ELEVATE YOUR NEXT PROJECT
LICENSABLE

Aerial Imaging Resources, LLC is a FAA Title 14 CFR Part 107 Exempt UAS (Unmanned Aerial Systems) or Drone Company with waivers of exemption for any commercial UAS (Unmanned Aerial Systems) applications. Our company carries 1 Million Dollars in Commercial General Liability and 1 Million Dollars in Aircraft Liability Insurance for all UAS Platforms in our fleet. We can add the entity or entities of your choice along with waiver of subrogation, if desired, under our policy for any number of clients involved in any project.

KNOWLEDGABLE

We are staffed with an incredible team of licensed and experienced drone pilots with over ten years of remote UAS piloting along with backgrounds in aviation. Our team of pilots and camera operators also have experience in videography, photography, live streaming, high-resolution mapping, geospatial analysis, three-dimension modeling, inspections, data collection and processing, as well as other commercial/industrial applications across many different industries through UAS technology, but operating commercial data collection applications while improving and/or on-ground media content along with beneficial applications including FLIR XT2 Thermal, 30x Optical Zoom Camera, and more.

EXPERIENCE

Our team also consists of a highly experienced in-house production and editing team capable of cinematic quality videography on the ground and full post production. Our vertically integrated setup, along with utilizing the latest media technology, allows our clients to communicate with a single company to ensure they receive the deliverables they envisioned. We have worked with small businesses, municipalities, major media production companies, and Fortune 500 companies across the nation that have wanted to leverage drone technology into their applications.

MAIN UAS PLATFORMS

• (2) Heavy High-End Industrial Platform – Up To 40-Minute Flight Time, 17 Inch Quad Propellers, Dual Pilot / Monitor Operation, Weather Resistant, Multiple Camera Attachments - (2 Bottom & 1 Top Mounted Camera)
• Any of our cameras (below) are attachable and allows two cameras to run simultaneously including FLIR XT2 Thermal, 30x Optical Zoom Camera, and more.

(2) Heavy High-End UAS Platforms - Upgraded Mirrorless 4/3 Camera
• 28 Minute Flight Time + 9 Inch Quad Propellers
• (Olympus 12mm F/2.0) (Lumix 15mm F/1.7) (Olympus 25mm F/1.7) Lenses
• (5.2K - 5280x2160 @ 24p/30p) (C4K - 4096x2160 @ 24/25/30/50/60p) (UHD 4K - 3840x2160 @ 24/25/30/48/50/60p) 2704x1520 (2.7K @ 24/25/30/48/60p) FHD - 1920x1080 (24/25/30/48/50/60/120p)
• Cinema DNG, Apple Pro Res, H.264 + H.265 @ 100Mbps
• 20.8 Megapixel DNG + JPEG Photographs
• Live Television Broadcast (1080i @ 50p + 720P @ 60p)
• ISO Range 100-25600 (Still) / 100-6400 (Video)
• Full Intelligent Obstacle Avoidance System
• F1.7 Maximum - F22 Minimum Aperture
• Dual Pilot Control (Dedicated UAS Pilot + Camera Operator)
• Dual Monitor Setup + Tripod For Creative or Internal Oversight
• RAW / ProRes / MP4 / MOV Video File Formats Supported

SECONDARY + INDOOR UAS PLATFORMS

• (2) Heavy UAS Platforms - Mirrorless 4/3 Camera CMOS Sensor Camera
• (C4K - 4096x2160 @ 24/25p) - UHD 4K - 3840x2160 (25/30p)
• FHD - 1920x1080 (24/30/48/50/60p) (Live Television Broadcast 720p)

• (2) Small UAS Platforms - 1 Inch Large Camera Sensor
• Indoor Flights, Close Proximity Technical Flights, Propeller Guards
• Full Intelligent Obstacle Avoidance System
• (C4K - 4096x2160 & UHD 4K - 3840x2160 @ 24/25/30/48/50/60p)
• 2704x1520 (2.7K) (C4K / 25 / 30p) FHD 1920x1080 (24/25/30/48/50/60p)
• Dual Monitor Setup + Tripod For Creative or Internal Oversight
• (Olympus 12mm F/2.0) (Lumix 15mm F/1.7) (Olympus 25mm F/1.7) Lenses
• 28 Minute Flight Time + 9 Inch Quad Propellers
• Mirrorless 4/3 Camera CMOS Sensor Camera
• Full Intelligent Obstacle Avoidance System
• (C4K - 4096x2160 @ 24/25p) - UHD 4K - 3840x2160 (25/30p)
• FHD - 1920x1080 (24/30/48/50/60p) (Live Television Broadcast 720p)

• Dual Pilot Control (Dedicated UAS Pilot + Camera Operator)
• Dual Monitor Setup + Tripod For Creative or Internal Oversight
• RAW / ProRes / MP4 / MOV Video File Formats Supported
• JPEG / DNG Photo File Formats Supported

SELECT CLIENTS

We are passionate about our services, customer relationships, and take pride in every project we do. Customer satisfaction and safety is our number one priority. We use a multiple control and monitor setup, which allows for internal oversight and for our clients to be a part of the creative process to see live high definition footage of exactly what the camera is capturing to make sure you get the exact shot your company is looking for.
HIGH RESOLUTION MAPPING

Overview

Our drone technology allows us to deliver a much more cost-effective way of GIS Mapping. We create accurate high-resolution maps that are up to 30x the resolution of Google Earth. Online map sharing internally to get the data you need extremely quickly for your project.

