Quanergy 3D LiDAR Improves Passenger Flow Management

QUANERGY®
See beyond.

Quanergy 3D LiDAR Optimizes Airport Passenger Flow

Airports continuously look to strike the perfect balance of providing the best possible passenger experience, resource optimization and security. Quanergy's 3D LiDAR solutions help address all three of these priorities by streamlining passenger flow management from the curb to the gate, enhancing overall operations efficiency. The result is a smoother, more satisfying journey for travelers which leads to increased revenue and lower costs.

Quanergy's 3D LiDAR streamlines airport passenger flow, delivering superior performance, pinpoint accuracy, and unmatched value.

Conventional video surveillance struggles to capture the real-time data needed for optimal passenger flow management in airport terminals. This hinders airport operations, retail profitability and ultimately, the traveler experience.

Quanergy's 3D LiDAR technology is a game changer. It surpasses the limitations of 2D video, transforming conventional surveillance operations from reactive to proactive. By generating high-quality, real-time data with unmatched accuracy and cost-efficiency, Quanergy's LiDAR provides a new and unique source of business intelligence that can be applied across virtually all airport terminal operations.

The 3D LiDAR TCO Advantage

3D LiDAR significantly outperforms traditional video camera systems at a fraction of the price.
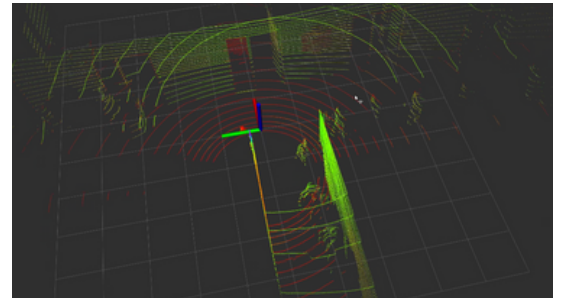
- One Quanergy 3D LiDAR sensor covers the same area as seven video cameras with a 50% reduction in initial equipment and installation costs

- Post installation, TCO is 70% less than 2D video over years

Why Quanergy 3D LiDAR Works So Well in Airport Terminals

We've Got it All Covered Inside…

Quanergy 3D LiDAR solutions provide the unprecedented ability to autonomously detect events, classify and continuously track thousands of unique people and vehicles with 20X higher accuracy than 2D video even when obscured by obstacles and in total darkness. This is accomplished by combining specialized Quanergy 3D LiDAR sensors designed specifically for indoor applications with advanced perception software.

The accuracy of Quanergy 3D LiDAR sensors to deliver insightful intelligence for airport terminal operations is ideal for a wide range of applications, including:
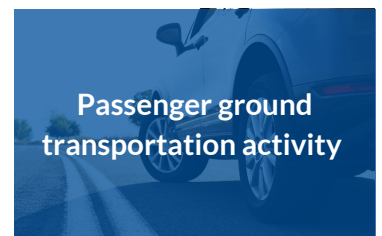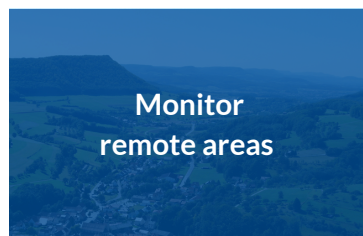
- Improve passenger happiness
- Personnel utilization at check-in areas
- Baggage drop-off and handling
- Time spent passing through security checkpoints
- Real-time gate queue management and planning
- Retail merchandising and planning
- Wait times on service and vendor lines
- People occupancy counting
- Restroom and resource usage and maintenance
- Time per passenger and group movements throughout terminals
- Data-driven passenger forecasting
- Generate real-time passenger journey maps
- Real-time resource management (HVAC, lighting people movers) based on occupancy

… And Outside Too.

For wide-area airport surveillance and security applications, Quanergy 3D LiDAR long-range sensors provide 360° coverage with a range of 15,000 square meters per sensor. These powerful sensors are ideal for Perimeter Intrusion Detection (PID) and wide-area surveillance of all tarmac and runway activities even under the harshest environmental conditions, including total darkness.

Critical security and safety detection, tracking and surveillance applications include:
(each application below to have an image/graphic thumbnail with meta data)

Perimeter Intrusion Detection (PID)

Parking garage security

Monitor remote areas

Passenger ground transportation activity

Runway and tarmac traffic

Object left behind detection

Elimination of tailgating and piggybacking into secured areas such as mantraps and vestibules

Automated security alerts in protected areas

Quanergy 3D LiDAR Sensor Performance for Airports

✔ Generates a 3D point cloud providing spatial location and depth information to identify, classify, and track moving objects in real-time with extreme accuracy.

✔ Each sensor provides 360° coverage with a range of 15,000 square meters, effectively reducing hardware, software, cabling, networking and installation costs

✔ Defines event speed and direction across the entire system's coverage area employing mesh network technology

✔ Tracks people/vehicles continuously even when they move behind an obstruction such as a jetliner, cargo bin, or any type of fixed asset

✔ Tracks up to 1000+ individuals/vehicles simultaneously per sensor

✔ Performs under virtually any environmental condition 24/7 – including total darkness

✔ Field proven to reduce costly false alarms by up to 95%.

✔ Time-of-flight (ToF) sensing technology that emits low power, eye-safe lasers

✔ Delivers tangible ROI and lowers long-term TCO related to equipment and labor costs

Case Study:
Vancouver International Airport Deploys Quanergy 3D LiDAR Solution to Improve Passenger Journey

Vancouver International Airport (YVR) has chosen Quanergy Solutions to enhance its footfall analysis. With our cutting-edge 3D LiDAR sensors and advanced perception software, Q-Track, YVR can now precisely identify, classify, and track people and objects, providing valuable operational insights. These insights help YVR address critical operational and business priorities, such as streamlining check-in processes and enhancing security clearance efficiency. By optimizing data flow and leveraging business intelligence, YVR has significantly improved the traveler's journey, resulting in higher customer satisfaction and safety.

> *"Through the implementation of Quanergy's solutions, we have harnessed the power of real-time insights, gaining a deep understanding of passenger volumes and the associated wait times at different stages of their journey through the terminal."*
>
> **Jason Williams, Manager, Innovation & Technology Group, YVR.**

There is no doubt… Quanergy's 3D LiDAR transforms airport security and operations. Its accuracy, versatility, and affordability transform reactive 2D systems into proactive 3D solutions that improve passenger flow.

For more information, please visit https://solutions.quanergy.com/aviation-solutions-webpage/