



Small Form Factor Flight Management System

The Lead'Air **NanoTrack** is a mid-level, yet highly capable flight management system, serving a broad spectrum of sensor platforms, from large-format, analog frame cameras to off-the-shelf small and medium format digital cameras (Nikon, Canon, Phase One, etc.)



NanoTrack provides superior functionality in a small form factor, along with developer options for sensor and feature upgrades.

The system accurately fires the camera at pre-computed positions and is capable of reading an electronic pulse back from the camera and providing a Mid Exposure Pulse (MEP) to an external source. This precise time tagging allows accurate georeferencing of the actual photo position by a GPS or IMU. The hardware includes the NanoTrack camera interface, a GPS receiver and all required cables.



Track'Air 's X-Track Flight Management Software Suite

The **Track'Air X-Track** planning software includes 5 independent software modules tightly integrated by means of a common database specially designed and developed over the last 20 years to provide a practical, secure method for planning a project. All these programs allow the use of raster maps and DEM data in the planning process. A general description of each module is below:



snapXYZ:

This module allows the planner to define project limits and background shapes by typing or loading coordinates into a specific text driven header. The planner can import a variety of CAD files including DXF, SHP, DCW or KML files to be employed as area or background drawings during the flight planning and inflight acquisition process. Additionally, the preparation of individual flight runs or a block of runs from existing coordinate text files can be added to a flight plan header. This can be accomplished by copy/pasting or direct typing. The module includes a graphical viewer for a quick inspection of the data.



snapVIEW:

This module allows you to open, import or save a variety of georeferenced topographic maps and imagery from around the world as well as interface with Google Maps, Bing Maps, or Web Map Services available online.

A selection of drawing tools are available for defining the project limits using screen digitizing on the available raster backgrounds. From digitizing a single polygon as a project limit to creating outlines of specific topographic features and details, or saving the raster image for creating flight lines in the **snapPLAN** module for useful display information during the acquisition process, this is a module you can't do without.



snapPLAN:

This module has a near countless number of options to create flight plans. With automated as well as manual functionality the system allows you to create and optimize blocks of runs and/or single photo strips. The software supports geographical and grid based pinpoint block planning.





Track'Air 's X-Track Flight Management Software Suite



snapBASE:

The module that is the hub of the **Tracker 32 Software Suite** has a variety of management tools used to check and track the status and progress of projects. The Project Manager or flight planner employs this to finalize flight plans before missions as well as updating the office database with the data acquired or generated during the flight, from the acquisition computers.



snapPLOT:

The module name says it all. This module is a printing, plotting and exporting utility specially designed for the automated production of aerial survey indices and report documents. An unlimited number of layouts for specific printers can be saved as a means of standardizing or customizing the indices you wish to create. Customizable legends, titles and adding your own logo are all possible in this versatile software. In addition, the planning and acquisition data can be exported as a dxf file to be utilized in other CAD functional programs.



snapSHOT:

snapSHOT will manage your workflow in the airplane, graphically depicting your flight lines and photo sites. The graphic interface includes standard turn rate indicators to facilitate alignment and interception of flight lines while enhancing the maneuvering comfort of the flown mission.



X-Track Tracker Database:

The data produced and processed by **Tracker** is saved to a built in relational Microsoft ACCESS "mdb" database which can be used by any number of programs.

The benefits are:

- Planning and acquisition data stored in one place and easily transferred between computers.
- Data captured in a structured and logical way using the concepts of a relational database.
- Data can be easily accessed with the Microsoft Access structured query language (SQL) for developing customized databases, applications, add-ons or extensions that access the data directly from the Tracker.mdb database. The **Tracker** database can become part of a new or existing geographic information system (GIS).



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NANOTRACK SPECIFICATIONS

The **Nanotrack** interface includes its own GPS receiver.

Specifications

- USB 2.0 device can be connected to any USB 2.0 or 3.0 laptop or tablet
- Integrated, single frequency 12 channel Garmin 18 GPS
- Included GPS antenna to be installed on the glare shield or outside.
- Operating altitude 25,000 feet + (laptop must have SSD above 14,000 feet)
- Operating temperature 0° to 60° Celsius (32° to 140° Fahrenheit)
- Dimensions 10 x 5 x 3 centimeters (4 x 2 x 1.25 inches)
- Weight max 200g (7 oz.)
- Relative triggering accuracy estimated to 1 meter (3 feet) at 120 knots (depends on GPS signal quality)
- Minimum triggering interval between photos, 0.3 second (depending on camera)
- Fully guaranteed for 1 year (no repair, exchange only)
Free software upgrade and support for 1 year.

Delivery

- **NanoTrack** USB 2.0 camera interface
- Camera cable custom built for most cameras
- GPS antenna –Single frequency, navigation grade
- MEP Cable
- Computer Interface Cable
- Software for planning: snapXYZ and snapPLAN, snapVIEW
- Software for flight management: snapshot
- Software for checking and reporting: snapBASE and snapPLOT



Flight Management Solutions

Key variations in our FMS systems:

<i>DESCRIPTION OF FEATURES</i>		NexTrack 2	NanoTrack	PicoTrack	SofTrack
GPS Included	Garmin 18 - 5hz Navigation Grade GPS and Antenna	•	•	•	•
Internet Planning Support	Using Google or BING, KML or TML files can be created and imported into our program. Map Imagery can also be captured and saved for planning.	•	•	•	•
WGS 84 Coordinate System	World Geodetic System (WGS) 84 coordinate system available for planning	•	•	•	•
Precision Camera Firing	Camera is automatically fired at precise, pre-determined locations along flight lines. This basic functionality guarantees side and forward overlap.	•	•	•	
MEP Return	Mid-Exposure Pulse – Pulse return from the camera at the instant of exposure recorded in X-Track.	•	•	•	
Other Coordinate Systems	Local coordinate systems such as the US State Plane or other specific country coordinate systems are supported with this function.	•	•		
Sensor Options	Specific current and legacy sensors, are supported. May include specific interfacing needs or functions specific to a sensor type as well as FMC and Annotation support.	•	•		
DEM Option	Digital Elevation Model; 3D, digital representation of terrain for 3D flight planning and execution	•	•		
Airspace Depiction (US Airspace Only)	ATC airspace data updated monthly on our website and downloadable through our software to allow planning within controlled airspace. Displays the data for planning or flight.	•	•		
ATC Option	The ATC option provides specific maps to be sent to the ATC to allow them to coordinate with the Pilot during acquisition within their airspace.	•	•		
3 rd Party External GPS Support	Allows users to plug in an external GPS with NMEA output capabilities. Provides an MEP pulse to indicate event marks	•	•		
FMC for Phase-One Cameras	Forward motion compensation control from within the NexTrack 2 system.	•			
Mount Control	Freeze and unfreeze stabilized mounts during flight. Streaming data from digital compass or IMU to fully stabilize mounts or can be displayed on screen for manual Drift mounts	•			
IMU Support	Provides an external pulse to the IMU for event marks. Some additional IMU software support available depending on model	•			
SnapSHOT Mobile	Wireless Mobile device support for pilot or secondary operator display.	•			
WMS – World Mapping System Option	Web Map Service is a standard protocol for sharing georeferenced map images over the internet.	•			