

REIMAGINE AIRPORT OPERATIONS

How Honeywell can help optimize landside
and airside operations



Honeywell

A WALK THROUGH THE OPTIMIZED AIRPORT

Imagine an airport where everything flows together effortlessly. That's the optimized airport.

People enter to find intuitively designed signage that points them in the right direction. Unobtrusive video systems monitor safety. Security checkpoints screen each passenger with fluid effectiveness.

On the departure boards, delays at this airport are rare, a testament to discreet technologies coordinating everything behind the scenes. Crew members and ground staff seamlessly orchestrate planes across the tarmac. A strong WiFi signal allows passengers to stay connected in flight. Baggage and cargo make it to their destinations on time.

Beneath its vast operation, the entire airport conveys a palpable sense of efficiency and security that contributes to an enjoyable passenger and staff experience. Signs of a commitment to sustainability range from energy efficient systems to solutions that reduce carbon emissions.

Although no two airports are alike, the optimized airport demonstrates innovation in action for passengers, crew and staff — from the beginning to the end of their journeys.





OVERVIEW

It's hard to find an environment more fast-paced, high-traffic and complex than an airport. Every airport is different, with its own needs, goals, community impact and regulatory requirements. There's an art and a science to juggling all those competing priorities. To succeed, airports need to find the right balance between six interconnected outcomes: operational efficiency, passenger and staff experience, safety and security, compliance, resilience and sustainability.

Take a closer look at how we bring all these outcomes together to create the optimized airport:

OPERATIONAL EFFICIENCY

By employing advanced technologies like artificial intelligence and machine learning to harness data, we enable predictive and proactive maintenance and improve asset reliability across the airport infrastructure. Meanwhile, our ground traffic and turnaround management systems optimize gate and runway usage. These capabilities help airports reduce taxi times and fuel consumption to help increase flight and passenger throughput. Open platforms coupled with integration capabilities help systems talk to one another, reducing communication silos between different airport stakeholders.

PASSENGER AND STAFF EXPERIENCE

Improved indoor air quality and terminal conditions, on-time departures and arrivals, crowd and queue management, and safety directly impact the airport experience for passengers and staff. According to a J.D. Power study,¹ satisfied travelers spend more money at the airport. Meanwhile, Connected Worker Solutions enhance the safety, productivity and efficiency of frontline and field service workers.

SAFETY AND SECURITY

Safety and security are paramount in an airport environment. Our integrated security systems — including access control, digital ID management, video systems and intrusion and perimeter security — help safeguard the airport infrastructure. Additionally, our operational technology (OT) cybersecurity solutions and comprehensive fire and life safety solutions provide an added layer of protection for passengers and staff. Likewise, our SmartPath Ground Based Augmentation System and Enhanced Ground Proximity Warning System work to improve flight navigation and landing safety.

1. Source: J.D. Power 2023 North America Airport Satisfaction Study, September 20, 2023. Accessed October 18, 2023.



COMPLIANCE

From security to fire and life safety systems to sustainability efforts, we help airports track, verify and comply with local, national and industry guidelines and regulations. Our video management systems enable airport-wide recording for security monitoring to identify prohibited items and suspicious behaviors. Our OT cybersecurity solutions help support uptime and meet regulatory audits. Using our advanced fire detection solutions helps airports identify and minimize potential fire risks. These enhancements include gas monitoring and detection, along with sensing thermal runaway in lithium-ion batteries, to provide early warning of fires in compliance with local fire codes

RESILIENCE

A disruptive event at an airport could have ripple effects across the world. Our solutions promote resilience through asset reliability, secure operations, gate management and load balancing of electricity used across an airport. These measures help prevent disruptions and enable an airport to maintain and resume operations as quickly as possible.

SUSTAINABILITY

Our sustainability solutions help airports track energy use and carbon impact at a device level and support managing the supply- and demand-side power across the airport infrastructure. Our financing programs can help airports meet their energy goals through energy performance contracting that minimizes capital expenditures. In addition, our NAVITAS™ software suite and Gate and Turnaround Solutions as well as our Honeywell Forge Flight Efficiency solutions can help reduce airport traffic congestion and fuel consumption, while our sustainable aviation fuel meets renewable energy regulations through low-emission jet fuels made from sustainable feedstocks.



