Lead’Air has developed and sold high quality, robust, custom systems for various client applications for years and this new solution is no exception. The small form UTrack application is designed to be mounted on UAV, helicopter or fixed wing aircraft. The mount positions for the system are necessarily customizable because the world of aerial image capture has had a significant shift in acquisition platforms in the past year. With a size small enough to fit most professional UAV’s (unmanned aerial vehicles) this robust system is also capable of being tailored to almost any manned helicopter or fixed wing aircraft and flown without the need for a sensor operator, making the unit truly versatile for numerous applications.

**Modular Design**

The UTrack is created with the opportunity to customize your own solution. You may not need all of the components so it is offered in four different configurations:

- **U**Track Flight Management System for a fully autonomous FMS application. This system will work with your existing camera and IMU provided it can output a NMEA string of data. Allows for pilot only operation (no sensor operator required).

- **U**Track 2 Flight Management System including all of the components of the UTrack and an Integrated Applanix APX 15 IMU system.

- **U**Track 3 Flight Management System, including a fully stabilized mount customized to your specific single sensor. System will include an Applanix IMU providing a completely integrated autonomous acquisition platform.

- **U**Track 4 Flight Management System including all of the components of the UTrack 3 and a post processing computer from Stellacore Solutions designed to seamlessly and automatically process your raw data.
Small Mount Solutions - Unique Concepts

**UTrack Flight Management System**

For the past 20 years hundreds of aerial survey companies, including the largest aerial survey mapping companies in the world, have used and continue to use Track’Air’s X-Track Flight Management Systems including prominent governmental organizations such as NASA, NOAA, etc. The proven reliability of this system is well documented and has wide ranging capabilities to control almost any large, medium or small format cameras and LiDAR sensors on the market today.

Derived from this well known, industry leading software, the UTrack System is a fully autonomous, highly professional flight management system targeting UAV and conventional light aircraft for single pilot operation. The system provides maximum reliability and accuracy as well as total ease of use.

Onboard the UAV the UTrack relies on a special version of the Track’Air snapSHOT FMS software which operates independently from the aircraft guidance system automatically controlling all phases of the mission and making decisions based on the flight path followed by the UAV. SnapSHOT completely controls the camera capturing the imagery as the UAV follows the planned mission trajectory.

If a GPS down link exists, the UAV pilot can monitor the progress of the mission in real time on a display identical to the one used by pilots on manned aerial survey aircraft equipped with the Track’Air Flight Management System. If the mission calls for hands on flying of the UAV, this display allows the UAV pilot to hand fly the aircraft as if he would be on-board and in control of the aircraft.

[www.trackair.com](http://www.trackair.com)
Using the system in a full sized helicopter or fixed wing aircraft allows the pilot to fly the project without the need of a system operator provided your equipment can work independently. Once activated, the pilot flies to the project and as he approaches the project area the UTrack automatically selects the line closest to the pilot. If the pilot continues past the line it will select the next line and so forth until the pilot turns on the line they want to fly.

The system then automatically zooms in as he approaches the first firing point or beginning of the line and starts the sensor at the proper time. All lines can be flown without any interaction from the pilot.

The UTrack can control all prevalent camera systems available for UAV’s including Phase One, Nikon, Canon, etc. It also controls most LiDAR scanners like the Riegl VUX series.

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**UTrack 2 Flight Management System**

UTrack 2 Flight Management System includes all of the components of the UTrack and an Integrated Applanix APX 15 IMU system. The system will use data from the IMU to control the sensor and fire at precise locations simultaneously sending an event mark from the sensor to the IMU during the flight. This data will be used for post processing the trajectory and providing additional data for direct georeferencing of the imagery. The interaction of the IMU and the UTrack is equivalent to the Applanix POSTrack system that is used on most of the large format mapping cameras currently in use worldwide.

**UTrack 3 Flight Management System**

UTrack 3 Flight Management System, includes the UTrack 2 system and a fully stabilized mount customized to your specific single sensor or provided with one of ours. The system which includes an Applanix IMU provides a completely integrated autonomous acquisition platform. The IMU data is utilized not only for the trajectory information of the images but also for controlling and stabilizing the mount.

The fully stabilized system compensates for roll, pitch and yaw using streaming data from the IMU assuring proper orthogonal alignment of the sensor at all times during the flight.

Designed by Lead’Air’s in-house engineering and built in our own manufacturing facility provides our assurance that this system meets our own rigorous standards for proper aviation safety.

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