



Looking Forward and Back

Welcome to the second edition of the *LiDAR Magazine*. I would like to take this opportunity to thank many of you for the compliments that we have received on our first edition. It is very encouraging. This is truly a team effort, so for all the people behind the scenes that make this magic happen—congratulations for a job well done, and all of us will continue to work at earning your praise.

9/11 is one of those life changing events that causes you to never forget where you were when you first heard that unbelievable news. For my generation it was like the John Kennedy assassination, or on a more positive note, man's first step on the Moon. I have never thought of that before—it was Kennedy who provided the vision for going to the Moon. One can only imagine what he would have been able to accomplish.

On 9/11/2001 I was working for a small remote sensing firm on Rte. 128 near Boston. As the news spread a number of us congregated in one of the large offices where we were able to rig up a small television to watch history in the making. I guess that is why you can never forget your circumstances on a day like that, and maybe why it seems like it was only yesterday for me.

As a civil engineer, with a lot of structural engineering courses under my belt, I could not believe it when the first tower collapsed. In hindsight when you analyze what had happened it makes perfect sense, yet to this day I somehow still can't accept the entire event. It's just hard to imagine something like this being planned.

As I noted in an earlier [blog](#) a number of the galleries near Ground Zero are honoring the 9/11 tragedy through art. The Woodward Gallery is of particular interest to all of us as they have an [exhibit](#) called "*Charting Ground Zero: 10 Years After*" that is based on the use of LiDAR images. Although "documenting" may be more appropriate than "charting", the positive message of rebirth is clear. The exhibition will be donated to the Memorial Museum at Ground Zero for their permanent installation. And this is very interesting—Esri Inc. of Redlands, CA is a generous sponsor for this exhibition.

I think we will all agree that the past 10 years have not been the best, but on the other hand the laser scanning and LiDAR industries have certainly made tremendous progress. A lot has been accomplished

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over that time period and just think what might have been in a more positive world economy. That's the question I like to ask—"What could have been?"; especially over the past 5 years. It's an impossible question to answer, but it's important because it gets to the issue of potential.

Since laser scanning and/or LiDAR were not even on my radar on 9/11/01, I decided to reach out to some of the industry veterans who were in the business at that time for their perspectives. I asked them to describe how they were involved with the industry 10 years ago, what has been the single most important event in the past 10 years and what the industry will look like in 10 years from now.

Ted Knaak had founded Riegl USA and they had sold a few LMS-Z210 scanners in 2001. He remembers one university customer calling to say he was driving up to New York City with the scanner to see how he "could be of help". Ted thinks that the major accomplishment has been the increase in processing speed—from +/-10 mm at 10 Hz, to +/-1 mm at 300 kHz, with the latter at a range up to 3,000 feet—incredible. For the future Ted sees the use of laser scanning being standard operating procedure and that 3D cameras will be available on the consumer market.

Geoff Jacobs was responsible for marketing at the start-up Cyra, now Leica Geosystems in 2001. They had recently announced a software breakthrough that allowed a CAD file to be merged with a point cloud and



one of their scanners had been used that summer to document the Statue of Liberty in case something catastrophic ever happened to it. This photo shows the Cyra on the job with the twin towers in the background.

Geoff believes the development of Leica Geosystems' TruView in 2006 and the more recent introduction of the ScanStation C10 in 2010 are the outstanding events of the past 10 years. In the future he sees laser scanning being a part of the mainstream global survey instrument and software business.

Michael Raphael, the founder of Direct Dimensions was contacted by the Federal government after 9/11 to demonstrate the value of laser scanning on the Lincoln Memorial. Ten years

later, as far as Michael knows there has been little follow through on this.

Now this I find interesting, Michael also points to the development of a laser scanner as the most important development of the past 10 years—that's 3 for 3. In his case he thinks it's the Surphaser 25HSX "IR" with its versatility at both short and medium ranges. As far as the future is concerned Michael hopes to see the development of industry standards for hardware/software, people and applications.

As a 5–6 year veteran my answers would be that the terrestrial laser scanner industry was in its infancy in 2001. Cyra Technologies had proven there was a market as evidenced by their acquisition that year by Leica Geosystems. Over the past 10 years I think the most impressive development has been the overall

advances in collection speed, and in 10 years I think the combination of flash ladar and augmented reality will be the leading application of LiDAR technology.

Yes, for me 9/11/2001 still seems like it was yesterday, but the laser scanning and LiDAR industries have made significant strides and there is tremendous potential for the future. Our challenge, as a community is to maximize that potential to the benefit of all.

Regards,

A handwritten signature in black ink, appearing to read 'Gene Roe'.

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