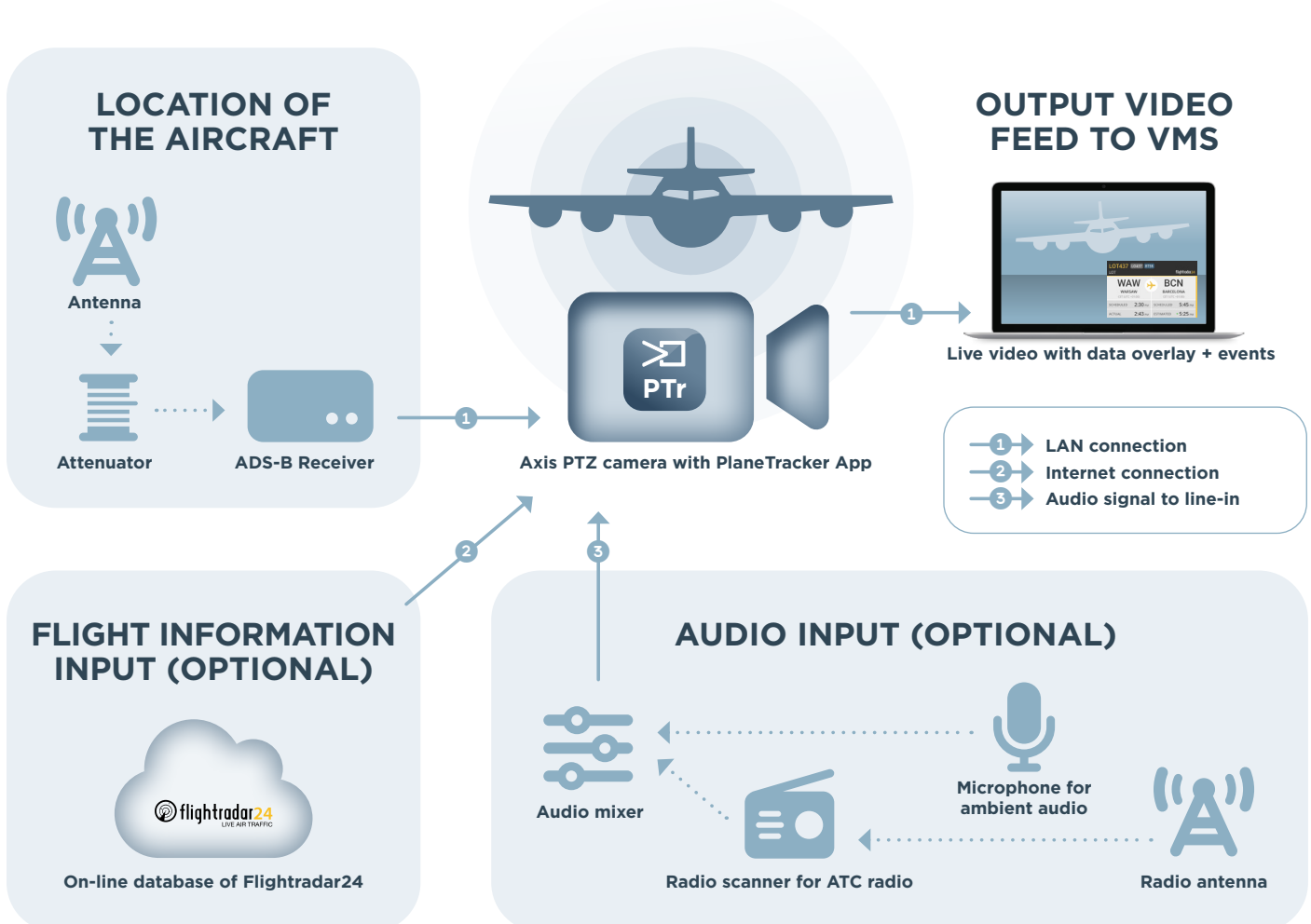


PlaneTracker for Airports



PlaneTracker is a solution from CamStreamer for automated visual tracking of aircraft. Using real-time ADS-B data, the Axis PTZ camera continuously pans, tilts, and zooms to keep selected aircraft in view. Live flight information such as flight number, registration, and aircraft type are embedded directly into the video stream. All tracked flights can be recorded and stored in a VMS together with valuable metadata for quick search in recordings. PlaneTracker also supports aircraft filtering, priority zones, and optional integration of audio to provide a complete situational overview.

