



FLIGHT DATA MONITORING



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APPAREO

APPAREO'S TURN-KEY FLIGHT DATA MONITORING SUITE

When it comes to flight safety, there's nothing more valuable than accurate statistics, actionable trending data, and true visual representations of every moment during a flight.

The AIRS-400 is a stand-alone flight data recording solution that captures accurate flight data, plus cockpit audio and 4k video. Supported by our Flight Data Monitoring (FDM) software, this information can be used to review and analyze your flight operations, allowing you to identify and mitigate risk. If the unthinkable were to occur, the recorded data is an invaluable investigation tool, giving you insights into exactly what, when, why and how it happened.

Increased Safety

- Proactively identify and reduce risk.
- Get automated analysis and actionable reporting / trending tools.

Better Efficiency & Quality Assurance

- Ensure SOP compliance on every flight.
- Set notifications to easily monitor your fleet.

Incident Investigation

- Quickly answer your questions on what happened and why.
- Dramatically reduce the investigation time and expense.

Compliance & Accountability

- Comply with FAA rule 135.607 for Helicopter Air Ambulance operators
- Easily show your level of operational safety with objective data.
- Demonstrate actionable safety initiatives for potential insurance savings.

Individualized Pilot Training

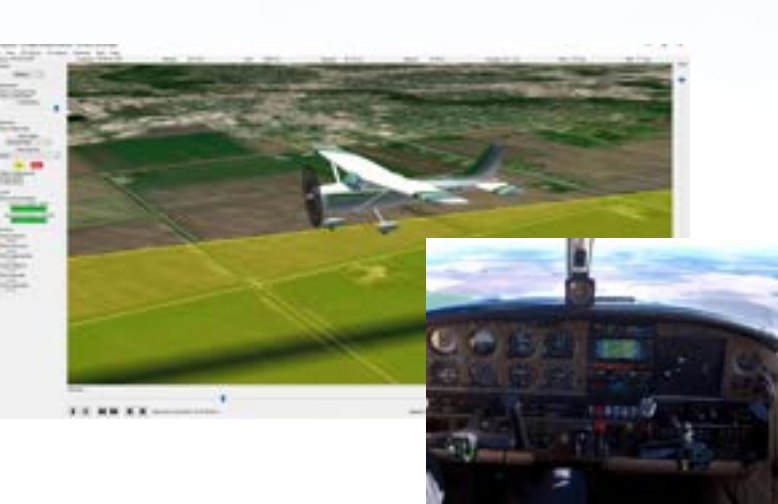
- Use actual performance data to evaluate and educate pilots.
- Identify problematic trends, and correct them.
- Develop customized flight training for new pilots.

HERE'S HOW IT WORKS



AIRS-400

- Record flight data, audio, and cockpit video
- Small, light, and affordable
- Easy, one-day installation
- Playback utility included
- Records to removable SD card and internal hardened memory



Visualization Software

- Synchronized imaging, audio, and 3D playback
- Flight training
- Incident investigation
- Maintenance troubleshooting



FDM Software

- Automated event analysis
- Detailed reports
- Web-based accessibility
- Hosting to save and store flight data
- Easily manage your fleet from anywhere

RECORD



(Actual size)
2.8" x 3.4" x 2.6"

AIRS-400

AIRS-400 CAPTURES:

- Attitude data (pitch, roll, yaw, etc.)
- WAAS GPS data (date/time, latitude, longitude, speeds, altitude, etc.)
- Cockpit video
- Crew and ATC communication
- Ambient audio

**For FAA Certification information and the AML-STC, please visit appareo.com*

The AIRS-400 is a powerful tool that records an entire cache of flight data to help you better manage the safety and performance of your aircraft. Data is recorded to an internal crash-hardened memory as well as a removable SD card. The information is written on a continual loop so you always have the latest information available. AIRS-400 comes with playback software that works alone or with our extensive, yet easy-to-use, FDM software suite.

Easy Installation

Unlike other flight recording solutions, Appareo's AIRS-400 is the only device you'll need to install in your aircraft. Its lightweight (11 ounces) and compact size (2.8" x 3.4" x 2.6") makes it ideal for any rotor or fixed-wing aircraft. With its own internal sensors, the AIRS-400 only requires aircraft power and ground; we also provide a small GPS antenna that is installed inside the aircraft. There is a free optional intercom system connection to record crew and ATC communications in addition to the ambient audio already being recorded. There are no special tools required for the installation, and it only takes about one day to complete.

