AXIS PARTNER SOLUTION

AXIS COMMUNICATIONS
Technology Integration Partner

CAMSTREAMER

PTr

Visual aircraft tracking

Automatic visual tracking of aircraft via a PTZ camera

Why PlaneTracker App?

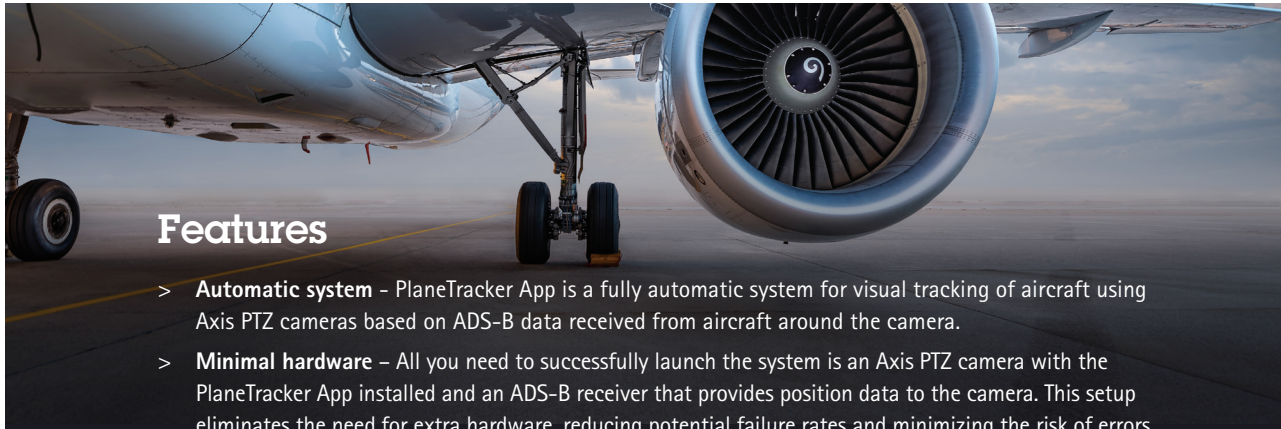
Elevate airport security with an automated video system for aircraft visual tracking to monitor aircraft not only during take-offs and landings.

Why network video?

> Superior image quality
> Remote accessibility
> Easy, future-proof integration
> Scalability and flexibility
> Cost-effectiveness
> Distributed intelligence
> Proven technology

Why Axis?

> Industry leader in network video
> Global market presence
> Strong partner network
> Smart, innovative products and services for video surveillance, access control, audio systems, and video analytics



Features

> **Automatic system** - PlaneTracker App is a fully automatic system for visual tracking of aircraft using Axis PTZ cameras based on ADS-B data received from aircraft around the camera.

> **Minimal hardware** – All you need to successfully launch the system is an Axis PTZ camera with the PlaneTracker App installed and an ADS-B receiver that provides position data to the camera. This setup eliminates the need for extra hardware, reducing potential failure rates and minimizing the risk of errors.

> **Day and night, in any weather** – Camera positioning adjusts continuously based on highly accurate ADS-B data. Regardless of obstacles, weather conditions, or time of day, aircraft tracking is always on a rock-solid autopilot.

> **Tracking zones and priorities** - The automation system works with pre-set zones at the airport and their priorities, with the runway having the highest priority by default and the taxiway zone having a lower priority.

> **Filtering and prioritizing aircraft** - PlaneTracker App offers flexible tracking options: use the blacklist to exclude specific aircraft from tracking, apply the whitelist to focus only on selected aircraft and use the priority list if you never want to miss your chosen aircraft.

> **Manual override** - On the map in the application interface or within the VMS plugins, you can manually select an aircraft and have the application track it. When you are finished, switch the application back to automatic mode.

> **Distress & urgency override** - Don't want to miss any aircraft within camera range that is sending out a distress signal? No problem, just check the box in the app settings.

> **Overlay graphics** - Optionally, the application can insert graphics with information and photos of the monitored aircraft into the camera image, all thanks to cooperation with Flightradar24.

> **Metadata for your VMS** - For each tracked aircraft, the application can send metadata to the VMS system, which can then be used to search the recorded video (ICAO, Tail Number, Flight Number, etc.).

> **Events for your VMS / Rule Engines** - The application generates a set of events based on which your VMS or camera can respond in some way. These include events such as the start and end of aircraft tracking and tracking based on a distress & urgency signal.

> **ATC communication audio track** - An audio track of control tower communications can be integrated with the video feed to ensure all essential information is in one place, eliminating the need to search across multiple sources.