- ✓ Automated visual tracking of air traffic independent from weather conditions
- ✓ Applications can track airport vehicles and with Dronetag Scout also drones
- ✓ Configurable prioritisation of planes including whitelisting and blacklisting
- ✓ Compatibility with video management systems including metadata with flight information
- ✓ Graphical overlay in the video feed with aircraft and flight information
- ✓ Online or offline operation
- ✓ Standalone solution with software embedded in the Axis camera



PlaneTracker for Airports



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-  VMS compatibility
-  Prioritization of planes for automatic tracking
-  Online / Offline Mode
-  Flight information
-  Audio
-  Licensing
-  Others

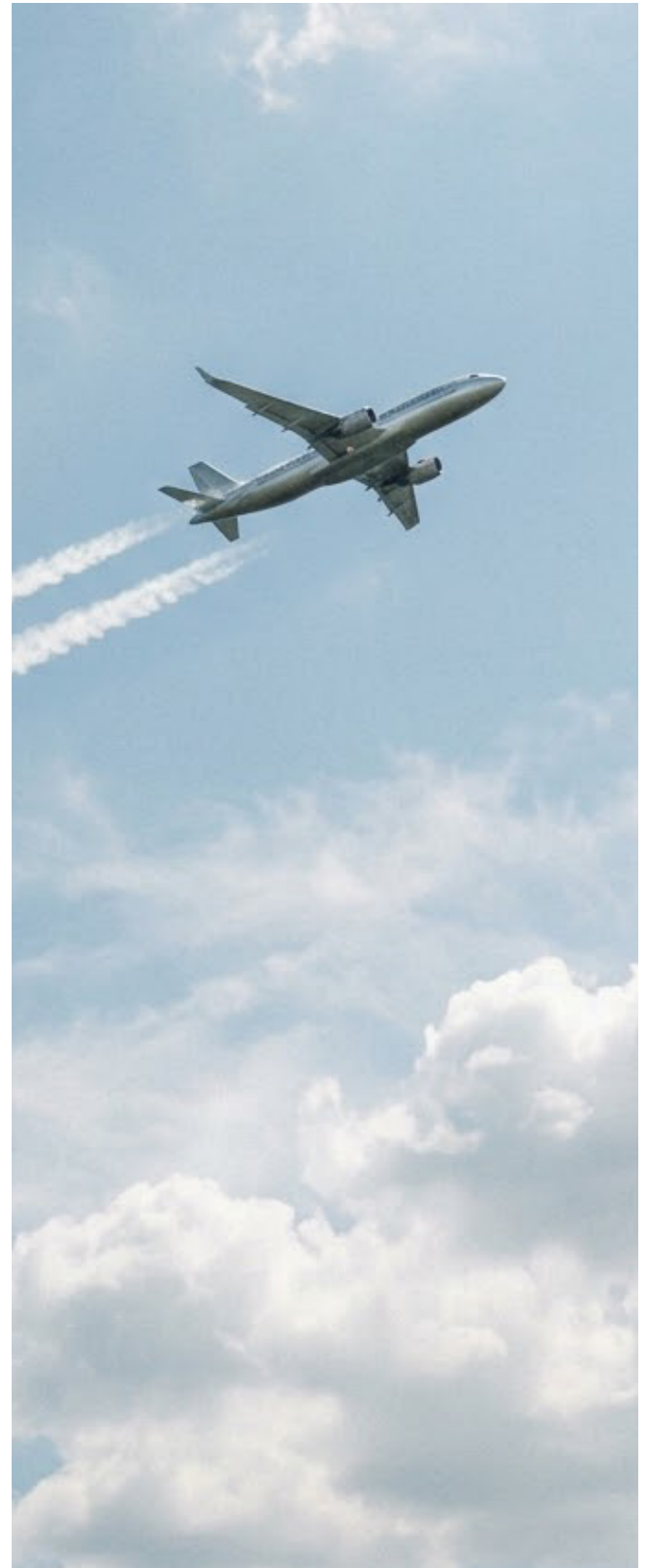
COMPONENTS / BILL OF MATERIAL

-  Camera
-  Accessories, mounts
-  ADS-B Receiver
-  Remote ID Receiver
-  Audio
-  Installation service
-  Licenses

INSTALLATION PROCEDURE

TECHNICAL SPECIFICATION

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PlaneTracker for Airports



Functionality

Plane localisation – ADS-B data

One ADS-B receiver sufficient for multiple plane tracking cameras. Tested ADS-B receivers listed in the Components section, other receivers can be remotely tested. Raw data in Mode-S Beast (TCP) in local network is required.

