

EBOOK



Intelligent video & critical communications solutions for safer, efficient airports

Every inch of the airport, we have you covered.

An airport is a complex environment with multiple stakeholders, including passengers, airlines, cargo companies, merchants, police, government agencies and fire departments.

Safety and security are crucial for everyone; and airports must balance passenger expectations of timeliness and comfort with a large number of potential security risks and compliance requirements. Effective communication and collaboration between all stakeholders, both within and beyond the airport, is essential, as is airside and landside security.

Core airport requirements:



Multilayered Security

Airports need multilayered fortified security across their perimeters (terrestrial and marine) and airfields in all weather conditions.



Reliable radio communication

Clear and timely mission-critical communications are crucial for creating a safe and efficient airport, whether it's a daily operation or an emergency situation.



Greater situational awareness

AI-driven video analytics are crucial for airports to identify potential risks for situational awareness due to their widespread and complex operations.



Positive passenger experience

Clear communication is key for airports to improve passenger experience through efficient ticketing, baggage, screening, customs, immigration, and transport services.



Wider collaboration

Airports seek to boost efficiency by partnering with airlines, service providers, caterers, cargo firms, and transport agencies across multiple networks and devices.



How we can help: technology overview

We have grown our video operations through a string of acquisitions in recent years and now own the Pelco, Avigilon, and Silent Sentinel brands. The breadth and range of video security portfolio, teamed with constantly developing critical communications technology and wealth of integration possibilities, firmly establishes us as a key provider to the aviation industry.

Our safety and security ecosystem safeguards airports, ensuring a secure and efficient experience for travellers, crews, and employees, detecting anomalies and facilitating clear communication throughout complex operations.



Critical communications systems

- **Enable** users to communicate securely and clearly across all zones of operation with TETRA, P25 or DMR two-way radio systems that deliver superior voice clarity and outstanding range.
- **Deliver** robust, wide-area coverage, with high reliability, redundancy and rugged devices that perform in harsh conditions.
- **Connect** across devices and networks ensuring you and your entire team are aware and informed at all times.
- **Safeguard** mission-critical communications systems against security threats with advanced encryption and authentication.
- **Extend** reach beyond airport confines via broadband PTT service.
- **Integrate** with analogue radio systems, our body cameras and our video security systems (via Radio Alert).