OPERATIONAL EFFICIENCY

We're transforming airport operations with solutions that harness advanced technologies to optimize processes, minimize delays and enhance productivity, all while creating an integrated, high-performance environment that delivers unprecedented efficiency.

MAKING GROUND TRAFFIC MANAGEMENT AND MAINTENANCE MORE EFFICIENT

Our all-in-one [NAVITAS software suite](#) helps airport operators and air navigation service providers make more informed and accurate decisions across airside operations, enabling safer and more efficient airport operations.

UNIFYING BUILDING SYSTEMS MANAGEMENT FOR EFFICIENCY AND COMFORT

Through [Honeywell Enterprise Buildings Integrator](#), heating, cooling, lighting, security, fire detection systems and more are integrated into one platform, creating a safer, more efficient and more secure terminal environment.

IMPROVING GATE USE AND REDUCING TIME BETWEEN FLIGHTS

[Navitas Smart Visual Docking System](#) uses sensors, cameras and advanced algorithms to help aircraft dock more precisely, improving gate use and cutting down on turnaround times.

IMPROVING RUNWAY OPERATIONS WITH ADAPTABLE LIGHTING CONTROL

Honeywell's cyber-secure [Airfield Ground Lighting Control System](#) provides centralized control of runway and taxiway lighting for greater visibility and safety. In addition, our [NAVITAS Lights Manager](#) enables Follow the Greens routing to identify the optimum route for pilots to support more energy-efficient airside operations, based on aircraft ground traffic.

PROMOTING BETTER DECISION-MAKING AND RESOURCE MANAGEMENT

The [Honeywell Command and Control Suite \(CCS\)](#) integrates building systems together so that they can be managed in a single view, delivering enhanced productivity and greater situational awareness. CCS provides a comprehensive view of airport operations, leading to better decision-making and improved safety, security and resource management.

OPTIMIZE YOUR INFRASTRUCTURE AND INCREASE ASSET LIFECYCLE

Honeywell offers customizable, outcome-based service models to meet the needs of airport operators, including remote building management predictive maintenance capabilities, parts management and ongoing software maintenance and support. Our service offerings can help improve performance, increase asset reliability and lifecycle, and support overall building uptime.

[Honeywell Forge Performance+ for Buildings | Predictive Maintenance](#) uses real-time predictive analytics, equipment models and dashboards to display building performance, identify improvement opportunities before they escalate and help service teams track corrective actions.

BUILD LONGER-LASTING RUNWAYS AND TAXIWAYS

[Honeywell Titan™](#) asphalt additive can help deliver longer-lasting and better load-bearing runways. No matter how tough your asphalt is, Honeywell Titan can help make a positive impact on your airport by helping reduce the time and cost of constructing new runways. Titan enables larger aircraft to land by reducing rutting and increasing the maintenance lifecycle and moisture resistance, providing a runway environment with improved efficiency.



PASSENGER AND STAFF EXPERIENCE

Honeywell aims to optimize the airport experience for passengers, staff, crew and tenants. From the moment they enter the airport terminal, everyone encounters Honeywell solutions, including improved indoor air quality controls, touchless access controls for restricted zones, integrated terminal technology, and safety and security systems that enhance their time at the airport.

