



Editorial

by Marc S. Cheves, LS

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A FOOT IN THE PAST... AN EYE TO THE FUTURE

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SPAR and ACSM

Sugar Land, Texas was the location of SPAR 2006 laser scanning conference. It is now in its third year, and attendance and interest continues to increase. Most attendees are what I call the metrology crowd – surveyors involved in high-end location services such as those required by the oil and gas, and process and plant industries. Scanning provides the minute detail required by these industries. Other attendees include land development surveyors who are looking to get into scanning. Turn to page 28 to read conference organizer Tom Greaves’ recap of the event.

In his keynote, Greaves shared several interesting statistics about the industry: sales for 2002 were \$70 million; 2003, \$83M; 2004, \$120M; and 2005, \$180M. By the end of 2005, approximately 2,000 scanners had been sold. According to SPAR Research, market share for the various manufacturers is: Leica HDS, 41 percent; Riegl, 14 percent; Trimble, 10 percent; Zoller & Fröhlich, 9 percent; with the rest divided between the other manufacturers.

Key factors affecting the industry are:

Deciding whether to outsource scanning or do it in-house: In-house advantages include having intimate knowledge of the project, scheduling and insurance. Outsourcing advantages include the fact that service providers stay on top of the technology, cross-pollinate, and learn from their competitors.

Technical issues: How much modeling is needed? Are there CAD integration issues? Greaves claimed that Autodesk is lagging behind the other major CAD vendors, but I spoke with attendee Terry D. Bennett, PLS – LPF, Senior Manager, Engineering & Construction Solutions with Autodesk, and he said, *“The current state of laser scanning is still at an early adopter stage of acceptance. That being said, the velocity of its entrance into the main stream survey and mapping market is at a rate faster than say, GPS was a decade ago. As price for the units comes down and demand for 3D increases, which it will, then the availability of rich 3D data captured in the field will increase. As the leader in 3D applications for the design of buildings, infrastructure, and manufacturing we are working with our extended software and hardware community to ensure that our customers have a complete 3D workflow from the field to the office in all phases of the infrastructure lifecycle. We feel we are uniquely positioned to provide this type of end-to-end solution leveraging 3D both capture in the field and modeled in the office.”* Other issues include registration and control. For more on this, see Greaves’ recap.

Other factors include **construction benefits:** a fascinating presentation showed how one company is using scanning to insure that pre-fabricated panels fit erected steel. Just the same as pre-fabricated pipe sections (often fabbed-up far from the construction site) need to fit the first time to eliminate costly re-work, pre-fabbed building skins need to fit when they are hoisted in the air. A good example of this are futuristic curtain-wall buildings, such as the Experience Music Project in Seattle, designed by Frank Gehry.

Safety continues to be an issue, and OSHA is watching this area closely.

Standards are another important area, and I’m pleased to report that NIST and ASTM are working diligently to create a level playing field where apples can be compared to apples instead of the current situation where manufacturers emphasize



Tom Greaves, Managing Partner of Spar Point Research LLC

those aspects that make their equipment look best. The performance standards have been established, and these groups are now working on data exchange. Because some of the manufacturers are still using proprietary data formats, it is difficult to move the data into the various processing software programs, or between clients. Look for a future article from Greaves on this important initiative.

Finally, **hardware and software** continue to be a very active area. Since 1998, we have seen a dramatic drop in the amount of time necessary to extract useable products from the point clouds. Without a doubt, both hardware and software will increase in capability and speed.

ACSM in Orlando

Slightly less than 900 people attended the annual conference in Orlando. While the numbers were disappointing for the exhibitors, the venue was excellent and I heard good things on the floor about the show. For me, the ACSM show has always been my feedstock for learning about new technology and applications, and where I got all my ideas about how to make money with technology.

Going back several years, we have seen that when the ACSM show is held in conjunction with one or more state organizations, attendance is nearly doubled. In terms of the time and money it takes to attend conferences, many surveyors feel that they get all they need from their state shows, even though the national show is often the

only place where the cutting-edge information is presented and speakers who will never appear at a state show are available. Gary Kent provides an eloquent but sober assessment and recommendations for ACSM on page 63.

The good news is that the 2007 conference will be held in St. Louis, in partnership with the Illinois and Missouri societies. Illinois has been having 1,100-1,200 attendees and Missouri generally has 500-600, so the attendance should be good. And in other good news, it was announced that in 2008, ACSM will partner with GITA and hold the show in Seattle. Because there's overlap between GITA's utility crowd and ACSM's surveying and land development crowd, it promises to be a good show.

In This Issue

In this issue is an article about new technology, the 7000i series total station from Topcon. I first saw this demonstrated at the Intergeo show in Stuttgart two years ago. Topcon had created a scale model of a hillside in the booth, and demonstrated how the instrument can be used to create topographic maps from a remote location using photogrammetric techniques. I see the 7000i as a world of possibility for new and exciting applications. Read about a unique and cost-effective application in a chemical plant on page 10. The sidebar in the article provides some suggestions about land development uses.

When I attended the Leica HDS User Conference last fall, one of the presenters was Sean Douthett from David Evan and Associates in Tacoma. He spoke about a scanning project DEA had performed at the Utah State Capitol. In particular, one of the slides in his PowerPoint presentation caught my eye – the dome of the capitol looking down. Overlaid was the wagon wheel layout from the center of the dome to the each of the columns supporting the dome. What surveyor doesn't like a neat geometric layout diagram? I asked Sean to write an article for *The American Surveyor*, paying particular attention to the surveying and control aspects of the job, as well as the re-use of the data from the scanning. You can read the details of this success story (and also see the image that caught my eye) beginning on page 18.

Two other articles in this issue deserve mention. First is an article about Louisiana by Tony Cavell, who describes the efforts to use GPS to deal with the fact that Louisiana is sinking. Given the apparent increased hurricane activity cycle we are entering, these efforts have large implications for the residents of the Pelican State. The second article pertains to the success Kent County, Washington has had in establishing an RTK network. To me, the key information in the article is the steps the surveyors took to demonstrate the cost/benefit ratio of having a network. Once they got over that hump, they have been reaping these benefits. For those of you who are considering such a network, this article is a must-read. *A*