AIRS-400 SPECS



Image Specifications	
Image Frame Rate	30 fps
Image Size	3840 x 2160
Compression Methodology	H.264
Horizontal Field of View	90°
Vertical Field of View	45°

Audio Record Specification	
ICS Input Range	up to 44.1 KHz
Audio Input per ED-112 Max Input Voltage	3.0 VRMS
Ambient Area Audio Recording (per DO-214)	up to 32 KHz

Audio Output Specification	
Nominal Output Level	1 Vrms (600 ohm load)
Max Output Level	2 Vrms (600 ohm load)
Output Impedance	< 600 ohms
Frequency Range	100 Hz - 10 KHz
Flat Frequency Response	< 3 dB

Inertial Measurement Unit (IMU) Specification	
IMU Record Rate	4 Hz
Rotational Rate Range	250 dps
Acceleration Range	+/- 4g
Sense Axis	triaxial
Heading Accuracy	2°
Roll and Pitch Accuracy	1.5°

GPS Specification	
GPS Constellations Supported	GPS, GLONASS
GPS Receiver Type	WAAS
GPS Update Rate	4 Hz
GPS TTFF	< 2 minutes

On Board Flash Memory	
Storage Capacity	35 GB
Storage Time	200 hours IMU, 100 hours of ARINC, 2 hours of image/audio

Removable Flash Memory (SD Card)	
Storage Capacity	200 hours of IMU, 100 hours of ARINC, 8 hours image / audio

ARINC 429 Support	
Baud Rates Supported	12.5 and 100 Kbps

Wired Communication Specification	
Ethernet per IEEE 802.3U (100BASE-TX)	at least 5 MB/s
RS-422 supporting ANSI / TIA / EIA-422-B Standards	230.4 kbps bidirectional

Cellular Communication Specification	
LTE M1	B1, B2, B3, B4, B5, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B66

General Specifications	
Input Supply Voltage	9 - 32 VDC
Input Supply Current	< 2 Amps
Weight	310 grams
Dimensions	71.09 mm x 86.47 mm x 65.69 mm
Operating Temperature	-25° C to +65° C
Time to Record Power Application	<30 seconds



VISUALIZATION SOFTWARE

To complement and maximize the effectiveness of the AIRS-400, Appareo developed a turn-key FDM software solution.

AIRS-400 Playback Utility

Included with your AIRS-400 is a playback utility, which allows you to replay the imaging, audio, and flight data recorded on a removable SD card.

AS Flight Analysis Software

Replay the flight with our rich 3D visualization software that incorporates a topographical map overlaid with satellite imagery. Your flight path and accurate flight position show you exactly when, where, and how the aircraft was being operated. This software will also sync with the Playback Utility, so you get a full picture of all recorded information.

Together, these software tools create a detailed, precise replay of your flights, which is ideal for incident investigations, flight training, and maintenance troubleshooting.



FDM SOFTWARE

When you add Appareo EnVision to your FDM software package, it's like having a virtual flight analyst watching every minute of every flight. This web-based application allows you to access past and current flight data, generate detailed reports, and trend the safety improvements in your operations. It's available any time from any location with internet access.

Data Transfer

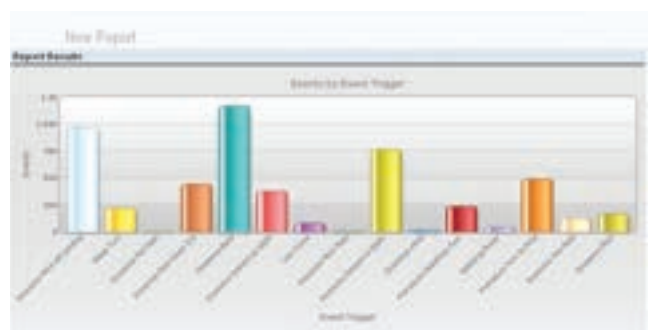
Automated analysis begins with the Appareo Transfer Utility (ATU), which uploads your inertial flight data to our servers for analysis. Comprehensive data for every flight is archived on the Appareo servers, giving you convenient online access to your data whenever you need it, while minimizing your IT costs.

Automated Analysis

The Appareo EnVision software was designed for you to easily identify and address operational risk. Your flight data is automatically analyzed against customized Event Triggers which can be set for different aircraft or operations, based on the parameters defined in your organization's flight ops. Quickly see which flights had Events as well as the duration and severity of each. Detailed reports are easily generated from those Events, delivering the safety information you want to monitor and the ability to trend that information over time.

Events Based on AGL Altitude

Our comprehensive terrain database allows you to create Event Triggers using above ground level (AGL) altitude without needing a radar altimeter. This allows you to get the most value out of the flight data by utilizing the AGL altitude limitations; a feature unique to Appareo's FDM suite.





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