Video systems - four key brands in our portfolio

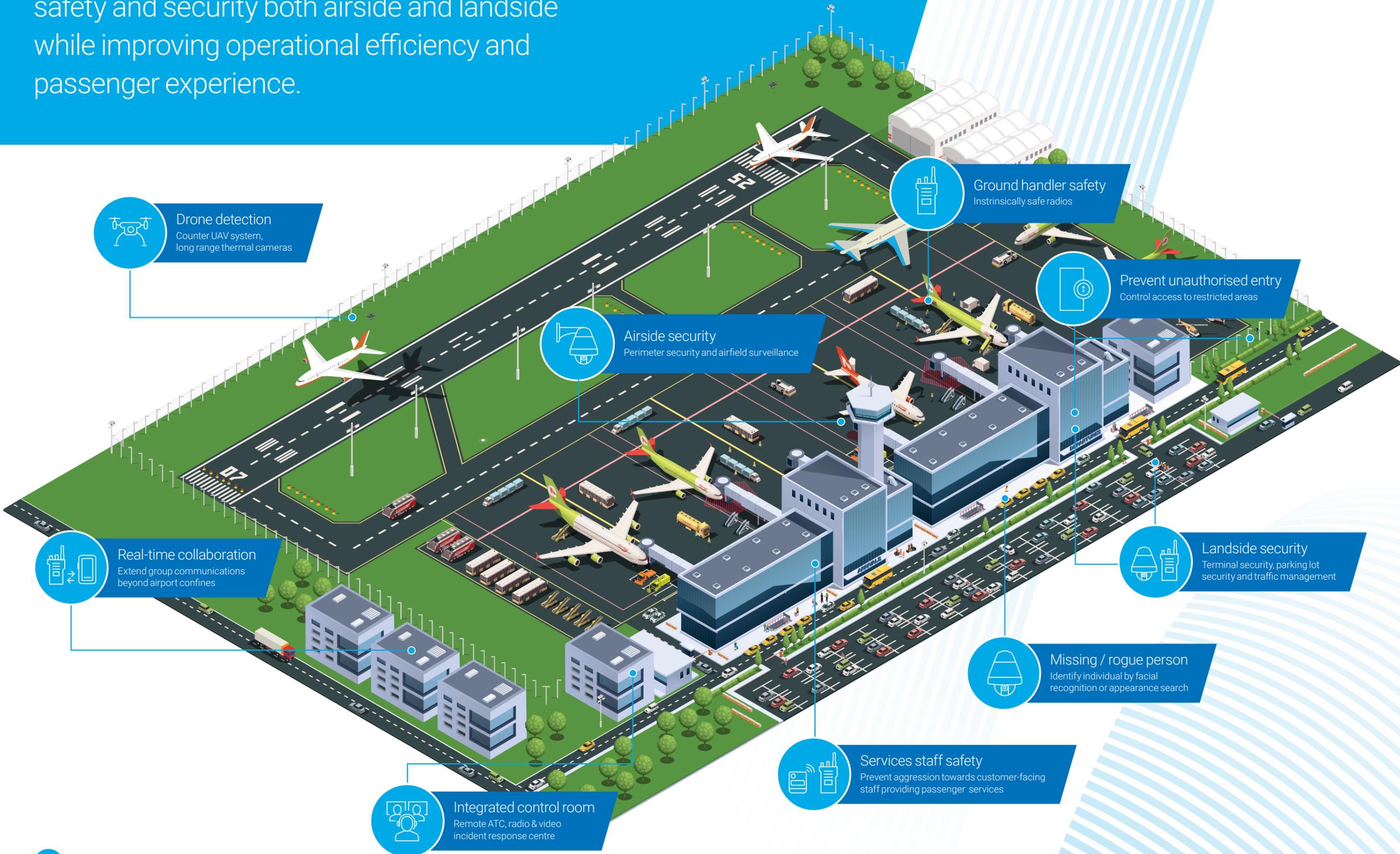
- **Avigilon** for comprehensive systems including VMS, advanced AI-analytics, ultra-high resolution cameras and access control.
- **Pelco** is popular for its open-platform (ONVIF), ruggedised IS-certified specialty cameras and analytics on-the-edge.
- **Silent Sentinel** has ultra-long range cooled and uncooled cameras, illuminators, signal light guns and potential jammers and radar integrations.
- **Motorola Solutions** body cameras, LPR cameras and in-vehicle video systems.



Command centre and dispatch solutions

- **Help** protect passengers, crews and employees from the parking lot to terminals and checkpoints, for a safe travel experience and efficient operations.
- **Comprise** integrated analytics, dispatch systems, VMS, alarms, encoders, situational awareness software and the Orchestrate workflow tool, to simplify and standardise processes.
- **Enable** your controllers to operate more effectively and productively. TETRA, P25 and DMR mobile radios, meanwhile, can be used to coordinate teams.

Motorola Solutions enables airports to improve safety and security both airside and landside while improving operational efficiency and passenger experience.



Airside

Airside security is vital for ensuring operational continuity. By implementing robust safety and security protocols, airports can effectively respond to potential security threats and safety incidents.