Graphical widget with flight data in the output video feed

Graphical overlays in the image with flight information depending on the ADS-B receiver used and availability of internet connection. There are following options:

- ✓ Overlay with data from online database of Flightradar24
- ✓ Overlay with information from the offline database of Radarcape ADS-B receiver
- ✓ Overlay with only the data from ADS-B

VMS compatibility

- ✓ Basic video stream with overlay – all VMS compatible with Axis cameras
- ✓ Metadata – Axis Camera Station, Milestone XProtect and Genetec Security Center
- ✓ Plugin with operator console – Genetec Security Center

The operator console brings better situational awareness and manual control – locking to a particular plane.

Prioritization of planes for automatic tracking

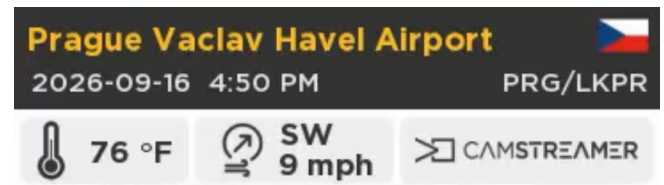
PRIORITY OPTIONS:

Planes

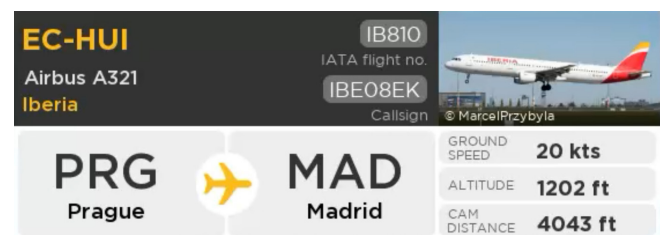
Specific plane, Specific plane model (e.g. Airbus A380).

Zone prioritizing

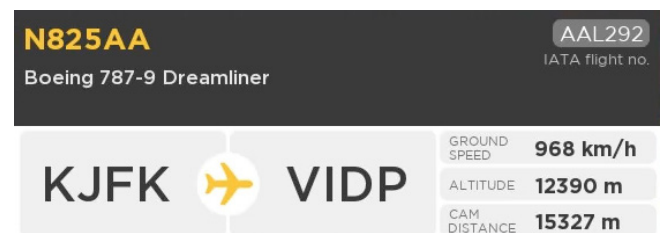
It is possible to draw a zone(s) on the map and prioritize departures/arrivals, consider plane speed (to exclude taxiing), and max and min elevation (to exclude overflying aircraft).



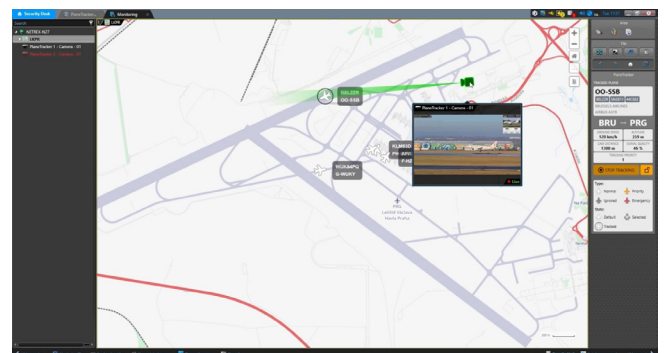
Overlay with the airport data and optionally weather information from Accuweather



Overlay with data from online database of Flightradar24



Overlay with information from the offline database of Radarcape ADS-B receiver



PlaneTracker App in Genetec Security Center

Blacklisting / Whitelisting

It is possible to add aircraft to a blacklist to prevent them from being tracked, and conversely to whitelist aircraft so that only selected planes are tracked.

Distress signal

Highest priority for aircrafts sending emergency squawk codes 7500, 7600 & 7700.

PlaneTracker for Airports



Online / Offline Mode

Plane tracking solution supports both operation in an isolated environment as well as online environment.

Offline operation prevents the access to the online database of Flightradar24 and thus has an impact on the amount of information available in the overlay and metadata, see below.

Online operation requires the PlaneTracker App to be able to connect to the internet.

While application of license key is possible in both modes, offline mode requires manual key verification.

Flight information

Available in video stream overlay, app web user interface and as metadata.

Offline mode

Displayed in user interface and in video stream overlay:

- ✓ ICAO Hex Code, Call Sign, Aircraft speed, Current altitude, Distance from camera

Sent to VMS as metadata:

- ✓ ICAO Hex Code, Call Sign

In case the airport uses a Radarcope ADS-B receiver and has updated its offline database, data can include Aircraft type, Flight Number, Registration and Departure and Arrival airport (when available).

