

# Avionics, Navigation and Electrical Products



**Increasing cockpit efficiency  
and reducing operating costs**

**Honeywell**

Optimize your current and next generation air transport aircraft with safer, more efficient and more cost-effective solutions from Honeywell.



# Meeting the evolving safety stand



## Crew Information

For improved situational awareness and reduced pilot workload, Honeywell crew information systems are designed to increase safety and efficiency, minimize user training and consolidate equipment into intuitive displays to reduce costs.

- Electronic Flight Displays – using larger, high performance color liquid crystal display screens, our electronic displays feature state-of-the-art graphics processing to reduce system cost.
- Flight Management Systems (FMS) – calculating the most efficient altitude for fuel savings and time savings, our FMS system updates automatically through the Controller Pilot Data Link Communication (CPDLC) to take advantage of step-climb optimization while increasing cockpit efficiency.

## Safety and Surveillance

As a pioneer in aircraft safety systems, our system enhances situational awareness by surrounding the pilot with the most advanced weather, traffic and terrain information available to decrease pilot workload.

- Weather Radar – Honeywell's IntuVue™ family offers advanced turbulence detection and predictive windshear capability while providing a 3-D volumetric view of all weather hazards out to 320 nm from the aircraft. This technology has shown a 26% improvement in weather avoidance decision making and enables pilots to quickly find the most efficient route for fuel efficiency and passenger safety.
- Enhanced Ground Proximity System (EGPWS) – increases aircraft safety by using aircraft position along with internal databases to predict and warn of potential conflicts between the aircraft's flight path and terrain or obstacles. With over 600 million flight hours of tested

performance, our system is flight-proven to enhance aircraft situational awareness and improve flight safety.

- SmartRunway™ – Addressing one of the most common ground incidents – runway incursions – SmartRunway uses aircraft position and accurate runway databases to provide timely aural and graphical advisories of runway position to the flight crew during taxi, takeoff and landing. Certified on several platforms, SmartRunway is a quick, low-cost upgrade to the existing EGPWS.
- SmartLanding™ – Addresses the risks of runway excursions and unstable approaches. Runway excursions represent 96 percent of total runway related accidents and 80 percent of the runway related fatal accidents, costing the U.S. commercial aviation industry approximately US \$900 million annually. SmartLanding provides alerts when the aircraft is approaching the runway too high, too fast or when the landing is too far down the runway. It also provides an altimeter setting alert.
- Traffic/Airborne Collision Avoidance System (TCAS/ACAS) with Change 7.1, Hybrid Surveillance and SmartTraffic™ – Providing advanced collision avoidance protection and airspace situational awareness, our industry leading TCAS solutions incorporate the latest in processing technology to address key safety hazards and provide a clear course of action. Honeywell is the only solution that utilizes ADS-B In Hybrid Surveillance technology to minimize frequency congestion in addition to ADS-B In SmartTraffic technology to improve safety, reduce fuel consumption and optimize long-haul flights. Trust Honeywell for improved flight safety and reduced operating costs through flexible upgrades for emerging user requirements and new technologies.



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- **Integrated Surveillance Systems (ISS)** – a fully integrated safety solution that optimizes performance by integrating weather, traffic and terrain awareness functions using our IntuVue 3-D volumetric weather radar system, CAS 100 with Mode S/ADS-B Transponders and EGPWS into a 50% smaller packaged solution.
- **Emergency Locator Transmitters (ELT)** – with flexible installation and simplified operation to lower the cost of ownership, our ELTs provide superior reliability and state-of-the-art transmission capability to meet worldwide safety standards and crash survivability requirements.

## High Integrity Controls

By combining our flight controls experience with our high integrity platform environment, we offer highly reliable flight and engine control solutions that reduce weight, integrate safety critical systems and improve cockpit operational efficiencies.

- **Flight Controls** – facilitating new benefits such as flight envelope protection, automatic obstacle/terrain avoidance and auto-descent in case of inadvertent cockpit depressurization, our solutions maintain high reliability—meeting system failure rates of less than one in a billion per flight hour—and reduce pilot workload. New innovations, such as active side stick, evolve technology to reduce operational costs and improve cockpit efficiency while the latest fly-by-wire systems use technology to provide aircraft structural weight savings of 7,000 pounds.
- **Engine and APU Controls** – our high integrity integrated and federated controls provide a comprehensive range of highly reliable and affordable solutions for your power and propulsion systems with a lower cost of ownership.

## Navigation Systems

For accurate navigation and sensing, our high integrity products and integrated solutions provide precision flight positioning, approach and landing information—even in especially adverse conditions—with high reliability, lower weight and lower power consumption to reduce overall maintenance and operational expense.