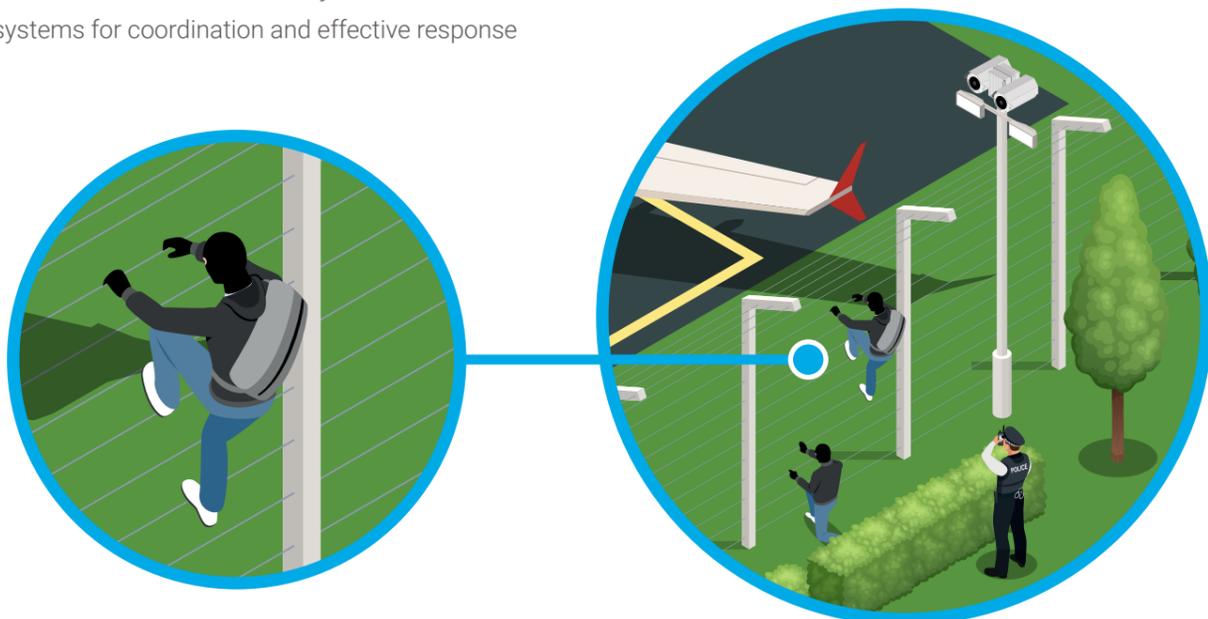
Perimeter security

Airport perimeters often stretch for many kilometres, can border busy highways or shipping channels, are the most remote areas of the airport and usually have compromised visibility, due to poor lighting. Perimeter breaches cause serious issues for airports and camera systems and effective radio communications play crucial roles in thwarting these.

Silent Sentinel, Avigilon, and Pelco perimeter video systems feature long-range thermal and visible sensors, SWIR cameras, and anti-corrosion for marine perimeters, suitable for all climatic, weather, and light conditions. Silent Sentinel heavy duty **long range electro optical (EO)** Aeron and Jaeger cameras detect targets from short to very long distances and come in both an uncooled or a cooled model. Jaeger can detect humans up to 24 km and vehicles up to 31 km.

Our **two-way radio systems**, meanwhile, allow security teams to effectively respond to perimeter threats. Constant communication ensures real-time coordination between patrols, checkpoints, and control centres and, if a breach is detected, radios enable immediate alerts, precise location sharing, and swift deployment of resources, maximising airport safety.

- Very long range cameras that can detect humans up to **24 km** and vehicles up to **31 km**
- Uncooled and cooled camera systems with visual and thermal views in the same device
- Outdoor ready, highly ruggedized bullet cameras for harsh weather and low-light conditions
- Built-in advanced AI for enhanced object detection and classification
- Radio systems for coordination and effective response