Online mode with data from Flightradar24

Displayed in user interface and in video stream overlay:

- ✓ ICAO Hex Code, Aircraft Image, Aircraft type, Flight number, Registration, Flight Number, Airline name, Departure airport, Arrival airport, Aircraft speed, Current altitude, Distance from camera

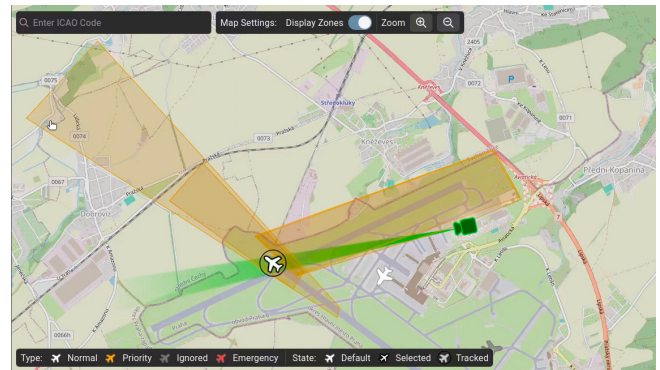
Sent to VMS as metadata:

- ✓ Tracking Start Time, Tracking End Time, ICAO Hex Code, Call Sign, Flight Number, Aircraft Type, Registration, Airline name, Departure Airport, Arrival Airport, Tracking Duration

Audio

Audio from external sources can optionally be added to the video stream:

- ✓ ATC audio – communication between planes and control tower
- ✓ Ambient audio from the runway



Licensing

License

Annual prepaid license fee.

Licensing

- ✓ Time limited license keys which need to be activated in the application
- ✓ Via user interface (online mode only)
- ✓ Via manual procedure of API calls in a local network (offline mode)

Others

Behavior when no aircraft is being tracked

The camera can return to its home position or a PTZ guard tour can be activated.

Sun avoidance

Automatic closing of the aperture and decreasing zoom when the aircraft flies in the direction of the sun, in order to decrease the risk of damaging the camera's sensor.

Ground Vehicle Tracking

PlaneTracker also tracks ADS-B-equipped ground vehicles – tugs, tow tractors, de-icing trucks, follow-me cars, and fire and rescue vehicles – displaying them on the live map alongside aircraft. Any vehicle can be selected and followed automatically, giving security teams continuous camera coverage during incidents or routine ground operations.

Commercial Drone Tracking

Track commercial drones that broadcast Remote ID. This feature requires a Dronetag Scout device to receive the data.

PlaneTracker for Airports



Components / Bill of material

Camera

Recommended
PTZ cameras are:

- ✓ AXIS Q6225-LE PTZ Camera
- ✓ AXIS Q6355-LE PTZ Camera
- ✓ AXIS Q6358-LE PTZ Camera
- ✓ AXIS Q8752-E Mk II Bispectral PTZ Camera
- ✓ AXIS Q6315-LE PTZ Camera
- ✓ AXIS Q6318-LE PTZ Camera
- ✓ AXIS Q6325-LE PTZ Camera

Accessories, mounts

SD card

- ✓ An SD card with a minimum capacity of 128GB. The SD card can also be used for local recordings, and the length of the available recording depends on its size

Mounts

- ✓ Mounts, brackets, cabling and power supply depending on the position, mounting and camera type

ADS-B Receiver

Option 1 – Flightradar24

- ✓ Flightradar24 ADS-B receiver with all accessories needed (provided free of charge upon Flightradar24's decision)
- ✓ Requires internet connection, Flightradar24 requires access to the ADS-B data captured by the receiver

Option 2 – Jetvision

- ✓ Radarcape EVO 1CH Bundle, A3 ADS-B Antenna 1090 MHz with 33 ft / 10 m cable
- ✓ Radarcape Software License Key for Commercial Use

Accessories

- ✓ Coaxial RF Attenuator 20 dB (8GHz or higher) to be installed between ADS-B receiver and its ADS-B antenna – improves position reading at close distance, but limits the reach to approx 16 km / 10 miles

A single ADS-B receiver can serve multiple plane tracking cameras on the airport.