CamStreamer PlaneTracker App – overview

PlaneTracker App is an innovative ACAP application designed for Axis cameras and developed in cooperation with Flightradar24, providing airports with a sophisticated automated visual tracking system to monitor aircraft during their most safety-critical maneuvers: take-off and landing. This ensures enhanced visual control in critical airport operations.

The PlaneTracker App offers three modes of operation:

1. Offline mode with no Flightradar24 data

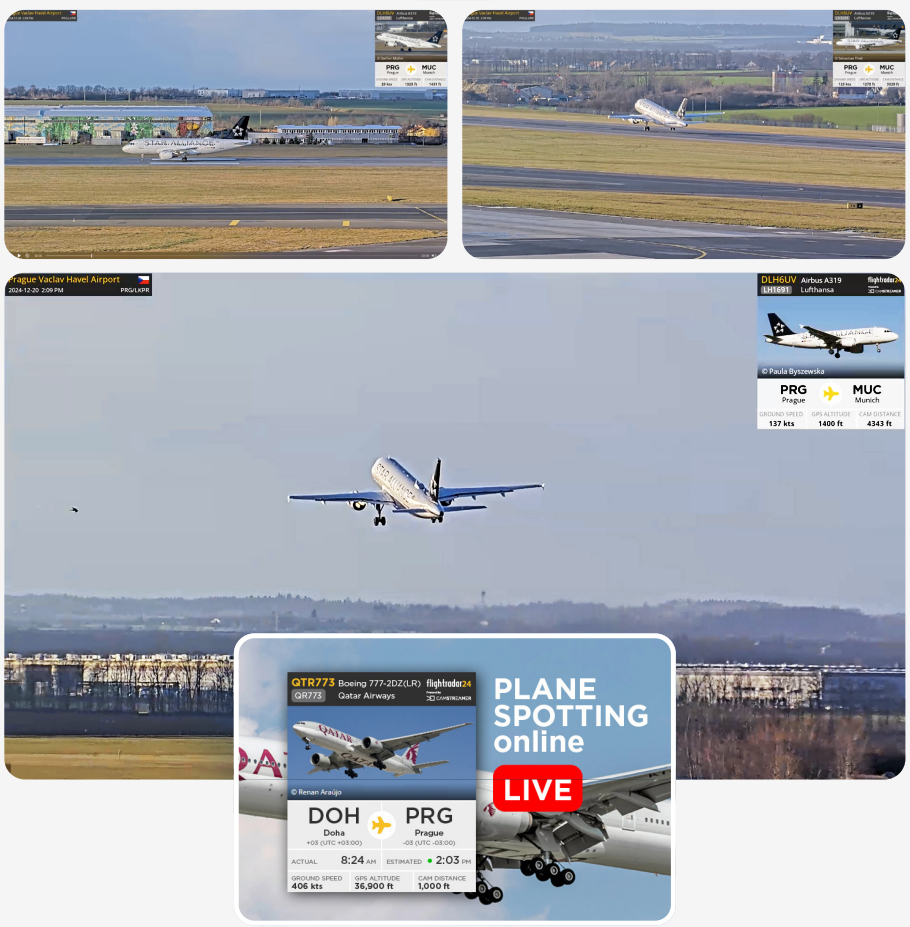
In this configuration, neither the camera nor the ADS-B receiver requires internet access. This setup is typically used for security installations meant solely for internal airport purposes. Instead of using a Flightradar24 receiver, we recommend and have tested an alternative receiver for this scenario.

2. Connected mode with Flightradar24 data

In this setup, as a standard the Flightradar24 ADS-B receiver is used, which shares the received ADS-B data with both the camera and the Flightradar24 platform. The advantage of this mode is the ability to insert graphics related to the tracked aircraft into the video feed and access a more extensive set of metadata for the VMS (Video Management System). This metadata includes the aircraft tail number, call sign, aircraft type, flight number, operating carrier, origin airport, destination airport and aircraft images.

3. Connected mode with Flightradar24 data and public live streaming

Additionally, if the camera is used for live streaming with the stream shared with Flightradar24, this option is more cost-effective.



How does the PlaneTracker App work?

PlaneTracker App receives and filters ADS-B data, calculates the flight path and adjusts the camera to ensure continuous monitoring of the aircraft. Simultaneously, the app displays the received information in the video feed and stores it, along with the recording, in the VMS.

What are the benefits?

Aircraft tracking

PlaneTracker App provides real-time visual monitoring of aircraft throughout take-off and landing within the runway perimeter, helping identify potential risks such as bird collisions, runway obstacles, or mechanical issues.

Metadata and events for your VMS

PlaneTracker App uploads recordings and related metadata to the VMS, providing critical input for comprehensive incident investigations and legal evidence. This data—including timestamps, aircraft ICAO from ADS-B, and optional flight details from Flightradar24 —is securely stored, easily searchable, and readily retrievable.

