

ENHANCING AIRSIDE SAFETY WITH PREDICTIVE COLLISION AVOIDANCE

Overdrive's Airside Collision Avoidance System (ACAS) helps airports prevent aircraft & ground vehicle conflicts through real-time predictive alerts, enabling faster response and safer airside operations.



The Challenge

Modern airports operate in highly dynamic environments where aircraft, ground support equipment (GSE), and service vehicles move simultaneously under tight turnaround schedules. While airside operations rely on radio communication, standard operating procedures, and operator awareness, these methods are largely reactive and depend heavily on human judgement.

As traffic increases and operations become more complex, maintaining situational awareness alone is no longer enough. Operators often have only seconds to identify potential conflicts and react appropriately. Delayed decision-making, blind spots, and communication gaps can increase the risk of aircraft and vehicle collisions, operational disruptions, and costly delays.

Airport operators required a solution that could move beyond simply tracking asset locations by proactively **identifying potential collision risks and providing timely alerts before incidents occur.**



The Solution

Overdrive implemented the **Airside Collision Avoidance System (ACAS)**, a predictive safety solution designed specifically for airport ground operations.

Rather than simply displaying the location of aircraft and vehicles, the system continuously analyses their movement, speed, and direction in real time to identify potential conflict paths before they develop into dangerous situations.

The system provides:

- Live aircraft and vehicle movement monitoring
- Predictive collision risk detection
- Real-time driver and operations alerts
- Continuous situational awareness across the airside environment

By providing operators with valuable reaction time, the solution enables **quicker intervention, improves coordination** between ground teams, and **helps prevent incidents before they escalate.**

How it works

The Airside Collision Avoidance System operates through Overdrive's real-time IoT platform, integrating live positioning data from both aircraft and authorised ground vehicles operating within the airport.

The platform continuously monitors movement patterns, speed, direction, and proximity between assets. Using predictive algorithms, it evaluates whether two or more moving objects are likely to enter a collision path.

When a potential conflict is detected, the system factors in operator reaction time before generating immediate visual and audible alerts to vehicle drivers and airport operations personnel. This early warning provides valuable time for corrective action while maintaining operational efficiency.

All alerts, movement history, and operational events are recorded within a central dashboard, allowing supervisors to monitor live operations, review historical incidents, and identify opportunities to improve safety procedures.



Key Features



Predictive Collision Detection



Continuous Aircraft & Vehicle Monitoring



Real-Time Driver Alerts



Human Reaction Time Buffering



Centralised Operations Dashboard



Historical Event Reporting & Analytics

The Results

With Overdrive's Airside Collision Avoidance System, airport operators gain greater confidence in managing busy airside environments.

Ground teams receive timely alerts before conflicts occur, enabling faster decision-making and safer vehicle operations. Supervisors benefit from real-time operational visibility and actionable safety insights, while airports reduce the likelihood of costly incidents, delays, and operational disruptions.

By shifting from reactive monitoring to predictive intervention, the solution strengthens airside safety, improves operational coordination, and supports more reliable airport operations.

Key Outcomes



Eliminated serious airside collision incidents



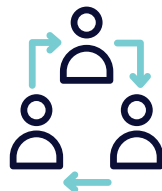
Enhanced safety for aircraft, ground vehicles, and airside personnel



Earlier operator response through predictive real-time alerts



Reduced runway disruptions and operational delays



Improved coordination across airport ground operations



Enhanced real-time situational awareness across the airside environment

Who Are We

Overdrive is the leading real-time asset monitoring IOT company in Asia that provides end-to-end IoT solutions and automates data sensing of various types of assets within a business ecosystem, from vehicles and machinery to facilities and people – all under one roof.

What We Do

Specialises in

- Vehicles Monitoring
- Airport Management
- Vessel Tracking
- Heavy Machinery Monitoring
- Smart Hygiene
- Environmental Monitoring
- Sustainability Solution

Hello,
We Are **Overdrive**.

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