

iOmniscient

iQ-Airport

One multi-sensory system for airport operations

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Airport-wide Operations

Safety, security and productivity across the whole airport

It is cost effective, does not require expensive infrastructure and operates in real time using the most advanced AI techniques.



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One Unified System

A multi-sensory operating layer across core functions

Anonymized Tracking across **non-overlapping** cameras **in crowds at long distances**
Behavior Analytics in Crowded Environments





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Multi-sensory Technology

Video, sound and smell analytics with autonomous response



VIDEO

License Plate Recognition (130 countries) – including Make and Model Detection.

SOUND

Sound Analytics – 100 sounds from gunshot detection to people shouting.

SMELL

Smell Analytics – Infinite smells from gas leaks to managing toilets.

INTUITIVE AI
No Deep Learning
No GPUs, Fast Deployment

COMPREHENSIVE
Autonomous Multi-Sensory
Analytics (video, sound & smell)

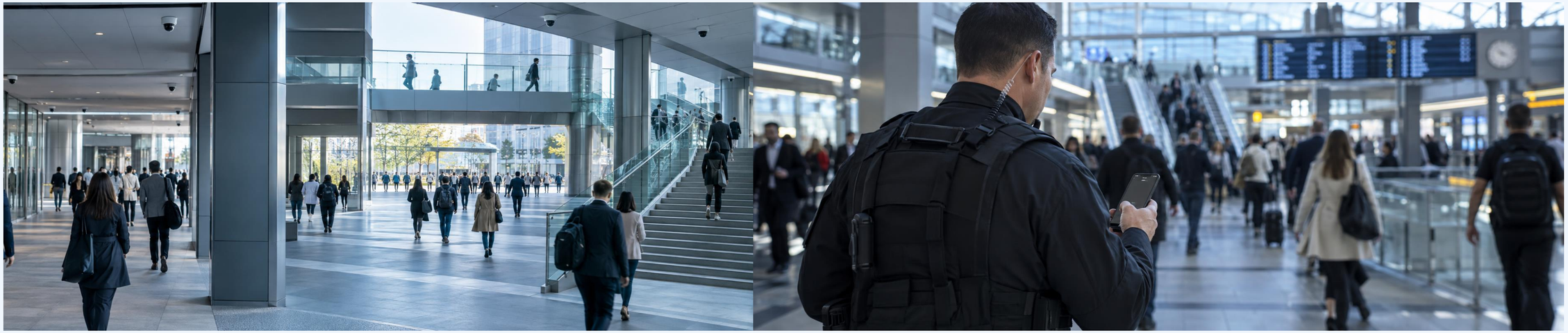
SAFETY
Encrypted Privacy
Protection

AUTONOMOUS RESPONSE
Reduced requirement
for a control room

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Security in a Crowd

Recognize, track and direct response while protecting privacy



RECOGNIZE

- Recognize people of interest by face or behavior in dense crowds, including at 20 m in landside areas.
- Privacy remains protected.

TRACK ANONYMOUSLY

Track people of interest anonymously in an uncontrolled environment

DIRECT RESPONSE

- Autonomously find the nearest security officer
- Tell them where to go and what to do

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Security Incidents

Detection and access controls in crowded settings



CROWD EVENTS

- Detect abandoned bags and objects in crowds
- Detect misplaced or abandoned trolleys
- Detect theft and fighting in crowds
- Detect loitering and man-down incidents



SECURED ZONES & ACCESS

- Prevent unauthorized access to runways, control rooms, hangars and other secured zones
- Manage Exit pass-back into Airside from Landside
- Detect gunshots

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Safety and Hazards

Protect passengers and staff while reducing public liability



SPILL & FALL

- Detect liquid spills and determine cleanup time
- Slip & Fall detection

HEALTH & SAFETY

Automated Quarantine Control for airport health and safety.