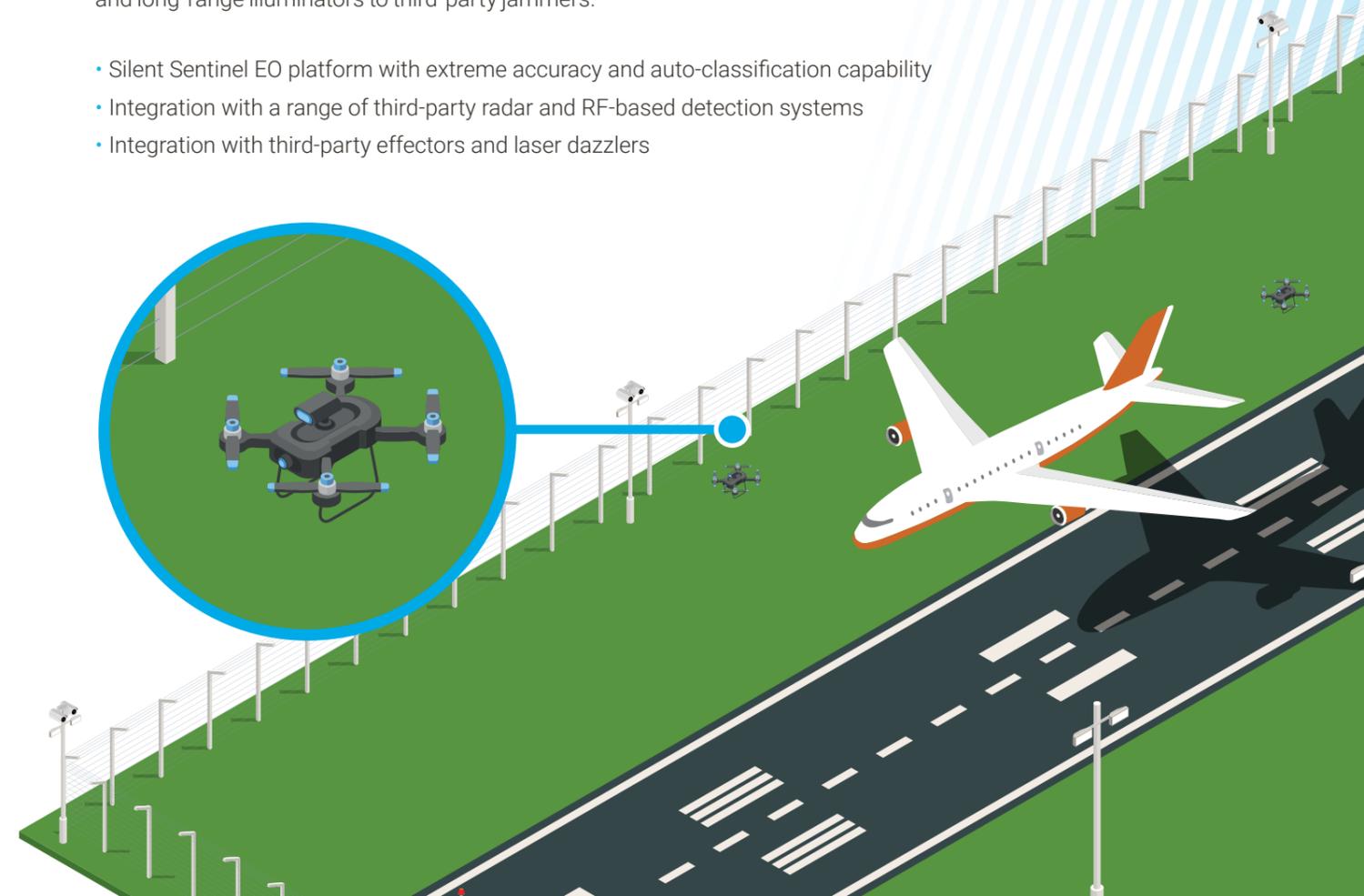


Drone detection

Drone or unmanned aerial vehicle (UAV) sightings and incidents around airports have increased significantly in recent years; and drones and other unmanned aerial systems (UAS) can disrupt flight schedules and ground operations and damage aircraft.

Silent Sentinel **Jaeger PTZ platform** has been specifically developed for **integration with third-party radar** or radio frequency (RF)-based detection systems. Its auto-classification capability adds an additional layer of intelligence, allowing drone targets to be distinguished from other airborne objects such as birds. Its camera systems, equipped with video trackers and slew-to-cue capabilities, enable security personnel to track the UAV and assess threat levels early. Jaeger can also be integrated with a range of mitigation technologies ranging from effector capabilities such as laser dazzlers and long-range illuminators to third-party jammers.

