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 GT 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 GT 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. 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. The panoramic imagery / point cloud section has a robust selection of tools through which

“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.”
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.

**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.

**A Typical workflow**

A typical workflow for one of our major telecommunications clients would include 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. 

Scott Peterson, GISP, is the Mobile LiDAR Systems Administrator for Michael Baker International. Scott 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.