FACILITY

- Detect smoke and fire, including outdoors
- Management of hazardous chemicals in the facility
- Detect gas leaks

STAFF

Ensure staff in working areas are wearing safety gear

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Child Safety & Protection

Finding missing children, verifying pickup and supporting child welfare



MISSING CHILDREN

Find missing children in a crowd using Automated Response.

AUTHORIZED PICKUP

Ensure that only authorized adults pick up children.

CHILD WELFARE

Monitor for aggressive behavior towards children and support their welfare.

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Crowd Management

Observe crowd flow and prepare for sudden change



COUNT & DENSITY

- Count stationary and moving crowds.
- Estimate density and alert when counts exceed a defined threshold.

FLOW & CHANGE

- Monitor movement and alert on counter-flow.
- Detect sudden gatherings or dispersal.

EMERGENCY SUPPORT

Count people by zone to support rescue operations and safe evacuation.

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Queues & Passenger Services

Measure demand and guide gate decisions



MEASURE QUEUE — **OPEN MORE GATES?**

Measure check-in and security queues and waiting times. Use crowd density and dwell time to open gates, deploy staff and improve scheduling. Use behavior data to assess service and efficiency, and plan airport operations.

PASSENGER SERVICES

- Manage VIP access to gates
- Find the last passenger missing from their flight gate
- Provide paperless boarding passes

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On the Tarmac

Aircraft, people, cargo and perimeter monitoring



SKY

Detect flocks of birds
that may hamper flights

GATE & CARGO

Meter time that plane is
parked at the gate
Ensure cargo is loaded securely

RUNWAY

Detect objects in the
path of planes
Detect accidents on the tarmac

BOUNDARY

Ensure only authorized
personnel are on the tarmac
Prevent intrusion across
the airport boundary

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Assets and Facilities

Cleaning, maintenance and secure access



CLEAN

- Keep refuse rooms clean
- Keep toilets clean



MAINTAIN

- Provide predictive maintenance on equipment to reduce maintenance costs.
- Preventive Maintenance on Escalators/Elevators



PROTECT

- Provide cardless staff access and staff identification.
- Detect graffiti, vandalism and asset damage or manipulation.
- Identify and track those involved until they are apprehended.

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Retail Intelligence

Movement, demographics, sales and adaptive messaging

MEASURE

Understand **flow of traffic** through retail areas
Understand **how long** people spend in different areas
Understand their **demographics** – gender/ age

INTERPRET

Correlate people traffic with sales

APPLY

Use traffic insights for customer service and marketing
Adaptive advertising and traffic-based shop rents

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Car Parks

Space availability, vehicle location and incidents



PARKING INTELLIGENCE

- Count occupied and vacant spaces
- Measure parking duration and detect overstays
- Help customers find their vehicles
- Detect vehicles parked in illegal spaces

SAFETY & SECURITY

- Identify stolen or crime-related vehicles
- Detect counter-direction driving
- Alert when vehicle counts exceed a set threshold
- Detect theft, fights and accidents

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Ground Transport

Bus, taxi, drop-off and roads leading to the airport

Concourse
and external Bus/Taxi interchange

- Queue Management
- Drop off Zone Management
- Recognition of known hooligans and Criminals

ROADS TO THE AIRPORT

- Roads leading to airport
- Understand traffic congestion
- Send advisory to potential travelers