- Silent Sentinel EO platform with extreme accuracy and auto-classification capability
- Integration with a range of third-party radar and RF-based detection systems
- Integration with third-party effectors and laser dazzlers



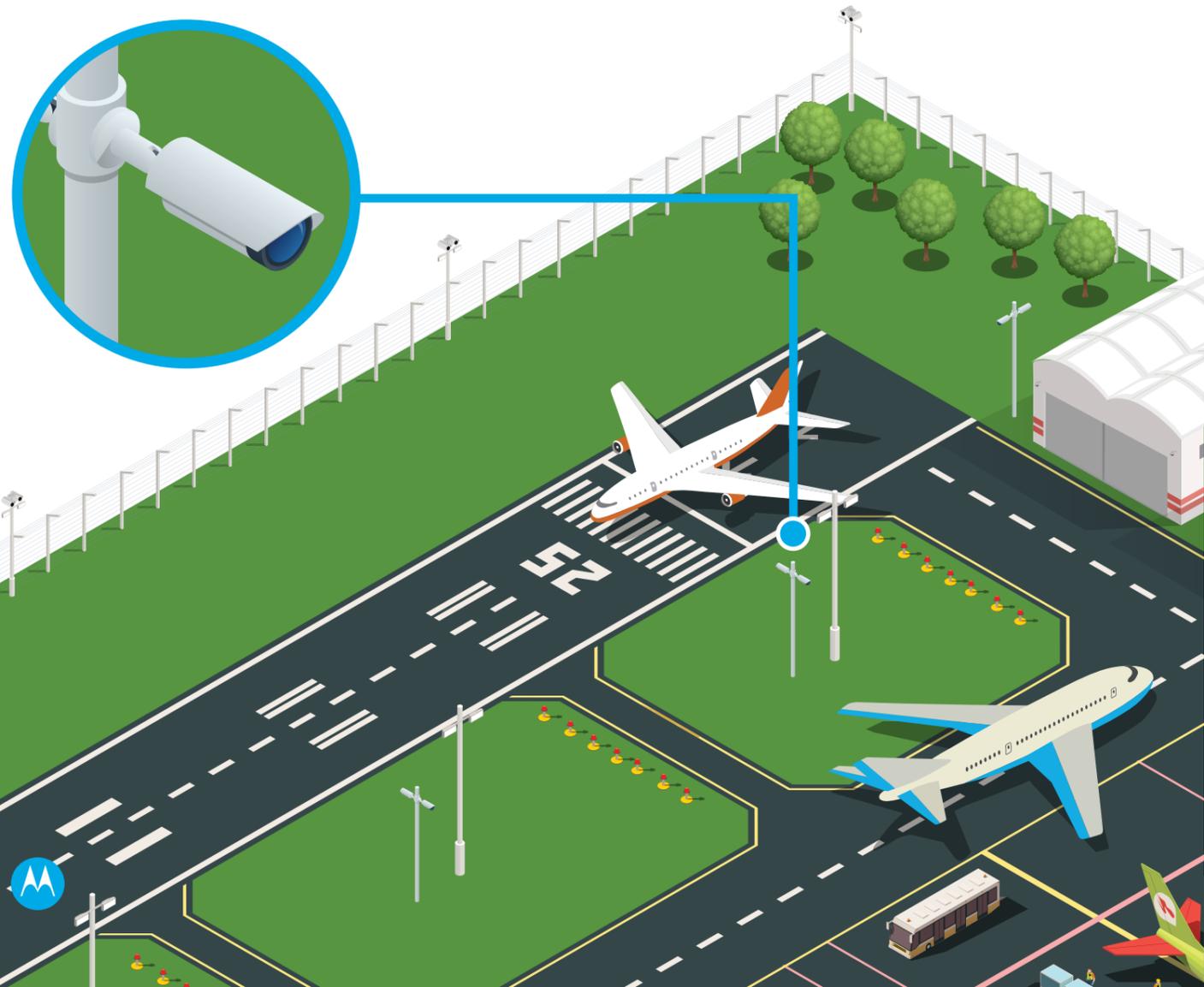
Runway and taxiway surveillance

Out on the runway or taxiway, the smallest safety or security flaw can have a catastrophic result. The control centre needs a clear view of this area, with AI-analytics to enable quick, informed decisions.

