



Editorial

>> Marc Cheves, LS

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

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Building Your Connected Site

I recently attended the second annual Trimble User Conference (UC), held at the Mirage in Las Vegas. With nearly 2,000 attendees representing 47 countries – a 60 percent increase over last year – the conference had nearly double the number of presentations as the first year.

Trimble CEO Steve Berglund described the convergence of three key technologies that enable the connected site: 1) precise positioning, 2) wireless communications, and 3) information. The first is being enabled by all the GNSS systems and VRS. The second is rapidly enlarging. And the third is being enhanced by the acquisition of such companies as XYZ Solutions (a company specializing in real-time, interactive 3D intelligence software to manage the spatial aspects of a construction project) and Meridian Project Systems (a company that provides enterprise project management and lifecycle software for optimizing the plan, build and operate lifecycle).

I asked Gavin Schrock, one of our frequent writers, if he would share a few notes about the conference. Here's what he had to say:

"My expectations for the UC this year were to see more of what we saw last year, as I was quite pleased with that formula. One apprehension I had was that the construction tracks may completely overshadow the survey and infrastructure tracks (let's face it, construction represents a bigger ticket market), but my fears were unfounded. There were many 'crossover' attendees for the construction and survey sessions; undoubtedly attracted by mutual needs, applications, and perhaps even out of curiosity.

"Overall the UC was presented with the polish and professionalism that one might also experience at, say, an ESRI or Autodesk University conference. What also worked was the incorporation of customer suggestions from last year (e.g., more site calibration, working with robotics, cost-benefit examples, and a Spanish language track).

"Certain aspects of RTN (real-time networks) found a more prominent role in the program (now that these RTN have doubled in number in the U.S. during 2006) both for the network administrator, and for the user. Considering where we are in the evolution of U.S. RTN, timely sessions included several that concentrated on arguably the most frustrating aspect (at least initially) for the new RTN user: communications connectivity (e.g., GMS/GPRS connections and information technology concepts). Also addressed were reference station components, connectivity, and redundant systems). It would be a natural progression for the infrastructure track for 2007 to include more on the geodesy and field procedures for RTN users.

"On the subject of RTN, a session of note by Christian Waese of the German Federal Department of Geodesy and Cartography (*Bundesamt für Kartographie und Geodäsie*, or BKG) focused on the NTRIP Protocol (Networked Transport of



between his H3 and H4 clocks, the famous Captain Cook endorsed his H4 after using it at sea. The Board never fully recognized Harrison's efforts, but King George finally authorized the payment of part of the prize money when Harrison was 70 years old. At a time when most clocks lost 1-15 minutes per *day*, Harrison's Regulator clock was accurate to within one second per *month*. How he surely would marvel at today's incredibly accurate clocks that regulate our GNSS constellations! Yet certainly he would shake his head at our continued resistance to change.

Another keynote was given by Dr. Jill Tarter, director of the center for research at the SETI Institute. GPS is being used to precisely position 350 antennas to create one giant antenna in the search for extraterrestrial life.

The keynote speech that impressed me perhaps the most was made by futurist Daniel Burrus. In his fast-paced presentation, Burrus made several key points, all of which related to change. He reminded us that technology can turn the impossible into the possible. With technology, it's not just the tools, but the knowledge and wisdom of how best to use the tools. Keeping up provides no advantage; we need to get ahead. Burrus discussed "hard trends" (the things that *will* happen) versus "soft trends" (the things that *might* happen). He believes that a visible future exists if we know how and where to look. Technology, a hard trend, is tangible and measureable. Strategic thinking is critical; hope is not a strategy. We can determine the future by strategizing in terms of *both/and* rather than *either/or*. The future is also about relationships, and trust is most important. Burrus encouraged the audience to not concentrate on enlarging their "piece" of the pie, but rather on enlarging the "whole" pie by embracing change. He believes this because we live in an age of abundance, not scarcity. In times past, information was difficult to obtain. Now, it's just the opposite, and the firms that transform how they sell, market, communicate and collaborate will be the winners. Burrus posed the question: Is change pressure coming from within your company or from the outside? Many of us, if presented with just one more ball to juggle, will drop all the balls. Burrus encouraged us to identify and get rid of the balls that block our strategies to achieve the future we want. *A*

RTCM via Internet Protocol), first developed and implemented by said BKG. NTRIP is the internationally recognized protocol for transporting GNSS observations and corrections via the Internet; fast becoming as readily recognizable to surveyors as the respective RTCM types. A year ago, mention of NTRIP drew a lot of blank stares, but now with the rapid growth of RTN in the past year, and the primacy of NTRIP as the RTN connectivity mode of choice, it was a real coup to get someone like Mr. Waese directly from the NTRIP "think tank" to present so well a vital subject that still mystifies many of us. Look for an article by Mr. Waese on NTRIP in a future instalment of my RTN-101 series.

"A good selection of international and U.S. presenters gave us a glimpse of solutions beyond our typical "lines of business". Of particular note was a fully matured mapping solution from Austria; developed for power utility field locates and work order fulfillment, this is a marriage of RTN for high precision location and mobile mapping software customization. Perhaps good fodder for a session or two next year might be "What happens when survey-grade meets non-survey field operations?" (I won't go there right now).

"Pete Kelsey, Tech Evangelist (it really says that on his business card) for Autodesk's Worldwide Sales group related another observation: 'Now that rapid and highly accurate location solutions have all gone digital means that

the dream of true 'field-to-finish' that we [Autodesk] have been preaching for so long is now doable.'

"Another vignette summed up the UC for me; I overheard a large group of folks at the airport raving about a conference they had just attended (they were all sporting the NASCAR-themed caps handed out at the UC). When folks are still talking about the content of the sessions after the conference has ended, and not just about the food, then I think that "Team Yellow" can chalk up another success."

Keynotes and Ball Juggling

Notable again this year were the keynote speakers. Dava Sobel, author of the acclaimed *Longitude* (the story of John Harrison's struggle to build a maritime clock that would enable the determination of longitude over long distances) spoke of the extreme resistance to change in Harrison's day. Harrison spent nearly his entire life dealing with the Board of Longitude and enduring ridiculous politics in an attempt to secure the prize money for the solution. Isaac Newton, a member of the Board, declared that the solution would not come from a clock, but rather from astronomy such as the lunar distance method which involved complicated math. Many considered the search Longitude Lunacy, in league with the searches for the fountain of youth or perpetual motion. Harrison persevered, however, and though 19 years elapsed