1 CREATING A SAFER AND MORE COMFORTABLE AIRPORT TERMINAL ENVIRONMENT

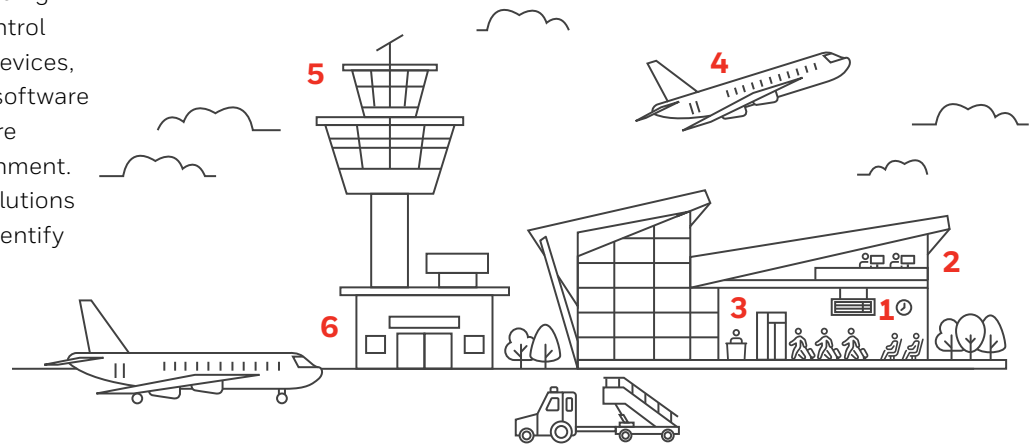
Honeywell offers an advanced, ready-now [indoor air quality portfolio](#) that can help improve passenger and staff well-being, meet energy efficiency goals and change the way people experience your airport terminal. This end-to-end solution starts with our comprehensive range of building management systems to control key parameters of building devices, field devices and advanced software to create a healthier and more comfortable building environment. Advanced video analytics solutions can help airport operators identify and manage crowded areas to improve passenger flow.

2 IMPROVING OPERATIONS AROUND AIRPORT OCCUPANTS

The [Honeywell Command and Control Suite](#) offers a comprehensive view of airport operations for better coordination and fewer disruptions for passengers, crew and staff.

3 EMPOWERING FRONTLINE WORKERS WITH ADVANCED TECHNOLOGIES

[Honeywell's Connected Worker Solutions](#) merge technologies like wearable devices, IoT sensors, augmented reality and cloud computing to enhance the safety, productivity and efficiency of frontline and field service workers.



4 ENHANCING VISUAL GUIDANCE FOR UNINTERRUPTED FLIGHTS

[Honeywell Airfield Ground Lighting \(AGL\)](#) solutions can reduce runway visibility issues, helping enable seamless takeoffs and landings, fewer delays and consistent flight experiences for everyone on board, on the tarmac and in the control tower.

5 REDUCING STRESS WITH STREAMLINED OPERATIONS

[Honeywell NAVITAS software suite](#) reduces communication between air traffic controllers and pilots, directly lessening flight delays and helping enable a smoother experience for all airport stakeholders.

6 ENABLING PROMPT AND SAFE AIRCRAFT DOCKING

Our [Smart Docking Guidance](#) and the Control & Monitoring Management for Docking Systems deliver safe aircraft docking and reduce tarmac delays, allowing passengers and crew to disembark quickly.



SAFETY AND SECURITY

Providing a safe and secure environment is the cornerstone of all we do, both on the ground and in the sky. The moment you enter the airport, Honeywell technology is at work, from integrated security systems to state-of-the-art fire and life safety capabilities to help support safer airport operations.

INCREASING SITUATIONAL AWARENESS

Honeywell offers a comprehensive security framework that can fortify airport perimeters, control access to restricted zones and identify intrusions. These systems can improve situational awareness, protect high-security areas and improve incident response to help resolve issues in a timely and effective manner.

MANAGING THE UNIQUE FIRE CHALLENGES IN AN AIRPORT ENVIRONMENT

From public address systems to [advanced fire detection](#), Honeywell can support the unique fire and life safety needs of an airport. Honeywell equips airport operators with life safety systems that provide the earliest detection, enable the fastest responses, and centralize decision-making and management.

ENHANCING SECURITY WITH ADVANCED ACCESS CONTROL

From biometrics to touchless access, [Honeywell Access Control solutions](#) help fortify restricted areas at airports. These technologies enable staff to navigate security zones hands-free, reducing opportunities for unauthorized access and lowering overall threat risks. In addition, our

integrated badge and ID technologies bring the traditionally labor-intensive access management process into the digital age for a more secure and efficient airport.