We have a strong portfolio of **long and mid-range thermal cameras**, including infrared (IR) models, coupled with VMS, motor control, telemetry and High Definition Stream Management (HDSM) technology. Offering extreme accuracy, and, on selected cameras, exceptionally fast pan and tilt speeds, 360° continuous rotation, automatic self-position correction and specialist multi-sensor options, our cameras can capture large spatial areas such as the runway and taxiway in high-quality resolution in one **panoramic view**.

Our cameras can provide the highest runway coverage with lower total cost - underpinned by **ultra high definition** (up to **61 MP**) cameras and dynamic colour adjustment technology enabling pinpoint zoom and clear image for both live view and playback. Our cameras also feature wide dynamic range (WDR) technology to improve image quality and capture details clearly under high-contrast lighting conditions where both dimly and brightly lit areas are presented equally in the same field of view.

- A variety of wide lens cameras with ultra HD (up to 10K or 61 MP Avigilon cameras) and WDR for maximum scene coverage.
- Pelco Sarix Enhanced 4 series cameras that captures up to 60 frames per second (fps) with reduced motion blur of the fast-moving aircraft.
- Fixed long and mid-range cameras which minimise bandwidth and storage consumption through our High Definition Stream Management (HDSM) technology.
- Exceptionally fast pan and tilt (PTZ) speeds, 360° continuous rotation coupled with low-light cameras, automated IR illumination and colour adjustment technology with up to 40x zoom.



Apron: Ground handlers safety

The apron is a noisy, busy and hazardous environment, where various below-the-wing services and operations occur concurrently; ground handlers have to navigate a ballet of moving aircraft and vehicles. Many airport accidents happen here, so safety is always a key priority.

We have a wide range of **intrinsically safe radios**, which can be used in and around the aircraft. These deliver excellent audio clarity, with integrated noise and acoustic feedback reduction technology, trained through AI machine learning, so ground workers can always hear and be heard clearly.

The radios can be paired with our apron surveillance **cameras** via **Radio Alert**, so users can quickly respond to alarms. Moreover, our cameras can detect up to 50 people or vehicles in any scene and the high-resolution zooms mean details aren't missed; the footage aids post-incident forensics. **Body cameras** (BCs) enable a first-person perspective, and can be paired with our radios too. Technicians can also live stream incidents, equipment failures or repairs and share the information with the supervisor away from the site.

- Two-way radio systems (P25, TETRA, DMR, LTE) and a range of radios including intrinsically safe radios for use in hazardous areas and clear audio with background noise suppression.
- Apron surveillance cameras (ultra HD, explosion proof & IR cameras with advanced AI analytics) to detect anomalies.
- Body cameras for first-hand perspective integrated with radios (Radio Alert) and in-vehicle video systems.



Landside

From overcrowding during peak holiday periods, parking irregularities and delayed transport links, to missing persons, suspicious behaviour and unauthorised access, landside security can cause multiple issues and endanger passengers, staff and assets, if not properly managed.



Terminal building security

Terminal buildings are the busiest areas of an airport, and having stringent airport security protocols in place serves as the first line of defence against potential threats and malicious activities that could compromise air travel safety.

Airports can use **cameras** such as fisheye for gates and multi-sensor models for terminal walkways with integrated self-learning **AI-analytics**. Moreover, we have Focus of Attention (FoA) software, which gives operators an easier way to monitor real-time video and a more intuitive way to consume information about potential security events, so they can make situationally aware decisions quicker. Operators can also programme specific critical alerts, such as presence detection, crowd build-up, loitering and door breaches to be sent directly to operators' radios as text messages and or text-to-voice alerts; operators can then coordinate their response effectively via their radios.

