Comprehensive Resource

The NexTrack 2 FMS was conceptualized and developed by Lead’Air, Inc. in their Kissimmee, FL facilities as an upgrade and complete replacement for our previous Track’Air Flight Management Systems. As with our previous systems the NexTrack 2 is a combination of software and hardware that covers all aspects of an airborne acquisition project from planning to final archiving of the data.

The software includes the complete X-Track Suite of Windows based planning and reporting software as well as the snapSHOT32 control module for the in-aircraft acquisition process.

NexTrack 2 System:

- TECI-4 Interface
- Surf’Air Operator tablet
- Wireless Pilot Display tablet
- Garmin 18 Navigation GPS
- All required cables

These items, in combination with the complete Track’Air X-Track Software Suite create a powerful, compact and all-inclusive Flight Management System for today’s demanding acquisition needs.

http://www.trackair.com/
Wide-Ranging System/Sensor Interface

The TECI-4 System/Sensor Interface is not much larger than a cell phone. Connected to the System Operator Tablet via a USB connection, it is designed to draw its power directly from the Tablet. The TECI-4 Interface is delivered with its own 5 Hz 12 channel GPS receiver; however it can also be connected to almost any other GPS receivers that have NMEA output capabilities.

In combination with the Track’air X-Track software on the Sensor Operator Tablet, the TECI-4 Interface triggers the sensor at pre-determined locations and records the positions with high accuracy. The system has the ability to also control “on/off” functions of many of the LiDAR scanning systems on the market.

The TECI-4 likewise performs many other tasks: exposing the details of the mission and the photo position on film (RC30, RMK TOP, etc.); automatically controlling all the camera functions, v/h, FMC, drift, etc. (with the necessary optional equipment) as well as interfacing with most camera mounts and stabilized platforms (Track’Air Steadytrack, PAV 30, GSM 3000, TAS, etc.).

It can be used with all existing legacy mapping cameras from the Leica RC10 and RC30 to the Zeiss RMK and LMK large format cameras. Small/medium format film cameras, modern digital cameras (Microsoft Vexcel, Phase One, etc.) and some LiDAR sensors are included.

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**Ruggedized Housing—Built in Ventilation**

The **Surf’Air** Sensor Operator Tablet is a specially designed, ruggedized aluminum housing encapsulating a Microsoft Surface Pro tablet. The custom housing has effective, built in ventilation and a 24 volt input power supply that allows the tablet to be safely and directly connected to 24 volt aircraft power. The housing is engineered in accordance with the Flat Display Mounting Interface (FDMI) standards.

![Surf’Air Sensor Operator Tablet](http://www.trackair.com/

**Incredibly Fast Performance**

With a Next-Gen Intel Core i5 processor providing incredibly fast performance, Windows 8.1 powerful operating system and a crisp bright display, the Microsoft Surface Pro has demonstrated it is perfectly adaptable for cockpit operation.

The tablet software is exclusively configured to run the X-Track snapSHOT in-flight software module at startup and the operating system is entirely protected from unintentional corruption. The touchscreen is a high quality display with a wide viewing angle and backlighting suitable for indoor and outdoor use. The tablet adapts ideally to any aircraft environment.

Wireless Connectivity—Many Options

The Lead’Air snapSHOT Mobile device option allows snapSHOT to operate on your mobile device! This leading-edge technology allows the pilot to choose almost any mobile device as a pilot display. The platform independent software can be installed on any iPhone 5s or higher, IPad or iPad Mini Gen 2 or higher, Android 4.0 or higher, and all Microsoft Surface Pro computers with full version Microsoft Windows 8 operating software. SnapSHOT Mobile installed on any of these platforms can be used as a Pilot (client) device with wireless connectivity directly to the NexTrack 2 Surf’Air.

Along with a very small form factor these inexpensive devices have exceptional screens with excellent sunlight readability ideally suited for the cockpit environment. In addition to the yoke mount provided with this option, most of these devices can be conveniently installed in the cockpit using off the shelf mounting solutions. The device is connected to the Surf’Air Operator Tablet computer via wireless connectivity.

Most of these modern devices should be powerful enough to run all the new features of snapSHOT, including the display of large bitmaps and FAA airspace data during flight.

The mobile device acts as a display which can be controlled via its touch screen but does not require any action from the pilot once it is connected to the Track’Air Operator Tablet via WIFI. It updates itself and automatically starts the snapSHOT software, loads the selected project and follows the lead of the operator computer unless the pilot decides to take the lead, in which case the operator computer will automatically follow the pilot display. It can be graphically configured from its own interface and is independent of the camera operator’s view.
In-Flight Flexibility

SnapSHOT is used to control the cameras and sensors and to provide navigation information to the pilot. SnapSHOT assists the crew in taking the best course of action by continually displaying the current status of the mission. Critical FAA (USA only) aeronautic information (restricted airspace, danger areas, international boundaries, etc.) can be displayed together with the limits of the project. Raster maps and aeronautical charts can also be shown on the background.

SnapSHOT interfaces with most known survey cameras from small format digital cameras to the latest large format digital mapping cameras. It also manages many types of geophysical equipment (Lidar, frame scanners, etc.)

SnapSHOT includes a built in flight simulator which can be used by the crew to become rapidly familiar with the system. Additionally snapSHOT can be interfaced with MS flight simulator for advance familiarization and training with the software.

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The **Track’Air X-Track** planning software includes 5 independent software modules tightly integrated by means of a common database. 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. **snapPLAN** can manually or automatically adjust runs or strips for terrain altitude deviations from existing DEM data.

**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.

**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 is stored in one place and can be easily transferred between computers.
- Data is 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).