BOOSTING SECURITY WITH INTELLIGENT VIDEO AND MACHINE LEARNING

The [Honeywell Digital Video Manager](#) is a smart, scalable video surveillance solution that consolidates footage from cameras across a video camera network and provides live monitoring, playback and advanced analytics. When paired with the machine learning abilities of our advanced threat detection, airport security personnel can more quickly identify real-time threats and respond rapidly.

IDENTIFYING UNSEEN THREATS

Airports need to be prepared for unseen threats such as data breaches, denial of service or system compromise, which can affect operation significantly. Honeywell's comprehensive approach to OT cybersecurity can provide airports with real-time system monitoring to more continuously identify threats and attacks to detect and isolate them, while a response capability helps airports quickly restore systems to normal operations.



SAFETY AND SECURITY

POWERED BY THE NAVITAS SOFTWARE SUITE

ENHANCING GROUND TRAFFIC SAFETY AND SECURITY

Provide a robust safety alert that includes runway incursion prevention and runway status lights for safe access, as well as airport surface detection equipment to enhance runway safety and boost airside operational security.

STREAMLINING GATE AND TURNAROUND OPERATIONS

Our **Gate and Turnaround Solutions**, **Smart Docking Guidance Systems** and **Control and Monitoring System for Docking Systems** offer real-time guidance and data, while the **NAVITAS software** provides real-time information about aircraft and ground vehicles. Together, they contribute to quick and safe aircraft turnaround operations.

IMPROVING AIR TRAFFIC CONTROL COMMUNICATION

Reduce unnecessary communication between air traffic controllers and pilots, enhancing responsiveness and safety in all weather conditions.

ANTICIPATING AND RESOLVING TRAFFIC CONFLICTS

Predict, detect and resolve traffic conflicts across approach, runway, taxiway and apron areas, bringing layers of safety and security to critical airport operations.

ENABLING SAFE AND SECURE OPERATIONS

Our Airfield Ground Lighting (AGL) solutions, **AGL Control System** and **NAVITAS Lights Manager** include advanced detection and safety switches to identify and respond to both partial and total system failures, helping airport operations remain safe and secure.

COMPLIANCE

Our range of integrated solutions enables airport operations to be efficient and safe as well as fully compliant with the highest global aviation standards, from safety and health regulations to carbon reduction requirements.



SIMPLIFYING COMPLIANCE REPORTING AND ENABLING THIRD-PARTY CERTIFICATIONS

[Honeywell Forge Sustainability+ for Buildings](#) provides straightforward reporting of energy use, carbon impact and indoor air quality parameters for airports to support compliance reporting and to gain third-party certifications for sustainability efforts.



DESIGNING SYSTEMS FOR REGULATORY STANDARDS

The Honeywell Runway Incursion Prevention Systems, Runway Status Lights and Airport Surface Detection Equipment are all carefully designed to meet ICAO, EASA, FAA and other regional regulations.



OFFERING ADVANCED GUIDANCE AND CONTROL SYSTEMS

Our NAVITAS Surface Manager provides comprehensive control of surface traffic, making it easier to comply with ICAO and Eurocontrol requirements for Advanced Surface Movement Guidance and Control Systems (A-SMGCS).



ENHANCING RAMP SAFETY AND EFFICIENCY

[Honeywell Gate and Turnaround Solutions](#) such as NAVITAS Turnaround Manager and [Smart Visual Docking System](#) improve safety and compliance on the ramp and optimize gate operations and aircraft turnarounds.