- Multi-sensor, fisheye and dome HD cameras with advanced AI-analytics
- Focus of Attention (FoA), Unusual Activity Detection (UAD) and Unusual Motion Detection (UMD)
- Simplified access control management, connect up to 4000 doors to a single appliance
- Access control server appliances that integrate with leading third-party wireless locks
- Integrated Body cameras and TETRA, P25, DMR & WAVE PTX portable radios and systems

Our safety and security ecosystem, which can integrate with both internal and third-party systems, can help with issues such as:



Missing or suspicious person

Facial recognition and appearance search help users to quickly identify and track persons of interest. Searches can be initiated by selecting specific physical descriptions such as hair or clothing colour, gender and age category, or vehicle type and colour. Unusual motion detection (UMD) can also reveal atypical events and dynamic privacy masking can be used to obscure people and vehicles, if needed.



Restricted area access

Our access control solutions enable you to manage access to different buildings or restricted areas using a rule-based system including immediate facility lockdown. Featuring touchless and mobile capabilities and coupled with camera-based verifications, analytics and alarms sent directly to users' radios, our solutions can also be integrated with pre-existing assets.



Services staff safety

Our body cameras (BCs) can be paired with radios and other BCs for various automatic recording triggers, such as peer-assist, the radio emergency button and Fall Alert, so important incidents are always captured. The BCs can help prevent aggression towards staff, de-escalate situations and false accusations, and enhance staff safety.





Parking lot security

Airports need to maintain car park security by monitoring the car park, as well as vehicles entering and leaving, whilst allowing approved vehicles to circulate freely.

Our **Licence Plate Recognition (LPR)** technology can monitor roads approaching the airport and parking areas; it can be integrated with radio and access control systems with predetermined rules and alarm triggers. It alerts operators of queue build-ups and flagged vehicles, making drive-through and parking areas safer. It helps airports manage entry permissions, track arrival and departure times, locate vehicles on-site, identify parking offenders, enforce compliance and speed up investigations.

On site teams can use a range of suitable **two-way radios** and body cameras while off-site parking zone teams use WAVE PTX broadband PTT to ensure reliable, clear, multimedia communications integrated with the airport's main radio communications network.

- Low-light and multi-sensor HD cameras with licence plate recognition (LPR) and other analytics such as Object Detection
- Specialised licence plate capture (LPC) cameras with integrated IR illumination and visible light filtering to help read reflective licence plates clearly in challenging light conditions
- WAVE PTX broadband PTT and integrated TETRA, P25, DMR portable radios and systems



Communications beyond airport confines

An increasing number of airports are looking at extending their critical communications networks beyond airport confines to include external partners, such as emergency services, security contractors, airlines, cargo and transportation companies, and also introduce multimedia communications for enhanced situational awareness.

WAVE PTX broadband PTT or PTTtoC supports instant and interoperable communication across different land mobile radio, LTE and 5G networks and devices including smartphones, radios and computers. Our WAVE PTX service can be integrated into airports' mission-critical communications systems to extend cross-team and cross-agency communications with security services and public transport operators, such as railway and bus companies, for wider cooperation and coordination. Being an easily scalable platform, WAVE PTX is also a viable option for wider coordination with ancillary workers and third-parties such as caterers and logistics providers.

- WAVE PTX broadband PTT or PTTtoC
- WAVE PTX compatible portable radios
- Simultaneously stream video and initiate/receive PTT calls



Work smarter and safer with connected airport

Our intelligent, high-performance, secure technologies enable airports to become safer and more efficient, and address everyday concerns and emerging situations with compelling solutions.

The only ecosystem to unify voice, video, analytics, and software

We unify voice, video and data feeds into the command center, connecting the dots to simplify workflows and help provide the overarching perspective to make decisions with greater focus, accuracy and speed.



We make critical communications devices and networks, that perform exceptionally in harshest conditions and are proven to help you stay connected and communicate with clarity.

Managed and Support Services

We design video security systems powered by responsibly-built AI analytics that can alert you when action is needed, focusing human attention to cover more ground and act with more certainty.





Contact us today to find out more about our solutions and how we can help your airport solve for safer.

[Contact us](#)



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