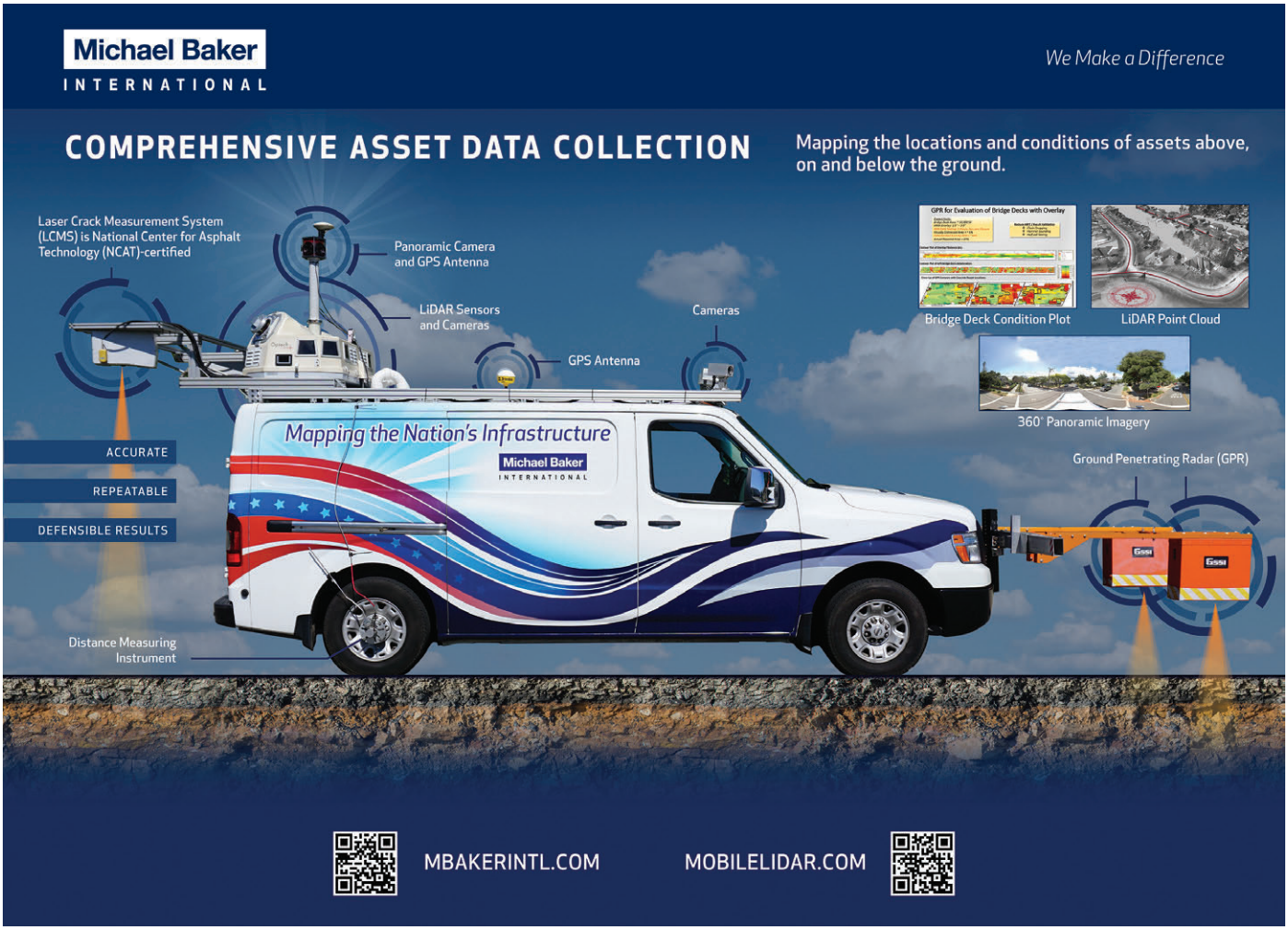
MOBILE LIDAR AND ORBIT GT

PROVIDING THE USER WITH THE BEST TOOLS FOR THE JOB.



Michael Baker International's fully equipped all-purpose data collection van

Michael Baker International possesses the most comprehensive asset data collection capabilities in the industry. To help our clients maximize their resources Michael Baker has implemented a web-based solution on our BEAST environment (Baker Enterprise Architecture for Spatial Technologies) that leverages the Orbit framework to link panoramic imagery, GIS/CAD features, and LiDAR point clouds into a single integrated solution that can be accessed from any of the most popular internet browsers.

Here at Michael Baker we have embraced the Orbit framework and have implemented it for many of our clients. One of our projects involves the use of the full range of Orbit visualization tools to identify and calculate measurements for a telecommunications customer. As part of this single initiative, Michael Baker collected hundreds of miles of point cloud data for an area of interest and almost 1 million individual panoramic images. One project of this sort will consist of with both totaling over 25 to 50Tb of remotely collected data.

The best tools

By publishing the LiDAR and vector data with Orbit, our end users are provided a user-friendly platform to view, collect, and interact with various forms of field-collected data. Michael Baker's Quality Assurance (QA) team is utilizing Orbit to closely examine the information

extracted from the LiDAR and pictures. As seen in Figure 1, Orbit provides a client and our QA team with multiple views of the data to conduct spot measurements and interrogations using both overhead and panoramic representations.