Remote ID Receiver

Dronetag Scout (Baseline)

- ✓ Dronetag Scout receiver: dual-band 2.4 GHz + 5 GHz omnidirectional antenna (N-type, male), an omnidirectional 2.4 GHz antenna (N-type, male), a PoE injector, grounding wire and mounting kit

Audio

Radio receiver for ATC radio

- ✓ Uniden BC355N 300-Channel Base/Mobile Scanner or similar
- ✓ Bingfu 20-1300MHz Scanner Antenna or similar

AXIS C8110 Network Audio Bridge

- ✓ Audio bridge to convert analog signal to RTSP audio that can be added to a video stream

Audio cable 3.5 mm

- ✓ Stereo audio cable, male-male, 3-pole, 3.5mm jack connector

External microphone for ambient sound

- ✓ AXIS TU1001-VE Microphone for ambient audio – camera with line-in required, or AXIS C8110 Network Audio Bridge

Mixer

- ✓ Needed if both ATC radio and external microphone are used to mix two line audio signals into one
- ✓ YGiTK Mini 4-channel Audio Mixer or similar

PlaneTracker for Airports



Installation service

One-time initial setup fee

- ✓ Remote installation of the software on the camera
- ✓ Basic configuration
- ✓ Connection to the ADS-B receiver
- ✓ Calibration of the PTZ coordinates
- ✓ Remote online training
- ✓ Part number 800-001

Licenses

Plane tracking solution PREMIUM

Annually paid license fee

- ✓ For airports with more than 50.000 operations per year
- ✓ PlaneTracker App – ACAP
- ✓ Integration with Flightradar24 for online flight information
- ✓ Support for PlaneTracker Genetec Plugin
- ✓ Metadata for Axis Camera Station Pro and Milestone XProtect
- ✓ Helpdesk services for technical support
- ✓ Updates
- ✓ Access to online documentation
- ✓ Provided by CamStreamer
- ✓ Part number 801-002

Plane tracking solution BASIC

Annually paid license fee

- ✓ For airports with less than 50.000 operations per year
- ✓ All features of plane tracking solution PREMIUM
- ✓ Part number 801-001

Tracking solution DRONES

Annually paid license fee

- ✓ PlaneTracker App – ACAP
- ✓ Support for PlaneTracker Genetec Plugin
- ✓ Metadata for Axis Camera Station Pro and Milestone XProtect
- ✓ Helpdesk services for technical support
- ✓ Updates
- ✓ Access to online documentation
- ✓ Provided by CamStreamer
- ✓ Part number 801-003

Genetec PlaneTracker Plugin

One-time fee

- ✓ One license for the server and one license for each workstation
- ✓ Delivered and billed by Genetec distribution partners
- ✓ Part number GSC-1SDK-CAMSTREAMER-PT

Installation procedure

- 1 Insert an SD card into the camera.
- 2 Ensure that the camera is installed and connected in its final position. Keep in mind that the camera will need to be recalibrated if it is moved.
- 3 Install an ADS-B receiver and its antenna. Ensure there are no obstacles between the antenna and the runway to maintain a clear signal.
- 4 Place a 20dB signal attenuator between the antenna and ADSB receiver.
- 5 Assign a static IP address to the ADS-B receiver. The camera(s) will need to communicate with this address.
- 6 Once the camera is installed in its final position, provide us with its GPS coordinates and altitude (height above sea level).

PlaneTracker for Airports



- 7 Set up remote access for the cameras so we can access its web user interface. Remote access is required from our office for at least the initial calibration period (approximately one week). Possible methods include:
 - ✓ Remote access via a cloud service such as [CamStreamer Cloud](#)
 - ✓ Port forwarding
 - ✓ Remote desktop access
 - ✓ VPN
- 8 CamStreamer will remotely log into the camera, install the software, calibrate the PTZ positioning system and connect ADS-B receiver and optionally flight information database. The software setup and calibration might take several days to complete.
- 9 Handover & Online training.

Technical specification

Application type	✓ In-camera ACAP application
Main functionality	✓ Aircraft tracking and camera positioning ✓ Metadata sending into VMS ✓ Graphical overlays in video feed
Hardware requirements	✓ Axis PTZ camera ✓ CPU ARTPEC-7/8/9
Configuration	✓ Embedded web user interface
UI language	✓ English, Japanese and Spanish
Access to application	✓ Local web access ✓ Operator functionality is also available within PlaneTracker Genetec Plugin (which always cooperates with the running PlaneTracker App on the camera)
Dark mode	✓ Available
Configuration export	✓ Complete backup of the application settings is available

Useful links

Product page	https://camstreamer.com/planettracker-about
Product video	https://camstreamer.com/planettracker-app-video
Dronetracking page	https://camstreamer.com/visual-drone-tracking-remote-id-planettracker-app
Knowledge base	https://camstreamer.com/resources/planettracker-knowledgebase
Release notes	https://camstreamer.survilla.support/planettracker-app/#release-notes
Contact us	CamStreamer contact form