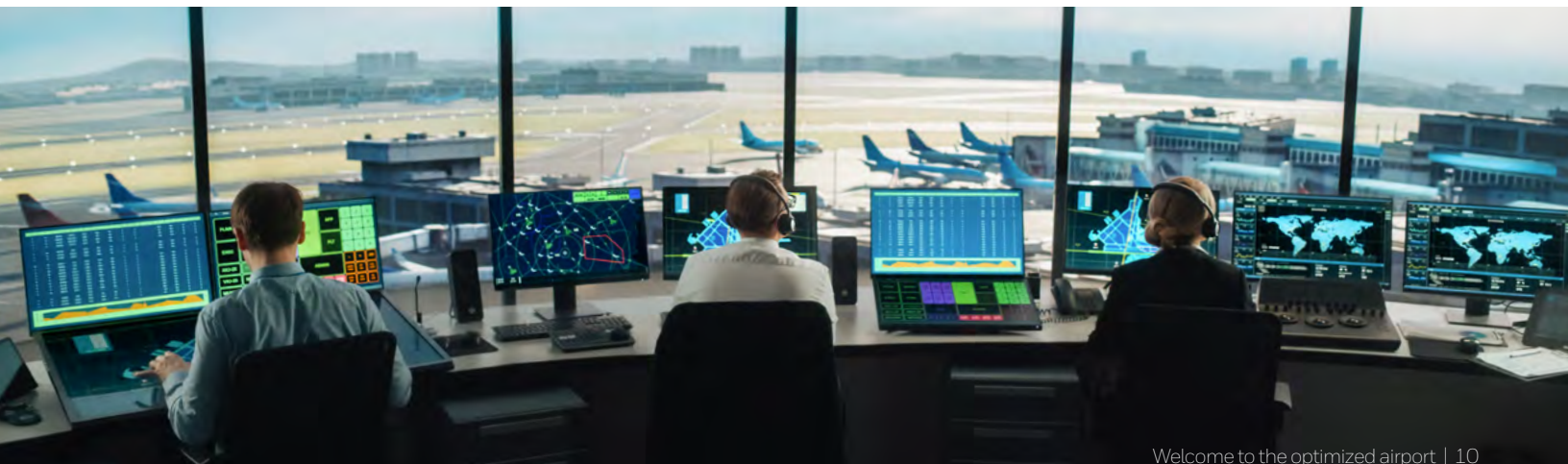
DELIVERING COMPLIANCE

Designed for ICAO, EASA and FAA standards, our AGL solutions and [AGL Control System](#) enable real-time monitoring and reporting for more effective compliance.



SUPPORTING SAFETY AND CYBERSECURITY REPORTING

[Honeywell Pro-Watch Integrated Security Suite](#) and video systems comply with government, financial and critical infrastructure compliance guidelines and reporting. Honeywell [OT cybersecurity](#) capabilities allow airports to meet local and regional cybersecurity guideline reporting requirements while helping to protect against attacks.



RESILIENCE

At Honeywell, we foster resilience in airport operations. Our solutions feature predictive maintenance workflows, advanced ground traffic technologies and all-weather traffic throughput to enable airports to quickly recover and adapt to disruptions, as well as capabilities to help support energy resilience. Through a variety of solutions, Honeywell can help airports maintain uptime to keep flights arriving and departing on time.

MANAGING ENERGY AND INFRASTRUCTURE IN REAL TIME

Our remote building operations center improves system reliability by helping to proactively identify and respond to building issues before they escalate. Honeywell can also help airports better control their supply- and demand-side power management to optimize electricity costs, track and control carbon emissions, and protect resilience and uptime by using clean sources of alternative power to provide backup power and remote monitoring.

ENABLING SEAMLESS GROWTH AND EXPANSION

Our NAVITAS software suite is a scalable and modular solution that adjusts to the growth requirements of busy airports, allowing for seamless integration and expansion without major disruptions.

CONNECTED CONTINUITY

DRIVING PERFORMANCE WITH ACTIONABLE INTELLIGENCE

Our Airside Business Intelligence System turns airside data into actionable insights, while our Ground Traffic Management Integration solution coordinates traffic flow by enhancing the situational awareness between air traffic controllers and pilots.

HELPING ENABLE UNINTERRUPTED SERVICES AND GROUND TRAFFIC MANAGEMENT

The [Honeywell NAVITAS platform](#) allows Advanced Guidance and Control Systems to provide safe surveillance, alerting and surface routing, and guidance services enable uninterrupted ground traffic operations in all weather conditions.

FACILITATING CONNECTIVITY AND REAL-TIME DATA SHARING

Our [Digital Video Manager](#) and Connected Airport Concept introduce IoT and connectivity solutions that facilitate connectivity, interoperability, automated workflows and real-time data to support more efficient and resilient airport operations.