For more intensive data extraction and review, Michael Baker utilizes the Orbit GT Desktop Client tool (Figure 2). The panoramic imagery / point cloud section has a robust selection of tools through which we can toggle on/off layers and explore GIS data. The desktop client gives us the ability to open multiple viewing windows to simultaneously observe the same location from various perspectives. 360-degree pan/zoom functionality is standard as are measurement tools including: positional location, distance, line (single and multi-segment), area, and volumetric calculations.

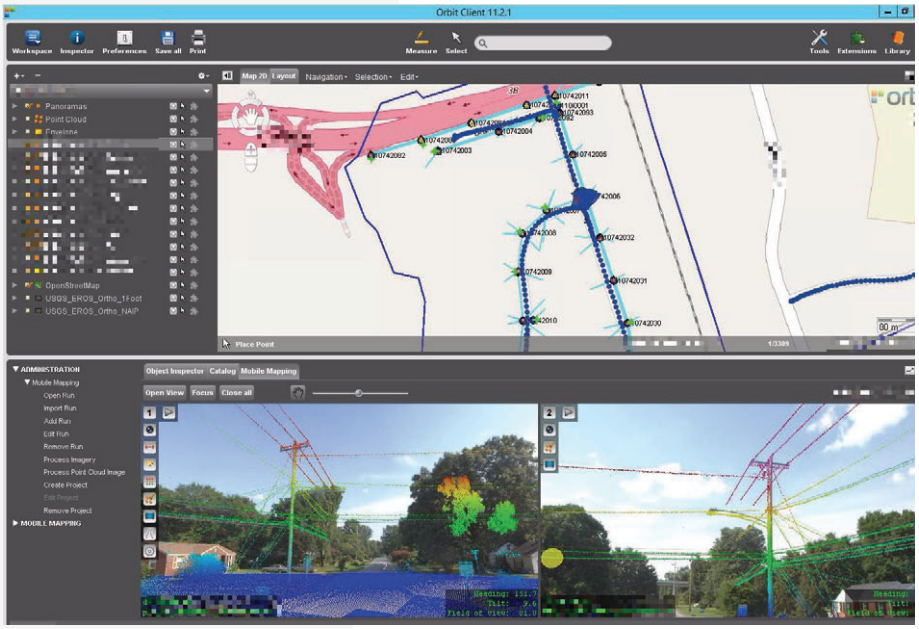


Figure 1: Orbit's Feature Extraction tools in Client/Server setup providing analytic insight of telco network and asset inventory.

Figure 2: Analysing poles and equipment and catenary wire extraction to inventorise telco network shared with customer using Orbit MM Publisher.

From Piecemeal System to Single Productivity Platform

Before we adopted the Orbit platform, we used a piecemeal system of panoramic image viewers and CAD-based point cloud rendering tools. Orbit has allowed us the ability to integrate these tasks into a single productivity platform. This has dramatically reduced the effort required to disseminate our LiDAR data to users and consumers. The beauty of the solution is the ease of use. Anyone that's ever used an online map will be self-navigating and making meaningful observations using Orbit within minutes – and all without any other special software.

Typical workflow

The typical workflow for one of our major telecommunications clients includes the collection of the raw LiDAR point cloud data and panoramic imagery in the field; the processing of the data into LAS and jpg format; conversion of the imagery locations to an ascii file for loading as Orbit sphericals and the conversion of the point cloud data into the Orbit .opc data format for optimal performance. The majority of our clients utilize the panoramic and point cloud data via Orbit Publisher web pages through our **www.poledata.net** website. This website provides an extra layer of security for the data yet allows for easier dissemination of the data resulting from Michael Baker's feature extraction, analysis and engineering teams . We utilize these pages in a number of ways, including data identification and extraction, quality assurance, and as a final delivery format.

Michael Baker is the recognized leader in the Mobile LiDAR profession. Michael Baker's Mobile LiDAR Team is the most experienced, well-respected, proficient, well-travelled, and active within the profession. Our Mobile LiDAR Team has successfully performed hundreds of projects throughout 24 different U.S. states, guided many USA Department of Transportation's through their adoption of Mobile LiDAR deliverables. We are the current provider of Mobile LiDAR products and services for many US state DOT's, the US Army Corps of Engineers and federal agencies. We can take our systems and capabilities worldwide. To learn more, please visit our weblog at **www.mobilelidar.com**.

About the author

Scott Peterson has worked in the geospatial industry for almost 20 years specializing in geospatial systems and database systems such as Oracle, SQL Server, and Orbit GT. He is responsible for administering and maintaining Michael Baker's Orbit Desktop and Publication infrastructure.

ABOUT MICHAEL BAKER

Michael Baker International, Inc. is a leading global provider of engineering and consulting services which includes geospatial, planning, architectural, environmental, construction, program management, and full life cycle support services as well as information technology and communications services and solutions.

The company provides its comprehensive range of services and solutions in support of U.S. federal, state, and municipal governments, foreign allied governments, and a wide range of commercial clients. Michael Baker International has more than 5,000 employees in over 90 locations located across the U.S. and internationally.

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