We offer plugins for selected VMS systems (e.g. Genetec Security Center) that provide maximum convenience when searching and exporting stored video based on metadata, as well as great tools for controlling the functions of the PlaneTracker App, such as manual tracking override by selecting an aircraft on the map in the VMS system interface.

Marketing potential

Live video streams and recordings of arriving and departing aircraft offer engaging and dynamic content that can be leveraged for marketing—from driving website traffic and boosting social media reach to enhancing digital displays at the airport with real-time runway footage.

How to build PlaneTracker solution

The PlaneTracker solution runs on an AXIS Q6225-LE PTZ camera equipped with an SD card (8 GB minimum for PlaneTracker App itself, more for local recordings if desired), which is installed in a suitable location on the airport premises.

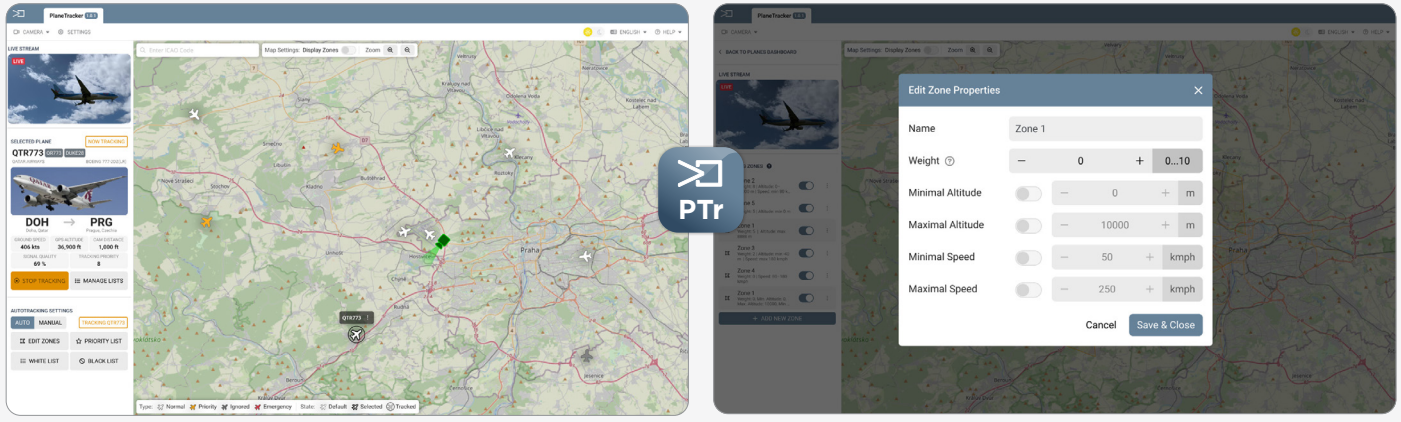
Near the camera, on the same LAN, there is an ADS-B (Automatic Dependent Surveillance – Broadcast) receiver.

The PlaneTracker App is installed directly on the camera, automatically links ADS-B data with the PTZ camera functions, ensuring precise tracking of aircraft at any stage of the landing or take-off maneuver. The app also supplies crucial metadata to the VMS, including timestamps, aircraft registration, model, flight number, operator and origin and destination airports.

To make the flight information complete, the video stream can be supplemented with real-time air traffic control (ATC) audio, provided by the AXIS C8110 Network Audio Bridge with a connected ATC radio receiver. For public video streams, a red button is included for the airport's operations center, allowing for the immediate interruption of the broadcast at any time.

Easy to install, configure and maintain

The Axis camera and ADS-B receiver must be installed on the same LAN. Initial calibration and application setup can be done by remotely accessing the camera. The exact position of the camera needs to be determined (GPS coordinates + altitude). To calibrate the camera, it is necessary to take a set of images of the night sky with visible stars, based on which the camera is then calibrated.



Camera

AXIS Q6225-LE
AXIS Q6315-LE
AXIS Q6355-LE
ADS-B receiver

Optionally:
AXIS C8110 Network Audio Bridge with connected ATC radio receiver

VMS

Compatible with most common VMS systems like AXIS Camera Station, Milestone Xprotect and Genetec Security Center

Application

PlaneTracker App

About Axis Communications

Axis enables a smarter and safer world by improving security, safety, operational efficiency, and business intelligence. As a network technology company and industry leader, Axis offers video surveillance, access control, intercoms, and audio solutions. These are enhanced by intelligent analytics applications and supported by high-quality training.

Axis has around 5,000 dedicated employees in over 50 countries and collaborates with technology and system integration partners worldwide to deliver customer solutions. Axis was founded in 1984, and the headquarters are in Lund, Sweden.

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