

# Unmanned Aerial Systems

Improve visualization, mobility and efficiency of your survey projects

Pipeline Services



HGA's Unmanned Aerial Systems (UAS) solutions deliver hands-off piloting visualization from takeoff to landing, delivering highly precise points to use for design, calculations, and certifications from one short flight. Our Unmanned Aerial Vehicle (UAV) solutions are more flexible and cost-effective than piloted aircraft since they can be deployed repeatedly, rapidly and at reduced costs. Our high-resolution camera sensors capture hundreds of images in the locations necessary to generate high-density 3D point cloud models and with the use of GPS collected ground control, these point clouds will be within survey grade accuracy tolerance. Data is uploaded automatically and wirelessly to the cloud for fast processing and reporting.

The HGA UAS team has the skills and capabilities to deploy our unmanned vehicle, anytime, from any location for your project. We have an in house specialist with a Remote Pilot in Command (RPIC) License obtained from the FAA, and multiple staff trained as pilots and visual observers. The onboard flight computer system uses a variety of sensors to deliver a hands-off, autonomous piloting experience from takeoff to landing, and can cover hundreds of acres in minutes. Real time flight and data



collection information is streamed to the ground station from all aircraft utilizing on board telemetry radios. Using reliable, customized UAVs, we can vastly reduce the time spent collecting accurate data, resulting in more accurate project plans, models and operations.

The HGA autonomous UAS solutions will assist in the planning and design of anything from construction sites and route development to infrastructure inspection and environmental studies. Your project will benefit from our advanced technologies and software for planning, design, and layout

operations, all of which help you reduce collection/inspection time, for faster analysis and monitoring.

Our unmanned aerial systems make the inspection process quicker and safer. We do this by pre-programming waypoints for flights using Google Earth, which allows the drone to scan the site and capture high resolution images to give you a better understanding of your operation.

The technology can help you with a wide range of issues, from right of way inspections to surveillance. In an infrastructure inspection program, we used infrared equipment and visual cameras on the UAV to find hot spots in addition to other infrastructure faults. With our ROW/route development accuracy, we can gather high-resolution map images necessary for a better understanding of operations, resulting in more accurate project development plans.

### Technical specifications:

#### HGA T-1070

The HGA T-1070 is a custom 6 prop rotary Unmanned Aerial Vehicle (UAV) that was designed and constructed by an in house specialist for the specific use of aerial surveys, such as: topographic surveys, volumetric calculations and 3D modeling. Complete set-up time takes less than 10 minutes. This platform weighs approximately 13 pounds and has a 40 minute flight time with full payload. The HGA T-1070 carries a 42 megapixel Sony A7Rii, which is essential to produce precise photogrammetric point clouds.

#### 3DR Iris+

The 3DR Iris+ is a 4 prop rotary Unmanned Aerial Vehicle (UAV) that was purchased from 3D Robotics, a leading commercial and recreational unmanned aerial vehicle manufacturer. The Iris+ specializes in aerial photography and videography such as: site and infrastructure inspections, aerial orthographic imagery and construction progress monitoring. Complete set-up time takes less than 10 minutes. This platform weighs approximately 3.8 pounds and has a 15 minute flight time with full payload. Due to the relatively small size and sonar capabilities, the Iris+ can be utilized for indoor and outdoor inspections.



HGA T-1070 and 3DR Iris+ UAV solutions

#### PTV-Tail

The PTV-Tail is a custom single prop fixed wing Unmanned Aerial Vehicle (UAV) that was designed for HGA with the specific use of high area data collection. The PTV-Tail specializes in aerial photography and videography over great distances such as: right-of-way inspections, class studies, route development, and aerial orthographic imagery of large areas, environmental studies and emergency management. Complete set-up time takes 15 minutes. This platform has flight time of 1 hour and 45 minutes and has a mapping coverage area of 1,500 acres. With a wingspan of 50 inches, this craft is able to cover 15 miles with each flight.

#### Our applications are:

- Aerial orthographic imagery
- Topographic surveys
- Site and infrastructure inspections
- Construction progress monitoring
- 3D modeling and asset measurement
- Volumetric calculations
- ROW inspections/class studies
- Route development
- Emergency management
- Environmental studies

Unmanned flights can survey your projects in hours, instead of days, so projects can be completed faster and more cost-efficiently, contact your local HGA office or visit us online at [www.hga-llc.com](http://www.hga-llc.com).

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Hunt Guillot & Associates LLC  
603 Reynolds Drive, Ruston, LA 71270  
866.255.6825  
[www.hga-llc.com](http://www.hga-llc.com)