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Experience and Scale

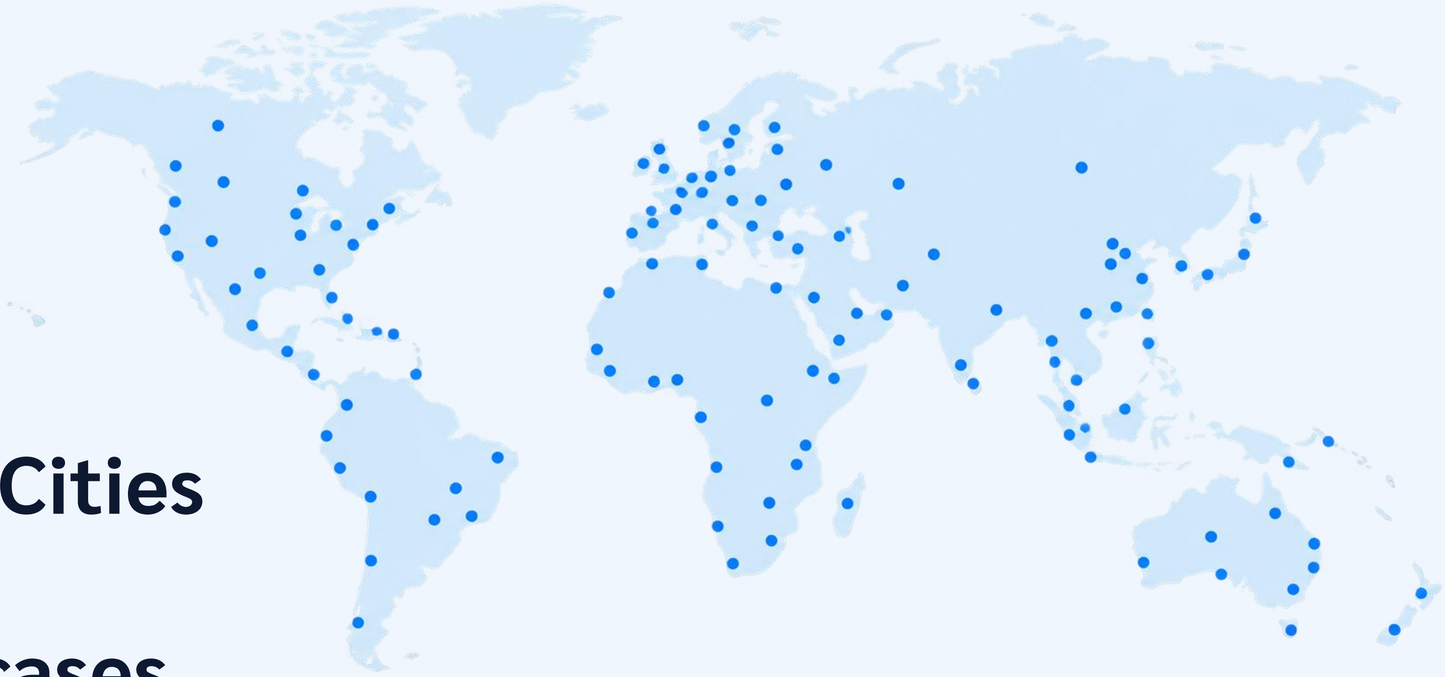
A proven range of implementations

70+ Countries

30 Industries

Used by 75 Smart Cities

300+ Proven use cases



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About iOmniscient

Partnership

All iOmniscient Products run exclusively on Intel based computing hardware using OpenVINO™

- The use of Advanced AI technology that goes beyond Deep Learning enables iOmniscient to run its systems without the need for 3rd party GPUs.
- This reduces the power required by a factor of 16 – resulting in a 16-fold reduction in the carbon footprint.
- This is just one part of a multi-faceted program to help customers to implement Sustainable Systems.

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About iOmniscient

- iOmniscient is an **Ethical AI** company.
- It offers **multi-sensory (video-sound-smell) Artificial Intelligence based analytics for Autonomous Systems.**
- It focuses on ensuring **Outcomes** for its customers.
- With **over 2 decades of experience,** iOmniscient systems have been demonstrated to be **robust,** operating with high accuracy and few false alarms specially in **complex and crowded** environments.
- By design, its systems **reduce the cost of infrastructure** required:
  - they can use existing cameras
  - they require fewer cameras with lower resolution
  - they require 90% less storage and network bandwidth
  - they are computing light and require no GPUs
  - they allow autonomous operations requiring fewer personnel to operate
- iOmniscient has implemented projects in **70 countries.**
- With over **70 international patents** many of its capabilities are unique and unavailable from any other source.





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