opportunities and challenges. Discussion on software workflows for data extraction and management of geospatial information for a variety of applications will be presented.</p> |

TUESDAY JANUARY 24, 2012

| | | | |
|------------------------|---|---|---|
| <p>11.00 - 12.00pm</p> | <p>Utility corridor management to meet regulatory requirements <i>Alastair Jenkins</i> President and CEO GeoDigital, Canada</p> |  | <p>GeoDigital, one of the industry leaders in acquisition and delivery of Geospatial information for utility corridors will be presenting a one hour session on the use of LIDAR for utility corridor management to meet regulatory requirements. This session will cover basic LIDAR principles (what should be specified and technical requirements) and will show how this technology can be used to capture and manage asset information in an on line Geospatial context.</p> |
| <p>12.00 - 1.00pm</p> | <p>Best practices from acquisition to LAS file export for mobile mapping systems <i>Joshua I France,</i> Applications – Systems Engineer Riegl, USA</p> |  | <p>Mobile mapping systems collect millions of points per second, and thousands of pictures per mission; this amount of data can be overwhelming without the proper practices. Best practices help customers and consumers of LIDAR data get the most out of the data. The accuracy bar is constantly being raised by both the Departments of Transportation and users. This workshop will focus on how acquisition practices can help reduce error, reduce post processing time, and increase the efficiency of mobile mapping systems. It will also show some of the latest data adjustment techniques and tools available to Riegl mobile system users.</p> |

TUESDAY JANUARY 24, 2012 CONTINUED

| | | | |
|---------------|---|---|---|
| 2.00 - 3.00pm | Quality control concepts for LIDAR <i>Bill Emison</i> <i>Senior Account Manager</i> <i>Merrick & Company, USA</i> |  | <p>The purpose of this workshop is to review the latest quality control (QC) concepts involving light detection and ranging (LIDAR) datasets. Given the increasing number of airborne LIDAR projects in the US, quality control tools that support data acceptance, vertical accuracy verification and compliance to established LIDAR specifications is becoming very important. The workshop will provide insight into quality control procedures and how to determine if a LIDAR data deliverable has been properly processed.</p> |
| 3.30 - 4.30pm | ArcGIS 10.1 <i>Peter Becker, Product Manager,</i> <i>Imagery Clayton Crawford, 3D Analyst,</i> <i>Product Lead, ESRI, USA</i> |  | <p>ArcGIS 10.1 includes significant new capabilities to enable the management of large collections of LIDAR data, the ability to quickly check and modify the data, use in advanced analysis and then publish as services for fast access to a wide range of applications. This workshop provides an overview of these new workflows and how they can how substantially increase accessibility to the volumes of lidar being collected.</p> |
| 4.30 - 5.30pm | LIDAR data management <i>Jennifer Whitacre</i> <i>National Account Manager</i> <i>- LIDAR Solutions</i> <i>GeoEye, USA</i> |  | <p>Now that you have your LIDAR project collected and ready to be delivered, the next step is to manage the data. Effectively managing spatial data can be an extremely complex and difficult process. This workshop will provide information on an enterprise, web-based spatial data management solution that automates discovery, cataloging, management, provisioning, and dissemination of disparate geospatial data.</p> |

WEDNESDAY JANUARY 25, 2012

| | | | |
|-----------------|--|---|---|
| 8.30 - 9.30am | Targeting results: Application-specific LIDAR mission planning <i>Ron Roth, Product Manager</i> <i>Leica Geosystems, USA</i> |  | <p>Lidar isn't just for regional mapping any more. Applications for Lidar mapping are continuously emerging, and proper mission planning can greatly enhance the quality of the delivered data product. This application-oriented discussion will cover system setups and mission execution tips for a sampling of Lidar survey projects, including bulk asset measurement, wide-area acquisition, power transmission line measurement and infrastructure/resources management in under-developed equatorial areas.</p> |
| 10.00 - 11.00am | Overview of the five different LIDAR technologies in the marketplace <i>Rob McCarthy, Vice President</i> <i>- Aerial Survey and Mapping</i> <i>John Chance Land Survey</i> <i>/ FLH-MAP, USA</i> |  | <p>A 10 minute overview of each of five different LIDAR technologies the marketplace currently offers: High Altitude, Low density LIDAR; Medium Altitude, Medium density LIDAR; Low Altitude, High density LIDAR; Medium Altitude Bathymetric LIDAR; Mobile High density LIDAR. The use of many types and hybrid combinations of LIDAR sensors and aerial platforms in support of a variety of surface terrain and accuracy requirements including below water surface hydrology has become a common practice in recent years. Each specific application requires a strategic application of sensors, aerial platforms and methodologies to meet client's ever increasing needs. Each application presents a special challenge to design and apply cost effective LIDAR data acquisition and processing technology that meets a variety of project conditions and accuracy standards.</p> |
| 11.00 - 12.00pm | What's our LIDAR distribution story? <i>Mike Rosen</i> <i>Engineering Manager</i> <i>LizardTech, USA</i> |  | <p>How big is LIDAR and what does that mean to me? With scan rates increasing every year and exploitation software moving from derived DEMS and Contours into the Point Cloud proper, the question is increasingly pressing. This talk describes the context of and the emerging solutions to LIDAR distribution. In this presentation they look at current approaches as well as those based on emerging LIDAR server and compression technologies.</p> |
| 1.30 - 2.30pm | Hydro breakline enforcement of LIDAR data <i>Lewis Graham, CTO</i> <i>GeoCue Group, USA</i> |  | <p>LIDAR data are commonly collected to develop elevation surfaces and models. These terrain surfaces are often used in hydrological modeling. In order to support such modeling, the LIDAR derived terrain itself must be hydrologically correct. In this workshop they will demonstrate tools and techniques for developing flat water bodies, downhill streams, proper cross-bank correlation and other attributes necessary in ensuring hydrological compliance.</p> |
| 2.30 - 3.30pm | LIDAR data in photogrammetric software and the modeling of complex buildings from LIDAR point clouds <i>Stewart Walker, Director,</i> <i>Product Initiatives</i> <i>Bingcai Zhang, Engineering Fellow</i> <i>BAE Systems, USA</i> |  | <p>SOCET GXP can be used to manipulate LIDAR data in an image processing environment designed for photogrammetry and mapping. The software accesses capabilities developed for photogrammetrically derived elevation data, including display, TIN modeling, and interactive editing. Sensor modeling presents challenges but offers the reward of rigorous LIDAR/imagery fusion. The image processing heritage brings special strengths in automatic feature extraction and modeling of buildings and trees from point clouds, including intricate buildings without predefined templates.</p> |