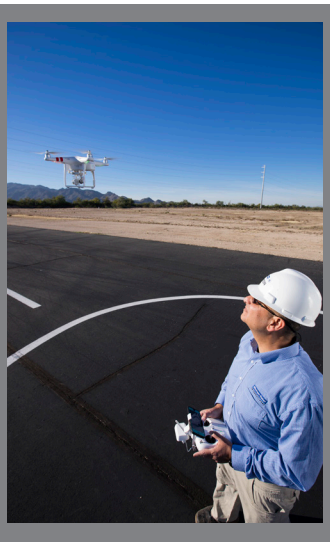
Michael Baker
INTERNATIONAL

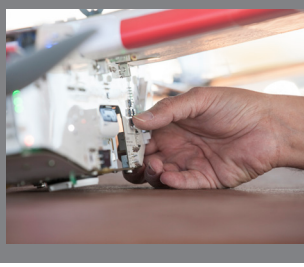
We Make a Difference

GEOSPATIAL INFORMATION TECHNOLOGY:

UNMANNED AERIAL SYSTEMS

VISUAL • MULTISPECTRAL • THERMAL • LiDAR • HYPERSPECTRAL





Services Provided

- Consulting
- Database development
- Application design and development
- Data acquisition and processing
- Aerial and mobile LiDAR
- Surveying and mapping
- Systems integration
- Asset management
- Data access and visualization
- Staffing support

Solution Advantages:

- Rapid deployment
- Minimal safety risks
- Acquisition from any angle
- Reduced acquisition costs
- Low altitude and high resolution
- Higher point densities than LiDAR
- Integration with existing surveys

Michael Baker's unmanned aerial systems (UAS) provide a new alternative approach to traditional aerial acquisition or ground-based surveys. Picking up where traditional methods of acquisition are limited either in ability or expense, UAS promise to unlock new opportunities for users of geospatial information.

Typical photogrammetric products are provided in resolutions that are not available from conventional systems, and hybrid datasets from pixel-based point clouds, with per-square-meter densities not achievable from LiDAR, will drive the demand for new products.

Michael Baker's UAS team offers both fixed-wing and vertical take-off and landing (VTOL) systems to meet project-specific needs. Michael Baker's fixed wing UAS are capable of over 45 minutes of flight time and have multiple payload configurations. Our VTOL fleet includes an array of systems, each suited for inspection services and/or small footprint projects.

Michael Baker's certified management system is ISO9001:2008 registered for the Design and Provision of Professional Engineering and Consulting Services with a focus on Geospatial Information Technologies, Mobile Light Detection and Ranging (LiDAR) Field Collection and LiDAR Data Processing.

ISO 9001 SRI CERTIFIED

ANAB ACCREDITED

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Roof Damage Assessment from Textured 3D Model

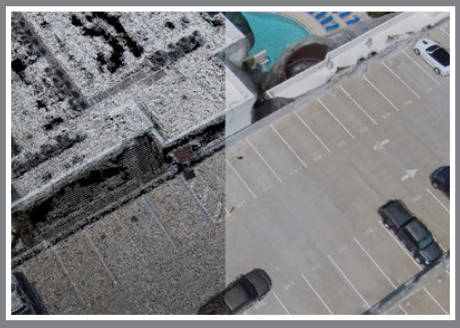
Textured Models

The versatility of VTOL UAS in capturing images from any location and angle offers a breakthrough in the ability to survey locations that are inaccessible due to hazardous conditions or are not visible from the air, such as the underside of bridges. Having this versatile acquisition capability allows for unprecedented views that can be rendered as three-dimensional models. Designers can then assess structures from their desktops in a three-dimensional environment.

Multispectral Image Acquisition for Crop Health

Multispectral Imaging

Our fixed-wing UAS has interchangeable payloads for various applications. RGB, multispectral, hyperspectral, thermal and LiDAR payloads are available for rapid incorporation and use. Below is a recent example of a multispectral collection. The data collected has a resolution of two centimeters and was processed for analysis.



Point Cloud Density | Textured Image

Ultra-Dense Point Clouds

Operating at 50 meters (164 feet), resolutions of fewer than two centimeters are common. With appropriate overlap point densities of more than 200 per square meter are achievable. This is much greater than LiDAR industry standards, which are typically 20 points per square meter. Image-based points are very different in that there is only one return. This involves different processing methodologies that can be used to create new dynamic products.

Wind Turbine Blade Inspections

Close Range

The close-up capabilities that UAS offer, and the hovering ability of VTOLs, make these systems an excellent choice for inspection services. Coupled with real-time video downlink capabilities, inspectors can look for issues on an object from the safety of the ground. Objects such as wind turbine blades, smokestacks, towers and bridges are excellent candidates for this type of inspection.