# Case Study Rugged Tablet / Government



# **Oregon Department of Transportation Taps DT Research to Develop Purpose-built Inspector Positioning Tablets**



There is a growing trend in the building and improvement of highway construction sites to go "stakeless" and forego physical stakes by using modern Automated Machine Guidance (AMG) applications on jobsites to determine line and grade when building or fixing stretches of road. DT Research worked closely with the Oregon Department of Transportation (ODOT) to design purpose-built Inspector Positioning Tablets that inspectors and construction crews can use to run applications that contain GPS locating and 3D modeling technologies. DT Research's Rugged Tablets host surveying applications to enhance construction efficiencies through advanced location referencing and employs a combination of 3D modeling to guide construction workers.

### **The Challenge**

With the increased use of AMG throughout the highway construction industry as well as ODOT's push to use full 3D design, ODOT's construction personnel were having to inspect projects with fewer stakes and visual indicators for line and grade on construction sites. ODOT needed new survey-grade tablets that could withstand the wear and tear of the inclement Oregon winters as well as host AMG applications and Microsurvey FieldGenius for stakeless job sites. ODOT turned to DT Research, the company with the world's most comprehensive line of Rugged and Industrial-grade Tablets and leading designer and manufacturer of

purpose-built computing solutions for vertical markets, to help ODOT's construction crews complete their jobs on many stakeless highway and road projects.

### **The Solution**

DT Research worked with ODOT to design purpose-built Inspector Positioning Tablets with the critical hardware and software needed for line and grade stakeless highway construction projects. Leveraging DT Research's two decades of computer design and manufacturing experience, combined with ODOT's expertise in survey grade RTK GNSS and knowledge of the Oregon Real Time GNSS Network, the Inspector Positioning Tablet solution was developed. The solution was designed and assembled at DT Research's California facility, providing ODOT with a rapid time-to-market solution.

The DT391GS Rugged Tablets were designed with a full survey grade RTK GNSS built-in to achieve accuracies of +/0.05 and can be handheld or used with an external antenna and rod. Each tablet has a nine-inch backlight capacitive touch screen. Since many of the construction jobs occur during Oregon's rainy season, the tablets are IP65 rated for water and dust resistance. The tablets run on Microsoft<sup>®</sup> Windows<sup>®</sup> 7 Professional with MicroSurvey FieldGenius software while also connecting to the Oregon Real Time Network. The DT391GS Rugged Tablets also display XML files for alignment, surface and design files.



**DT391GS** 



The DT391GS purpose-built Inspector Positioning Tablets contain the following features:

- 9" LED-backlight Capacitive Touch Screen
- Intel<sup>®</sup> Celeron<sup>®</sup> Dual Core processor
- Four GNSS module options
- IP65 Rated
- MIL-STD-810G
- Wide temperature operation
- Built-in back camera
- Optional 3G/4G module

#### Quote

"ODOT selected the DT Research tablet as it was the only device on the market that provided dual frequency GNSS in a rugged Windows based device," Chris Pucci, Construction Automation Surveyor, Oregon Department of Transportation. "The tablets have been very well received by our construction inspection personnel."

## Results

The ODOT Inspector Positioning Tablet project is currently in the pilot phase with DT391GS tablets deployed at eight construction offices and more than 60 construction personnel trained. The DT Research Rugged Tablets have been well received by inspectors and enable MicroSurvey Field Genius surveying software to read XML files directly, allowing the inspector to work with the same files that the contractors received from the roadway designers. The tablets allow the inspectors to make the same checks they would have made if there had been traditional construction staking on a project and do not require inspectors to become surveyors.

ODOT has also benefited from significant savings in their IT budget by using the DT Research tablets. ODOT estimated each hardware and software package to cost approximately \$8,200, which netted an overall a savings to ODOT of nearly \$12,000, when compared to using standard survey grade GNSS units.

For more information regarding DT Research Rugged Tablets, visit http://www.dtresearch.com



#### About DT Research



2000 Concourse Drive San Jose, CA 95131 USA Tel : 408.934.6220 Fax: 408.934.6222 www.dtresearch.com DT Research<sup>™</sup> develops and manufactures web-enabled information appliances for vertical applications. The DT Research family of products is based on embedded computing platforms for secure, reliable, and cost-effective computing. The products include digital signage solutions, wireless tablets, point-of-service handhelds, compact modular systems, and display-integrated information systems. These systems emphasize mobility, wireless connectivity and touch displays. Powered by Windows<sup>®</sup> operating systems, the devices offer durability and ease in integration, leading to solutions that can be remotely managed with the comprehensive WebDT Content Manager and Device Manager software. For more information, visit <u>www.dtresearch.com</u>

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