Included With Services

- We host each processed map on our online interface perpetually for client access.
- Annotation tools are included in each map to show and share annotations.
- Clients can use the annotation tools to measure distance, volume, exact location, and area.
- On the interface, you can choose to see Orthomosaic 2D, Elevation, NDVI and 3D Model Maps.

Volumetric Analysis

Volume measurements with our software are an extremely fast, accurate, and cost-effective method to analyze volumes on mapping from any device. Our volume measurements are accurate to within 1-2% of traditional laser based measurements.

Relative Accuracy

The horizontal accuracy within a map largely depends on the ground sampling distance and number of pixels per centimeter of your data. With our ability to fly much lower than manned aircraft, we can achieve incredible accuracy and resolution.

GPS Coordinates

This depends on where you are on Earth, and what GPS receiver you have. Using our GPS systems on our drone platforms, you can typically expect to have around 1-3 feet horizontal and vertical accuracy.

GPS Coordinates and Ground Control Points (GCPs):  

You can radically improve your Absolute GPS Accuracy by using GCP's (Ground Control Points) or Differential GPS Systems (RTK, PPK, etc.). These will increase your absolute accuracy to around 1cm to 2cm on the horizontal axis, and 1cm to 2cm on the vertical axis. We recommend a minimum of 4 GCPs, but if more can be provided, that can produce even greater accuracy.

Contour Intervals

We can produce contours available in Shapefile (.shp), which are georeferenced and support custom projection systems that are compatible with ArcMap and other GIS packages.

We can produce contours at intervals of 1 to 5 feet that are not georeferenced and integrate easily with AutoCAD. Our software produces contours not created as DTMs, but created as DSMs, which include all features within the area itself and not just elevation features.
ORTHOMOSAIC MAPPING

ELEVATION ANALYSIS
CONTOUR INTERVALS (2 FT.)

VOLUMETRIC ANALYSIS
3D MODELING

POINT CLOUD DATA
The elevation data on your drone map is used to create a 3D Model in addition to your 2D layers. The map is visualized on the interactive map interface, and exportable in several formats. The “.xyz” point cloud export is the most commonly accepted format for software in the construction and mining industries. This export is compatible with AutoDesk products including AutoCadd Civil 3D and AutoCad Revit.

LIDAR DATA
The “.las” point cloud export is another widely accepted format for GIS Software such as ESRI ArcMap. The “.las” dataset stores reference to one or more “.las” file on disk, as well as to additional surface features for storing aerial LIDAR data. This dataset allows one to examine “.las” files, in their native format, quickly and easily, providing detailed statistics and area coverage of the LIDAR data contained in the “.las” files.

A “.las” dataset can also store reference to feature classes containing surface constraints, such as breaklines, water polygons, area boundaries, or any other type of surface feature that is to be enforced in the “.las” dataset. Please contact us for more information regarding everything that can be achieved with “.las” datasets.
NDVI HIGH RESOLUTION MAPPING

Overview

Our drone technology allows us to deliver a much more cost-effective way of gathering very precise data from NDVI Mapping. The images we capture will pinpoint areas where nutrients or chemicals need to be applied thus decreasing input costs and increasing yields.

The geo-referenced maps aid customers in fast and precise ground truthing. By being more efficient, farmers and agronomists save time and money. We can provide clients the ability to evaluate crop health and field conditions within approximately one hour, which is faster than any other method available including imagery captured by manned aircraft.

With our ability to fly our UAS platforms anywhere from 0 to 400 feet above the ground, we will provide high-resolution near infrared imagery in greater detail than near infrared imagery captured by manned aircraft. This will ensure that our clients will view the conditions of their fields with the highest possible resolution and data accuracy.

Benefits

The NDVI plant health algorithm compares the proportions of light captured across different bands (red, green, and near-infrared) to compute numerical values for each pixel or area of a given drone map. Maps with plant health algorithms are then assigned colors based on those numerical values, which makes it easy to identify the variance between healthy and unhealthy areas.

Growers and agronomists who are seeking to understand comparative plant health data over time and can greatly benefit the use of drone NDVI imagery captured with near-infrared cameras. These cameras are specifically designed for agricultural needs.