PROVIDING A ROBUST RESPONSE TO IRREGULAR OPERATIONS

Our handling of Irregular Operations (IROPS) solutions provides a robust response to bad weather and tarmac delays, supporting continuity and resilience in the face of disruptions.



SUSTAINABILITY

Sustainability is key to airport operations. It starts with solutions like Honeywell building management systems that are designed to save energy and are supported by advanced software controls to help manage energy use and supply. Additional solutions include energy and carbon management, electric load management for electrification of everything and smart power such as battery storage and smart grid solutions — all through our AI- and ML-enabled **Honeywell Forge Sustainability+ for Buildings solution**. Finally, we offer airside LED lighting systems, Constant Currency Regulators and gate turnaround management that reduce energy consumption and carbon emissions. Alongside our sustainable aviation fuels and low global warming potential refrigerants, these innovations work together to support airports in achieving their sustainability goals and carbon accreditation certification.

REDUCING EMISSIONS THROUGH SMART GATE OPERATIONS

Our [Gate and Turnaround Solutions](#) promote efficient operations and help reduce unnecessary fuel use.

REDUCING FUEL CONSUMPTION THROUGH FLIGHT EFFICIENCY

[Honeywell Forge Flight Efficiency](#) helps improve flight efficiency and reduce carbon emissions. As an enterprise performance management solution, this software platform can replace multiple-point solutions to connect stakeholders across the entire organization and provide a unified source of truth for operations-related data. Honeywell Forge uses advanced analytics to help uncover hidden potential beyond standard best practices.

MANAGING TRAFFIC FOR LOWER EMISSIONS

Our [NAVITAS software suite](#) safely enhances traffic flow and reduces taxi times, while NAVITAS Surface Manager improves throughput in all weather conditions, lowering fuel use and emissions.

RENEWABLE FUELS HELP DRIVE THE ENERGY TRANSITION

Our latest Ecofining™ technology is an efficient way refiners can produce renewable diesel and sustainable aviation fuel today. Both fuels are nearly chemically identical to their petroleum-based counterparts and are used as drop-in replacements without modification to engines or fuel systems. In addition to Ecofining, Honeywell has introduced new ethanol-to-jet and methanol-to-jet processes to produce sustainable aviation fuel from other readily available feedstocks.



SUSTAINABILITY

INTELLIGENT ENERGY

MANAGE ENERGY AND CARBON IMPACT

Honeywell Forge Sustainability+ for Buildings allows airport operators to gain insight into their energy consumption and carbon emissions at the asset, site and portfolio levels. It improves visibility and enhances compliance via control of equipment and schedules to enable adjustments before energy use escalates. For example, through machine learning (ML) and artificial intelligence (AI) algorithms that optimize around desired energy consumption and IAQ goals, our solutions help airports gain energy efficiency and improved resiliency by optimizing HVAC equipment performance.

TRACK ENERGY FOR DATA-DRIVEN SUSTAINABILITY

Our AGL Control System tracks valuable data on energy use and environmental impacts, helping airports reduce their carbon footprint and enhance sustainability.

ORCHESTRATE ENERGY DEMAND AND SUPPLY

Honeywell Forge Sustainability+ for Buildings includes a comprehensive turnkey energy management application to help airports become energy efficient, energy-producing and lower-carbon facilities. Using advanced AI and ML algorithms, it can help optimize supply- and demand-side emissions, while increasing airport resilience and lowering operational costs. It can also help airports add cleaner sources of energy to provide backup power, as well as electric vehicle (EV) charging controls.



WE ARE HONEYWELL

Guided by a rich history of innovation, we are driven to anticipate and respond to the changing demands of a global clientele. From aircrafts in the sky to cars on the road, from the comfort of the offices where we work to the hubs of industry, our technologies are helping connect us in ways that make our world smarter, safer and more sustainable.

That's how we see the optimized airport — as a hub of technologies that seamlessly link our worlds together.

Connect with us if you'd like to hear more about our vision for optimizing your airport.



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THE
FUTURE
IS
WHAT
WE
MAKE IT

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