- **Air Data and Inertial Reference System (ADIRS)** – our systems provide highly accurate and reliable aircraft information with more than a 50% reduction in system weight and more than a 70% decrease in maintenance costs. Honeywell Inertial GPS Hybrid (HIGH) software provides 100% availability of RNP 0.1 navigation for improved aircraft route efficiencies to maximize time and fuel.
- **Inertial Navigation** – utilizing advanced software, our digital ring laser gyros and quartz accelerometers provide attitude, heading, velocity, flight vector and other critical information to aircraft systems for precision accuracy and high reliability.
- **Non-inertial Sensors** – from aircraft control surface position sensing and engine oil pressure to landing gear status and cockpit input controls, critical flight and aircraft information are provided through our reliable high precision pressure, thermal, magnetic, flame, weight and balance electronic and electromechanical cost-effective sensing devices.





# Commercial aircraft

## Communication and Information Systems

Offering superior in-flight access, reliability and high quality connections, we deliver a comprehensive offering of technologically advanced products and systems with the flexibility and growth capability to meet ever-changing airline communication needs.

- Quantum™ Line – designed to meet the more stringent environmental and operational requirements for newer generation aircraft. Our highly reliable navigation radios, sensors, receivers and communication equipment integrate with the automatic flight control systems, instrument systems and EGPWS system during approaches and landings sequences to increase cockpit efficiency and reduce maintenance and operational costs.
- Satellite Communications (SATCOM) – provides passengers and crew instant digital voice and data communications, as well as flight deck connectivity with air traffic control, for increased operational efficiency, added passenger amenities and optimized aircraft operation through Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) capabilities.
- HF/Voice/HF Data Link – offering the latest Digital Signal Processing (DSP) technology, our systems deliver significant improvements in voice communications with lower cost datalink capability.
- Data Management – our FliteLink for Flight Data Acquisition and Management System (FDAMS) automatically downloads flight and aircraft data providing fast, cost-efficient access to flight information for better airline flight operations.

- Flight Inspection Receiver – providing significantly improved performance and temperature stability over analog receivers, our all-digital receiver is designed for accurate measurement of VHF Omnidirectional Range (VOR) navigation system and Instrument Landing System (ILS) signals-in-space for ground station certification.
- Cockpit Voice Recorders and Data Recorders – our solid state devices use modular Crash Survivable Memory Units (CSMU) to protect and extend the recording memory. The CSMU increases reliability and lowers system costs while meeting or exceeding all current industry requirements.
- Aircraft Communications Addressing and Reporting System (ACARS) – Our Communications Management Unit (CMU) and Communications Management Software (CMF) provide paths for today's airline digital communications through VHF, HF and satellite networks. GATELINK, using WiFi connectivity, allows for higher data transfer rates and more cost-effective, quicker access to data for the maintenance and ground crews.

## Lighting Systems

With a focus on efficient operation and improved maintainability, our lighting products are cost effective as either a stand-alone solution or as part of an integrated system.

- Aircraft Lighting – Honeywell's full suite of exterior and interior lights supply a range of lighting capability from aircraft navigation to anti-collision exterior illumination to emergency and cabin lighting. Our high performance LED lighting products provide a reliable, long life and energy efficient solution to the airplane's lighting needs, resulting in lower lifecycle costs.

## Key Benefits

- Safety and productivity technologies that reduce operating costs
- Federated and integrated solutions for peak aircraft performance
- Safety solutions reduce delays and maximize fuel efficiency
- Reduced wiring and power consumption lowers operating costs
- Integration maximizes data buses and reduces weight and installation costs
- Improved situational awareness increases cockpit efficiency
- Greater hardware reliability reduces maintenance costs



Honeywell's avionics, navigation and electrical solutions help maximize airline and route efficiencies, decrease aircraft weight and space requirements and reduce pilot workload and training requirements to lower total cost of ownership.

## **Meeting Customer Needs**

As the airline industry continues to evolve, Honeywell remains at the forefront of avionics and electrical system, subsystem and component innovation. Dedicated to increasing efficiencies with reduced operating costs for today's aircraft, our development teams are working with a focus on the future to create new product platforms that can be easily upgraded and modified to meet emerging technologies, operational requirements and industry standards for commercial airlines.

Our innovative solutions are proven to deliver lower costs and improved efficiencies for your aircraft and operations.

## **Honeywell Aerospace**

Honeywell is a leading global provider of integrated avionics, engines, wheels and brakes systems and service solutions for aircraft manufacturers, airlines, business and general aviation, military, space and airport operations.

For more information on Honeywell Aerospace, visit us online at [www.honeywell.com/aero](http://www.honeywell.com/aero)

## **Global Network of Support Services**

Honeywell's resources span the Americas, Europe, Middle East, Africa, Asia and the South Pacific to deliver dedicated 24/7 service support. As a world leader in aviation aftermarket services, our global repair centers, logistics network and field services engineering teams are able to quickly repair, supply and warrant equipment whenever and wherever it is needed.

## **Honeywell Aerospace**

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