This means that any NDVI images produced are better suited to analyze and detect the smallest amount of crop stress by reading the near-infrared light and picking up on any reflection from plants.

Crop scouting with drone imagery makes it possible to measure plant health, identify crop stress, and rapidly eliminate threats to your field. We utilize the latest drone and camera technology that enables you to assess plant health and spot crop variability in minutes.
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<th>Projection</th>
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<td>.kml (Web Mercator)</td>
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</table>
| All 2D Layers                    | .jpg                               | Includes .twf file with georeferenced metadata. WGS84 or custom projections.
### PHOTOGRAPHY RATE SHEET

#### Full Day ($1500 - $1650)

- Project Coordination + FAA Airspace Clearance Confirmation ($100 - $200)
- Travel + Setup + Initial Flight ($200 - $250)
- Additional Flights + Battery Charging (Unlimited) ($175)
- PIC (Pilot in Command) *FAA Required ($225)
- Photographer / Camera Pilot + VLOS Assistant (Visual Line of Sight) *FAA Required ($300)
- Heavy UAS Platform - 4/3 Mirrorless Camera, CMOS Sensor, 20.8 Megapixel Photographs ($100)
- High Resolution Photographs RAW + JPEG Formats (Unlimited) (Included)

#### Half Day ($950 - $1050)

- Project Coordination + FAA Airspace Clearance Confirmation ($100 - $150)
- Travel + Setup + Initial Flight ($200 - $250)
- Additional Flights + Battery Charging (Unlimited) ($175)
- PIC (Pilot in Command) *FAA Required ($225)
- Photographer / Camera Pilot + VLOS Assistant (Visual Line of Sight) *FAA Required ($150)
- Heavy UAS Platform - 4/3 Mirrorless Camera, CMOS Sensor, 20.8 Megapixel Photographs ($100)
- High Resolution Photographs RAW + JPEG Formats (Unlimited) (Included)

### ADDITIONAL ITEMS (IF NEEDED)

- Photograph Post Production (Per Project Basis)
- High Resolution Mapping (2D Orthomosaic, 3D Modeling, NDVI Analysis) (Per Project Basis)
- Additional Entity Insured + Waiver of Subrogation (One Year) ($100)
- Additional Total Travel Outside of Indianapolis (Beyond 20 Mile Radius) ($.54 Per Mile)
- Additional Total Travel Outside of 20 Mile Radius (Over 75 Miles to 400 Miles Maximum) ($250 Flat Rate)
- Additional Travel Over 400 Miles (Per Project Basis)
- Tripod Photography (Per Project Basis)

### WEATHER OR DOWN DAYS

If for any reason the PIC (Pilot in Command) finds the shooting conditions too dangerous then we will be obligated to refrain from flying. We have no control over the weather so it is a collaborative effort between ourselves and our clients to book accordingly. We can fly in up to 23mph winds. We cannot fly in any precipitation. If weather the day of the shoot is deemed to be out of our filming capacity we recommend our clients to schedule a back up filming day. We do not charge a deposit or cancellation fee if weather cancels the shoot the day scheduled.

If client wants to proceed with filming on a day with possible rain and the shoot has to be rescheduled. We must charge 10% of the invoice for the half day rate if our crew is on site less than four hours. We must charge 10% of the total invoice for the full day rate if our crew is on site more than four hours. If client wants to cancel, the cancellation must be made within twenty-four hours of scheduled filming time or we must charge the same 10% of either a half day or full day invoice.
COMPETITIVE EDGE

Technology is always changing and companies are always figuring out new ways to utilize new technology to save time, money, and increase efficiency. Whether it’s just a few acres or thousands of aces, we can produce overlay and map accuracy within a centimeter. Let us create your next high resolution map or geo-stitched image of your project and have up to 30x to 40x the resolution of satellite imagery or manned aircraft imagery at a much more economical price.

ADDITIONAL INFORMATION

There are several variables that include whether a map turns out accurate and according to plan. Part of the mapping process incudes pre-flight planning, pre-flight ground coordination, in-flight imagery analysis, and post-flight imagery analysis.

We can provide a firm estimate on the time it will take to do all pre-coordination, complete imagery capturing, and post-flight image analysis for a given acreage.

A high resolution map can include anywhere from 250 to 3000 images to be processed. Turnaround time on the final deliverables is between 24 to 72 hours. Larger projects, such as 200 acre plots or more, can sometimes take up to 3 business days to process.

FINAL DELIVERABLES

• Interactive Map Laid Over Google Satellite Earth Imagery
• All Export Formats or Specific Formats of Client’s Choice
• Perpetual Hosting of Interactive Map
• Export Formats Access and Perpetual Hosting On Our Secure FTP Server
• Annotation & Measurement Tools (With Purchase As Annual User With Personal Login Credentials)