

3D Engineering: Laser quick, precise

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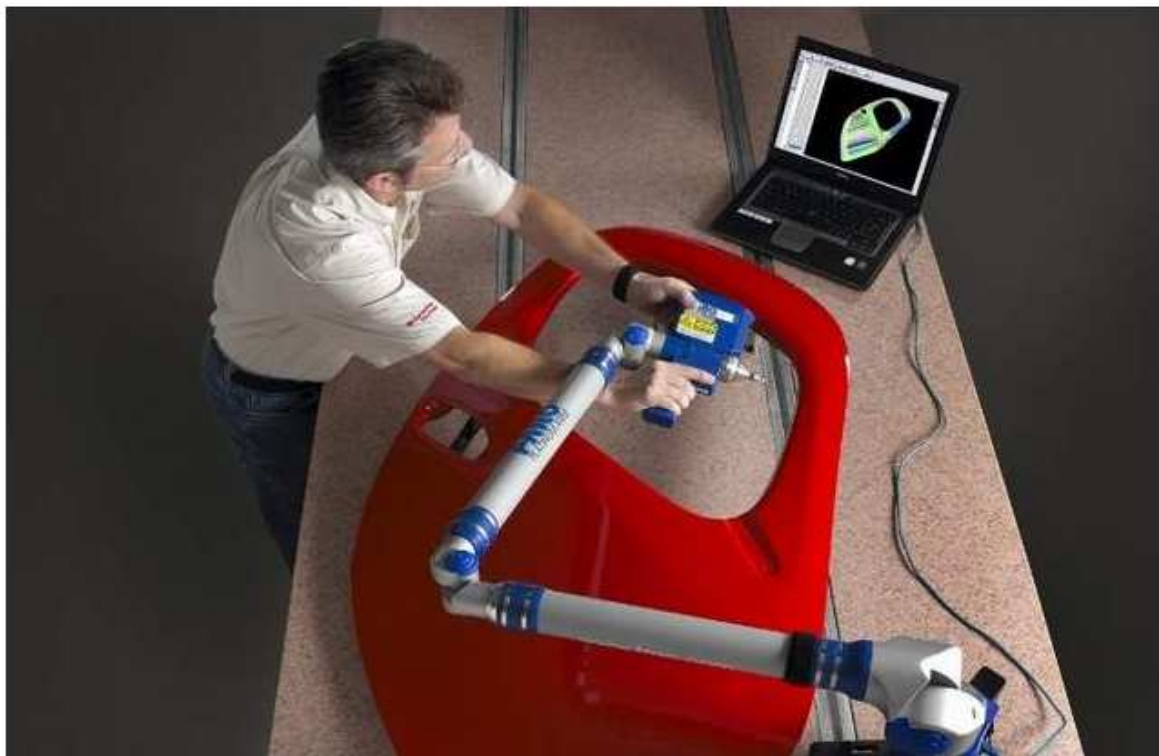
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Using a new portable laser scanner, engineers from 3D Engineering Solutions in Woodlawn captured a precise, three-dimensional digital image of every inch of the sprawling Cincinnati Museum Center at Union Terminal - in a day and a half.

That type of data gathering used to take a team of engineers years, says James T. Irwin, president of 3D Engineering Solutions, which donated the work to the Museum Center to demonstrate its capability.

"This is really a paradigm shift in data-point gathering," says Irwin, who started 3D Engineering about five years ago to do engineering, measuring and inspections of everything from aerospace parts to bridges and boats.

The achievement was the result of millions of data points gathered instantly by a laser system, a first of its kind in North America and acquired by 3D last December. In conjunction with other software, the firm was able to convert the data points into a realistic "fly-through" video showing the interior of the iconic former railroad terminal's 106-foot-high rotunda and other interior meeting rooms.

Elizabeth Pierce, Museum Center vice president of marketing, says the video and "data cloud" captured by 3D Engineering are important to the facility in several ways.

"It's an invaluable resource to our architects from a design and engineering standpoint as they study deterioration in the nearly 80-year old structure," she says. And the video will be an important resource in marketing the facility to companies and organizations holding events there.

"It's really a useful tool," she says.

While the Museum Center is one of the biggest buildings 3D has captured digitally, it's just one example of what the company can do.

3D Engineering Solutions, which employs 16, will have revenues this year of about \$2 million, double what it did two years ago.

"We're prepared to double our business again next year," Irwin says

The 5-year-old company started by Irwin has some of the latest short- and long-range digital scanning technology that allows it to precisely gather data on all types of components and structures.

Because 3-D Engineering's systems are portable, it can go to a client's site to measure anything that's too large or too confidential to be removed. Another key is the company's flexibility. "We're available 24/7," Irwin says.

He says the company has done more than 3,500 projects over the past four years.

As awareness of the company's capabilities have grown, it's opened up new application opportunities such as insurance and crime scene investigations, Irwin says.

Two years ago, in one of its highest profile projects, the company did a report for the National Transportation Safety Board that helped document structural flaws that caused the 2007 Minneapolis bridge collapse.

A big part of its business is "reverse engineering," creating computer specifications for a manufactured component from a finished piece where the original drawing doesn't exist.

Eventually, Irwin says the company would like to expand by franchising its capability to other engineering entrepreneurs.
